AWARD NUMBER: *W81XWH-17-C-0088*

TITLE: *Emotional State and Personality: A Proof-of-Concept Model for Predicting Performance Under Stress*

PRINCIPAL INVESTIGATOR: *William D. "Scott" Killgore, Ph.D.*

CONTRACTING ORGANIZATION: *University of Arizona*
Tucson, AZ 85719

REPORT DATE: *OCT 2018*

TYPE OF REPORT: *Annual Report*

PREPARED FOR: U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. REPORT DATE	2. REPORT TYPE	3. DATES COVERED
OCT 2018	Annual Report	25 SEP 2017 – 24 SEP 2018

4. TITLE AND SUBTITLE

Emotional State and Personality: A Proof-of-Concept Model for Predicting *Performance Under Stress*

5a. CONTRACT NUMBER

5b. GRANT NUMBER
W81XWH-17-C-0088

5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)

Dr. William D. S. Killgore

E-Mail: killgore@psychiatry.arizona.edu

5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

University of Arizona
888 N. Euclid Ave.
Tucson, AZ 85719-4824

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)

U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

10. SPONSOR/MONITOR'S ACRONYM(S)

11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION / AVAILABILITY STATEMENT

Approved for Public Release; Distribution Unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT

Combat medics must be capable of performing under difficult and highly stressful situations. However, not all individuals are equal in how stressful situations are handled. Some individuals may perform better in highly stressful situations than others, especially when faced with horrific injuries while taking enemy fire. Evidence suggests that performance under stress may be associated with current emotional state and stable personality traits. At present, there are no reliable tools for screening and selecting individuals for combat medic positions. This study aims to fill a critical information gap by developing a valid statistical model based on empirical data that combines emotional state determinants and personality traits to predict cognitive performance under stress. This model will be developed in Phase I using a validated psychosocial stress test, the Trier Social Stress Test, and further validated in Phase II which will include a single night of sleep deprivation and a repeated physical stress. Currently we have collected data from 91 participants as part of Phase I.

15. SUBJECT TERMS

Stress, cognitive performance, emotional state, personality, stress response, cortisol, sleep deprivation, predictive model, combat medic

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			USAMRMC
Unclassified	Unclassified	Unclassified	Unclassified	270	19b. TELEPHONE NUMBER *(include area code)*

TABLE OF CONTENTS

Page

1. INTRODUCTION

During active military operations and other hostile engagements, the combat medic must be able to rapidly assess a severely wounded warfighter and provide appropriate aid. These situations are often highly stressful and require split-second decisions. The ability to effectively manage emotions and respond appropriately in stressful situations often requires intensive and repeated practice during realistic situations. Unfortunately, the ability to effectively perform during these extremely stressful situations does not come naturally to most individuals. Evidence suggests that high levels of acute stress can have severe consequences on cognitive and physical performance [1]. However, there are large individual differences in the physiological, cognitive, and emotional responses to stress, which have been associated with measurable, trait-like characteristics including personality and coping capacities [2]. Moreover, previous work from our lab suggests that emotional intelligence, the ability to use emotional information to guide decision-making, is strongly associated with personality functioning [3] and mediates physiological sensitivity and expression of anxiety symptoms [4]. There is a critical need to identify personality and emotional state determinants of task performance under stressful situations in order to enhance the selection and training process of combat medics. A better knowledge of these determinants would allow for greater precision in identifying individuals more suitable to perform in highly stressful environments. Further, a better knowledge of these determinants would enhance combat medic training by fine-tuning situational stress scenarios to optimize learning for each individual. Without this deeper understanding, selection and training of combat medics will likely remain imprecise and costly. The present two-part project aims to develop and cross-validate a statistical model to predict cognitive performance under stress when emotional states and personality traits are known. During Phase I, n = 120 participants will complete a number of personality and emotional intelligence questionnaires at baseline. In addition, we will induce a specific mood state while each participant undergoes a prolonged psychosocial stressor, while also intermittently completing cognitive performance tasks (Fig. 1). At the completion of Phase I, we will develop a predictive model to evaluate the interactive effects of personality and emotional state on cognitive performance under stress. In Phase II, n = 48 participants will undergo a single night of sleep deprivation, while performing a physical stressor at regular intervals throughout the night. As in Phase I, participants will perform a series of cognitive tasks throughout the study. The predictive model created from Phase I will be applied and cross-validated using data collected during the novel stress condition of Phase II.

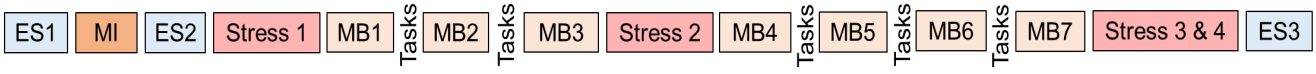


Figure 1. Basic study design. A total of 120 participants will be assessed. They will undergo several emotional state assessments (ES), mood inductions (MI) or mood boosts (MB) aligned with either a negative, neutral, or positive mood, as well a prolonged Trier Social Stress Test (TSST) broken down into four separate stresses. Cognitive performance tasks will be administered between the mood boosts.

2. KEYWORDS

Stress, Trier Social Stress Test, Maastricht Acute Stress Test, cognitive performance, emotional state, personality traits, sleep deprivation, stress response, salivary cortisol, predictive model, combat medic

3. ACCOMPLISHMENTS

Specific Aim 1: Identify key personality dimensions that interact with emotional state to influence cognitive task performance.

Major Task 1: Complete IRB/HRPO Approval and Procure Equipment – **Complete**

Subtask 1: *Prepare Regulatory Documents and Research Protocol*

The University of Arizona Institutional Review Board (IRB) and the U.S. Army Human Research Protections Office (HRPO) have approved the current protocol for human subjects research. Amendments are submitted as needed and all annual continuing review reports continue to be submitted to the UA IRB Office and HRPO prior to their annual due dates.

- ***Milestone Achieved:*** Local University of Arizona IRB approval (Approved: 20 OCT 2017)
- ***Milestone Achieved:*** HRPO approval (Approved: 18 DEC 2017)

Subtask 2: *Hire staff and acquire testing materials*

There continues to be sufficient study materials and equipment to gather data for the remainder of the project period. Study materials and research equipment remain available and ready for data collection as participants are scheduled. New materials are purchased as needed. In addition, there has been normal turnover in research technicians, with staff and new research technicians trained to replace those that have left.

- ***Milestone Achieved:*** All materials and tasks ready for data collection (Completed: 25 DEC 2017)
- ***Milestone Achieved:*** Research staff hired and trained (As needed)

Major Task 2: Complete Phase I (Model Development and Cross-Validation) – **Ongoing**

Subtask 1: *Collect data for predictive model.*

Data collection for the study has progressed with good success over this past year. In this reporting year, we have enrolled 96 (of 120 planned) participants. Of those enrolled, 91 have successfully completed all aspects of study participation, and 5 are currently enrolled for target completion in the next quarter. At the end of Year 1, data collection was 76% complete for Phase I. This phase is on schedule for timely completion by the target date.

- ***Target Completion Date:*** 25 DEC 2018

Subtask 2: *Develop and cross-validate a predictive model.*

The development of the predictive model is pending final data collection of Phase I, as data collected thus far does not yet constitute a sufficient sample size for adequate statistical power in regards to the generation of the predictive model. Model development will be completed at the conclusion of Phase I data collection.

- ***Target Completion Date:*** 25 DEC 2018

Nonetheless, over the past year, we have performed the following preliminary analyses on our physiological and behavioral data. These analyses allow us to ensure that data collection is accurate and of high quality. Preliminary analyses also allow us to report emerging data to the larger research community in the form of conference abstracts. The following is a summary of some of the initial findings from these preliminary analyses.

<u>Mood Induction Response:</u>

As part of the study, we are comparing the effects of induced mood state on cognitive performance. Preliminary Visual Analogue Scale (VAS) scores for happiness and sadness were analyzed for n = 55 participants to assess the effectiveness of our mood induction protocol for provoking the targeted mood state. Participants were randomized to 1 of 3 mood conditions: negative, neutral, positive. To induce a particular mood state, participants were required to listen to a piece of classical music aligned with the mood state for ~15 min. At the same time, subjects also read a series of self-reflective statements and wrote down a self-reflective memory associated with the target mood. To ensure that the mood was sustained, participants also completed several "mood boosts" throughout the study visit (See Fig. 1). During the mood boosts, participants were required to listen to the same classical music piece again for 3 min while thinking about the self-reflective memory written down during the initial mood induction. As an assessment of actual emotional status throughout the protocol, the VAS scales were administered during Emotional State Assessment 1 (ES1) at baseline, ES2 immediately after mood induction, following each mood boost, and during ES3, immediately preceding the debrief (See Fig. 1). Overall, the findings suggest that the mood inductions were generally successful in manipulating emotional state. The preliminary findings suggest that the negative mood condition was particularly effective at reducing ratings of happiness (Fig. 2) and increasing ratings of sadness (Fig. 3) across the study. On the other hand, the positive mood induction appears to have a less pronounced effect. Specifically, the preliminary findings suggest that there is little change in happiness (Fig. 2) or sadness (Fig. 3) as a result of the positive mood induction, which does not appear to be notably different from the neutral mood induction protocol.

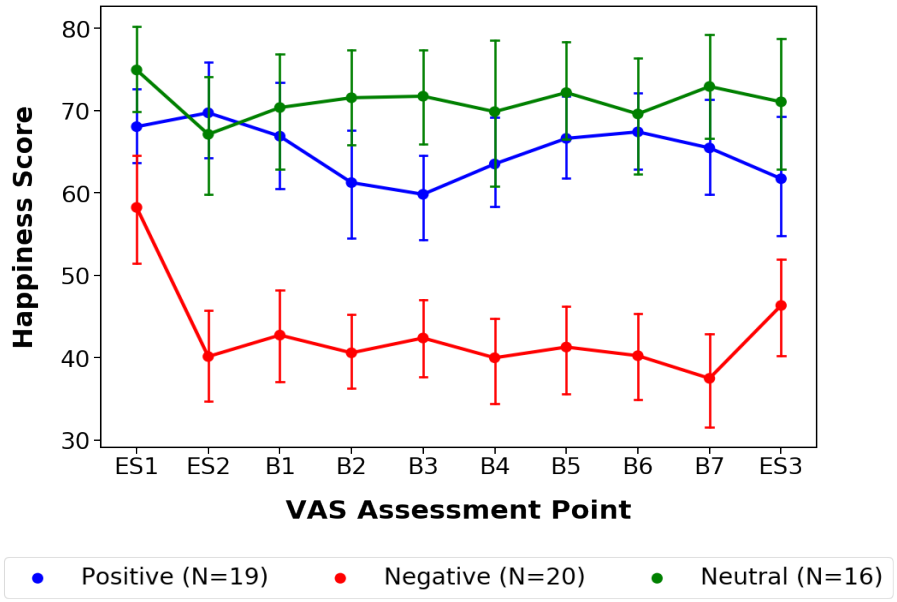


Figure 2. Self-reported happiness scores (mean ± SE) for n=55 participants recorded prior to mood induction (ES1), post mood induction (ES2), after each mood boost (B1-B7), and at the conclusion of the study (ES3). Preliminary findings suggest that only negative mood induction affected self-reported happiness.

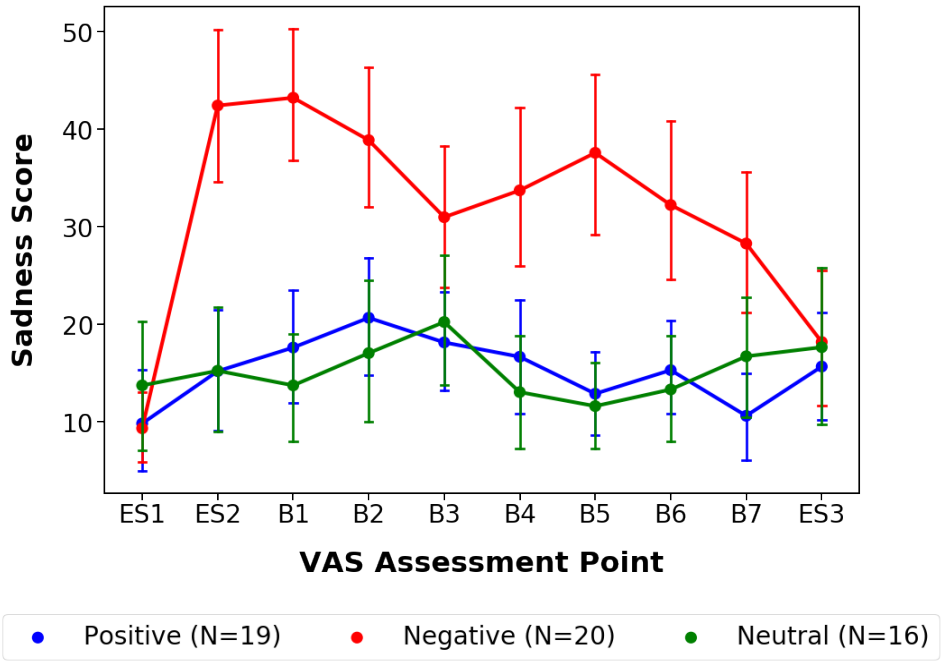


Figure 3. Self-reported sadness scores (mean ± SE) for n=55 participants recorded prior to mood induction (ES1), post mood induction (ES2), after each mood boost (B1-B7), and at the conclusion of the study (ES3). Preliminary findings suggest that only negative mood induction affected self-reported happiness.

Salivary Cortisol Response:

We collect multiple salivary cortisol samples from each participant throughout the day. These are processed in batches of approximately 30 participants at a time. At this point, salivary cortisol analyses have been conducted for n = 55 participants. Preliminary results suggest that the Trier Social Stress Test (TSST), which is the primary stressor of Phase I, is effective at inducing a cortisol stress response in our participants. The TSST involves informing participants that they will be required to give a 5 min speech on the topic of why they deserve their dream job. The speech is presented to a panel of judges that the participants are made to believe are judging their speech and body language. Following the speech, participants perform a 5 min mental arithmetic task. Salivary cortisol samples were collected at 11 time points over the course of the day-long stress protocol: at baseline before any stressors, immediately before and 30 min after each stressor, and one sample following a debrief period at the end of the day. There were 3 main stress periods: Stress 1 – Preparation: Participants were allowed 5 min to prepare notes for the impending speech, and were then informed that the speech would be delayed due to the last minute addition of a third judge. Stress 2 – Speech reminder: A second stress occurred later in the day. Specifically, participants were told that "it is almost time for the speech" and that they will not be allowed to use their notes. To delay the speech and induce additional stress, participants were also informed that the video camera was broken and the speech would again be delayed. During the delay periods, participants were requested to continue completing cognitive tasks. Stress 3 and 4 – Speech and mental arithmetic: The final stress occurred when the speech actually occurred. Specifically, participants performed the 5 min prepared speech in front of a panel of 3 judges wearing white lab coats and a video camera. Immediately after the speech, participants performed a mental arithmetic task during which they were required to count aloud backwards in 13-step increments, beginning at 2,083 to zero. Figure 4 shows the cortisol responses at the 11 saliva collection times throughout the session. The data show that there were large increases in salivary cortisol concentrations due to the TSST preparation period and the speech/serial subtraction task. The elevated cortisol levels at baseline are thought to be due to increased anticipatory effects of just entering the study. These levels drop dramatically for the second baseline sample, and the following pre-preparation sample, demonstrating that the participants become more comfortable with the testing prior to stress induction (Fig. 4).

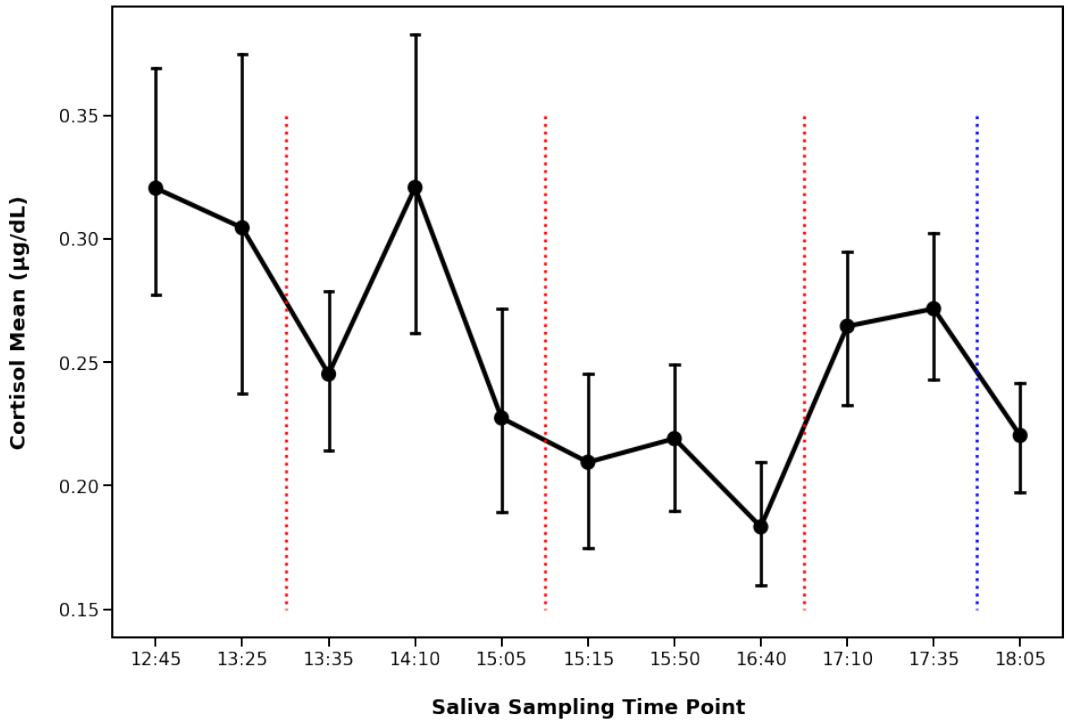


Figure 4. Mean cortisol concentrations (± SE) for n=55 participants at each collection time point. The graph has been split into 5 distinct stress periods: baseline (12:45 and 13:25); Post-Preparation (13:35, 14:10, 15:05), Post-Stress Reminder (15:15, 15:50, 16:40), Post-Speech (17:10 and 17:35), and Debrief (18:05). Red vertical dashed lines indicate the administration of each stressor; Blue vertical dashed line indicates debrief.

Mood Influence on Stress Reactivity:

We conducted preliminary calculations using data from n = 54 participants to assess the relationship between mood condition, self-reported mood, and predicted stress reactivity. More specifically, we wanted to know how mood condition and self-reported mood would predict physiological stress response to the TSST. Stress reactivity was defined as the difference in salivary cortisol concentrations between the saliva sample taken right before and right after the speech and mental arithmetic task (i.e., stresses 3 and 4). We hypothesized that positive mood induction and positive mood scores would increase resilience to future stress, whereas negative mood induction and mood scores would increase susceptibility. A one-way ANOVA confirmed that mood condition significantly affected VAS happiness and sadness scores ($F_{1,55} \leq 5.30$, $p \leq 0.025$). Interestingly, mood condition had no direct effect on stress reactivity while each VAS measure was found to be strongly correlated with stress reactivity. Counterintuitively, increased self-reported happiness was associated with greater stress reactivity (r=0.33, p=0.015; Fig. 5, left), while as expected reduced sadness was associated with less stress reactivity (r=-0.34, p=0.011; Fig.5, right). These findings suggest that mood condition may only serve as a mediator between affect and stress response, and that emotional state priors may influence future stress reactivity. The counterintuitive finding that greater happiness was associated with greater stress-responsivity deserves further exploration.

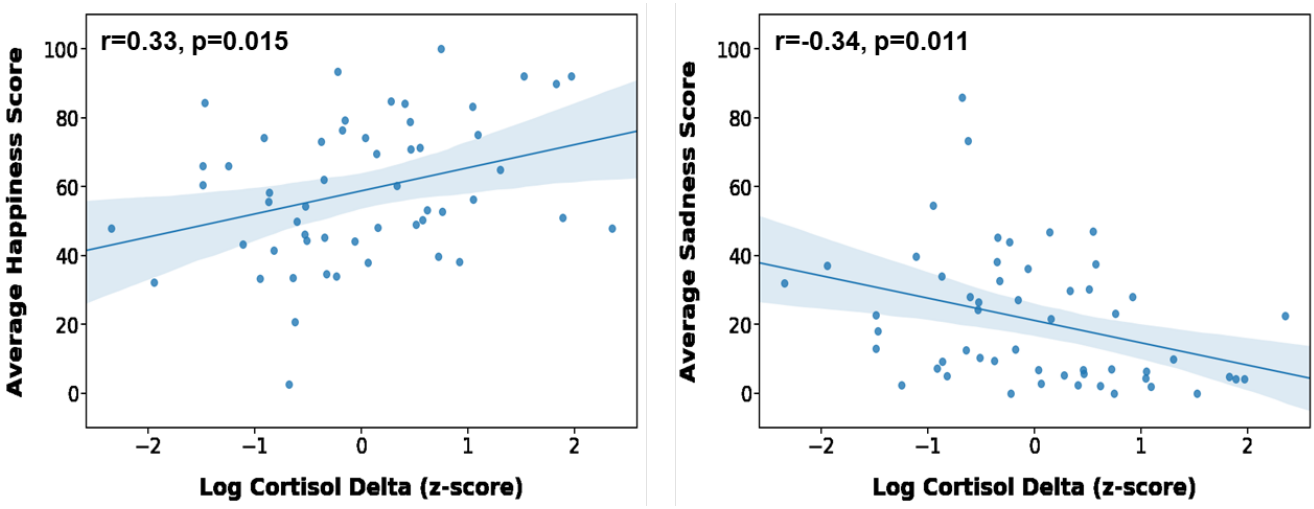


Figure 5. Average self-reported happiness (left) and sadness (right) in association with cortisol stress reactivity. Cortisol values are represented as a z-score of a participant's change in salivary cortisol. The z-score is the number of standard deviations from the mean across all subjects analyzed (n=54).

Interaction of Ability and Trait-Based Emotional Intelligence and Psychosocial Stress Reactivity:

Emotional intelligence (EI) is regarded as both an ability and stable personality trait that contributes to successful social exchanges. We examined the association between EI and cortisol responses within the context of stress reactivity during the speech and mental arithmetic task for n = 45 participants. All participants completed the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and the Emotional Quotient Inventory 2.0 (EQI) to test for ability and trait-based EI. Again, stress reactivity was calculated as the difference in salivary cortisol concentrations for samples collected immediately before and immediately after the speech and mental arithmetic task.

Bayesian exploratory factor analysis was used to account for multicollinearity between MSCEIT and EQI subscales. Eight latent factors were determined stochastically during Markov chain Monte Carlo sampling. These eight factors were used as predictors in a linear regression model predicting change in cortisol concentrations. Two of the eight identified factors were significant predictors of stress reactivity ($F_{8,36}$=3.07, p=0.013, R^2=0.39). The first factor loaded with the MSCEIT Strategic Area components (ß=0.12, p=0.001), and the seventh factor loaded with the EQI Interpersonal Area components (ß=0.21, p=0.052). Participants with higher scores in both the MSCEIT Strategic Area components and the EQI Interpersonal Area had significantly higher stress reactivity than those with lower scores in these areas. Findings for factor 1 and factor 7 are summarized in Fig. 6. These preliminary findings are interesting and suggest that there is an important association between Emotional Intelligence and psychophysiological stress reactivity. At present, it remains unclear what this level of increased cortisol may represent and the extent to which it is associated with improved versus degraded performance. We will be exploring this issue as more data become available.

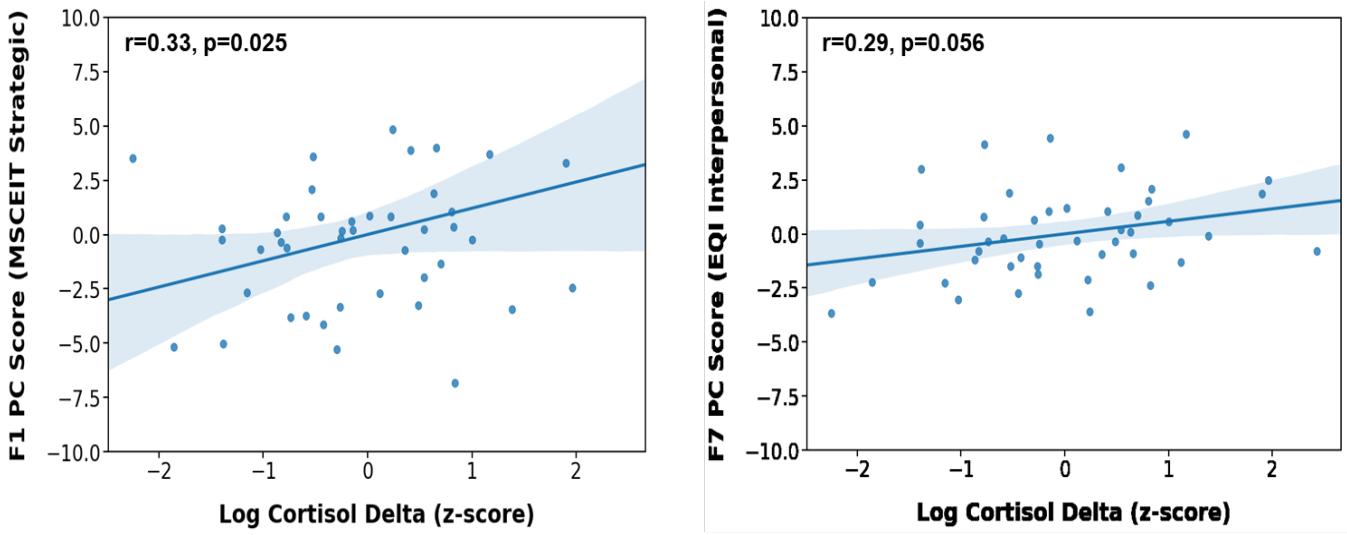


Figure 6. Linear combination for factor 1 (left; MSCEIT total and strategic, understanding, and management components) and factor 7 (right; EQI interpersonal, empathy, and social responsibility components) in relation to the z-score for the change in cortisol concentration in samples collected immediately before and immediately after the TSST.

Two-Stage Decision Making Task:

Participants also completed a modified two-stage Markov decision making task, a complex reinforcement learning decision paradigm based on current theories of computational neuroscience. These types of tasks have recently been used to determine an individual's tendency to use an inflexible, reflexive, habitual (i.e., model-free) decision approach versus a flexible, goal-directed, mental simulation (i.e., model-based) decision approach. The emerging multi-domain battlespace of the future will require that warfighters be able to learn from implicit information and adapt quickly and flexibly to changing situations. When operating in dense urban environments, warfighters who are able to think flexibly, learn under dynamically changing circumstances, and make decisions based on larger goal-directed mental simulations will likely retain the advantage over their adversaries. Recent evidence suggests that psychological stress alters decision-making away from flexible model-based cognition toward inflexible model-free decisions. Therefore, we examined the effects of stress, as measured by cortisol, on the model-based and model-free aspects of decision making. The participant sample was split into tertiles based on Operation Span total score, a measure of working memory capacity.

We analyzed data from n = 44 participants. Figure 7 shows preliminary findings on the two-step decision making task. Cortisol stress response was quantified as a change in cortisol concentration from baseline to immediately prior to the decision-making task. Results show that stress response was associated with degraded model-based decision-making tendencies (r=-0.59, p=0.02) for individuals in the low working memory group. Conversely, we found no relationship between stress response and model-based decision making for individuals in the high working memory group (r=0.05, p=0.81) or average working memory group (r=-0.06, p=0.81). This suggests a particularly important role of working memory capacity in the ability to maintain flexible thought processes under conditions of high stress. Further, there was no relationship between stress

response and model-free decision making for any of the working memory groups ($r<0.41$, $p>0.15$). These preliminary data are consistent with prior work and suggest that model-based decision making is sensitive to acute stress, especially in individuals with low working memory capacity, and that model-based decision making can be measured reliably with a brief computerized task.

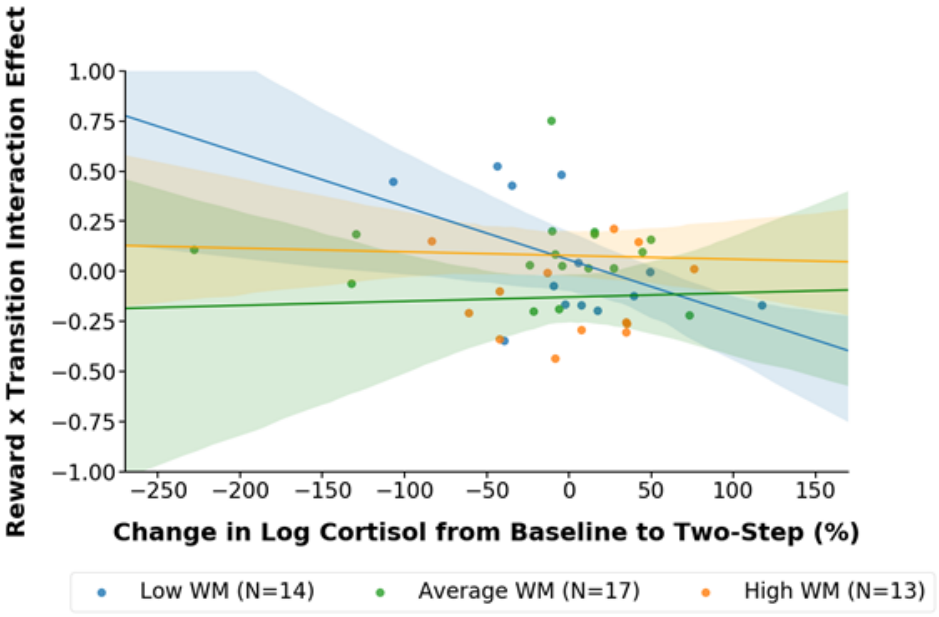


Figure 7. Preliminary data from the Modified Two-Stage Markov Decision Task. The sample was split into tertiles based on working memory capacity.

Psychosocial Stress and Cognitive Flexibility:

Stress can have significant consequences on cognitive control mechanisms which allow military personnel to think flexibly, make crucial decisions, and rapidly update behavior under changing circumstances. In our preliminary analyses, we sought to determine if cognitive flexibility was significantly impaired in those participants that were particularly vulnerable to the TSST. N=52 participants were analyzed here. Specifically, between two of the stressors, subjects performed a novel, militarily relevant, reversal learning task based on a standard go/no-go paradigm. This task is referred to as the Context Dependent Shoot/No-Shoot Task (Fig 8 Top). Stimulus-response rules (i.e., rules of engagement) were presented to the participants at the beginning of the task, and then subjects were asked to either respond or withhold a response (shoot or no-shoot) to the presented stimuli (pre-reversal). Halfway through the task, these stimulus-response rules were reversed (post-reversal). Here, performance was assessed as a change in discriminability (*d'*) index, hit rate (HR), and false alarm rate (FAR) from pre- to post-reversal. Stress reactivity was quantified based on salivary cortisol concentrations at eight time points throughout the stress protocol.

A Pearson's partial correlation, controlling for baseline cortisol, mood condition, and gender showed a significant relationship between cortisol response and cognitive flexibility. Participants with higher cortisol concentrations had a significantly larger decrease in pre- to post-reversal

performance for *d'* (r=-0.36, p=0.011) and HR (r=-0.42, p=0.003), but not FAR (r=0.24, p=0.091). Participants with higher cortisol response had significantly worse performance on this novel cognitive flexibility task (Fig. 8, Bottom). The inability to remain flexible and update behaviors appropriately under stress can lead to impaired performance on and off the battlefield. We find that cortisol responses to stress were significantly associated with poorer performance.

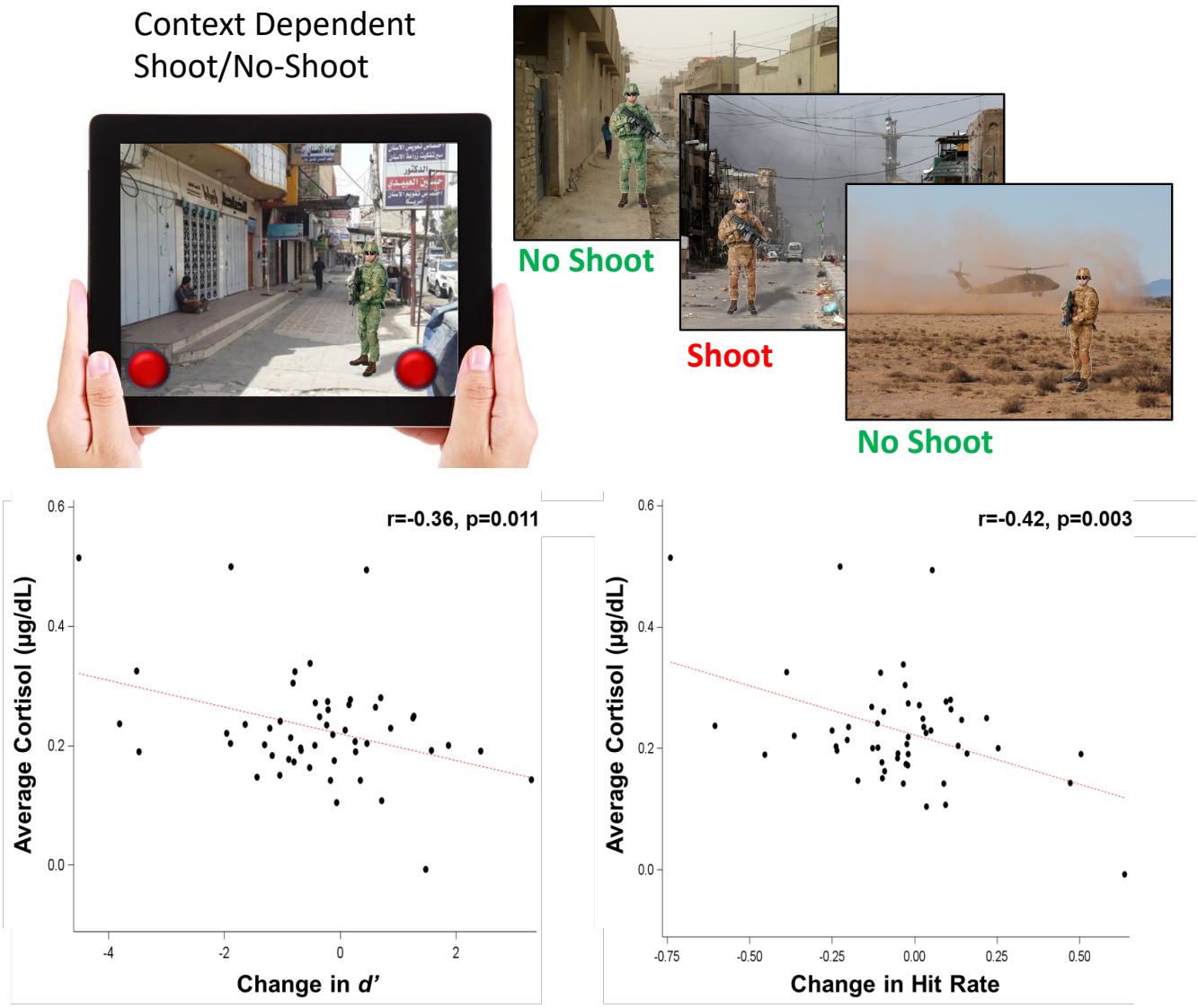


Figure 8. *Top*: Example of the Shoot/No-Shoot Task. Participants must follow specific rules of engagement and shoot only targets wearing a specific color uniform in a particular context (urban vs. rural). The rules of engagement are reversed half way through the test. *Bottom*: The relationship between average cortisol concentrations and cognitive flexibility performance as measured by discriminability index (d'; left) and hit rate (HR; right).

Mood and Disaster Triage Performance:

While it is evident that stress adversely impacts cognitive performance, current mood can also have a significant influence on performance. In a preliminary analysis, we hypothesized that self-reported affect at the time of assessment would be associated with overall performance on a disaster triage task.

As described above, VAS scores of happy, sad, calm, and tense, among others, were regularly administered throughout the study. From these scales, a global affect score can also be derived which represents a composite measure of several affective characteristics.

During the study, participants performed a disaster triage task during which they were asked to play to the role of a first responder during a simulated disaster event. All participants receive training on this task at their baseline visit and then must utilize that information a week later during the stress induction session. In this computer game-like scenario, the first responder (i.e., the participant) arrives on the scene of a mass shooting and is asked to evaluate and appropriately triage the victims by performing a series of assessments (e.g., check the pulse) and medical actions (e.g., position the airway). Points are awarded, or deducted, based on accuracy. Total score was used here as the dependent variable of interest.

In this preliminary analysis, we assessed performance for n = 65 subjects. Pearson's partial correlation, controlling for task order and mood condition, showed a significant relationship between performance and average self-reported global affect as well as self-reported happiness, but not self-reported sadness. Subjects with higher self-reported global affect scored higher on the disaster triage task (r=0.29; p=0.021; Fig. 9, left). Similarly, those reporting greater happiness also scored better on the task (r=0.27; p=0.035; Fig. 9, right). There was no relationship between total score and self-reported sadness (r=-0.08; p=0.56). Together, these findings suggest that current mood plays a significant role in predicting performance on a life-saving task under stress.

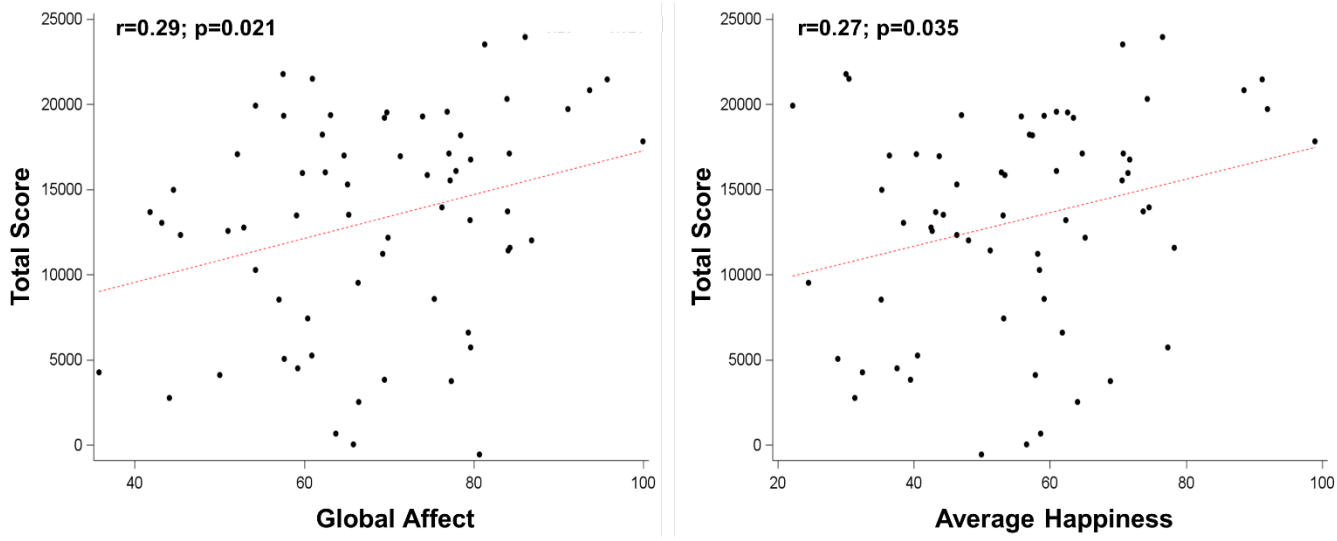


Figure 9. The relationship between total score on the Disaster Triage task, global affect (left) and average happiness (right).

Specific Aim 2: Determine the generalizability of the predictive model

Major Task 3: Complete Phase II (Model Generalization) – Ongoing

Subtask 1: *Collect data for sleep deprivation stress study*.

The Phase II protocol was submitted to the local IRB on 22 AUG 2018. We are currently awaiting approval. Following local IRB approval, the protocol will be sent to HRPO for approval. Data collection for Phase II is planned to begin as soon as regulatory approval has been received from the local IRB and HRPO.

- ***Target Completion Date:*** 25 MAR 2019

Subtask 2: Apply predictive model for cross-validation.

Application of the predictive model is pending final data collection.

- ***Target Completion Date*****:** 25 APR 2019

Subtask 3: *Submit publications and final report.*

Publications and final report are pending final data collection.

- ***Target Completion Date***: 25 SEP 2019

What was accomplished under these goals?

Major Activities:

Recruitment

Figure 10 summarizes the recruitment flow for Major Task 2 (Phase I). Cumulatively, 699 individuals completed our online interest form. Of these, 235 individuals were eligible to participate and 392 were not eligible to participate. We had 44 people express interest in participation, however these individuals did not respond to our request to complete the study screening process. At the end of the 4th quarter, there were 28 individuals waiting to be screened for eligibility. Of the 235 eligible participants, 114 were enrolled to participate and 91 successfully completed Phase I. In total, 18 individuals have discontinued participation in the study. At the end of the 4th quarter, 5 participants had completed the initial screening visit and were scheduled to complete the study during the 1st quarter of year 2. At the time of this report, we have 13 individuals scheduled to participate during the next quarter. Of the remaining 108 eligible participants, 105 have either not shown up for scheduled study visits or did not return our follow-up calls and 3 individuals are in the process of being rescheduled.

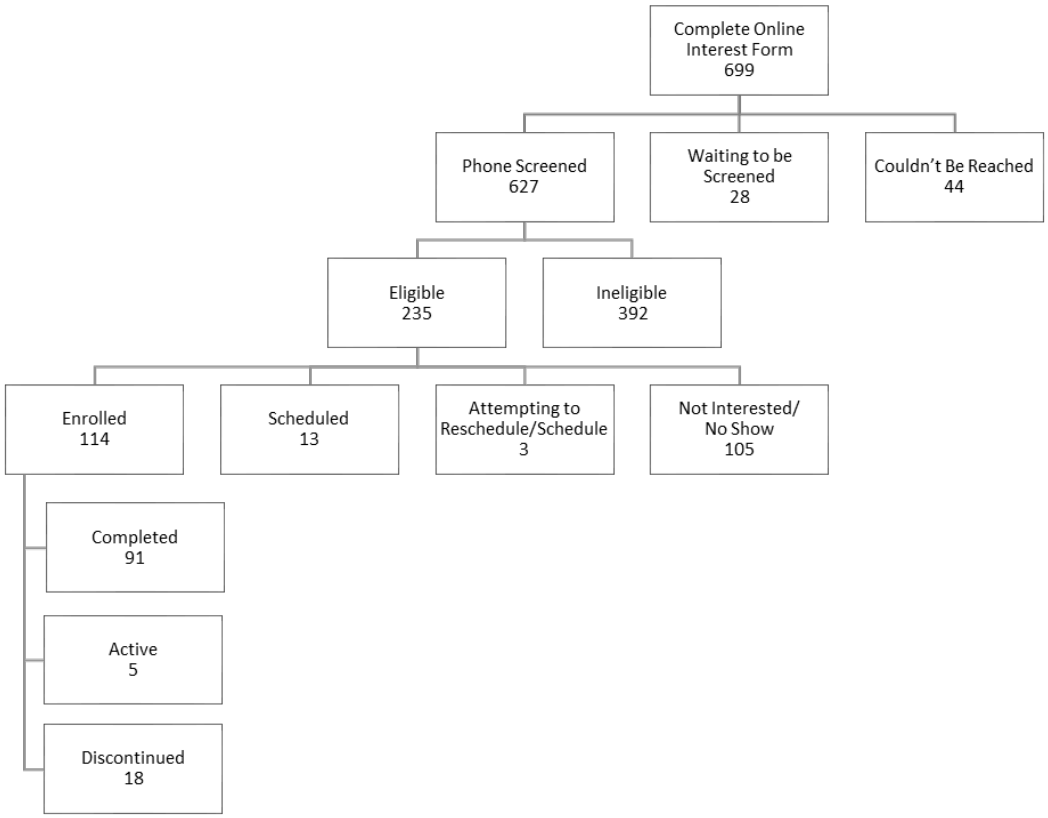


Figure 10. Recruitment flow for Phase I.

Our participant population has been recruited from a variety of different sources including print in local newspapers, digital media (i.e., Facebook, email listservs, and Craigslist), and flyers posted at local businesses and college campuses, as summarized in Fig. 11. To aid in recruitment and participant communication, we have been using a third-party company (Twilio), which allows potential participants to complete the online interest form at leisure on any personal electronic device. Since the beginning of the reporting year, we have had 699 potential participants respond to our study advertisements regarding interest in study participation (i.e., filling out the online interest form, calling in, etc.). A summary of recruitment methods that have been employed in the present study is shown in Figure 11. The greatest interest (31%) has been generated from flyers posted around the University of Arizona campus. The second most effective recruitment method was contact with students, staff, and faculty at the University of Arizona via departmental email listervs (24%). Craigslist has been the most effective (11%) non-University method of recruitment. The remaining methods (e.g., newspaper, social media, etc.) yielded a small percentage of people interested in the study.

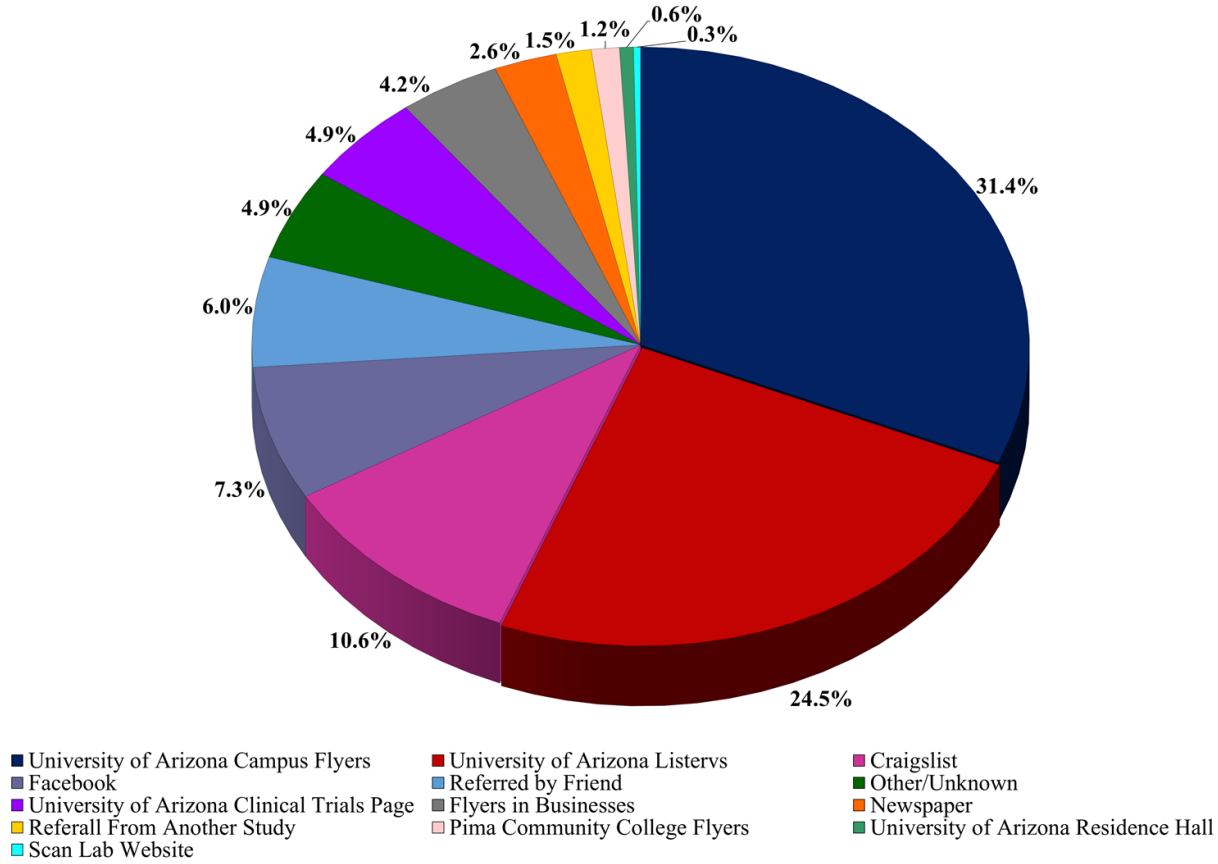


Figure 11. Methods of participant recruitment for Phase I.

The reasons participants were ineligible to be enrolled in the study are summarized in Figure 12. Three factors made up ~65% of all participants deemed ineligible for the study: no longer interested in the study (35.3%), nicotine use (16.5%), and exclusionary medication use (13.7%). In addition, we set a goal of recruiting approximately 50% male and 50% female (n=60 for each group). During the 4th quarter, we reached our quota for female participants. Due to this, an additional 26% of participants were not eligible due to gender (not shown).

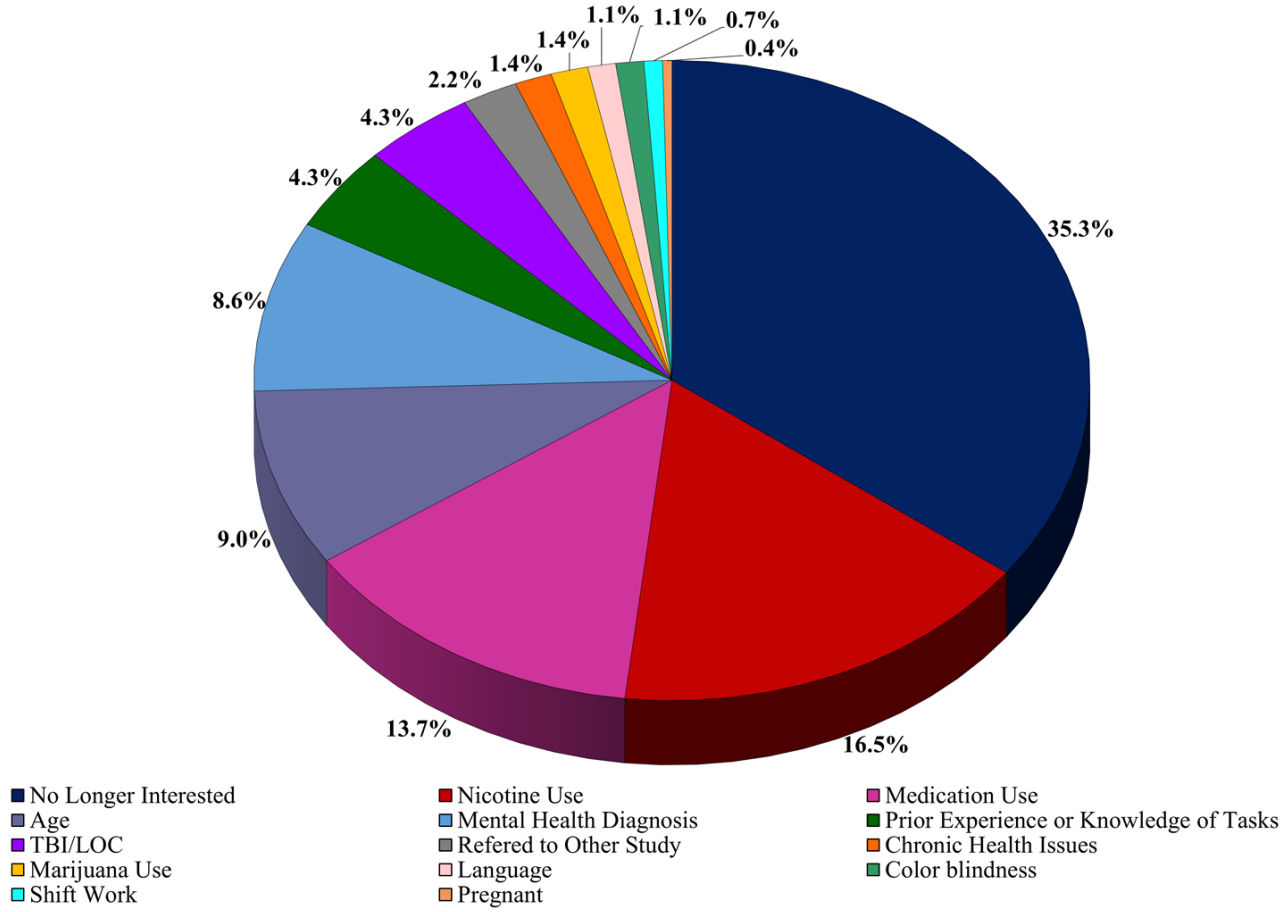


Figure 12. Reasons for subject ineligibly for Phase I.

Protocol Amendments:

Amendment #1 (Approved by local IRB: 05 FEB 2018):

- The amendment added additional neurocognitive and emotional state assessments, updated the script and protocol for the Trier Social Stress Task, improved recruitment materials, updated study forms such as intake forms and debrief forms, and approved scripts to be used in participant correspondence. These changes were minor but were deemed important to ensure valid data collection.

Amendment #2 (Approved by local IRB: 17 APR 2018):

- The amendment proposes the inclusion of additional questionnaires and personality assessments, improved recruitment materials, updated study forms such as the intake forms and debrief form, and updated participant correspondence scripts. These additions are very minor and do not alter the study in any major way.

Amendment #3 (Under local IRB Review; Submitted 22 AUG 2018):

- The amendment adds the new protocol for the second phase of the study which includes a sleep deprivation period along with new tasks and questionnaires. Additionally, the amendment included new recruitment material and phone screening forms for the second phase.

Data Management:

Consistent with SOW, data are actively stored in REDCap, a HIPAA compliant digital storage database, our secure internal severer, and locked filing cabinets in secure rooms. Data are regularly checked for accuracy. Saliva samples are stored in a -80 °C freezer in a locked facility until analysis, at which time samples are shipped to Salimetrics for cortisol assay. To date, saliva samples from n = 84, from have been submitted for cortisol testing.

What opportunities for training and professional development has the project provided?

Multiple members of our lab receive regular one-on-one instruction and supervision in the administration and scoring of neuropsychological assessments, psychodiagnostic testing, electrode placement, and patient interviewing.

6 college undergraduate students obtained training in research methods, assessment scoring, and participant screening in our lab over the last year, which was sponsored by the University of Arizona.

Over 10 members of our lab have undergone basic training modules in ethical conduct, statistical analysis, and neuroanatomy.

Over 10 members of our lab have undergone blood borne pathogen and biohazard safety training for proper handling of human biospecimens, including urine and saliva.

How were the results disseminated to communities of interest?

Preliminary analyses reported here were submitted and accepted for presentation during the reporting year. These data will be presented at two international conferences including the annual meeting of the Society for Judgment and Decision Making (Nov 2018) and the annual meeting of the International Neuropsychological Society (Feb 2019).

What do you plan to do during the next reporting period to accomplish the goals?

To continue our recruitment efforts, we plan to send out another round of digital advertisements on University of Arizona college listservs and Craigslist, in addition to posting flyers every two weeks on the University of Arizona campus and in local businesses. This should allow us to recruit the

remaining subjects we need to complete Phase I by the November deadline as stated in the SOW. Also, during the next quarter, we plan to submit another round of saliva samples to be analyzed. Lastly, we plan to receive local IRB and HRPO approval in order to begin Phase II during the next quarter. While waiting for approval, we will begin training research staff on Phase II protocols in preparation for starting Phase II as soon as regulatory approval is received. We have also recruited a number of additional volunteer Research Assistants who will help with the overnight data collection sessions in addition to our full-time Technician staff.

4. IMPACT

What was the impact on the development of the principal discipline(s) of the project?
Nothing to Report.

What was the impact on other disciplines?
Nothing to Report.

What was the impact on technology transfer?
Nothing to Report

What was the impact on society beyond science and technology?
Nothing to Report

5. CHANGES/PROBLEMS

Changes in approach and reasons for change

In order in increase recruitment efforts, we made a minor change to our participant eligibility criteria, effective 17 APR 2018. We modified the Phase I participant eligibility criteria with regard to history of concussions or traumatic brain injuries. Prior to the change, participants were deemed ineligible if they had had any history of concussion or traumatic brain injury. The new eligibility criteria was modified to only exclude participants that experienced loss of consciousness for > 5 minutes and have not experience a head injury within 2 weeks of study participation. This minor change allowed us to enroll 21 participants (~18% of target sample size) that would have otherwise been ineligible for study participation under the original criteria.

Actual or anticipated problems or delays and actions or plans to resolve them

91 of the proposed 120 (~76%) participants for Phase I have now successfully completed all aspects of the study. This is 10 participants (8%) short of the goal outlined in the SOW for the 4th quarter. We are slightly behind the proposed scheduled due to slow recruitment in the beginning of Phase I as we built up to fully utilizing all recruitment methods outlined above. Additionally, we have had 71 participants who have not shown up or who cancelled their initial visits in addition to 18 participants who dropped from the study after enrollment due to uncontrollable circumstances, including family emergencies, unable to commit the time to finish the study, or illness during the

second visit. As these elements are beyond our control, we can only counteract our attrition rate by bringing in more participants and increasing recruitment efforts. To make up numbers in the next quarter and complete Phase I, we will continue using Craigslist and University of Arizona college listservs, posting flyers on the University of Arizona Campus, and posting flyers at more businesses around the city to increase awareness of our study in the Tucson area. Additionally, we have periodically set up a recruitment table at the University of Arizona recreation center and at the center of campus and have found some success in garnering interest through this method. We will again utilize this method during the next quarter.

Changes that had a significant impact on expenditures
Nothing to Report.

Significant changes in use or care of human subjects, vertebrate animals, biohazards, and/or select agents
Nothing to Report

Significant changes in use or care of human subjects
Nothing to Report

Significant changes in use or care of vertebrate animals
Nothing to Report

Significant changes in use of biohazards and/or select agents
Nothing to Report

6. PRODUCTS

Accepted Conference Abstracts:

LaFollette K, Satterfield BC, Lazar M, Killgore WDS (Nov 16-19, 2018). *Attenuated model-based decision-making is predictive of increased psychosocial stress reactivity.* Society for Judgement and Decision Making, New Orleans, LA.

Satterfield BC, LaFollette K, Lazar M, Killgore WDS (Feb 20-23, 2019). Poster Presentation. *Prolonged psychosocial stress impairs cognitive flexibilit*y. International Neuropsychological Society, New York, NY.

LaFollette K, Satterfield BC, Lazar M, Killgore WDS (Feb 20-23, 2019). Poster Presentation. *Predicting psychosocial stress reactivity from ability and trait-based emotional intelligence*. International Neuropsychological Society, New York, NY.

LaFollette K, Satterfield BC, Lazar M, Killgore WDS (Feb 20-23, 2019). Poster Presentation. *Stay negative?: Positive affect is associated with increased psychosocial stress reactivity*. International Neuropsychological Society, New York, NY.

Journal publications.

Nothing to Report

Books or other non-periodical, one-time publications.

Nothing to Report

Website(s) or other Internet site(s)

Nothing to Report

Technologies or techniques

Nothing to Report

Inventions, patent applications, and/or licenses

Nothing to Report

Other Products

Nothing to Report

7. PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS

What individuals have worked on the project?

Name: William D. "Scott" Killgore, Ph.D.
Project Role: PI
Nearest person month worked: 2
Contribution to Project: Oversaw all aspects of project progress and orchestrated data analysis and publication efforts.
Funding support: USAMRAA W81XWH-14-1-0570
USAMRAA W81XWH-14-1-0571
USAMRAA W81XWH-16-1-0062
USAMRAA W81XWH-12-1-0386
USAMRAA W81XWH-17-C-0088

Name: Richard Lane
Project Role: Co-Investigator
Nearest person month worked: 2
Contribution to Project: Dr. Lane provided intellectual and study expertise for the project.
Funding support: USAMRAA W81XWH-17-C-0088
USAMRAA W81XWH-16-1-0062

Name: Michael Grandner
Project Role: Co-Investigator
Nearest person month worked: 1
Contribution to Project: Dr. Grandner provided intellectual and study design expertise for the project.
Funding support: USAMRAA W81XWH-17-C-0088
Kemin Industry
Nexalin Technology
National Heart, Lung, and Blood Institute 5K23HL110216-06
The American Sleep Medicine Foundation 169-SR-17

National Heart, Lung, and Blood Institute 1R56HL138377-01 REVISED
National Institute on Minority Health and Health Disparities 1R01MD011600-01A1 REVISED
National Collegiate Athletic Association

Name: Sara Knight
Project Role: Lab Manager
Nearest person month worked: 1
Contribution to Project: Ms. Knight oversaw the administrative needs of the study and study staff, in addition to providing regulatory support and performing periodic quality control checks.
Funding support:
USAMRAA W81XWH-14-1-0570
USAMRAA W81XWH-14-1-0571
USAMRAA W81XWH-16-1-0062
USAMRAA W81XWH-12-1-0386
USAMRAA W81XWH-17-C-0088

Name: Michael Miller
Project Role: Research specialist/Interim Lab Manager
Nearest person month worked: 2
Contribution to Project: Mr. Miller oversaw the administrative aspects of the study and study staff, in addition to providing support and performing periodic quality control checks.
Funding support: USAMRAA W81XWH-14-1-0570
USAMRAA W81XWH-14-1-0571
USAMRAA W81XWH-16-1-0062
USAMRAA W81XWH-12-1-0386
USAMRAA W81XWH-17-C-0088

Name: Anna Alkozei, Ph.D.
Project Role: Postdoctoral Fellow
Nearest person month worked: 1
Contribution to Project: Dr. Alkozei performed data analysis and processing for the project.
Funding support: USAMRAA W81XWH-14-1-0570
USAMRAA W81XWH-14-1-0571
USAMRAA W81XWH-16-1-0062
USAMRAA W81XWH-12-1-0386
USAMRAA W81XWH-17-C-0088

Name: Sahil Bajaj, Ph.D.
Project Role: Postdoctoral Fellow
Nearest person month worked: 1
Contribution to Project: Dr. Bajaj performed data analysis and processing for the project.
Funding support: USAMRAA W81XWH-14-1-0570
USAMRAA W81XWH-14-1-0571
USAMRAA W81XWH-16-1-0062
USAMRAA W81XWH-12-1-0386
USAMRAA W81XWH-17-C-0088

Name: Natalie Dailey, Ph.D., CCC-SLP
Project Role: Postdoctoral Fellow

Nearest person month worked: 1
Contribution to Project: Dr. Dailey performed data analysis and processing for the project.
Funding support: USAMRAA W81XWH-14-1-0570
USAMRAA W81XWH-14-1-0571
USAMRAA W81XWH-16-1-0062
USAMRAA W81XWH-12-1-0386
USAMRAA W81XWH-17-C-0088

Name: Adam C Raikes, Ph.D.
Project Role: Postdoctoral Fellow
Nearest person month worked: 1
Contribution to Project: Dr. Raikes performed data analysis and processing for the project.
Funding support: USAMRAA W81XWH-14-1-0570
USAMRAA W81XWH-14-1-0571
USAMRAA W81XWH-16-1-0062
USAMRAA W81XWH-12-1-0386
USAMRAA W81XWH-17-C-0088

Name: Brieann Satterfield, Ph.D.
Project Role: Postdoctoral Fellow
Nearest person month worked: 5
Contribution to Project: Dr. Satterfield oversaw project progress and study design.
Funding support: USAMRAA W81XWH-14-1-0570
USAMRAA W81XWH-14-1-0571
USAMRAA W81XWH-16-1-0062
USAMRAA W81XWH-12-1-0386
USAMRAA W81XWH-17-C-0088

Name: Ryan Smith, Ph.D.
Project Role: Postdoctoral Fellow
Nearest person month worked: 1
Contribution to Project: Dr. Smith performed data analysis and processing for the project.
Funding support: USAMRAA W81XWH-14-1-0570
USAMRAA W81XWH-14-1-0571
USAMRAA W81XWH-16-1-0062
USAMRAA W81XWH-12-1-0386
USAMRAA W81XWH-17-C-0088

Name: Matthew Allbright
Project Role: Research Technician
Nearest person month worked: 2
Contribution to Project: Mr. Allbright oversaw the technical aspects of the project and assisted in database export, storage, and management.
Funding support: USAMRAA W81XWH-14-1-0570
USAMRAA W81XWH-14-1-0571
USAMRAA W81XWH-16-1-0062
USAMRAA W81XWH-12-1-0386
USAMRAA W81XWH-17-C-0088

Name: Garrett Paul Baker

Project Role: Research Technician
Nearest person month worked: 1
Contribution to Project: Mr. Baker provided support with data collection and recruitment activities.
Funding support: USAMRAA W81XWH-14-1-0570
USAMRAA W81XWH-14-1-0571
USAMRAA W81XWH-16-1-0062
USAMRAA W81XWH-12-1-0386
USAMRAA W81XWH-17-C-0088

Name: Renata Botello
Project Role: Research Technician
Nearest person month worked: 1
Contribution to Project: Ms. Botello provided support with data collection and recruitment activities.
Funding support: USAMRAA W81XWH-14-1-0570
USAMRAA W81XWH-14-1-0571
USAMRAA W81XWH-16-1-0062
USAMRAA W81XWH-12-1-0386
USAMRAA W81XWH-17-C-0088

Name: Anna Burns
Project Role: Research Technician
Nearest person month worked: 1
Contributions to Project: Ms. Burns provided support with data collection and recruitment activities
Funding support: USAMRAA W81XWH-14-1-0570
USAMRAA W81XWH-14-1-0571
USAMRAA W81XWH-16-1-0062
USAMRAA W81XWH-12-1-0386

Name: Skye Challener
Project Role: Research Technician
Nearest person month worked: 1
Contribution to Project: Ms. Challener provided support with data collection and recruitment activities.
Funding support: USAMRAA W81XWH-14-1-0570
USAMRAA W81XWH-14-1-0571
USAMRAA W81XWH-16-1-0062
USAMRAA W81XWH-12-1-0386
USAMRAA W81XWH-17-C-0088

Name: Miriam Chinkers
Project Role: Research Technician
Nearest person month worked: 1
Contribution to Project: Ms. Chinkers provided support with data collection and recruitment activities
Funding support: USAMRAA W81XWH-14-1-0570
USAMRAA W81XWH-14-1-0571
USAMRAA W81XWH-16-1-0062
USAMRAA W81XWH-12-1-0386
USAMRAA W81XWH-17-C-0088

Names: James Eric Joshua Del Toro
Project Role: Research Technician

Nearest person month worked: 2
Contribution to Project: Mr. Del Toro provided support with data collection and recruitment activities
Funding support: USAMRAA W81XWH-14-1-0570
USAMRAA W81XWH-14-1-0571
USAMRAA W81XWH-16-1-0062
USAMRAA W81XWH-12-1-0386
USAMRAA W81XWH-17-C-0088

Name: Brittany Forbeck
Project Role: Research Technician
Nearest person month worked: 1
Contribution to Project: Ms. Forbeck provided support with data collection and recruitment activities.
Funding support: USAMRAA W81XWH-14-1-0570
USAMRAA W81XWH-14-1-0571
USAMRAA W81XWH-16-1-0062
USAMRAA W81XWH-12-1-0386

USAMRAA W81XWH-17-C-0088
Name: Yinya Huang
Project Role: Research Technician
Nearest person month worked: 2
Contribution to Project: Ms. Huang provided support with the data collection and recruitment activities.
Funding support: USAMRAA W81XWH-14-1-0570
USAMRAA W81XWH-14-1-0571
USAMRAA W81XWH-16-1-0062
USAMRAA W81XWH-12-1-0386
USAMRAA W81XWH-17-C-0088

Name: Kyle LaFollette
Project Role: Research Technician
Nearest person month worked: 3
Contribution to Project: Mr. LaFollette provided support with the data collection and recruitment activities.
Funding support: USAMRAA W81XWH-14-1-0570
USAMRAA W81XWH-14-1-0571
USAMRAA W81XWH-16-1-0062
USAMRAA W81XWH-12-1-0386
USAMRAA W81XWH-17-C-0088

Name: Michael Lazar
Project Role: Research Technician
Nearest person month worked: 5
Contribution to Project: Mr. Lazar provided support with data collection and recruitment activities.
Funding support: USAMRAA W81XWH-14-1-0570
USAMRAA W81XWH-14-1-0571
USAMRAA W81XWH-16-1-0062
USAMRAA W81XWH-12-1-0386
USAMRAA W81XWH-17-C-0088

Name: Meltem Ozcan
Project Role: Research Technician
Nearest person month worked: 1

Contribution to Project: Ms. Ozcan provided support with data collection and recruitment activities.
Funding support: USAMRAA W81XWH-14-1-0570
USAMRAA W81XWH-14-1-0571
USAMRAA W81XWH-16-1-0062
USAMRAA W81XWH-12-1-0386
USAMRAA W81XWH-17-C-0088

Name: Molly-Marie Richards
Project Role: Research Technician
Nearest person month worked: 1
Contribution to Project: Ms. Richards provided support with data collection and recruitment activities.
Funding support: USAMRAA W81XWH-14-1-0570
USAMRAA W81XWH-14-1-0571
USAMRAA W81XWH-16-1-0062
USAMRAA W81XWH-12-1-0386
USAMRAA W81XWH-17-C-0088

Name: Anna Sanova
Project Role: Research Technician
Nearest person month worked: 1
Contribution to Project: Ms. Sanova provided support with data collection and recruitment activities.
Funding support: USAMRAA W81XWH-14-1-0570
USAMRAA W81XWH-14-1-0571
USAMRAA W81XWH-16-1-0062
USAMRAA W81XWH-12-1-0386
USAMRAA W81XWH-17-C-0088

Name: Kristen Caleigh Shepard
Project Role: Research Technician
Nearest person month worked: 3
Contribution to Project: Ms. Shepard provided support with data collection and recruitment activities.
Funding Support: USAMRAA W81XWH-14-1-0570
USAMRAA W81XWH-14-1-0571
USAMRAA W81XWH-16-1-0062
USAMRAA W81XWH-12-1-0386
USAMRAA W81XWH-17-C-0088

Name: Anmol Singh
Project Role: Research Technician
Nearest person month worked: 2
Contribution to Project: Mr. Singh provided support with the data collection and recruitment activities.
Funding Support: USAMRAA W81XWH-14-1-0570
USAMRAA W81XWH-14-1-0571
USAMRAA W81XWH-16-1-0062
USAMRAA W81XWH-12-1-0386
USAMRAA W81XWH-17-C-0088

Name: Jeffrey Skalamera
Project Role: Research Technician
Nearest person month worked: 1

Contribution to Project: Mr. Skalamera provided support with data collection and recruitment activities.
Funding Support: USAMRAA W81XWH-14-1-0570
USAMRAA W81XWH-14-1-0571
USAMRAA W81XWH-16-1-0062
USAMRAA W81XWH-12-1-0386
USAMRAA W81XWH-17-C-0088

Name: Michael James Strong
Project Role: Research Technician
Nearest person month worked: 1
Contribution to Project: Mr. Strong provided support with data collection and recruitment activities
Funding Support: USAMRAA W81XWH-14-1-0570
USAMRAA W81XWH-14-1-0571
USAMRAA W81XWH-16-1-0062
USAMRAA W81XWH-12-1-0386
USAMRAA W81XWH-17-C-0088

Name: Matthew Thurston
Project Role: Research Technician
Nearest person month worked: 2
Contribution to Project: Mr. Thurston provided support with data collection and recruitment activities.
Funding support: USAMRAA W81XWH-14-1-0570
USAMRAA W81XWH-14-1-0571
USAMRAA W81XWH-16-1-0062
USAMRAA W81XWH-12-1-0386
USAMRAA W81XWH-17-C-0088

Name: Sydney Wilkerson
Project Role: Research Technician
Nearest person month worked: 3
Contribution to Project: Ms. Wilkerson provided support with data collection and recruitment activities.
Funding Support: USAMRAA W81XWH-14-1-0570
USAMRAA W81XWH-14-1-0571
USAMRAA W81XWH-16-1-0062
USAMRAA W81XWH-12-1-0386
USAMRAA W81XWH-17-C-0088

Name: Wing Ka Angela Yung
Project Role: Research Technician
Nearest person month worked: 1
Contribution to Project: Ms. Yung provided support with data collection and recruitment activities.
Funding support: USAMRAA W81XWH-14-1-0570
USAMRAA W81XWH-14-1-0571
USAMRAA W81XWH-16-1-0062
USAMRAA W81XWH-12-1-0386
USAMRAA W81XWH-17-C-0088

Has there been a change in the active other support of the PD/PI(s) or senior/key personnel since the last reporting period?
Nothing to Report

What other organizations were involved as partners?
Nothing to Report.

8. SPECIAL REPORTING REQUIREMENTS

Please see updated Quad chart attached in Appendix

9. APPENDICES

References

1. Arent, S.M. and D.M. Landers, Arousal, anxiety, and performance: A reexamination of the Inverted-U hypothesis. *Res Q Exerc Sport*, 2003. 74(4): p. 436-44.

2. Cosenzo, K.A., L.T. Fatkin, and D.J. Patton, Ready or not: Enhancing operational effectiveness through use of readiness measures. *Aviat Space Environ Med*, 2007. **78**(5 Suppl): p. B96-106.

3. Webb, C.A., et al., Convergent and divergent validity of integrative versus mixed model measures of emotional intelligence. *Intelligence,* 2013. **41**(3): p. 149-156.

4. Killgore, W.D.S., et al., Emotional intelligence partially mediates the assocation between anxiety sensitivity and anxiety symptoms. *Psychological Reports,* 2016. **118**(1): p. 23-40.

Emotional State and Personality: A Proof-of-Concept Model for Predicting Performance Under Stress

Visit 1
Intake Questionnaire Day 1
Alcohol Use Disorders Identification Test (AUDIT)
Epworth Sleepiness Scale (ESS)
Resilience to Sleep Loss Scale (RREST)
Wechsler Abbreviated Scale of Intelligence II (WASI II)
NEO-PI-3 ("Big 5 Personality Traits")
State Trait Anger Expression Inventory (STAXI-2)
Coping Self Efficacy (CSE)
Dispositional Resilience Scale (DRS)
Defense Style Questionnaire (DSQ-40)
Meyer-Salovey-Caruso Emotional Intelligence Test (MSCEIT)
Bar-On Emotional Quotient Inventory (EQ-I 2.0)
Levels of Emotional Awareness Scale – A (LEAS)
Levels of Emotional Awareness Scale – B (LEAS)
Visual Analogue Mood Scale (VAS)
Risk Tolerance Scale (RTS)
International Affective Picture System Presentation (IAPS)

Visit 2
Intake Questionnaire Day 2
Multiple Affective Adjective Checklist-R (MAACL-R)
State-Trait Anxiety Inventory (STAI)
Positive and Negative Affect Scale (PANAS)
MEDVAC Voice Stress Script
Perceptual Vigilance Task (PVT)
Operational Span Task (OSPAN)
California Verbal Learning Task (CVLT)
Corsi Blocks
Finger Tapping Test
Manual Dexterity Task
Berg Card Sorting Task (BCST)
Victoria Stroop
Go/No-Go Task
Two-Step sequential Learning Task
Tower of London (TOL)
Cognitive Reflection Test (CRT)
Balloon Analogue Risk Task (BART)
60 Seconds to Survival
Moral Competence Task (MCT)
Task Load Index (NASA-TLX)

Intake Form

Please complete the survey below.

Thank you!

Age	
Height (inches)	_____ (Inches)
Weight (lbs)	_____ (Pounds)
Biological Sex	○ Male ○ Female
Left or Right-Handed?	○ Left ○ Right ○ Both
What is your primary language (what do you speak at home most of the time)?	○ English ○ Spanish ○ Other
With what race do you identify with? (you may select more than one)	○ American Indian or Alaska Native ○ Asian ○ Black/African-American ○ Native Hawaiian or Other Pacific Islander ○ White ○ Other
With what ethnicity do you identify?	○ Hispanic or Latino ○ Not Hispanic or Latino ○ I do not know or I do not wish to disclose
Country of Birth (no abbreviations)	
What is your marital status?	○ Single ○ Married / Remarried ○ Separated ○ Divorced ○ Widowed ○ Domestic Partnership

	○ Other (please specify)
How many siblings do you have?	
How many older siblings do you have?	
What is the highest grade or level of school that you have completed or the highest degree you have obtained?	○ Some high school, no diploma ○ High school graduate ○ GED or equivalent ○ Some college, no degree ○ Associate degree: ○ Bachelor's degree ○ Master's degree ○ Professional/Doctoral school degree
Approximately what was your combined household annual income last year? (Please include yourself, as well as spouse and children, if applicable).	○ None ○ Less than $10,000 ○ Between $10,000 - $20,000 ○ Between $20,000 - $35,000 ○ Between $35,000 - $50,000 ○ Between $50,000 - $75,000 ○ Between $75,000 - $100,000 ○ Greater than $100,000
What is your occupation?	
Do you have any first responder experience (EMT, Police, First Aid, etc.)?	○ Yes ○ No
Please describe your training	
General Health	
Do you have any diagnosed learning disabilities? (e.g., ADD/ADHD, autism, etc.)	○ No ○ Yes
Are you currently doing shift work (working early morning, evening, or night shifts)?	○ No ○ Yes
Have you ever sustained any impact to the neck, head or body that yielded any symptoms such as dizziness, nausea, or headache?	
On how many occasions?	
When was the most recent?	_____ (Date of injury: ___ or about ____ days ago)
Have you ever experienced a loss of consciousness or "blacked-out" in your lifetime?	○ No ○ Yes
How long were you out for? (If unknown, take best estimate)	_____ (Indicate time field in next question)

Time Field	○ Seconds ○ Minutes ○ Hour(s) ○ Day(s)
Are you currently taking any medications, vitamins, or supplements (including birth control)?	○ No ○ Yes
Medication/Dosage/Frequency	_____ (e.g. Ibuprofen, 200 mg, Daily)
Medication/Dosage/Frequency	_____ (e.g. Ibuprofen, 200 mg, Daily)
Medication/Dosage/Frequency	_____ (e.g. Ibuprofen, 200 mg, Daily)
Medication/Dosage/Frequency	_____ (e.g. Ibuprofen, 200 mg, Daily)
Approximately how much did you pay last year for medical care expenses - including but not limited to medical doctor office visits, dental, vision, etc.? (Please list the combined payment for yourself as well as spouse and children (if applicable).	○ Less than $1,000 ○ Between $1,000 - $2,500 ○ Between $2,500 - $5,000 ○ Between $5,000 - $10,000 ○ Greater than $10,000
When was your last menstrual period (be as precise as possible)?	_____ (Date of period: ___ or about ___ days ago
How long is your Menstrual Cycle? (If Irregular, please state so)	_____ (Cycle = number of days from the first day of a period to the first day of the next period)
Caffeine Use	
Did you have any caffeine containing drinks today? (e.g., coffee, tea, soda/pop, etc.)	○ Yes ○ No
What type of caffeinated beverage?	☐ Coffee ☐ Tea ☐ Soda ☐ Energy Drink ☐ Other
How many cups?	_____ (1 cup = 8 oz)
On average, how many cups of caffeinated beverages do you drink per day?	_____ (1 cup = 8 oz)
Do you use any other caffeinated products (e.g., caffeine pills)?	_____ (1 cup = 8 oz)
How much/ many per day?	

Nicotine Use	
Do you currently use tobacco containing products (e.g., cigarettes, cigars, hookah), including smokeless tobacco (e.g., dip or chew)	○ No ○ Yes
Select from the following list any products you currently use?	☐ E-Cigarettes ☐ Nicotine Patch ☐ Nicotine Lozenges ☐ Nicotine Gum ☐ Other ☐ None of the above
Explain "Other":	
How much/ many per day, week, month, or year?	_____ (Designate time period in the next question)
Specify time period	○ Day ○ Week ○ Month ○ Year
Have you tried to quit?	○ Yes ○ No
In the past, have you ever used tobacco containing products (e.g., cigarettes, cigars, hookah), including smokeless tobacco (e.g., dip or chew)	○ Yes ○ No
Select from the following list any products you currently use?	☐ E-Cigarettes ☐ Nicotine Patch ☐ Nicotine Lozenges ☐ Nicotine Gum ☐ Other ○ None of the above
Explain "Other":	
How much/ many per day, week, month, or year?	_____ ○ (Designate time period in the next question)
Specify time period	○ Day ○ Week ○ Month ○ Year
Substance Use	
Have you ever used marijuana?	○ Yes

	○ No
At what age did you start?	_____ (_____ Years old)
On approximately how many occasions have you used marijuana?	
Have you ever tried to quit?	○ Yes ○ No
In the past six weeks, did you use marijuana?	○ Yes ○ No
Do you currently use any medications or street drugs for non-medical or recreational purposes	○ Yes ○ No
Please select one or more of the following:	☐ Stimulants (amphetamines, "speed", "crystal meth", Ritalin, diet pills) ☐ Cocaine (crack, "speedball") ☐ Narcotics (heroin, morphine, opium, codeine, Vicodin, OxyContin) ☐ Hallucinogens (LSD ("acid"), mescaline, peyote, "mushrooms", "ecstasy", MDA, MDMA) ☐ Phencyclidine (PCP, ketamine, Inhalants: "glue", nitrous oxide ("laughing gas"), amyl or butyl nitrate ("poppers")) ☐ Sedatives (Valium, Xanax, Ativan, barbiturates, GHB, "Roofies") ☐ Miscellaneous (steroids, non-prescription medication, cough medication, etc.)
Please explain "Miscellaneous"	
For the one(s) you use most heavily, how often do you use it per day, week, month, or year?	_____ (Designate time period in the next question)
Specify time period	○ Day ○ Week ○ Month ○ Year
In the past, have you ever used any medications or street drugs for non-medical or recreational purposes	○ Yes ○ No
Please select one or more of the following:	☐ Stimulants (amphetamines, "speed", "crystal meth", Ritalin, diet pills) ☐ Cocaine (crack, "speedball") ☐ Narcotics (heroin, morphine, opium, codeine, Vicodin, OxyContin)

	☐ Hallucinogens (LSD ("acid"), mescaline, peyote, "mushrooms", "ecstasy", MDA, MDMA) ☐ Phencyclidine (PCP, ketamine, Inhalants: "glue", nitrous oxide ("laughing gas"), amyl or butyl nitrate ("poppers")) ☐ Sedatives (Valium, Xanax, Ativan, barbiturates, GHB, "Roofies") Miscellaneous (steroids, non-prescription medication, cough medication, etc.)
Please explain "Miscellaneous"	

Sleep Habits	
How many hours of sleep did you get last night?	_____ (e.g. 7.5 for 7 hours 30 minutes of sleep)
At what time do you typically awaken on weekdays (Mon-Fri)?	_____ (In standard time HH:MM)
AM or PM	○ AM ○ PM
At what time do you typically awaken on weekends (Sat-Sun)?	_____ (In standard time HH:MM)
AM or PM	○ AM ○ PM
How long does it typically take you to fall asleep at night on weeknights (Sun-Thur)?	_____ (Minutes)
How long does it typically take you to fall asleep at night on weekends (Fri-Sat)?	_____ (Minutes)
At what time do you normally go to bed at night on weeknights (Sun-Thur)	_____ (In standard time HH:MM)
AM or PM	○ AM ○ PM
At what time do you normally go to bed at night on weekends (Fri-Sat)?	_____ (In standard time HH:MM)
AM or PM	○ AM ○ PM
Do you ever have trouble falling asleep?	○ No ○ Yes
How often per week, month, or year?	_____ (Designate time period in the next question)
Specify time period	○ Week

	○ Month ○ Year
Do you ever have trouble staying asleep?	○ No ○ Yes
How often per week, month, or year?	_____ (Designate time period in the next question)
Specify time period	○ Week ○ Month ○ Year
At what time of day do you feel sleepiest?	_____ (In standard time HH:MM)
AM or PM	○ AM ○ PM
At what time of day do you feel the most alert?	_____ (In standard time HH:MM)
AM or PM	○ AM ○ PM
How many hours do you need to sleep per night to feel your best?	
If you get less than ___ hours of sleep, you notice an impairment in your ability to function at work	
If you get more than ___ hours of sleep, you notice an impairment in your ability to function at work	
How many times per week do you nap?	
On average, how long dos your typical nap last?	_____ (Minutes)
Do you consider yourself a light, normal, or heavy sleeper?	○ Light ○ Normal ○ Heavy
Have you been told or do you think that you snore excessively?	○ Yes ○ No
Have you been diagnosed or treated for sleep apnea or sleep disordered breathing?	○ Yes ○ No
Is daytime sleepiness currently a problem for you?	○ Yes ○ No

AUDIT	
Because alcohol use can affect your health and can interfere with certain medications and treatments, it is important that we ask some questions about your use of alcohol. Your answers will remain confidential so please be honest.	
How often do you have a drink containing alcohol?	○ Never (0) ○ Monthly or less (1) ○ 2-4 times a month (2) ○ 2-3 times a week (3) ○ 4 or more times a week (4)
How many drinks containing alcohol do you have on a typical day when you are drinking?	○ 1 or 2 (0) ○ 3 or 4 (1) ○ 5 or 6 (2) ○ 7 to 9 (3) ○ 10 or more (4)
How often do you have six or more drinks on one occasion?	○ Never (0) ○ Less than monthly (1) ○ Monthly (2) ○ Weekly (3) ○ Daily or almost daily (4)
How often during the last year have you found that you were not able to stop drinking once you had started?	○ Never (0) ○ Less than monthly (1) ○ Monthly (2) ○ Weekly (3) ○ Daily or almost daily (4)
How often during the last year have you failed to do what was normally expected of you because of drinking?	○ Never (0) ○ Less than monthly (1) ○ Monthly (2) ○ Weekly (3) ○ Daily or almost daily (4)
How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	○ Never (0) ○ Less than monthly (1) ○ Monthly (2) ○ Weekly (3)

	○ Daily or almost daily (4)
How often during the last year have you had a feeling of guilt or remorse after drinking?	○ Never (0) ○ Less than monthly (1) ○ Monthly (2) ○ Weekly (3) ○ Daily or almost daily (4)
How often during the last year have you been unable to remember what happened the night before because of you drinking?	○ Never (0) ○ Less than monthly (1) ○ Monthly (2) ○ Weekly (3) ○ Daily or almost daily (4)
Have you or someone else been injured because of your drinking?	○ No (0) ○ Yes, but not in the last year (2) ○ Yes, during the last year (4)
Has a relative, friend, doctor, or health care worker been concerned about your drinking or suggested you cut down?	○ No (0) ○ Yes, but not in the last year (2) ○ Yes, during the last year (4)

ESS	
How likely are you to doze off or fall asleep in the following situations, in contrast to just feeling tired? This refers to your usual way of life in the last two weeks. Even if you have not done some of these things recently, try to work out how they would have affected you. Use the following scale to choose the most appropriate number for each situation.	
0 - Would never doze 1 - Slight chance of dozing 2 – Moderate chance of dozing 3 – High chance of dozing	
1. Sitting and reading	○ Would never doze (0) ○ Slight chance of dozing (1) ○ Moderate chance of dozing (2) ○ High chance of dozing (3)
2. Watching TV	○ Would never doze (0) ○ Slight chance of dozing (1) ○ Moderate chance of dozing (2) ○ High chance of dozing (3)
3. Sitting, inactive in a public place (e.g. a theater or meeting)	○ Would never doze (0) ○ Slight chance of dozing (1) ○ Moderate chance of dozing (2) ○ High chance of dozing (3)
4. As a passenger in a car for an hour without a break	○ Would never doze (0) ○ Slight chance of dozing (1) ○ Moderate chance of dozing (2) ○ High chance of dozing (3)
5. Lying down to rest in the afternoon when circumstances permit	○ Would never doze (0) ○ Slight chance of dozing (1) ○ Moderate chance of dozing (2) ○ High chance of dozing (3)
6. Sitting and talking to someone	○ Would never doze (0) ○ Slight chance of dozing (1) ○ Moderate chance of dozing (2) ○ High chance of dozing (3)

7. Sitting quietly after a lunch without alcohol	○ Would never doze (0) ○ Slight chance of dozing (1) ○ Moderate chance of dozing (2) ○ High chance of dozing (3)
8. In a car, while stopped for a few minutes in traffic	○ Would never doze (0) ○ Slight chance of dozing (1) ○ Moderate chance of dozing (2) ○ High chance of dozing (3)

RREST	
The following questions are designed to assess your beliefs about how sleep deprivation may affect your emotions, mind, and behavior. **Think about <u>all the recent times</u> in which you were well rested and generally healthy, but then <u>slept for two hours less than normal</u>, for whatever reason (e.g. work, school, or social obligations). Take a moment to think back about times like this, and try to remember several instances where you lost two hours of sleep one night.** **How did you feel and behave on the days after losing two hours of sleep, <u>relative to a typical day when you did not lose any sleep</u>? The following set of questions inquire about your feelings and reactions on such sleep-deprived days relative to days with sufficient sleep.**	
When I sleep for 2 hours less than normal, the next day:	
I generally function much worse	○ Rarely or never ○ Occasionally ○ About half the time ○ Often ○ Almost always
The day feels a lot more difficult	○ Rarely or never ○ Occasionally ○ About half the time ○ Often ○ Almost always
I feel much less like my normal self	○ Rarely or never ○ Occasionally ○ About half the time ○ Often ○ Almost always
My life feels a lot more complicated	○ Rarely or never ○ Occasionally ○ About half the time

	○ Often ○ Almost always
My behavior seems much worse	○ Rarely or never ○ Occasionally ○ About half the time ○ Often ○ Almost always
I feel much more irritable	○ Rarely or never ○ Occasionally ○ About half the time ○ Often ○ Almost always
I am much less happy	○ Rarely or never ○ Occasionally ○ About half the time ○ Often ○ Almost always
I am considerably more anxious	○ Rarely or never ○ Occasionally ○ About half the time ○ Often ○ Almost always
I feel much more "down"	○ Rarely or never ○ Occasionally ○ About half the time ○ Often ○ Almost always
I am a lot more easily frustrated	○ Rarely or never ○ Occasionally ○ About half the time ○ Often ○ Almost always
I tend to make many more mistakes	○ Rarely or never ○ Occasionally

	○ About half the time ○ Often ○ Almost always
I tend to miss more things than normally	○ Rarely or never ○ Occasionally ○ About half the time ○ Often ○ Almost always
I forget a lot more things than normal	○ Rarely or never ○ Occasionally ○ About half the time ○ Often ○ Almost always
I tend to space out many more times than usual	○ Rarely or never ○ Occasionally ○ About half the time ○ Often ○ Almost always
I am a lot less attentive	○ Rarely or never ○ Occasionally ○ About half the time ○ Often ○ Almost always
I feel much less engaged	○ Rarely or never ○ Occasionally ○ About half the time ○ Often ○ Almost always
It is a lot more difficult to think clearly	○ Rarely or never ○ Occasionally ○ About half the time ○ Often Almost always
It is much harder to focus on accomplishing my goals	○ Rarely or never

	○ Occasionally ○ About half the time ○ Often ○ Almost always
My ability to reason is much worse	○ Rarely or never ○ Occasionally ○ About half the time ○ Often ○ Almost always
I feel much less in control	○ Rarely or never ○ Occasionally ○ About half the time ○ Often ○ Almost always
I am considerably more likely to snap at others	○ Rarely or never ○ Occasionally ○ About half the time ○ Often ○ Almost always
It takes much more effort to accomplish my goals	○ Rarely or never ○ Occasionally ○ About half the time ○ Often ○ Almost always
I have much worse self-control	○ Rarely or never ○ Occasionally ○ About half the time ○ Often ○ Almost always
I am considerably more impulsive	○ Rarely or never ○ Occasionally ○ About half the time ○ Often ○ Almost always

I invest much less effort into things	○ Rarely or never ○ Occasionally ○ About half the time ○ Often ○ Almost always
My eyes or mouth feel more dry	○ Rarely or never ○ Occasionally ○ About half the time ○ Often ○ Almost always
My hands are more shaky or jittery	○ Rarely or never ○ Occasionally ○ About half the time ○ Often ○ Almost always
I feel more dizzy or lightheaded	○ Rarely or never ○ Occasionally ○ About half the time ○ Often ○ Almost always
My heart feels like it is beating faster	○ Rarely or never ○ Occasionally ○ About half the time ○ Often ○ Almost always

WASI-II Record Form

WECHSLER ABBREVIATED SCALE OF INTELLIGENCE — SECOND EDITION

Test Date

Calculation of Examinee's Age

Year	Month	Day

ID:

[redacted]

Total Raw Score to *T* Score Conversion

Subtest	Raw Score	Verbal Comp.	Perc. Rsng.	Full Scale–4	Full Scale–2
Block Design					
Vocabulary					
Matrix Reasoning					
Similarities					
Sum of *T* Scores					

Examinee Visual/Hearing Aids During Testing

Check type of aid examinee needed:	Used	Not Used
☐ Glasses	☐	☐
☐ Prescription Lenses	☐	☐
☐ Assisted Listening Device	☐	☐
☐ Other:	☐	☐

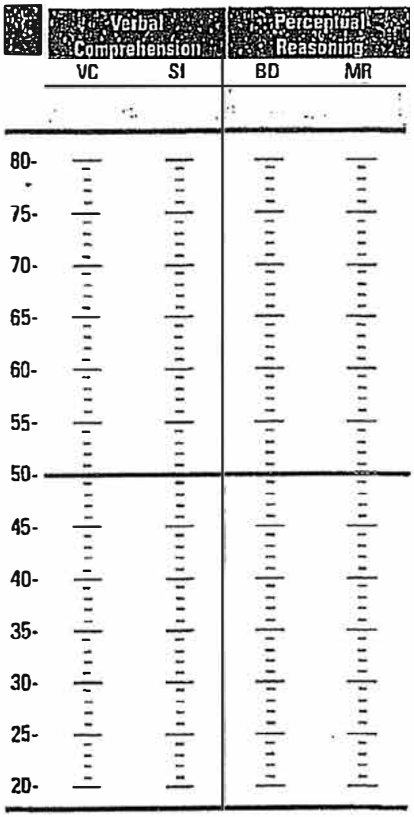
Sum of *T* Scores to Composite Score Conversion

Scale	Sum of *T* Scores	Composite Score		Percentile Rank	Confidence Interval 90% or 95%
Verbal Comp.		VCI			–
Perc. Rsng.		PRI			–
Full Scale–4		FSIQ–4			–
Full Scale–2		FSIQ–2			–

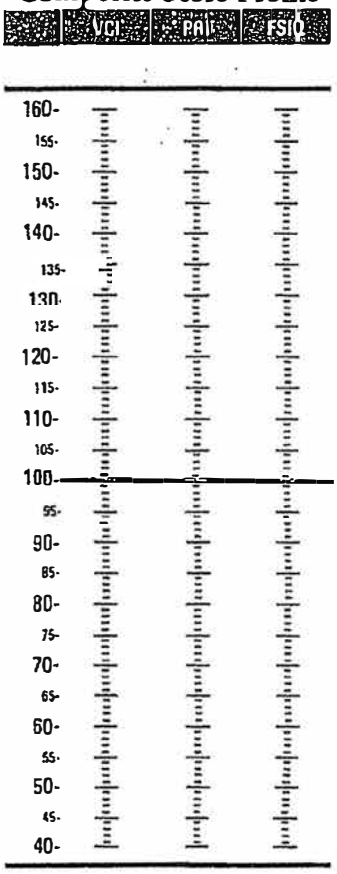
Ranges of Expected Scores

Scores	Confidence Level 90%	68%
FSIQ–4		
WISC-IV FSIQ	–	–
WAIS-IV FSIQ	–	–

Subtest *T* Score Profile



Composite Score Profile



PEARSON

PsychCorp

3 4 5 6 7 8 9 10 11 12 A B C D E 282563-1 3

Product Number 0158981596

1. Block Design

(Time limit: See item)

Start
Ages 6–8: Item 1
Ages 9–90: Item 3

Reverse
Ages 9–90: Does not obtain a perfect score on *either* Item 3 or Item 4, administer the preceding items in reverse order until two consecutive perfect scores are obtained.

Discontinue
After 2 consecutive scores of 0.

Stop
Ages 6–8: After Item 11.

Record & Score
Items 1–4: Score 0, 1, or 2 points.
Items 5–13: Score 0, 4, 5, 6, or 7 points.

		Design	Presentation Method	Time Limit	Completion Time		Constructed Design		Score			
6–8	1.	Examinee / Examiner	Model and Picture	30"	Trial 1	Trial 2	Trial 1	Trial 2	0	1	2	
	2.		Model and Picture	30"	Trial 1	Trial 2	Trial 1	Trial 2	0	1	2	
9–90	3.		Model and Picture	45"	Trial 1	Trial 2	Trial 1	Trial 2	0	1	2	
	4.		Model and Picture	45"	Trial 1	Trial 2	Trial 1	Trial 2	0	1	2	
	5.		Picture	60"					0	21–60: 4	16–20: 5	11–15: 6	1–10: 7
	6.		Picture	60"					0	21–60: 4	16–20: 5	11–15: 6	1–10: 7
	7.		Picture	60"					0	21–60: 4	16–20: 5	11–15: 6	1–10: 7
	8.		Picture	60"					0	21–60: 4	16–20: 5	11–15: 6	1–10: 7
	9.		Picture	120"					0	71–120: 4	46–70: 5	31–45: 6	1–30: 7
	10.		Picture	120"					0	61–120: 4	46–60: 5	36–45: 6	1–35: 7
	11.		Picture	120"					0	61–120: 4	46–60: 5	36–45: 6	1–35: 7
6–8 STOP	12.		Picture	120"					0	61–120: 4	46–60: 5	36–45: 6	1–35: 7
	13.		Picture	120"					0	101–120: 4	81–100: 5	56–80: 6	1–55: 7

Maximum Raw Score
Ages 6–8: 57
Ages 9–90: 71

Block Design Total Raw Score ☐

2. Vocabulary

Start
Ages 6–90: Item 4

Reverse
Ages 6–90: Does not obtain a perfect score on *either* Item 4 or Item 5, administer the preceding items in reverse order until two consecutive perfect scores are obtained.

Discontinue
After 3 consecutive scores of 0.

Stop
Age 6: After Item 22.
Ages 7–11: After Item 25.
Ages 12–14: After Item 28.

Record & Score
Items 1–3: Score 0 or 1 point.
Items 4–5: Score 0 or 2 points.
Items 6–31: Score 0, 1, or 2 points.
See the Manual for sample responses.

	Item	Response	Score
	1. Fish		0 1
	2. Shovel		0 1
	3. Shell		0 1
6–90	†4. Shirt		0 2
	5. Car		0 2
	6. Lamp		0 1 2
	7. Bird		0 1 2
	8. Tongue		0 1 2
	9. Pet		0 1 2
	10. Lunch		0 1 2
	11. Bell		0 1 2
	12. Calendar		0 1 2
	13. Alligator		0 1 2
	14. Dance		0 1 2

†If the examinee provides a 2-point response that requires feedback or gives an incorrect (0 point) response, provide corrective feedback as instructed in the Manual.

Continue

2. Vocabulary *(continued)*

Discontinue after 3 consecutive scores of 0.

Item	Response	Score
15. Summer		0 1 2
16. Reveal		0 1 2
17. Decade		0 1 2
18. Entertain		0 1 2
19. Tradition		0 1 2
20. Enthusiastic		0 1 2
21. Improvise		0 1 2
22. Haste		0 1 2
6 STOP		
23. Trend		0 1 2
24. Impulse		0 1 2
25. Ruminate		0 1 2
7–11 STOP		
26. Mollify		0 1 2
27. Extirpate		0 1 2
28. Panacea		0 1 2
12–14 STOP		

continue

2. Vocabulary *(continued)*

Discontinue after 3 consecutive scores of 0.

Item	Response	Score
29. Perfunctory		0 1 2
30. Insipid		0 1 2
31. Pavid		0 1 2

Maximum Raw Score
Age 6: 41
Ages 7–11: 47
Ages 12–14: 53
Ages 15–90: 59

Vocabulary Total Raw Score ____

3. Matrix Reasoning

Start — Ages 6–8: Sample Items A & B, then Item 1. Ages 9–90: Sample Items A & B, then Item 4.

Reverse — Ages 9–90: Does not obtain a perfect score on *either* Item 4 or Item 5, administer the preceding items in reverse order until two consecutive perfect scores are obtained.

Discontinue — After 3 consecutive scores of 0.

Stop — Ages 6–8: After Item 24.

Record & Score — Score 0 or 1 point. Correct responses are in color.

	Item	Response					Score
6–90	SA	1	**2**	3	4	5	
	SB	1	2	**3**	4	5	
6	1	1	**2**	3	4	5	0 1
	2	**1**	2	3	4	5	0 1
	3	1	2	**3**	4	5	0 1
9–90	4	**1**	2	3	4	5	0 1
	5	1	2	3	4	**5**	0 1
	6	**1**	2	3	4	5	0 1
	7	1	2	**3**	4	5	0 1
	8	1	2	**3**	4	5	0 1
	9	1	2	3	**4**	5	0 1
	10	1	**2**	3	4	5	0 1
	11	1	2	**3**	4	5	0 1
	12	1	2	3	**4**	5	0 1
	13	**1**	2	3	4	5	0 1
	14	1	2	3	**4**	5	0 1
	15	1	**2**	3	4	5	0 1
	16	1	2	3	4	**5**	0 1
	17	1	2	3	**4**	5	0 1
	18	1	**2**	3	4	5	0 1
	19	1	2	3	**4**	5	0 1
	20	1	**2**	3	4	5	0 1
	21	1	2	**3**	4	5	0 1
	22	1	2	**3**	4	5	0 1
	23	**1**	2	3	4	5	0 1
6–8	24	1	2	3	**4**	5	0 1
	25	1	2	3	**4**	5	0 1
	26	1	**2**	3	4	5	0 1
	27	1	2	3	4	**5**	0 1
	28	1	2	3	4	**5**	0 1
	29	**1**	2	3	4	5	0 1
	30	1	**2**	3	4	5	0 1

Maximum Raw Score
Ages 6–8: 24
Ages 9–90: 30

Matrix Reasoning Total Raw Score ____

4. Similarities

Start
Ages 6–8:
Item 1
Ages 9–90:
Item 4

Reverse
Ages 9–90: Does not obtain a perfect score on *either* Item 4 or Item 5, administer the preceding items in reverse order until two consecutive perfect scores are obtained.

Discontinue
After 3 consecutive scores of 0.

Stop
Ages 6–8:
After Item 22.

Record & Score
Items 1–3: Score 0 or 1 point. Correct responses are in color.
Items 4–5: Score 0 or 2 points.
Items 6–24: Score 0, 1, or 2 points.
See Manual for sample responses.

	Picture Item	Response	Score
6–8	1	1 2 **3** 4 5	0 1

Picture Item	Response	Score
2	1 2 3 **4** 5	0 1

Picture Item	Response	Score
3	1 **2** 3 4 5	0 1

	Verbal Items	Response	Score
9–90	§† 4. Green–Blue		0 2
	§† 5. Square–Triangle		0 2
	6. Cow–Bear		0 1 2
	7. Shirt–Jacket		0 1 2
	8. Pen–Crayon		0 1 2
	9. Hat–Umbrella		0 1 2
	10. Airplane–Bus		0 1 2
	11. Door–Window		0 1 2
	12. Child–Adult		0 1 2

§If the examinee provides a response that suggests he or she does not understand the task, provide the specified prompt in the Manual.

†If the examinee provides a 2-point response that requires feedback or provides an incorrect (0 point) response, provide corrective feedback as instructed in the Manual.

Continue

4. Similarities *(continued)*

Discontinue after 3 consecutive scores of 0.

Verbal Items	Response	Score
13. Shoulder–Ankle		0 1 2
14. Love–Hate		0 1 2
15. Smooth–Rough		0 1 2
16. Hand–Flag		0 1 2
17. Wall–Line		0 1 2
18. Heat–Wind		0 1 2
19. More–Less		0 1 2
20. Shadow–Echo		0 1 2
21. Tradition–Habit		0 1 2
22. Peace–War		0 1 2
6–8 STOP 23. Time–Progress		0 1 2
24. Memory–Practice		0 1 2

Maximum Raw Score
Ages 6–8: 41
Ages 9–90: 45

Similarities Total Raw Score ____

NEO™-PI-3

NEO Personality Inventory-3

Paul T. Costa, Jr., PhD and Robert R. McCrae, PhD

Item Booklet | **Form S**

SELF-REPORT

Instructions: Hand-Scorable Answer Sheet

IF YOU ARE USING THE SCANNABLE ANSWER SHEET, TURN TO PAGE 2.

Please read all instructions carefully before beginning. Mark all your answers on the Answer Sheet and write only where indicated. **DO NOT** write in this Item Booklet.

[redacted]

This questionnaire contains 240 statements. Please read each item carefully and circle the one answer that best corresponds to your agreement or disagreement.

Circle "SD" if the statement is definitely false or if you **strongly disagree.**	(SD)	D	N	A	SA
Circle "D" if the statement is mostly false or if you **disagree.**	SD	(D)	N	A	SA
Circle "N" if the statement is about equally true or false, if you cannot decide, or if you are **neutral** on the statement.	SD	D	(N)	A	SA
Circle "A" if the statement is mostly true or if you **agree.**	SD	D	N	(A)	SA
Circle "SA" if the statement is definitely true or if you **strongly agree.**	SD	D	N	A	(SA)

Answer every item. There are no right or wrong answers, and you need not be an "expert" to complete this questionnaire. Describe yourself honestly and state your opinions as accurately as possible.

Note that the answers are numbered down the columns on the Answer Sheet. Please make sure that your answer is marked in the correctly numbered space. If you make a mistake or change your mind, **DO NOT ERASE!** Make an "**X**" through the incorrect response and then draw a circle around the correct response. After you have answered all 240 items, answer the three questions labeled A, B, and C on the Answer Sheet. Turn to page 3 in this Item Booklet and begin with Item 1.

PAR • 16204 N. Florida Ave. • Lutz, FL 33549 • 1.800.331.8378 • www.parinc.com

98765 Reorder #RO-6792 Printed in the U.S.A.

Instructions: Scannable Answer Sheet

Please read all instructions carefully before beginning. Use a **No. 2 pencil** to complete your responses on the accompanying Answer Sheet. Please mark all your answers on the Answer Sheet. **DO NOT** write in this Item Booklet.

[redacted]

This questionnaire contains 240 statements. Please read each item carefully and fill in the one answer that best corresponds to your agreement or disagreement.

Fill in "SD" if the statement is definitely false or if you **strongly disagree.**	(SD) D N A SA
Fill in "D" if the statement is mostly false or if you **disagree.**	SD (D) N A SA
Fill in "N" if the statement is about equally true or false, if you cannot decide, or if you are **neutral** on the statement.	SD D (N) A SA
Fill in "A" if the statement is mostly true or if you **agree.**	SD D N (A) SA
Fill in "SA" if the statement is definitely true or if you **strongly agree.**	SD D N A (SA)

Answer every item and be sure to fill in the circles completely. There are no right or wrong answers, and you need not be an "expert" to complete this questionnaire. Describe yourself honestly and state your opinions as accurately as possible.

Note that the answers are numbered down the columns on the Answer Sheet. Please make sure that your answer is marked in the correctly numbered space. If you make a mistake or change your mind, **ERASE YOUR FIRST ANSWER COMPLETELY**. Then fill in the circle that corresponds to your correct answer. After you have answered all 240 items, please answer the three questions labeled A, B, and C on the Answer Sheet. Turn to page 3 in this Item Booklet and begin with Item 1.

MARKING INSTRUCTIONS

- ERASE COMPLETELY any answer you wish to change.
- Use a soft (No. 2) black lead pencil.
- DO NOT USE INK OR BALLPOINT PEN.
- Make dark, heavy marks that fill the circle.
- Mark ONLY where instructed.
- Make no other marks on this Answer Sheet.

EXAMPLES

INCORRECT MARKS

CORRECT MARKS

1. I am not a worrier.
2. I find it easy to smile and be outgoing with strangers.
3. I have a very active imagination.
4. Often, people aren't as nice as they seem to be.
5. I am efficient and effective at my work.
6. I often get angry at the way people treat me.
7. I prefer jobs that let me work alone without being bothered by other people.
8. I'm not really interested in the arts.
9. I'm not crafty or sly.
10. I don't mind a little clutter in my room.
11. I rarely feel lonely or blue.
12. I am dominant, forceful, and assertive.
13. I experience a wide range of emotions or feelings.
14. I'm not known for my generosity.
15. I try to go to work or school even when I'm not feeling well.
16. When I'm around people, I worry that I'll make a fool of myself.
17. I have a laid-back style in work and play.
18. I'm pretty set in my ways.
19. When I've been insulted, I just try to forgive and forget.
20. I don't feel like I'm driven to get ahead.
21. I seldom give in to my impulses.
22. I like to be where the action is.
23. I often enjoy playing with theories or abstract ideas.
24. I don't mind bragging about my talents and accomplishments.
25. I'm pretty good about pacing myself so as to get things done on time.
26. I often feel helpless and want someone else to solve my problems.
27. I have never literally jumped for joy.
28. I believe we should look to our religious authorities for decisions on moral issues.
29. When making laws and social policies, we need to think about who might be hurt.
30. Over the years I've done some pretty stupid things.
31. I am easily frightened.
32. I don't get much pleasure from chatting with people.
33. I try to keep all my thoughts directed along realistic lines and avoid flights of fancy.
34. I believe that most people are basically well-intentioned.
35. I sometimes act thoughtlessly.
36. I'm an even-tempered person.
37. I like to have a lot of people around me.
38. I am sometimes completely absorbed in music I am listening to.
39. If necessary, I am willing to manipulate people to get what I want.
40. I keep my belongings neat and clean.
41. Sometimes I feel completely worthless.
42. I don't find it easy to take charge of a situation.
43. I rarely experience strong emotions.
44. I go out of my way to help others if I can.
45. Sometimes I'm not as dependable or reliable as I should be.

46. I feel comfortable in the presence of my teachers or bosses.
47. My life is fast-paced.
48. I believe variety is the spice of life.
49. If someone starts a fight, I'm ready to fight back.
50. I strive to achieve all I can.
51. I have trouble resisting my cravings.
52. I wouldn't enjoy vacationing in Las Vegas.
53. I find philosophical arguments boring.
54. I'd rather not talk about myself and my achievements.
55. I have trouble making myself do what I should.
56. I'm pretty stable emotionally.
57. I have felt overpowering joy.
58. I believe that laws and social policies should change to reflect the needs of a changing world.
59. I have no sympathy for beggars.
60. I rarely make hasty decisions.
61. I rarely feel fearful or anxious.
62. I have strong emotional attachments to my friends.
63. I enjoy concentrating on a fantasy or daydream and exploring all its possibilities, letting it grow and develop.
64. I believe that most people will take advantage of you if you let them.
65. I keep myself informed and usually make intelligent decisions.
66. I am known as hot-blooded and quick-tempered.
67. I usually prefer to do things alone.
68. Poetry has little or no effect on me.
69. I couldn't deceive anyone even if I wanted to.
70. I'm not a very orderly or methodical person.
71. I am seldom sad or depressed.
72. I have often been a leader of groups I have belonged to.
73. Odd things—like certain scents or the names of distant places—can evoke strong moods in me.
74. Some people think of me as cold and calculating.
75. I pay my debts promptly and in full.
76. I often feel that I am not as good as others.
77. I'm not as quick and lively as other people.
78. On a vacation, I prefer going back to a tried and true spot.
79. I hesitate to express my anger even when it's justified.
80. When I start a self-improvement program, I usually let it slide after a few days.
81. I'm always in control of myself.
82. I love the excitement of roller coasters.
83. I enjoy working on "mind-twister"-type puzzles.
84. I have a very high opinion of myself.
85. Once I start a project, I almost always finish it.
86. When I'm under a great deal of stress, sometimes I feel like I'm going to pieces.
87. I rarely use words like "fantastic!" or "sensational!" to describe my experiences.
88. I think that if people don't know what they believe in by the time they're 25, there's something wrong with them.
89. We can never do too much for the poor and elderly.
90. I often do things on the spur of the moment.

91. I often worry about things that might go wrong.
92. Many people think of me as somewhat cold and distant.
93. I would have difficulty just letting my mind wander without control or guidance.
94. I tend to assume the best about people.
95. I don't seem to be completely successful at anything.
96. It takes a lot to get me mad.
97. I enjoy parties with lots of people.
98. Sometimes when I am reading poetry or looking at a work of art, I feel a chill or wave of excitement.
99. At times I bully or flatter people into doing what I want them to.
100. I like to keep everything in its place so I know just where it is.
101. Too often, when things go wrong, I get discouraged and feel like giving up.
102. In meetings, I usually let others do the talking.
103. I seldom pay much attention to my feelings of the moment.
104. I generally try to be thoughtful and considerate.
105. I ignore a lot of silly little rules.
106. It doesn't embarrass me too much if people ridicule and tease me.
107. I am a very active person.
108. I often try new and foreign foods.
109. I'm hard-headed and stubborn.
110. I work hard to accomplish my goals.
111. I sometimes eat myself sick.
112. I tend to avoid movies that are shocking or scary.
113. I have little interest in speculating on the nature of the universe or the human condition.
114. I feel that I am no better than others, no matter what their condition.
115. There are so many little jobs that need to be done that I sometimes just ignore them all.
116. I keep a cool head in emergencies.
117. I am a cheerful, high-spirited person.
118. I consider myself broad-minded and tolerant of other people's lifestyles.
119. I don't worry much about the homeless.
120. I always consider the consequences before I take action.

121. I seldom feel nervous.
122. I really enjoy talking to people.
123. I have an active fantasy life.
124. I'm suspicious when someone does something nice for me.
125. I have good judgment.
126. I often get disgusted with people I have to deal with.
127. I shy away from crowds of people.
128. Watching ballet or modern dance bores me.
129. I would hate to be thought of as a hypocrite.
130. I never seem to be able to get organized.
131. I tend to blame myself when anything goes wrong.
132. Other people often look to me to make decisions.
133. Without strong emotions, life would be uninteresting to me.
134. Some people think I'm selfish and egotistical.
135. When I make a commitment, I can always be counted on to follow through.

136. At times I have been so ashamed I just wanted to hide.
137. My work is likely to be slow but steady.
138. I prefer to spend my time in familiar surroundings.
139. I would rather cooperate with others than compete with them.
140. I'm not very ambitious.
141. It doesn't bother me too much if I can't get what I want.
142. I often crave excitement.
143. I enjoy solving problems or puzzles.
144. I'm better than most people, and I know it.
145. I am a productive person who always gets the job done.
146. It's often hard for me to make up my mind.
147. I'm not happy-go-lucky.
148. I believe that it's better to stick to your own principles than to be open-minded.
149. Human need is more important than economics.
150. Occasionally I act first and think later.

151. I often feel tense and jittery.
152. I really like most people I meet.
153. If I feel my mind starting to drift off into daydreams, I usually get busy and start concentrating on some work or activity instead.
154. My first reaction is to trust people.
155. I often come into situations without being fully prepared.
156. I am not considered a touchy or temperamental person.
157. I'd rather vacation at a popular beach than an isolated cabin in the woods.
158. Certain kinds of music have an endless fascination for me.
159. Sometimes I trick people into doing what I want.
160. I'm picky about how jobs should be done.
161. I have a low opinion of myself.
162. I would rather go my own way than be a leader of others.
163. I seldom notice the moods or feelings that different environments produce.
164. Most people I know like me.
165. I follow my ethical principles strictly.
166. I seldom feel self-conscious when I'm around people.
167. I usually seem to be in a hurry.
168. I think it's interesting to learn and develop new hobbies.
169. I can be sarcastic and cutting when I need to be.
170. I have a clear set of goals and work toward them in an orderly fashion.
171. When I am having my favorite foods, I tend to eat too much.
172. I have sometimes done things just for "kicks" or "thrills."
173. I sometimes lose interest when people talk about very abstract, theoretical matters.
174. I'm not a show-off.
175. When a project gets too difficult, I'm inclined to start a new one.
176. I can handle myself pretty well in a crisis.
177. Sometimes I bubble with happiness.
178. Our ideas of right and wrong may not be right for everyone in the world.
179. I believe all human beings are worthy of respect.
180. I think things through before coming to a decision.

181. I have fewer fears than most people.
182. I'm known as a warm and friendly person.
183. As a child I rarely enjoyed games of make believe.
184. I think most of the people I deal with are honest and trustworthy.
185. I have many skills.
186. At times I have felt bitter and resentful.
187. Social gatherings are usually boring to me.
188. I am intrigued by the patterns I find in art and nature.
189. Being perfectly honest is a bad way to do business.
190. I'm not compulsive about cleaning.
191. Sometimes things look pretty bleak and hopeless to me.
192. In conversations, I tend to do most of the talking.
193. I find it easy to empathize—to feel myself what others are feeling.
194. I think of myself as a charitable person.
195. I try to do jobs carefully, so they won't have to be done again.
196. If I have said or done the wrong thing to someone, I can hardly bear to face them again.
197. I act forcefully and energetically.
198. I like the old-fashioned methods I'm used to.
199. If I don't like people, I let them know it.
200. I strive for excellence in everything I do.
201. Sometimes I do things on impulse that I later regret.
202. I like loud music.
203. I have a lot of intellectual curiosity.
204. I would rather praise others than be praised myself.
205. I waste a lot of time before settling down to work.
206. When everything seems to be going wrong, I can still make good decisions.
207. I am not a cheerful optimist.
208. I believe letting students hear controversial speakers can only confuse and mislead them.
209. I have sympathy for others less fortunate than me.
210. I plan ahead carefully when I go on a trip.

211. Frightening thoughts sometimes come into my head.
212. I take a personal interest in the people I work with.
213. I don't like to waste my time daydreaming.
214. I have a good deal of faith in human nature.
215. I'm known for my common sense.
216. Even minor annoyances can be frustrating to me.
217. I really feel the need for other people if I am by myself for long.
218. I enjoy reading poetry that emphasizes feelings and images more than story lines.
219. I'm pretty slick when it comes to dealing with people.
220. I spend a lot of time looking for things I've misplaced.
221. I have sometimes experienced a deep sense of guilt or sinfulness.
222. Sometimes I don't stand up for my rights like I should.
223. How I feel about things is important to me.
224. I try to be courteous to everyone I meet.
225. I try to perform all the tasks assigned to me conscientiously.

STAXI-2™

Item Booklet (Form HS)

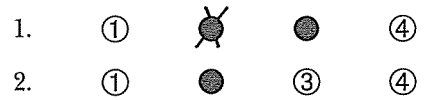
Instructions

In addition to this Item Booklet you should have a STAXI-2 Rating Sheet. Before beginning, enter your name, gender, and age; today's date; years of education completed, your marital status, and your occupation in the spaces provided at the top of the STAXI-2 Rating Sheet.

This booklet is divided into three Parts. Each Part contains a number of statements that people use to describe their feelings and behavior. Please note that each Part has *different* directions. Carefully read the directions for each Part before recording your responses on the Rating Sheet.

There are no right or wrong answers. In responding to each statement, give the answer that describes you best. DO NOT ERASE! If you need to change your answer, mark an "X" through the incorrect response and then fill in the correct one.

Examples



PAR • 16204 N. Florida Ave. • Lutz, FL 33549 • 1.800.331.8378 • www.parinc.com

9 8 Reorder #RO-4352 Printed in the U.S.A.

Part 1 Directions

A number of statements that people use to describe themselves are given below. Read each statement and then blacken the appropriate circle on the Rating Sheet to indicate how you feel *right now.* There are no right or wrong answers. Do not spend too much time on any one statement. Mark the answer that *best* describes your *present feelings.*

Fill in ① for *Not at all*	Fill in ② for *Somewhat*	Fill in ③ for *Moderately so*	Fill in ④ for *Very much so*

How I Feel Right Now

1. I am furious
2. I feel irritated
3. I feel angry
4. I feel like yelling at somebody
5. I feel like breaking things
6. I am mad
7. I feel like banging on the table
8. I feel like hitting someone
9. I feel like swearing
10. I feel annoyed
11. I feel like kicking somebody
12. I feel like cursing out loud
13. I feel like screaming
14. I feel like pounding somebody
15. I feel like shouting out loud

Part 2 Directions

Read each of the following statements that people have used to describe themselves, and then blacken the appropriate circle to indicate how you *generally* feel or react. There are no right or wrong answers. Do not spend too much time on any one statement. Mark the answer that *best* describes how you *generally* feel or react.

Fill in ① for *Almost never*	Fill in ② for *Sometimes*	Fill in ③ for *Often*	Fill in ④ for *Almost always*

How I Generally Feel

16. I am quick tempered
17. I have a fiery temper
18. I am a hotheaded person
19. I get angry when I'm slowed down by others' mistakes
20. I feel annoyed when I am not given recognition for doing good work
21. I fly off the handle
22. When I get mad, I say nasty things
23. It makes me furious when I am criticized in front of others
24. When I get frustrated, I feel like hitting someone
25. I feel infuriated when I do a good job and get a poor evaluation

Part 3 Directions

Everyone feels angry or furious from time to time, but people differ in the ways that they react when they are angry. A number of statements are listed below which people use to describe their reactions when they feel *angry* or *furious*. Read each statement and then blacken the appropriate circle to indicate how *often* you *generally* react or behave in the manner described when you are feeling angry or furious. There are no right or wrong answers. Do not spend too much time on any one statement.

Fill in ① for *Almost never*	Fill in ② for *Sometimes*	Fill in ③ for *Often*	Fill in ④ for *Almost always*

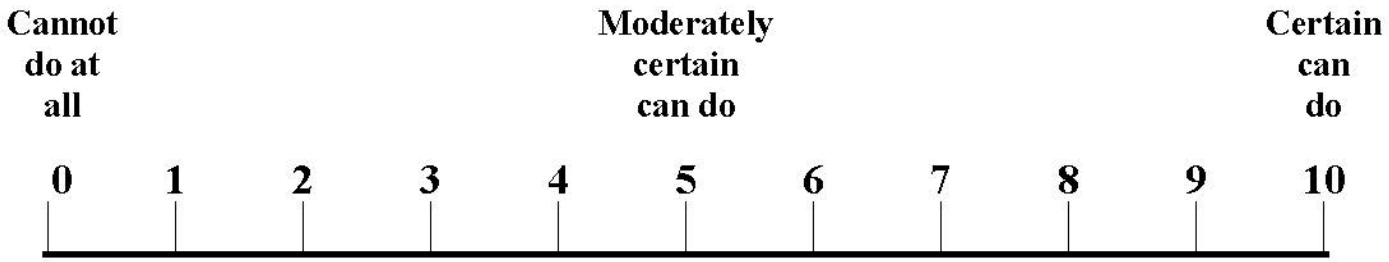
How I Generally React or Behave When Angry or Furious...

26. I control my temper
27. I express my anger
28. I take a deep breath and relax
29. I keep things in
30. I am patient with others
31. If someone annoys me, I'm apt to tell him or her how I feel
32. I try to calm myself as soon as possible
33. I pout or sulk
34. I control my urge to express my angry feelings
35. I lose my temper
36. I try to simmer down
37. I withdraw from people
38. I keep my cool
39. I make sarcastic remarks to others
40. I try to soothe my angry feelings
41. I boil inside, but I don't show it
42. I control my behavior
43. I do things like slam doors
44. I endeavor to become calm again
45. I tend to harbor grudges that I don't tell anyone about
46. I can stop myself from losing my temper
47. I argue with others
48. I reduce my anger as soon as possible
49. I am secretly quite critical of others
50. I try to be tolerant and understanding
51. I strike out at whatever infuriates me
52. I do something relaxing to calm down
53. I am angrier than I am willing to admit
54. I control my angry feelings
55. I say nasty things
56. I try to relax
57. I'm irritated a great deal more than people are aware of

CSE

Record ID _____

When things aren't going well for you, or when you're having problems, how confident or certain are you that you can do the following:



For each of the following items, write a number from 0 - 10, using the scale above.

When things aren't going well for you, how confident are you that you can:

1. Keep from getting down in the dumps.

◯ 0
◯ 1
◯ 2
◯ 3
◯ 4
◯ 5
◯ 6
◯ 7
◯ 8
◯ 9
◯ 10

2. Talk positively to yourself.

◯ 0
◯ 1
◯ 2
◯ 3
◯ 4
◯ 5
◯ 6
◯ 7
◯ 8
◯ 9
◯ 10

3. Sort out what can be changed, and what can not be changed.

◯ 0
◯ 1
◯ 2
◯ 3
◯ 4
◯ 5
◯ 6
◯ 7
◯ 8
◯ 9
◯ 10

4. Get emotional support from friends and family.

◯ 0
◯ 1
◯ 2
◯ 3
◯ 4
◯ 5
◯ 6
◯ 7
◯ 8
◯ 9
◯ 10

5. Find solutions to your most difficult problems.

◯ 0
◯ 1
◯ 2
◯ 3
◯ 4
◯ 5
◯ 6
◯ 7
◯ 8
◯ 9
◯ 10

---

6. Break an upsetting problem down into smaller parts.

◯ 0
◯ 1
◯ 2
◯ 3
◯ 4
◯ 5
◯ 6
◯ 7
◯ 8
◯ 9
◯ 10

7. Leave options open when things get stressful.

◯ 0
◯ 1
◯ 2
◯ 3
◯ 4
◯ 5
◯ 6
◯ 7
◯ 8
◯ 9
◯ 10

8. Make a plan of action and follow it when confronted with a problem.

◯ 0
◯ 1
◯ 2
◯ 3
◯ 4
◯ 5
◯ 6
◯ 7
◯ 8
◯ 9
◯ 10

9. Develop new hobbies or recreations.

◯ 0
◯ 1
◯ 2
◯ 3
◯ 4
◯ 5
◯ 6
◯ 7
◯ 8
◯ 9
◯ 10

10. Take your mind off unpleasant thoughts.

◯ 0
◯ 1
◯ 2
◯ 3
◯ 4
◯ 5
◯ 6
◯ 7
◯ 8
◯ 9
◯ 10

---

11. Look for something good in a negative situation.

◯ 0
◯ 1
◯ 2
◯ 3
◯ 4
◯ 5
◯ 6
◯ 7
◯ 8
◯ 9
◯ 10

12. Keep from feeling sad.

◯ 0
◯ 1
◯ 2
◯ 3
◯ 4
◯ 5
◯ 6
◯ 7
◯ 8
◯ 9
◯ 10

13. See things from the other person's point of view during a heated argument.

◯ 0
◯ 1
◯ 2
◯ 3
◯ 4
◯ 5
◯ 6
◯ 7
◯ 8
◯ 9
◯ 10

14. Try other solutions to your problems if your first solutions don't work.

◯ 0
◯ 1
◯ 2
◯ 3
◯ 4
◯ 5
◯ 6
◯ 7
◯ 8
◯ 9
◯ 10

15. Stop yourself from being upset by unpleasant thoughts.

◯ 0
◯ 1
◯ 2
◯ 3
◯ 4
◯ 5
◯ 6
◯ 7
◯ 8
◯ 9
◯ 10

16. Make new friends.

◯ 0
◯ 1
◯ 2
◯ 3
◯ 4
◯ 5
◯ 6
◯ 7
◯ 8
◯ 9
◯ 10

17. Get friends to help you with the things you need.

◯ 0
◯ 1
◯ 2
◯ 3
◯ 4
◯ 5
◯ 6
◯ 7
◯ 8
◯ 9
◯ 10

18. Do something positive for yourself when you are feeling discouraged.

◯ 0
◯ 1
◯ 2
◯ 3
◯ 4
◯ 5
◯ 6
◯ 7
◯ 8
◯ 9
◯ 10

19. Make unpleasant thoughts go away.

◯ 0
◯ 1
◯ 2
◯ 3
◯ 4
◯ 5
◯ 6
◯ 7
◯ 8
◯ 9
◯ 10

20. Think about one part of the problem at a time.

◯ 0
◯ 1
◯ 2
◯ 3
◯ 4
◯ 5
◯ 6
◯ 7
◯ 8
◯ 9
◯ 10

21. Visualize a pleasant activity or place.

◯ 0
◯ 1
◯ 2
◯ 3
◯ 4
◯ 5
◯ 6
◯ 7
◯ 8
◯ 9
◯ 10

22. Keep yourself from feeling lonely.

◯ 0
◯ 1
◯ 2
◯ 3
◯ 4
◯ 5
◯ 6
◯ 7
◯ 8
◯ 9
◯ 10

23. Pray or meditate.

◯ 0
◯ 1
◯ 2
◯ 3
◯ 4
◯ 5
◯ 6
◯ 7
◯ 8
◯ 9
◯ 10

24. Get emotional support from community organizations or resources.

◯ 0
◯ 1
◯ 2
◯ 3
◯ 4
◯ 5
◯ 6
◯ 7
◯ 8
◯ 9
◯ 10

25. Stand your ground and fight for what you want.

◯ 0
◯ 1
◯ 2
◯ 3
◯ 4
◯ 5
◯ 6
◯ 7
◯ 8
◯ 9
◯ 10

26. Resist the impulse to act hastily when under pressure.

◯ 0
◯ 1
◯ 2
◯ 3
◯ 4
◯ 5
◯ 6
◯ 7
◯ 8
◯ 9
◯ 10

DRS-15 (v3.2)

Below are statements about life that people often feel differently about. Check the box to show how much you think each one is true. Give your own honest opinions . . . There are no right or wrong answers.

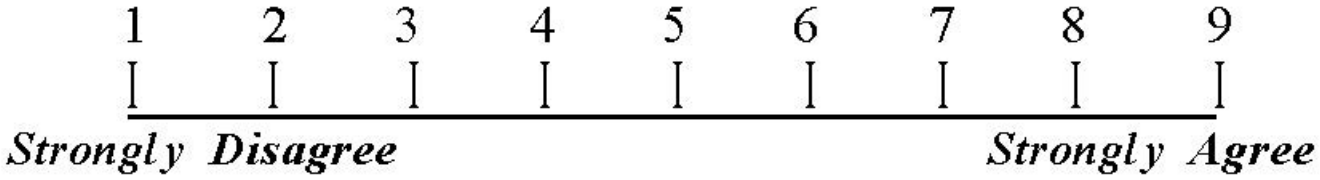
	Not at all true	A little true	Quite true	Completely true
1. Most of my life gets spent doing things that are meaningful	☐	☐	☐	☐
2. By working hard you can nearly always achieve your goals	☐	☐	☐	☐
3. I don't like to make changes in my regular activities	☐	☐	☐	☐
4. I feel that my life is somewhat empty of meaning	☐	☐	☐	☐
5. Changes in routine are interesting to me	☐	☐	☐	☐
6. How things go in my life depends on my own actions	☐	☐	☐	☐
7. I really look forward to my daily activities	☐	☐	☐	☐
8. I don't think there is much I can do to influence my own future	☐	☐	☐	☐
9. I enjoy the challenge when I have to do more than one thing at a time	☐	☐	☐	☐
10. Most days, life is really interesting and exciting for me	☐	☐	☐	☐
11. It bothers me when my daily routine gets interrupted	☐	☐	☐	☐
12. It is up to me to decide how the rest of my life will be	☐	☐	☐	☐
13. Life in general is boring for me	☐	☐	☐	☐
14. I like having a daily schedule that doesn't change very much	☐	☐	☐	☐
15. My choices make a real difference in how things turn out in the end	☐	☐	☐	☐

DSQ-40

Please complete the survey below.

Thank you!

Instructions:
This questionnaire consists of a number of statements about personal attitudes. There are no right or wrong answers. Using the 9-point scale shown below, please indicate how much you agree or disagree with each statement by choosing one of the numbers on the scale beside the statement. For example, a score of 5 would indicate that you neither agree nor disagree with the statement, a score of 3 that you moderately disagree, a score of 9 that you strongly agree.



1) 1. I get satisfaction from helping others and if this were taken away from me I would get depressed
◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯ 6 ◯ 7 ◯ 8 ◯ 9

2) 2. I'm able to keep a problem out of my mind until I have time to deal with it
◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯ 6 ◯ 7 ◯ 8 ◯ 9

3) 3. I work out my anxiety through doing something constructive and creative like painting or wood work
◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯ 6 ◯ 7 ◯ 8 ◯ 9

4) 4. I am able to find good reasons for everything I do
◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯ 6 ◯ 7 ◯ 8 ◯ 9

5) 5. I'm able to laugh at myself pretty easily
◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯ 6 ◯ 7 ◯ 8 ◯ 9

6) 6. People tend to mistreat me
◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯ 6 ◯ 7 ◯ 8 ◯ 9

7) 7. If someone mugged me and stole my money, I'd rather he be helped than punished
◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯ 6 ◯ 7 ◯ 8 ◯ 9

8) 8. People say I tend to ignore unpleasant facts as if they didn't exist
◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯ 6 ◯ 7 ◯ 8 ◯ 9

9) 9. I ignore danger as if I was Superman

◯ 1 ◯ 2 ◯ 3 ◯ 4
◯ 5 ◯ 6 ◯ 7 ◯ 8
◯ 9

10) 10. I pride myself on my ability to cut people down to size

◯ 1 ◯ 2 ◯ 3 ◯ 4
◯ 5 ◯ 6 ◯ 7 ◯ 8
◯ 9

11) 11. I often act impulsively when something is bothering me

◯ 1 ◯ 2 ◯ 3 ◯ 4
◯ 5 ◯ 6 ◯ 7 ◯ 8
◯ 9

12) 12. I get physically ill when things aren't going well for me

◯ 1 ◯ 2 ◯ 3 ◯ 4
◯ 5 ◯ 6 ◯ 7 ◯ 8
◯ 9

13) 13. I'm a very inhibited person

◯ 1 ◯ 2 ◯ 3 ◯ 4
◯ 5 ◯ 6 ◯ 7 ◯ 8
◯ 9

14) 14. I get more satisfaction from my fantasies than from my real life

◯ 1 ◯ 2 ◯ 3 ◯ 4
◯ 5 ◯ 6 ◯ 7 ◯ 8
◯ 9

15) 15. I've special talents that allow me to go through life with no problems

◯ 1 ◯ 2 ◯ 3 ◯ 4
◯ 5 ◯ 6 ◯ 7 ◯ 8
◯ 9

16) 16. There are always good reasons when things don't work out for me

◯ 1 ◯ 2 ◯ 3 ◯ 4
◯ 5 ◯ 6 ◯ 7 ◯ 8
◯ 9

17) 17. I work more things out in my daydreams than in my real life

◯ 1 ◯ 2 ◯ 3 ◯ 4
◯ 5 ◯ 6 ◯ 7 ◯ 8
◯ 9

18) 18. I fear nothing

◯ 1 ◯ 2 ◯ 3 ◯ 4
◯ 5 ◯ 6 ◯ 7 ◯ 8
◯ 9

19) 19. Sometimes I think I'm an angel and other times I think I'm a devil

◯ 1 ◯ 2 ◯ 3 ◯ 4
◯ 5 ◯ 6 ◯ 7 ◯ 8
◯ 9

20) 20. I get openly aggressive when I feel

◯ 1 ◯ 2 ◯ 3 ◯ 4
◯ 5 ◯ 6 ◯ 7 ◯ 8
◯ 9

21) 21. I always feel that someone I know is like a guardian angel

◯ 1 ◯ 2 ◯ 3 ◯ 4
◯ 5 ◯ 6 ◯ 7 ◯ 8
◯ 9

22) 22. As far as I'm concerned, people are either good or bad

◯ 1 ◯ 2 ◯ 3 ◯ 4
◯ 5 ◯ 6 ◯ 7 ◯ 8
◯ 9

23) 23. If my boss bugged me, I might make a mistake in my work or work more slowly so as to get back at him
◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯ 6 ◯ 7 ◯ 8 ◯ 9

24) 24. There is someone I know who can do anything and who is absolutely fair and just
◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯ 6 ◯ 7 ◯ 8 ◯ 9

25) 25. I can keep the lid on my feelings if letting them out would interfere with what I'm doing
◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯ 6 ◯ 7 ◯ 8 ◯ 9

26) 26. I'm usually able to see the funny side of another wise painful predicament
◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯ 6 ◯ 7 ◯ 8 ◯ 9

27) 27. I get a headache when I have to do something I don't like
◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯ 6 ◯ 7 ◯ 8 ◯ 9

28) 28. I often find myself being very nice to people who by all rights I should be angry at
◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯ 6 ◯ 7 ◯ 8 ◯ 9

29) 29. I am sure I get a raw deal from life
◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯ 6 ◯ 7 ◯ 8 ◯ 9

30) 30. When I have to face a difficult situation I try to imagine what it will be like and plan ways to cope with it
◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯ 6 ◯ 7 ◯ 8 ◯ 9

31) 31. Doctors never really understand what is wrong with me
◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯ 6 ◯ 7 ◯ 8 ◯ 9

32) 32. After I fight for my rights, I tend to apologize for my assertiveness
◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯ 6 ◯ 7 ◯ 8 ◯ 9

33) 33. When I'm depressed or anxious, eating makes me feel better
◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯ 6 ◯ 7 ◯ 8 ◯ 9

34) 34. I'm often told that I don't show my feelings
◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯ 6 ◯ 7 ◯ 8 ◯ 9

35) 35. If I can predict that I'm going to be sad ahead of time, I can cope better
◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯ 6 ◯ 7 ◯ 8 ◯ 9

36) 36. No matter how much I complain, I never get a satisfactory response
◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯ 6 ◯ 7 ◯ 8 ◯ 9

37) 37. Often I find that I don't feel anything when the situation would seem to warrant strong emotions

◯ 1 ◯ 2 ◯ 3 ◯ 4
◯ 5 ◯ 6 ◯ 7 ◯ 8
◯ 9

38) 38. Sticking to the task at hand keeps me from feeling depressed or anxious

◯ 1 ◯ 2 ◯ 3 ◯ 4
◯ 5 ◯ 6 ◯ 7 ◯ 8
◯ 9

39) 39. If I were in a crisis, I would seek out another person who had the same problem

◯ 1 ◯ 2 ◯ 3 ◯ 4
◯ 5 ◯ 6 ◯ 7 ◯ 8
◯ 9

40) 40. If I have an aggressive thought, I feel the need to do something to compensate for it

◯ 1 ◯ 2 ◯ 3 ◯ 4
◯ 5 ◯ 6 ◯ 7 ◯ 8
◯ 9

Mayer-Salovey-Caruso Emotional Intelligence Test

MSCEIT™

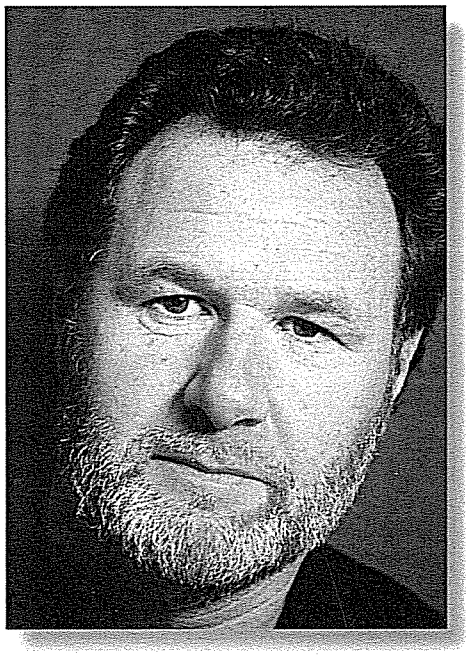
Item Booklet

MHS

John D. Mayer, Ph.D., Peter Salovey, Ph.D., & David R. Caruso, Ph.D.

SECTION A

1.



Instructions: How much is each feeling below expressed by this face?

(Please select a response for each item.)

1. No happiness	1	2	3	4	5	Extreme happiness
2. No fear	1	2	3	4	5	Extreme fear
3. No surprise	1	2	3	4	5	Extreme surprise
4. No disgust	1	2	3	4	5	Extreme disgust
5. No excitement	1	2	3	4	5	Extreme excitement

2.

Instructions: How much is each feeling below expressed by this face?

(Please select a response for each item.)

1. No happiness	1	2	3	4	5	**Extreme happiness**
2. No sadness	1	2	3	4	5	**Extreme sadness**
3. No fear	1	2	3	4	5	**Extreme fear**
4. No surprise	1	2	3	4	5	**Extreme surprise**
5. No excitement	1	2	3	4	5	**Extreme excitement**

3.

Instructions: How much is each feeling below expressed by this face?

(Please select a response for each item.)

1. No happiness	1	2	3	4	5	**Extreme happiness**
2. No sadness	1	2	3	4	5	**Extreme sadness**
3. No fear	1	2	3	4	5	**Extreme fear**
4. No surprise	1	2	3	4	5	**Extreme surprise**
5. No excitement	1	2	3	4	5	**Extreme excitement**

4.

Instructions: How much is each feeling below expressed by this face?

(Please select a response for each item.)

1. **No happiness**	1	2	3	4	5	**Extreme happiness**
2. **No sadness**	1	2	3	4	5	**Extreme sadness**
3. **No fear**	1	2	3	4	5	**Extreme fear**
4. **No anger**	1	2	3	4	5	**Extreme anger**
5. **No disgust**	1	2	3	4	5	**Extreme disgust**

SECTION B

Instructions: Please select a response for each item.

1. What mood(s) might be helpful to feel when creating new, exciting decorations for a birthday party?

	Not Useful				Useful
a. annoyance	1	2	3	4	5
b. boredom	1	2	3	4	5
c. joy	1	2	3	4	5

2. What mood(s) might be helpful to feel when composing an inspiring military march?

	Not Useful				Useful
a. anger	1	2	3	4	5
b. excitement	1	2	3	4	5
c. frustration	1	2	3	4	5

3. What mood(s) might be helpful to feel when following a very complicated, demanding, cooking recipe?

	Not Useful				Useful
a. tension	1	2	3	4	5
b. sorrow	1	2	3	4	5
c. neutral mood	1	2	3	4	5

4. What mood(s) might be helpful to feel when figuring out what caused a fight among three young children? Each of the three young children is telling a different story about how the fight started. Figuring out what happened requires attending to the details of the stories and weighing many facts.

	Not Useful				Useful
a. happiness	1	2	3	4	5
b. surprise	1	2	3	4	5
c. sadness	1	2	3	4	5

5. **What mood(s) might be helpful for a doctor to feel when selecting a treatment plan for a patient with a cancerous tumor? The doctor must apply several known, but conflicting, principles in the treatment of the tumor.**

	Not Useful				Useful
a. happiness	1	2	3	4	5
b. neutral mood	1	2	3	4	5
c. anger and defiance	1	2	3	4	5

SECTION C

Instructions: Select the best alternative for each of these questions.

1. **Marjorie felt more and more ashamed, and began to feel worthless. She then felt _____.**
   a. overwhelmed
   b. depressed
   c. ashamed
   d. self-conscious
   e. jittery

2. **Kenji felt content as he thought of his life, and the more he thought about the good things he had done and the joy his acts had brought to others, the more he felt _____.**
   a. surprised
   b. depressed
   c. acceptance
   d. happiness
   e. amazement

3. **Natalie had never been more surprised in her life. But as she recovered a bit from the shock of the loss and realized she could gain some advantage from the situation if she planned carefully, she became _____.**
   a. amazed
   b. confused
   c. denying of the situation
   d. expectant
   e. pensive

4. **Nelson was saddened by the news from home and wanted to express his sincere regret. When he heard that he had not been told right away and that matters were worse than he at first thought, he felt _____.**

   a. anger and surprise
   b. sadness and anticipation
   c. shock and regret
   d. fear and loathing
   e. anger and sorrow

5. **Rashad is usually quite happy at work and things also go well for him at home. He thought that he and his coworkers were generally fairly paid and treated well. Today, everyone in his unit received a modest across-the-board pay increase as part of corporate-wide adjustments in salary. Rashad felt _____.**

   a. surprised and shocked
   b. peaceful and quiet
   c. content and elated
   d. humbled and guilty
   e. proud and dominant

6. **Glenda loved Jake, who she felt belonged only to her. She began to see him as perfect for her and close to perfection in general. She _____.**

   a. respected him
   b. admired him
   c. envied him
   d. adored him
   e. resented him

7. **Tatiana was annoyed that a coworker took credit for a project, and when he did it again she felt _____.**

   a. anger
   b. annoyance
   c. frustration
   d. startled
   e. depression

8. **After Charlie's car was stolen, he installed a car alarm in his new car. When his new car was also stolen, he first felt shock and surprise, and then _____.**

   a. amazement and astonishment
   b. helplessness, despair, and anger
   c. anger and disgust
   d. jealousy and envy
   e. depression and contempt

9. **When Steve discovered that several students were cheating on exams, he thought it was morally wrong. When he told the teacher, the teacher said there was nothing he could do about it. Steve planned to pursue the matter with a school administrator because he felt _____ by what had happened.**

   a. enlivened
   b. enraged
   c. disgusted
   d. depressed
   e. saddened

10. **Matt had been hurt by one of his closest friends and was feeling angry. Matt told his friend how he felt, and when the friend did it again, Matt became _____.**

    a. angry
    b. fearful
    c. very annoyed
    d. worried
    e. enraged

11. **Theresa watched television so as to follow a hurricane's progress up the coast near where her parents lived. As the hurricane moved toward her parents' house, she felt anxiety and helplessness. At the last minute, however, it turned away, leaving that area of the coastline unharmed. She felt _____.**

    a. relief and gratitude
    b. surprise and shock
    c. tense and relieved
    d. anticipation and anxiety
    e. anticipation and calmness

12. A woman who felt secure and accepted later felt depressed. What happened in between?

a. she received a compliment intended for someone else
b. she discovered her husband was cheating on her
c. a friend became ill
d. a package she mailed to a friend was delivered to the wrong person
e. she was frustrated by a bad job she did on a project

13. A child who was happily anticipating his birthday later felt sad. What most likely happened in between?

a. a bully insulted him and he fought back
b. two friends who he was hoping would come never made it to the party
c. he ate too much cake
d. his mother embarrassed him in front of the other children
e. his father accused him of something he did not do

14. A middle-aged woman was happy and shortly thereafter felt disapproving. What most likely happened in between?

a. her son injured himself slightly at work
b. she realized she had hurt a close friend's feelings
c. her daughter-in-law was late for a family dinner
d. her husband criticized her
e. she lost a book that was important to her

15. A man was feeling rested and then felt admiration. What happened in between?

a. while resting, the man solved an important problem at work
b. the man heard a story about a sports hero who set a new world record
c. his friend called to say he had just purchased a new sports car at a great price
d. a package arrived with a gift from his mother
e. his doctor called to say his checkup indicated he was healthy

16. A woman felt anticipation and then she felt love. What happened in between?

a. she gave a donation and thought about the people she would help
b. she bought a dress that was very flattering
c. she read a fan magazine about a star she found very appealing
d. her mother called to tell her she was sending her a birthday gift that would be a surprise
e. she went on a date and discovered many things in common with an attractive man

17. An executive in a corporation felt displeased and then resentful. What happened in between?

a. a subordinate failed to achieve his sales goals for the period
b. another officer in the company, whom he believed to be incompetent, won a pay increase much larger than his own
c. he read a news item about people in another part of the world living in poverty and how a major charity was facing obstacles in their relief efforts
d. his wife was helping his children with their homework
e. no one seemed to like him

18. A woman was angry and then felt guilty. What happened in between?

a. she lost the phone number of a friend who was very close to her
b. she didn't finish a job as well as she had hoped to because she didn't have enough time
c. she expressed anger at her friend, who she then discovered hadn't done anything to hurt her
d. she lost a close friend
e. she was angry that someone gossiped about her, and then discovered that others were saying the same thing

19. A man liked his friend and then despised him. What happened in between?

a. his friend lost an expensive book he loaned him
b. his friend betrayed his wife
c. his friend won a raise he didn't deserve
d. his friend said he was moving away
e. the man felt he had hurt his friend and it was partly his friend's fault

20. A woman loved someone and then felt secure. What happened in between?

a. she learned the other person loved her in return
b. she decided not to express her feelings
c. her love went away
d. she told the other person that she loved him
e. her love itself brought about security

SECTION D

Instructions: Please select an answer for every action.

1. **Mara woke up feeling pretty well. She had slept well, felt well rested, and had no particular cares or concerns. How well would each action help her preserve her mood?**

Action 1: She got up and enjoyed the rest of the day.
a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

Action 2: Mara enjoyed the feeling and decided to think about and appreciate all the things that were going well for her.
a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

Action 3: She decided it was best to ignore the feeling since it wouldn't last anyway.
a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

Action 4: She used the positive feeling to call her mother, who had been depressed, and tried to cheer her up.
a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

2. **Andrew works as hard, if not harder, than one of his colleagues. In fact, his ideas are usually better at getting positive results for the company. His colleague does a mediocre job but engages in office politics so as to get ahead. So, when Andrew's boss announces that the annual merit award is being given to this colleague, Andrew is very angry. How effective would each action be in helping Andrew feel better?**

Action 1: Andrew sat down and thought about all of the good things in his life and his work.
a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

Action 2: Andrew made a list of the positive and negative traits of his colleague.
a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

Action 3: Andrew felt terrible that he felt that way, and he told himself that it wasn't right to be so upset over an event not under his control.
a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

Action 4: Andrew decided to tell people what a poor job his colleague had done, and that he did not deserve the merit award. Andrew gathered memos and notes to prove his point, so it wasn't just his word.
a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

3. **Jane did not know when her bills were due, how many more bills would be arriving soon, or if she could pay them. Then her car began making strange noises and her mechanic said it would cost so much to fix that it might not be worth it. Jane can't fall asleep easily, she wakes up several times at night, and she finds herself worrying all the time. How effective would each of the following actions be in reducing her worry?**

Action 1: Jane tried to work out what she owed, how much was due, and when it was due.
a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

Action 2: Jane learned deep-relaxation techniques to calm herself down.
a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

Action 3: Jane got the name of a financial planner to help her figure out how to manage her finances properly.
a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

Action 4: She decided to look for a job that paid more money.
a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

4. **Nothing seems to be going right for Ed. There just isn't much in Ed's life that he enjoys or that brings him much pleasure. Over the next year, how effective would each of the following actions be at making Ed feel better?**

Action 1: Ed started to call friends he hadn't spoken to in a while and made plans to see a few people.
a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

Action 2: He started to eat better, to get to bed earlier, and to exercise more.
a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

Action 3: Ed felt that he was bringing people down and decided to stay by himself more until he could work out what was bothering him. He felt he needed time alone.
a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

Action 4: Ed found that relaxing in front of the TV at night, with a beer or two, really helped him to feel better.
a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

5. **As Robert drove home from work, a tractor-trailer truck cut him off. He didn't even have time to honk his horn. Robert quickly swerved to the right to avoid getting hit. He was furious. How effective would each of the following actions be in dealing with his anger?**

Action 1: Robert taught the truck driver a lesson by cutting him off a few miles down the highway.

a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

Action 2: Robert just accepted that these things happen and drove home.

a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

Action 3: He yelled as loud as he could, and cursed and swore at the trucker.

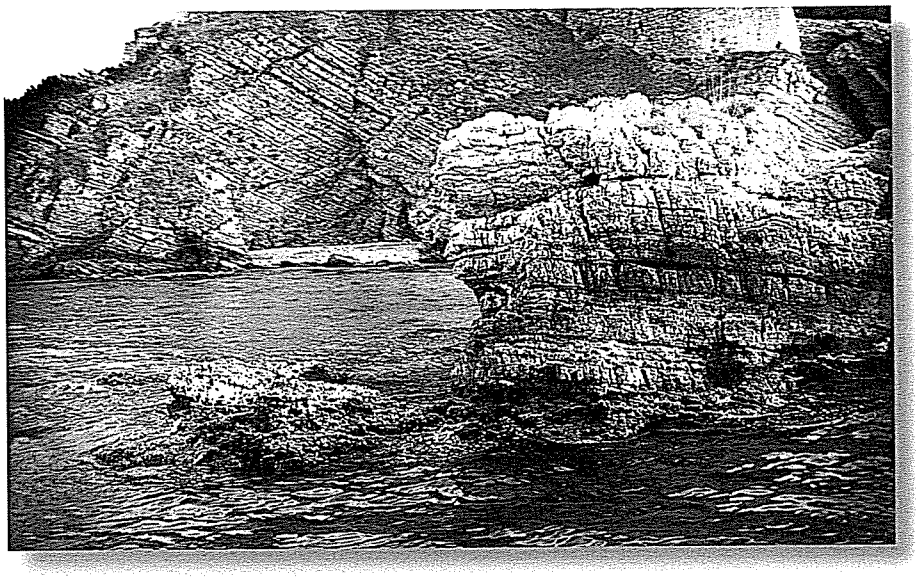
a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

Action 4: He vowed never to drive on that highway again.

a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

SECTION E

1.



Instructions: How much is each feeling below expressed by this picture?

(Please select a response for each item.)

	1	2	3	4	5
1. Happiness					
2. Sadness					
3. Fear					
4. Anger					
5. Disgust					

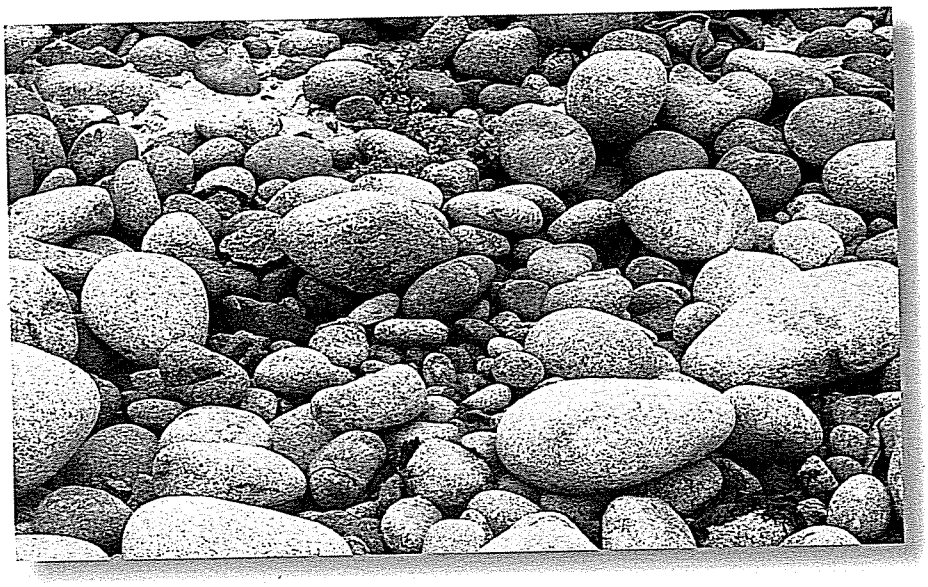
2.

Instructions: How much is each feeling below expressed by this picture?

(Please select a response for each item.)

	1	2	3	4	5
1. Sadness					
2. Anger					
3. Surprise					
4. Disgust					
5. Excitement					

3.

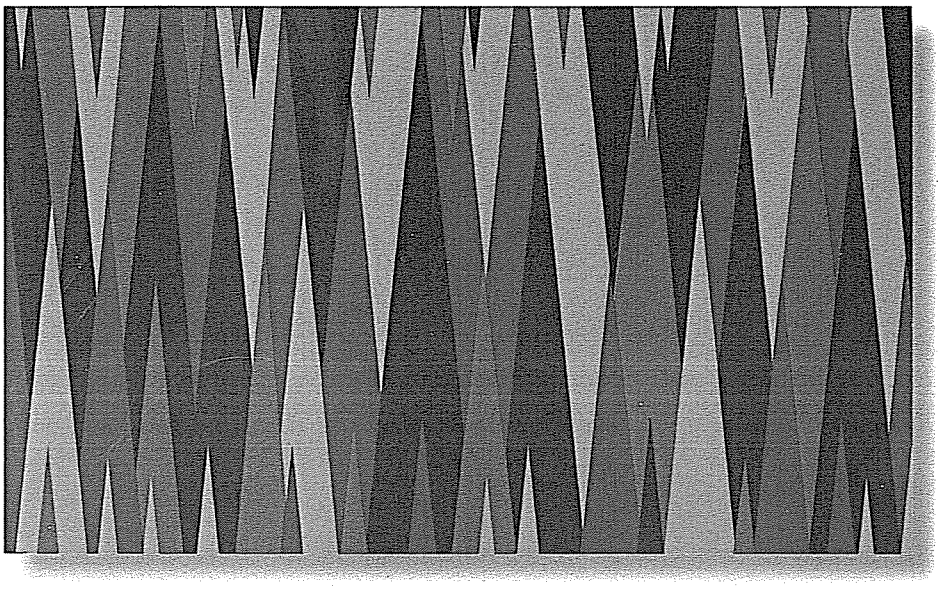


Instructions: How much is each feeling below expressed by this picture?

(Please select a response for each item.)

	1	2	3	4	5
1. Happiness					
2. Fear					
3. Anger					
4. Surprise					
5. Disgust					

4.

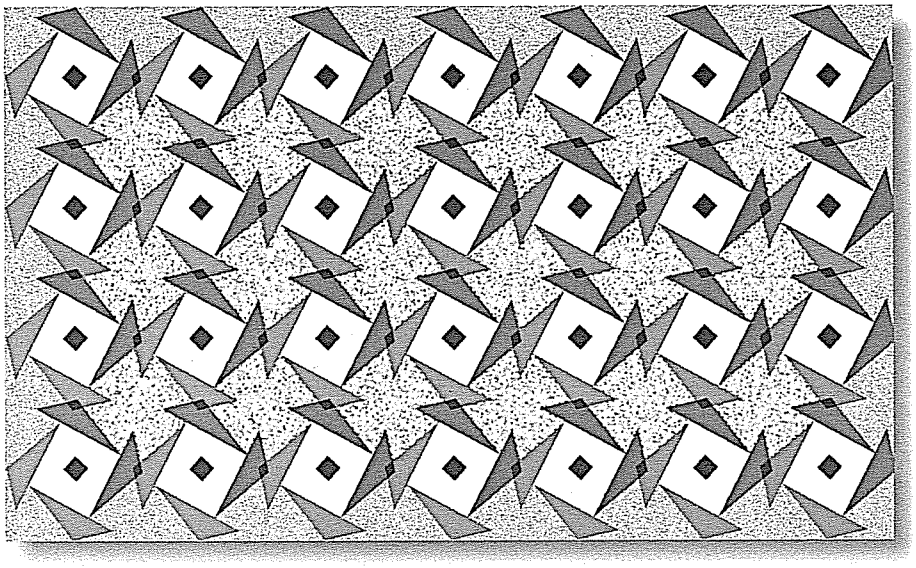


Instructions: How much is each feeling below expressed by this picture?

(Please select a response for each item.)

	1	2	3	4	5
1. Sadness					
2. Fear					
3. Anger					
4. Surprise					
5. Disgust					

5.

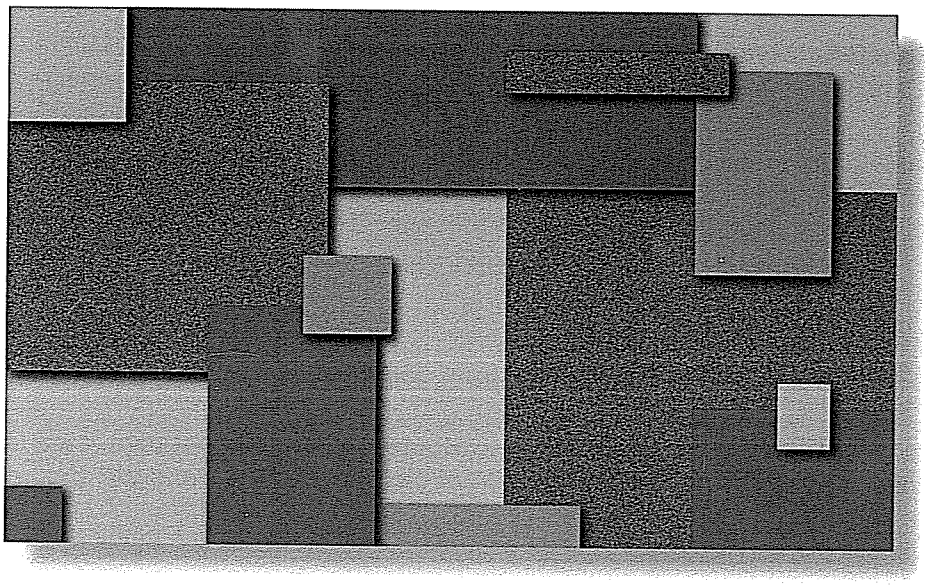


Instructions: How much is each feeling below expressed by this picture?

(Please select a response for each item.)

	1	2	3	4	5
1. Happiness					
2. Sadness					
3. Fear					
4. Anger					
5. Disgust					

6.



Instructions: How much is each feeling below expressed by this picture?

(Please select a response for each item.)

	1	2	3	4	5
1. Happiness					
2. Sadness					
3. Anger					
4. Surprise					
5. Disgust					

SECTION F

Instructions: For each item below, you are asked to imagine feeling a certain way. Answer as best as you can, even if you are unable to imagine the feeling.

1. **Imagine feeling guilty that you forgot to visit a close friend who has a serious illness. In the middle of the day, you realize you completely forgot to visit your friend at the hospital. How much is the feeling of guilt like each of the following?**

	Not Alike				Very Much Alike
a. cold	1	2	3	4	5
b. blue	1	2	3	4	5
c. sweet	1	2	3	4	5

2. **Imagine feeling content on a wonderful day, with terrific news about your job and family. How much is the feeling of contentment like each of the following sensations?**

	Not Alike				Very Much Alike
a. warm	1	2	3	4	5
b. purple	1	2	3	4	5
c. salty	1	2	3	4	5

3. **Imagine you are feeling cold, slow, and sharp. How much is that feeling like each of the following?**

	Not Alike				Very Much Alike
a. challenged	1	2	3	4	5
b. isolated	1	2	3	4	5
c. surprised	1	2	3	4	5

4. **Imagine you are feeling loud, large, delicate, and bright green. How much is that feeling like each of the following?**

	Not Alike				Very Much Alike
a. excited	1	2	3	4	5
b. jealous	1	2	3	4	5
c. afraid	1	2	3	4	5

5. **Imagine you are feeling closed, dark, and numb. How much is that feeling like each of the following?**

	Not Alike				Very Much Alike
a. sad	1	2	3	4	5
b. content	1	2	3	4	5
c. calm	1	2	3	4	5

SECTION G

Instructions: Select the best alternative for each of these questions.

1. **A feeling of concern most closely combines the emotions of _____.**
   a. love, anxiety, surprise, anger
   b. surprise, pride, anger, fear
   c. acceptance, anxiety, fear, anticipation
   d. fear, joy, surprise, embarrassment
   e. anxiety, caring, anticipation

2. **Another word for "consistently anticipating pleasure" is _____.**
   a. optimism
   b. happiness
   c. contentment
   d. joy
   e. surprise

3. **Acceptance, joy, and warmth often combine to form _____.**
   a. love
   b. amazement
   c. anticipation
   d. contentment
   e. acceptance

4. **Combining the feelings of disgust and anger results in _____.**
   a. guilt
   b. rage
   c. shame
   d. hatred
   e. contempt

5. **A sad surprise leads to _____.**
   a. disappointment
   b. amazement
   c. anger
   d. fear
   e. regret

6. **Sadness, guilt, and regret combine to form _____.**
   a. grief
   b. annoyance
   c. depression
   d. remorse
   e. misery

7. **Relaxation, security, and serenity are all parts of _____.**
   a. love
   b. fatigue
   c. expectancy
   d. calmness
   e. anticipation

8. **Fear, joy, surprise, and embarrassment are all parts of _____.**
   a. esteem
   b. awe
   c. puzzlement
   d. respect
   e. sympathy

9. **Shame, surprise, and embarrassment are combined in the feeling of _____.**
   a. jealousy
   b. sadness
   c. guilt
   d. envy
   e. humiliation

10. **Admiration, love, and anxiety are all parts of _____.**
    a. jealousy
    b. sadness
    c. malice
    d. pride
    e. worry

11. **Joy, excitement, and uncertainty are all parts of the feeling of _____.**
    a. liveliness
    b. anticipation
    c. anxiety
    d. calmness
    e. serenity

12. **Sadness and satisfaction are both sometimes part of the feeling of _____.**
    a. nostalgia
    b. anxiety
    c. anticipation
    d. depression
    e. contempt

SECTION H

Instructions: Please select an answer for every response.

1. **John developed a close friend at work over the last year. Today, that friend completely surprised him by saying he had taken a job at another company and would be moving out of the area. He had not mentioned he was looking for other jobs. How effective would John be in maintaining a good relationship, if he chose to respond in each of the following ways?**

   Response 1: John felt good for him and told his friend that he was glad he got the new job. Over the next few weeks, John made arrangements to ensure they stayed in touch.
   a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

   Response 2: John felt sad that his friend was leaving, but he considered what happened as an indication that the friend did not much care for him. After all, the friend said nothing about his job search. Given that his friend was leaving anyway, John did not mention it, but instead went looking for other friends at work.
   a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

   Response 3: John was very angry that his friend hadn't said anything. John showed his disapproval by deciding to ignore his friend until the friend said something about what he had done. John thought that if his friend didn't say anything, it would confirm John's opinion that the friend was not worth talking to.
   a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

2. **Roy's teacher has just called Roy's parents to say that Roy is doing poorly in school. The teacher tells Roy's parents that their son isn't paying attention, is being disruptive, and can't sit still. This particular teacher doesn't do well with active boys, and Roy's parents wonder what's really going on. Then the teacher says that their son will be left back unless he improves. The parents feel very angry. How helpful to their son is each of these reactions?**

   Response 1: The parents told the teacher that this was a big shock to them since this was the first time they had ever heard there was a problem. They asked to meet with the teacher and also requested if the principal could attend the meeting.
   a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

   Response 2: The parents told the teacher that if she continued to threaten to have their son repeat the grade, they would take it up with the principal. They said, "If our son is left back, we will hold you personally responsible. You are the teacher and your job is to teach, not to blame the student."
   a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

   Response 3: Roy's parents hung up on the teacher and called the principal. They complained about the teacher's threats and asked that their son be moved to a different classroom.
   a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

3. **Everything is going well for Liz. While others have been complaining about work, Liz has just gotten a promotion and a decent raise. Her children all are very happy and doing well in school, her marriage is stable and very happy. Liz is starting to feel very self-important and finds herself tempted to brag about her life to her friends. How effective would each of the following responses be for maintaining her relationships?**

Response 1: Since everything is so good, it's okay to feel proud of it. But Liz also realized that some people see it as bragging, or may be jealous of her and so she only talked to close friends about her feelings.

a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

Response 2: Liz started to think of all the things that could possibly go wrong in the future so she could gain perspective on her life. She saw that good feelings don't always last.

a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

Response 3: Liz shared her feelings with her husband that night. Then she decided that the family should spend time together on the weekend and get involved in several family events just to be together.

a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

Thank You for taking the MSCEIT.

For more information, contact MHS at...

In the U.S.:
P.O. Box 950
North Tonawanda, NY
14120-0950
1-800-456-3003

In Canada:
3770 Victoria Park Ave.
Toronto, ON
M2H 3M6
1-800-268-6011

International Tel: +1-416-492-2627
Fax: 1-888-540-4484
International Fax: +1-416-492-3343
E-mail: customerservice@mhs.com

www.mhs.com

Please complete one of the following

_____ [redacted]

_____ [redacted]

ID Number: _____ Today's Date: _____ /_____ /_____
MM DD YYYY

Instructions:

The EQ-i 2.0 provides you with an opportunity to describe yourself by indicating the frequency with which you feel, think, or act in the way described by each statement. There are five response options for each statement: *Never/Rarely, Occasionally, Sometimes, Often*, and *Always/Almost Always*.

Read each statement and decide which one of the five response options best describes the frequency of your thoughts, feelings, or actions. Indicate your response choice by circling the appropriate number.

If a statement does not apply to you, respond in such a way that will give the best indication of how you would possibly feel, think, or act. Although some of these statements may seem unclear or vague to you, choose the response option that seems to describe you best. There are no "right" or "wrong" answers and no "good" or "bad" choices. Answer openly and honestly by indicating how you actually are, and not how you would like to be or how you would like to be seen. Although there is no time limit, work at a steady pace and make sure that you consider and try to respond to each statement. This assessment must be completed in a single session.

	Never/ Rarely	Occasionally	Sometimes	Often	Always/ Almost Always
1. I keep calm in difficult situations.	1	2	3	4	5
2. I make rash decisions when I'm emotional.	1	2	3	4	5
3. I back down even when I know I am right.	1	2	3	4	5
4. It's hard for me to make decisions on my own.	1	2	3	4	5
5. I interrupt when others are speaking.	1	2	3	4	5
6. It's difficult for me to change my opinion.	1	2	3	4	5
7. I say "no" when I need to.	1	2	3	4	5
8. I accomplish my goals.	1	2	3	4	5
9. It's easy for me to make friends.	1	2	3	4	5
10. Looking at both my good and bad points, I feel good about myself.	1	2	3	4	5
11. I act in an environmentally friendly way.	1	2	3	4	5
12. It's hard for me to enjoy life.	1	2	3	4	5
13. I'm aware of how others feel.	1	2	3	4	5
14. I see situations as they really are.	1	2	3	4	5

Continued on the next page...

	Never/ Rarely	Occasionally	Sometimes	Often	Always/ Almost Always
15. I cling to others.	1	2	3	4	5
16. I pay attention to how I'm feeling.	1	2	3	4	5
17. When I'm really upset, I can't decide what to do.	1	2	3	4	5
18. I try to make a difference in society.	1	2	3	4	5
19. I feel sure of myself.	1	2	3	4	5
20. I like helping people.	1	2	3	4	5
21. I am assertive without being offensive.	1	2	3	4	5
22. I enjoy talking with people.	1	2	3	4	5
23. When I disagree with someone, I say so.	1	2	3	4	5
24. I am empathic.	1	2	3	4	5
25. I make mistakes.	1	2	3	4	5
26. I can't think clearly when I'm under stress.	1	2	3	4	5
27. I'm aware of the impact of my mood on others.	1	2	3	4	5
28. I am not happy with my life.	1	2	3	4	5
29. I stay positive even when things get difficult.	1	2	3	4	5
30. I am good at understanding the way other people feel.	1	2	3	4	5
31. I don't feel good about myself.	1	2	3	4	5
32. I am optimistic.	1	2	3	4	5
33. I do not like being in unfamiliar situations.	1	2	3	4	5
34. My impulsiveness creates problems for me.	1	2	3	4	5
35. I expect the worst.	1	2	3	4	5
36. I make realistic plans to achieve my goals.	1	2	3	4	5
37. I tend to worry about a problem rather than try to solve it.	1	2	3	4	5
38. I am easy to approach.	1	2	3	4	5
39. It's hard for me to share my feelings with others.	1	2	3	4	5
40. I know what triggers my emotions.	1	2	3	4	5
41. People confide in me.	1	2	3	4	5
42. It's hard for me to change my ways.	1	2	3	4	5
43. I recognize my own biases.	1	2	3	4	5
44. I am impulsive.	1	2	3	4	5
45. I avoid dealing with problems.	1	2	3	4	5
46. I am easily influenced by others.	1	2	3	4	5

Continued on the next page...

	Never/ Rarely	Occasionally	Sometimes	Often	Always/ Almost Always
47. It's easy for me to express my feelings.	1	2	3	4	5
48. When I start talking, it's hard to stop.	1	2	3	4	5
49. I feel I have something to contribute.	1	2	3	4	5
50. I tend to react hastily.	1	2	3	4	5
51. I am enthusiastic.	1	2	3	4	5
52. I avoid hurting the feelings of others.	1	2	3	4	5
53. I am firm and direct when necessary.	1	2	3	4	5
54. I prefer a job in which I'm told what to do.	1	2	3	4	5
55. I thrive in challenging situations.	1	2	3	4	5
56. It's difficult for me to control my impulses.	1	2	3	4	5
57. I have a good sense of my strengths and weaknesses.	1	2	3	4	5
58. I seek out enriching experiences.	1	2	3	4	5
59. I like everyone I meet.	1	2	3	4	5
60. I am a contributing member of the groups to which I belong.	1	2	3	4	5
61. I contribute to my community.	1	2	3	4	5
62. I'm aware of how I feel.	1	2	3	4	5
63. I am self-motivated.	1	2	3	4	5
64. I lack self-confidence.	1	2	3	4	5
65. It's hard for me to do things on my own.	1	2	3	4	5
66. I am fun to be with.	1	2	3	4	5
67. It's hard for me to resist temptation.	1	2	3	4	5
68. It's hard for me to decide on the best solution when solving a problem.	1	2	3	4	5
69. It's hard to express my intimate feelings.	1	2	3	4	5
70. I'm in touch with other people's emotions.	1	2	3	4	5
71. I am happy.	1	2	3	4	5
72. I get stuck when thinking about different ways of solving a problem.	1	2	3	4	5
73. I make good use of my abilities.	1	2	3	4	5
74. I'm a team player.	1	2	3	4	5
75. I feel overwhelmed when I need to make a decision.	1	2	3	4	5
76. I strive to be the best I can be.	1	2	3	4	5

Continued on the next page...

		Never/ Rarely	Occasionally	Sometimes	Often	Always/ Almost Always
77.	I know when I need to be more objective.	1	2	3	4	5
78.	I relate to the emotions of others.	1	2	3	4	5
79.	I handle stress without getting too nervous.	1	2	3	4	5
80.	I am hopeful about the future.	1	2	3	4	5
81.	I need reassurance from others.	1	2	3	4	5
82.	It's hard for me to compromise.	1	2	3	4	5
83.	I see the best in people.	1	2	3	4	5
84.	If I have trouble solving a problem, I get frustrated and give up.	1	2	3	4	5
85.	I know when my emotions affect my objectivity.	1	2	3	4	5
86.	I stand up for what I believe in.	1	2	3	4	5
87.	I feel uneasy with last minute changes.	1	2	3	4	5
88.	I perform well under pressure.	1	2	3	4	5
89.	It's hard for me to accept myself just the way I am.	1	2	3	4	5
90.	I have good thoughts about the future.	1	2	3	4	5
91.	I respect the way others feel.	1	2	3	4	5
92.	I am satisfied with my life.	1	2	3	4	5
93.	When I am sad, I talk to people about it.	1	2	3	4	5
94.	I have bad days.	1	2	3	4	5
95.	I tell people what I think.	1	2	3	4	5
96.	It's hard for me to make changes in my daily life.	1	2	3	4	5
97.	I need other people more than they need me.	1	2	3	4	5
98.	I expect things to turn out all right, despite setbacks from time to time.	1	2	3	4	5
99.	I cope well with stressful situations.	1	2	3	4	5
100.	I find it difficult to show people how I feel about them.	1	2	3	4	5
101.	I'm excited about my life.	1	2	3	4	5
102.	People think I am sociable.	1	2	3	4	5
103.	I find it difficult to show affection.	1	2	3	4	5
104.	I am driven to achieve.	1	2	3	4	5

Continued on the next page...

	Never/ Rarely	Occasionally	Sometimes	Often	Always/ Almost Always
105. I recognize when I'm upset.	1	2	3	4	5
106. When I wake up in the morning, I look forward to the day.	1	2	3	4	5
107. Even when upset, I'm aware of what's happening to me.	1	2	3	4	5
108. It's hard for me to describe my feelings.	1	2	3	4	5
109. I try to make my life as meaningful as I can.	1	2	3	4	5
110. I am sensitive to the feelings of others.	1	2	3	4	5
111. I have a good sense of what is going on around me.	1	2	3	4	5
112. I let my emotions get in the way when making decisions.	1	2	3	4	5
113. I handle upsetting problems well.	1	2	3	4	5
114. I am more of a follower than a leader.	1	2	3	4	5
115. I care about social issues.	1	2	3	4	5
116. I have a positive outlook.	1	2	3	4	5
117. It's hard for me to smile.	1	2	3	4	5
118. I look for ways to improve myself.	1	2	3	4	5
119. Things bother me.	1	2	3	4	5
120. I need things to be predictable.	1	2	3	4	5
121. I understand how the emotions of others affect me.	1	2	3	4	5
122. Change makes me uneasy.	1	2	3	4	5
123. I do not react well to stressful situations.	1	2	3	4	5
124. I care about other people's feelings.	1	2	3	4	5
125. I know which emotions affect my performance.	1	2	3	4	5
126. I am content.	1	2	3	4	5
127. I only care about what is best for others.	1	2	3	4	5
128. I think highly of myself.	1	2	3	4	5
129. I have good relationships with others.	1	2	3	4	5
130. I respect myself.	1	2	3	4	5
131. I know the right answer.	1	2	3	4	5
132. I'm happy with who I am.	1	2	3	4	5
133. My responses to the preceding sentences were open and honest.	1	2	3	4	5

LEAS-A

Subject#:_____ Study#:_____

INSTRUCTIONS

Please describe what you would feel in the following situations. The only requirement is that you use the word "feel" in your answers. You may make your answers as brief or as long as necessary to express how you would feel. In each situation there is another person mentioned. Please indicate how you think that other person would feel as well.

1. A neighbor asks you to repair a piece of furniture. As the neighbor looks on, you begin hammering the nail but then miss the nail and hit your finger. How would you feel? How would the neighbor feel?

2. A loved one gives you a back rub after you return from a hard day's work. How would you feel? How would your partner feel?

3. As you drive over a suspension bridge you see a person standing on the other side of the guardrail, looking down at the water. How would you feel? How would the person feel?

4. Your boss tells you that your work has been unacceptable and needs to be improved. How would you feel? How would your boss feel?

5. You are standing in line at the bank. The person in front of you steps up to the window and begins a very complicated transaction. How would you feel? How would the person in front of you feel?

6. You have been working hard on a project for several months. Several days after submitting it, your boss stops by to tell you that your work was excellent. How would you feel? How would your boss feel?

7. Your dentist has told you that you have several cavities and schedules you for a return visit. How would you feel? How would the dentist feel?

8. Your doctor told you to avoid fatty foods. A new colleague at work calls to say that she/he is going out for pizza and invites you to go along. How would you feel? How would your colleague feel?

9. You and a friend agree to invest money together to begin a new business venture. Several days later you call the friend back only to learn that she/he changed her/his mind. How would you feel? How would your friend feel?

10. You fall in love with someone who is both attractive and intelligent. Although this person is not well off financially, this doesn't matter to you -- your income is adequate. When you begin to discuss marriage, you learn that she/he is actually from an extremely wealthy family. She/he did not want that known for fear that people would only be interested in her/him for her/his money. How would you feel? How would she/he feel?

LEAS-B

Subject#:_____ Study#:_____

INSTRUCTIONS

Please describe what you would feel in the following situations. The only requirement is that you use the word "feel" in your answers. You may make your answers as brief or as long as necessary to express how you would feel. In each situation there is another person mentioned. Please indicate how you think that other person would feel as well.

1. You are walking through the desert with a guide. You ran out of water hours ago. The nearest well is two miles away according to the guide's map. How would you feel? How would the guide feel?

2. You are running in a race with a friend with whom you have trained for some time. As you near the finish line, you twist your ankle, fall to the ground, and are unable to continue. How would you feel? How would your friend feel?

3. You are traveling in a foreign country. An acquaintance makes derogatory remarks about your native country. How would you feel? How would your acquaintance feel?

4. Your sweetheart has been gone for several weeks but finally comes home. As your sweetheart opens the door....how would you feel? How would your sweetheart feel?

5. You and your spouse are driving home from an evening out with friends. As you turn onto your block you see fire-trucks parked near your home. How would you feel? How would your spouse feel?

6. You receive an unexpected long-distance phone call from a doctor informing you that your mother has died. How would you feel? How would the doctor feel?

7. You tell a friend who is feeling lonely that she/he can call you whenever she/he needs to talk. One night she/he calls at 4:00 a.m. How would you feel? How would your friend feel?

8. Someone who has been critical of you in the past pays you a compliment. How would you feel? How would the other person feel?

9. You sell a favorite possession of your own in order to buy an expensive gift for your spouse. When you give him/her the gift, he/she asks whether you sold the possession. How would you feel? How would your spouse feel?

10. You and your best friend are in the same line of work. There is a prize given annually to the best performance of the year. The two of you work hard to win the prize. One night the winner is announced: your friend. How would you feel? How would your friend feel?

VAS

Answer each of the questions for how you currently feel .

How alert do you feel?	Very Little	Very Much
	(Place a mark on the scale above)	
How sad do you feel?	Very Little	Very Much
	(Place a mark on the scale above)	
How tense do you feel?	Very Little	Very Much
	(Place a mark on the scale above)	
How much of an effort is it to do anything?	Very Little	Very Much
	(Place a mark on the scale above)	
How happy do you feel?	Very Little	Very Much
	(Place a mark on the scale above)	
How weary do you feel?	Very Little	Very Much
	(Place a mark on the scale above)	
How calm do you feel?	Very Little	Very Much
	(Place a mark on the scale above)	
How sleepy do you feel?	Very Little	Very Much
	(Place a mark on the scale above)	

Please click on the line shown below to indicate how you feel right now. A mark at the extreme left end would indicate that you are feeling not at all anxious. A mark at the extreme right end would indicate that you are feeling the most anxious you could ever imagine. A mark near the center would indicate that you feel moderately anxious. Please indicate on the line below your level of anxiety at this moment.

	Not At All Anxious	Very Anxious
	(Place a mark on the scale above)	
Global Vigor	_____	
Global Affect	_____	

RTS

Please complete the survey below.

Thank you!

In general, how would your best friend describe you as a risk taker?	1. A real gambler 2. Willing to take risks after completing adequate research 3. Cautious 4. A real risk avoider
You are on a TV game show and can choose one of the following, which would you take?	1. $1,000 in cash 2. A 50% chance at winning $5,000 3. A 25% chance at winning $10,000 4. A 5% chance at winning $100,000
You have just finished saving for a "once-in-a-lifetime" vacation. Three weeks before you plan to leave, you lose your job. You would:	1. Cancel the vacation 2. Take a much more modest vacation 3. Go as scheduled, reasoning that you need the time to prepare for a job search 4. Extend your vacation, because this might be your last chance to go first-class
If you unexpectedly received $20,000 to *invest*, what would you do?	1. Deposit it in a bank account, money market account, or an insured CD 2. Invest it in safe high quality bonds or bond mutual funds 3. Invest it in stocks or stock mutual funds
In terms of experience, how comfortable are you investing in stocks or stock mutual funds?	1. Not at all comfortable 2. Somewhat comfortable 3. Very comfortable
When you think of the word "risk", which of the following words comes to mind first?	1. Loss 2. Uncertainty 3. Opportunity 4. Thrill
Some experts are predicting prices of assets such as gold, jewels, collectibles, and real estate (hard assets) to increase in value; bond prices may fall, however, experts tend to agree that government bonds are relatively safe. Most of your investments assets are now in high interest government bonds. What would you do?	1. Hold the bonds 2. Sell the bonds, put half the proceeds into money market accounts, and the other half into hard assets 3. Sell the bonds and put the total proceeds into hard assets 4. Sell the bonds, put all the money into hard assets, and borrow additional money to buy more
Given the best and worst case returns of the four investment choices below, which would you prefer?	1. $200 gain best case; $0 gain/loss worst case 2. $800 gain best case; $200 loss worst case 3. $2,600 gain best case; $800 lost worst case 4. $4,800 gain best case; $2,400 loss worst

	case
In addition to whatever you own, you have been given $1,000. You are now asked to choose between:	1. A sure gain of $500 2. A 50% chance to gain $1,000 and a 50% chance to gain nothing
In addition to whatever you own, you have been given $2,000. You are now asked to choose between:	1. A sure loss of $500 2. A 50% chance to lose $1,000 and a 50% chance to lose nothing
Suppose a relative left you an inheritance of $100,000, stipulating in the will that you invest ALL the money in ONE of the following choices. Which one would you select?	1. A savings account or money market mutual fund 2. A mutual fund that owns stocks and bonds 3. A portfolio of 15 common stocks 4. Commodities like gold, silver, and oil
If you had to invest $20,000, which of the following investment choices would you find most appealing?	1. 60% in low-risk investments, 30% in medium-risk investments, 10% in high-risk investments 2. 30% in low-risk investments, 40% in medium-risk investments, 30% in high-risk investments 3. 10% in low-risk investments, 40% in medium-risk investments, 50% in high-risk investments
Your trusted friend and neighbor, an experienced geologist, is putting together a group of investors to fund an exploratory gold mining venture. The venture could pay back 50 to 100 times the investment if successful. If the mine is a bust, the entire investment is worthless. Your friend estimates the chance of success is only 20%. If you had the money, how much would you invest?	1. Nothing 2. One month's salary 3. Three month's salary 4. Six month's salary

IAPS

During this task participants alternate between staring at a plus sign and viewing images that are either negative, neutral, or positive. In between viewing each set of images and staring at a plus sign, participant have their blood pressure recorded and they complete a short survey asking about their current mood state.

Intake Form

Please complete the survey below.

Thank you!

Please answer the questions below to the best of your ability. Be as honest as possible. All answers are kept confidential.

Have you taken any medications in the last 12 hours?

◯ Yes
◯ No

What medication(s)

_____

Did you have any caffeine containing drinks or pills today? (e.g., coffee, tea, soda/pop, caffeine pills, etc.)

◯ Yes ◯ No

If you consumed a caffeinated beverage, which type did you consume?

☐ Coffee
☐ Tea
☐ Soda
☐ Energy Drink
☐ Other

How many cups and/or pills?

_____
(1 cup = 8 oz)

Have you used any recreational drugs in the past week? (marijuana, tobacco, etc.)

◯ Yes ◯ No

What recreational drug(s) did you use?

How many hours of sleep did you get last night?

_____
(e.g., 7.5 for 7 hours and 30 minutes of sleep)

Are you currently on your period?

◯ Yes ◯ No

MAACL_R

Record ID _____

Click the button next to the words which describe how you feel right now, today. Some of the words may sound alike, but we want you to check all the words that describe your feelings. Work rapidly.

Active	○
Adventurous	○
Affectionate	○
Afraid	○
Agitated	○
Agreeable	○
Aggressive	○
Alive	○
Alone	○
Amiable	○
Amused	○
Angry	○
Annoyed	○
Awful	○
Bashful	○
Bitter	○
Blue	○
Bored	○
Calm	○
Cautious	○
Cheerful	○
Clean	○
Complaining	○
Contented	○
Contrary	○
Cool	○

Cooperative	○
Critical	○
Cross	○
Cruel	○
Daring	○
Desperate	○
Destroyed	○
Devoted	○
Disagreeable	○
Discontented	○
Discouraged	○
Disgusted	○
Displeased	○
Energetic	○
Enraged	○
Enthusiastic	○
Fearful	○
Fine	○
Fit	○
Forlorn	○
Frank	○
Free	○
Friendly	○
Frightened	○
Furious	○
Lively	○
Gentle	○
Glad	○
Gloomy	○
Good	○
Good-Natured	○
Grim	○

Happy	◯
Healthy	◯
Hopeless	◯
Hostile	◯
Impatient	◯
Incensed	◯
Indignant	◯
Inspired	◯
Interested	◯
Irritated	◯
Jealous	◯
Joyful	◯
Kindly	◯
Lonely	◯
Lost	◯
Loving	◯
Low	◯
Lucky	◯
Mad	◯
Mean	◯
Meek	◯
Merry	◯
Mild	◯
Miserable	◯
Nervous	◯
Obliging	◯
Offended	◯
Outraged	◯
Panicky	◯
Patient	◯
Peaceful	◯
Pleased	◯

Pleasant	◯
Polite	◯
Powerful	◯
Quiet	◯
Reckless	◯
Rejected	◯
Rough	◯
Sad	◯
Safe	◯
Satisfied	◯
Secure	◯
Shaky	◯
Shy	◯
Soothed	◯
Steady	◯
Stubborn	◯
Stormy	◯
Strong	◯
Suffering	◯
Sullen	◯
Sunk	◯
Sympathetic	◯
Tame	◯
Tender	◯
Tense	◯
Terrible	◯
Terrified	◯
Thoughtful	◯
Timid	◯
Tormented	◯
Understanding	◯
Unhappy	◯

Unsociable	◯
Upset	◯
Vexed	◯
Warm	◯
Whole	◯
Wild	◯
Willful	◯
Wilted	◯
Worrying	◯
Young	◯

State-Trait Anxiety Inventory for Adults™

Instrument and Scoring Key

Developed by Charles D. Spielberger
in collaboration with R.L. Gorsuch, R. Lushene, P.R. Vagg, and G.A. Jacobs

Published by Mind Garden, Inc.

info@mindgarden.com
www.mindgarden.com

SELF-EVALUATION QUESTIONNAIRE STAI Form Y-1

Please provide the following information:

Name_____ Date_____ S_____

Age_____ Gender (*Circle*) **M** **F** T_____

DIRECTIONS:

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you feel *right* now, that is, *at this moment*. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

	NOT AT ALL	SOMEWHAT	MODERATELY SO	VERY MUCH SO
1. I feel calm	1	2	3	4
2. I feel secure	1	2	3	4
3. I am tense	1	2	3	4
4. I feel strained	1	2	3	4
5. I feel at ease	1	2	3	4
6. I feel upset	1	2	3	4
7. I am presently worrying over possible misfortunes	1	2	3	4
8. I feel satisfied	1	2	3	4
9. I feel frightened	1	2	3	4
10. I feel comfortable	1	2	3	4
11. I feel self-confident	1	2	3	4
12. I feel nervous	1	2	3	4
13. I am jittery	1	2	3	4
14. I feel indecisive	1	2	3	4
15. I am relaxed	1	2	3	4
16. I feel content	1	2	3	4
17. I am worried	1	2	3	4
18. I feel confused	1	2	3	4
19. I feel steady	1	2	3	4
20. I feel pleasant	1	2	3	4

SELF-EVALUATION QUESTIONNAIRE

STAI Form Y-2

Name_____ Date_____

DIRECTIONS

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you *generally* feel.

	ALMOST NEVER	SOMETIMES	OFTEN	ALMOST ALWAYS
21. I feel pleasant	1	2	3	4
22. I feel nervous and restless	1	2	3	4
23. I feel satisfied with myself	1	2	3	4
24. I wish I could be as happy as others seem to be	1	2	3	4
25. I feel like a failure	1	2	3	4
26. I feel rested	1	2	3	4
27. I am "calm, cool, and collected"	1	2	3	4
28. I feel that difficulties are piling up so that I cannot overcome them	1	2	3	4
29. I worry too much over something that really doesn't matter	1	2	3	4
30. I am happy	1	2	3	4
31. I have disturbing thoughts	1	2	3	4
32. I lack self-confidence	1	2	3	4
33. I feel secure	1	2	3	4
34. I make decisions easily	1	2	3	4
35. I feel inadequate	1	2	3	4
36. I am content	1	2	3	4
37. Some unimportant thought runs through my mind and bothers me	1	2	3	4
38. I take disappointments so keenly that I can't put them out of my mind	1	2	3	4
39. I am a steady person	1	2	3	4
40. I get in a state of tension or turmoil as I think over my recent concerns and interests	1	2	3	4

PANAS

Record ID _____

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to the word. Indicate to what extent you feel this way right now, that is, at the present moment.

Interested
◯ very slightly or not at all
◯ a little
◯ moderately
◯ quiet a bit
◯ extremely

Distressed
◯ very slightly or not at all
◯ a little
◯ moderately
◯ quiet a bit
◯ extremely

Excited
◯ very slightly or not at all
◯ a little
◯ moderately
◯ quiet a bit
◯ extremely

Upset
◯ very slightly or not at all
◯ a little
◯ moderately
◯ quiet a bit
◯ extremely

Strong
◯ very slightly or not at all
◯ a little
◯ moderately
◯ quiet a bit
◯ extremely

Guilty
◯ very slightly or not at all
◯ a little
◯ moderately
◯ quiet a bit
◯ extremely

Scared
◯ very slightly or not at all
◯ a little
◯ moderately
◯ quiet a bit
◯ extremely

Hostile
◯ very slightly or not at all
◯ a little
◯ moderately
◯ quiet a bit
◯ extremely

Enthusiastic
- ◯ very slightly or not at all
- ◯ a little
- ◯ moderately
- ◯ quiet a bit
- ◯ extremely

Proud
- ◯ very slightly or not at all
- ◯ a little
- ◯ moderately
- ◯ quiet a bit
- ◯ extremely

Irritable
- ◯ very slightly or not at all
- ◯ a little
- ◯ moderately
- ◯ quiet a bit
- ◯ extremely

Alert
- ◯ very slightly or not at all
- ◯ a little
- ◯ moderately
- ◯ quiet a bit
- ◯ extremely

Ashamed
- ◯ very slightly or not at all
- ◯ a little
- ◯ moderately
- ◯ quiet a bit
- ◯ extremely

Inspired
- ◯ very slightly or not at all
- ◯ a little
- ◯ moderately
- ◯ quiet a bit
- ◯ extremely

Nervous
- ◯ very slightly or not at all
- ◯ a little
- ◯ moderately
- ◯ quiet a bit
- ◯ extremely

Determined
- ◯ very slightly or not at all
- ◯ a little
- ◯ moderately
- ◯ quiet a bit
- ◯ extremely

Attentive
- ◯ very slightly or not at all
- ◯ a little
- ◯ moderately
- ◯ quiet a bit
- ◯ extremely

Jittery
- ◯ very slightly or not at all
- ◯ a little
- ◯ moderately
- ◯ quiet a bit
- ◯ extremely

Active

◯ very slightly or not at all
◯ a little
◯ moderately
◯ quiet a bit
◯ extremely

Afraid

◯ very slightly or not at all
◯ a little
◯ moderately
◯ quiet a bit
◯ extremely

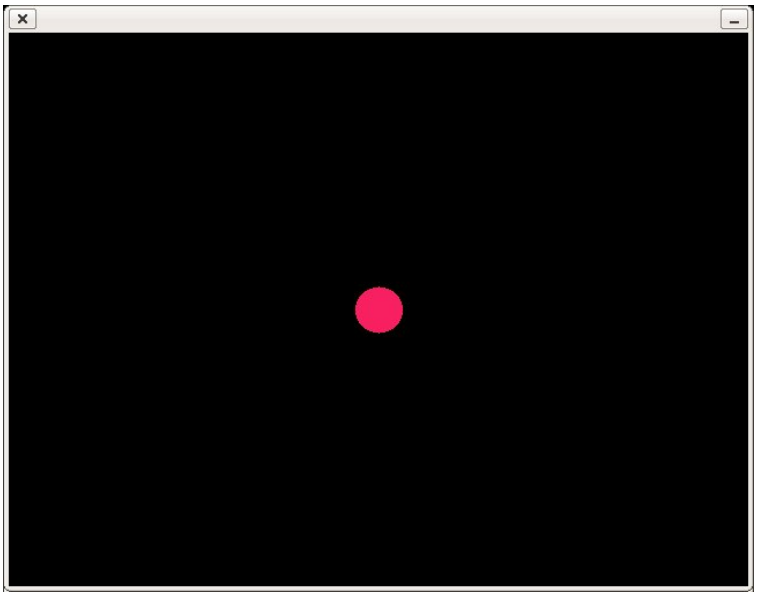
MEDEVAC Script

You are on scene of a casualty situation in which several members of your Army unity have suffered an explosive IED. Injuries include broken bones, minor head injuries, major head wounds, burns, traumatic amputations of legs and arms, and severe blood loss.

1. I have a MEDEVAC Request. Over. Unit on MEDEVAC frequency standby. BREAK.
2. Papa-Yankee 93408765. I say again, Papa-Yankee 93408765. BREAK.
3. This is W64M on 2-0-8-0-0. BREAK.
4. 4 alpha. BREAK. 2 Charlie. BREAK.
5. 1 O2 bottle, 1 backboard, and 1 C-collar. BREAK.
6. 4 Alpha and 3 Lima. BREAK.
7. X-ray. I repeat X-ray. BREAK.
8. Smoke. BREAK. 5 Alpha, 2 Echo. BREAK.
9. None. I say Again: None. BREAK.

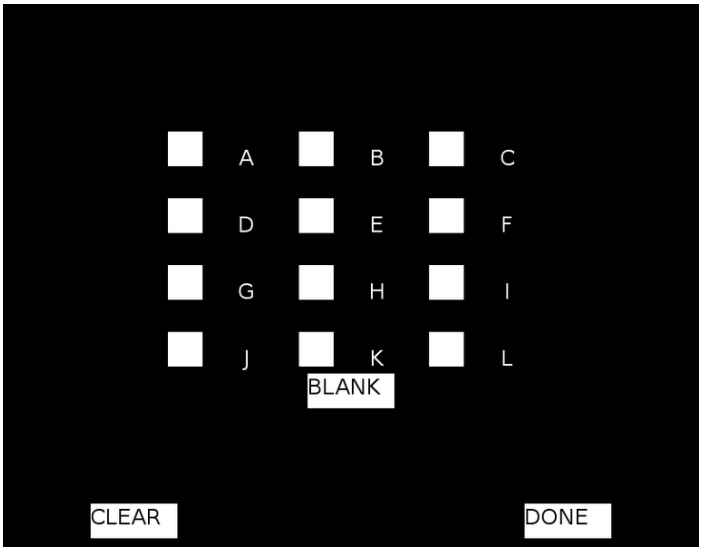
Perceptual Vigilance Task

Participants will be asked to press the space bar as fast as they can every time a colored circle appears on the screen. Participants will be provided with feedback on how fast they pressed the space bar in response to the circle on the screen.



Operational Span Task

Participants will be presented with a visual sequence of letters ranging from 3-7 letters that need to be recalled at the end. Each letter in the sequence is preceded by a math problem followed by a proposed solution and participants have to decide whether the proposed solution is the correct answer or not. The participant's memory of the letters is then tested by them selecting letters from a provided letter matrix.



CVLT-II
California Verbal Learning Test®
Second Edition • Adult Version

California Verbal Learning Test–Second Edition

Dean C. Delis Joel H. Kramer Edith Kaplan Beth A. Ober

Standard Form

150

[redacted] ID#: _____ Examiner: _____

	Year	Month	Day
Date Tested			

[redacted]

	Raw Score	Standard Score		Raw Score	Standard Score
Trial 1 Free Recall **Correct**			Long-Delay Free Recall **Correct**		
Trial 2 Free Recall **Correct**			Long-Delay Cued Recall **Correct**		
Trial 3 Free Recall **Correct**			Free-Recall **Intrusions** (Immediate & Delayed, All Types)		
Trial 4 Free Recall **Correct**			Cued-Recall **Intrusions** (All Types)		
Trial 5 Free Recall **Correct**			Total **Intrusions** (All Recall Trials, All Types)		
Trials 1–5 Free Recall Total **Correct**		(*T* score)	Total **Repetitions** (All Recall Trials)		
List B Free Recall **Correct**			Long-Delay Yes/No Recognition **Hits**		
Short-Delay Free Recall **Correct**			Long-Delay Yes/No Recognition **False-Positives**		
Short-Delay Cued Recall **Correct**			Long-Delay Forced-Choice Recognition **Accuracy** (# hits _____/16) × 100	%	

PEARSON

PsychCorp

Product Number 0154035742

List A Immediate Free Recall Trial 1

I'm going to read a list of words to you. Listen carefully, because when I'm through, I want you to tell me as many of the words as you can. You can say them in any order, just say as many of them as you can. Are you ready?

Read List A at an even pace, taking slightly longer than one second per word, so the entire list takes 18 to 20 seconds. Then say: Go ahead.

Trial 2

I'm going to read the same list again. Like before, tell me as many of the words as you can, in any order. Be sure to also say words from the list that you told me the first time.

Trials 3 and 4

I'm going to read the same list again. Like before, tell me as many of the words as you can, in any order, including words from the list you've said before.

Trial 5

I'm going to read the same list one more time. Like before, tell me as many of the words as you can, in any order, including words from the list you've said before.

Record all responses verbatim, in the order recalled. Prompt only once (e.g., Anything else?) at the end of each free and cued recall trial (i.e., after 15 seconds with no response or when the examinee says he/she cannot remember more words).

List A

truck
spinach
giraffe
bookcase
onion
motorcycle
cabinet
zebra
subway
lamp
celery
cow
desk
boat
squirrel
cabbage

	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5
Resp Type					
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
Total Correct C					
Total Repetitions R					
Total Intrusions I					

List B Immediate Free Recall

Now I'm going to read a second list of words to you. When I'm through, I want you to tell me as many words from this second list as you can, in any order. Don't tell me words from the first list, just this second list.

Read List B at an even pace, taking slightly longer than one second per word, so the entire list takes 18 to 20 seconds. Then say: Go ahead.

List A Short-Delay Free Recall

Now I want you to tell me all the words you can from the *first* list, the one I read to you several times. Don't tell me words from the second list, just the first list. Go ahead.

List A Short-Delay Cued Recall

Tell me all the words from the first list that are furniture.
Tell me all the words from the first list that are vegetables.
Tell me all the words from the first list that are ways of traveling.
Tell me all the words from the first list that are animals.

Record all responses verbatim, in the order recalled. Prompt only once (e.g., Anything else?) at the end of each free and cued recall trial (i.e., after 15 seconds with no response or when the examinee says he/she cannot remember more words).

List B
violin
cucumber
elephant
closet
turnip
guitar
basement
sheep
clarinet
garage
corn
rabbit
patio
saxophone
tiger
radishes

Trial B

		Resp Type
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

Total Correct C
Total Repetitions R
Total Intrusions I

List A

		Resp Type
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

Total Correct C
Total Repetitions R
Total Intrusions I

Furniture

		Resp Type
1		
2		
3		
4		
5		
6		
7		
8		

Vegetables

		Resp Type
1		
2		
3		
4		
5		
6		
7		
8		

Ways of Traveling

		Resp Type
1		
2		
3		
4		
5		
6		
7		
8		

Animals

		Resp Type
1		
2		
3		
4		
5		
6		
7		
8		

Total Correct C
Total Repetitions R
Total Intrusions I

*There should be approximately a **20-minute delay** between the completion of Short-Delay Cued Recall and the start of Long-Delay Free Recall. Do not inform the examinee that there will be later CVLT–II trials.*

List A Long-Delay Free Recall

I read two different lists of words to you earlier: a first list that I read to you several times, and a second list that I read to you once. Tell me all the words you can that were from the *first* list. Don't tell me words from the second list, just the first list. Go ahead.

List A

		Resp Type
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

Total Correct C ____

Total Repetitions R ____

Total Intrusions I ____

List A Long-Delay Cued Recall

Tell me all the words from the first list that are furniture.
Tell me all the words from the first list that are vegetables.
Tell me all the words from the first list that are ways of traveling.
Tell me all the words from the first list that are animals.

Furniture	Resp Type	Vegetables	Resp Type	Ways of Traveling	Resp Type	Animals	Resp Type
1		1		1		1	
2		2		2		2	
3		3		3		3	
4		4		4		4	
5		5		5		5	
6		6		6		6	
7		7		7		7	
8		8		8		8	

Total Correct C ____ Total Repetitions R ____ Total Intrusions I ____

List A Long-Delay Yes/No Recognition

Now I'm going to read more words to you. After I read each one, say "Yes" if that word was from the first list, or say "No" if it was not from the first list.

If the examinee responds "I don't know" during Yes/No Recognition, say, "Tell me whether you think _____ was on the first list."

	Response	Item Type
wallet	Y N	UN
boat	Y N	T
saxophone	Y N	BN
cucumber	Y N	BS
giraffe	Y N	T
carrot	Y N	PR
patio	Y N	BN
cabbage	Y N	T
desk	Y N	T
bracelet	Y N	UN
car	Y N	PR
elephant	Y N	BS

	Response	Item Type
violin	Y N	BN
cow	Y N	T
fork	Y N	UN
bus	Y N	PR
celery	Y N	T
lamp	Y N	T
radishes	Y N	BS
table	Y N	PR
rose	Y N	UN
motorcycle	Y N	T
sheep	Y N	BS
basement	Y N	BN

	Response	Item Type
dog	Y N	PR
bookcase	Y N	T
matches	Y N	UN
spinach	Y N	T
clarinet	Y N	BN
truck	Y N	T
rabbit	Y N	BS
chair	Y N	PR
corn	Y N	BS
seashell	Y N	UN
garage	Y N	BN
squirrel	Y N	T

	Response	Item Type
turnip	Y N	BS
cabinet	Y N	T
onion	Y N	T
lion	Y N	PR
camera	Y N	UN
guitar	Y N	BN
subway	Y N	T
tiger	Y N	BS
coffee	Y N	UN
zebra	Y N	T
lettuce	Y N	PR
closet	Y N	BN

T = Target
Distractor Types: BS = List B Shared; BN = List B Non-Shared; PR = Prototypical; UN = Unrelated

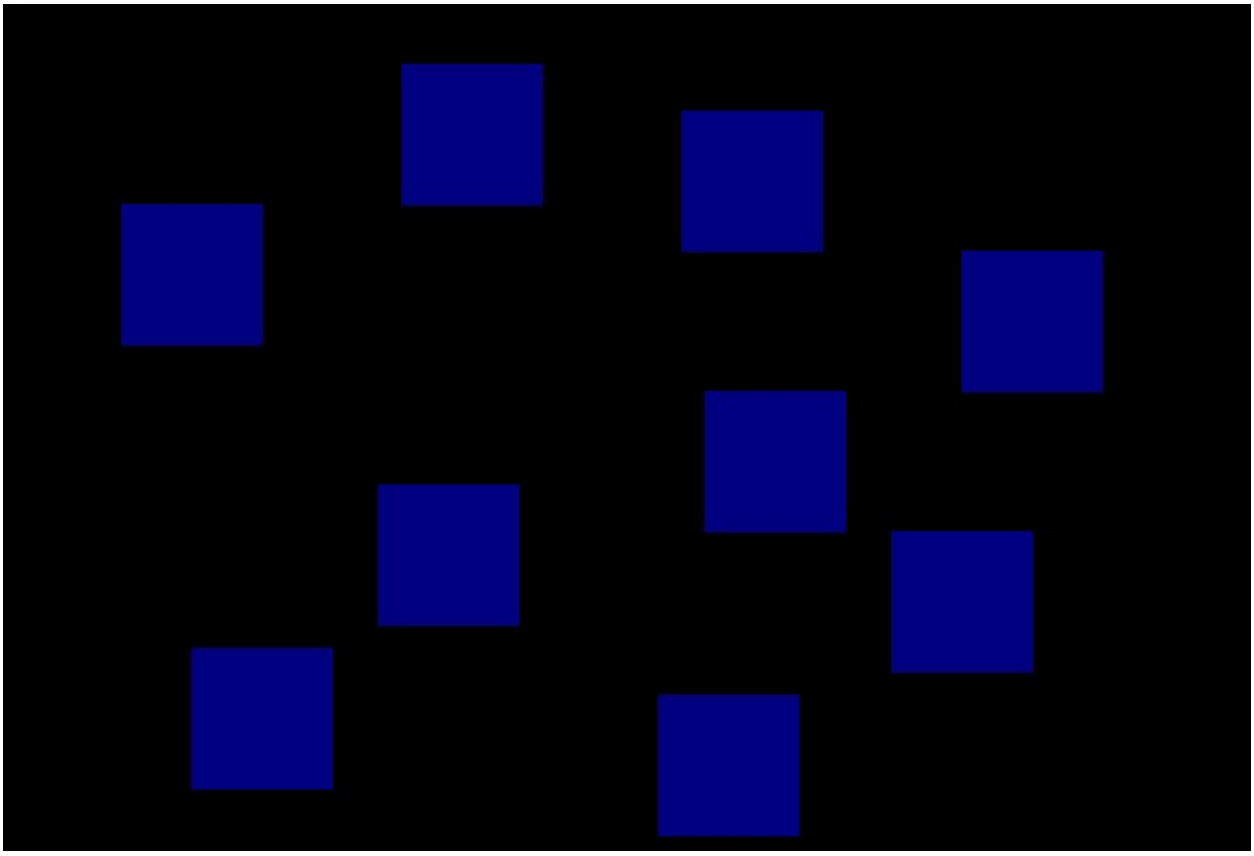
Total Hits ____

Total False-Positives ____

*There should be approximately a **10-minute delay** between the completion of Yes/No Recognition and the start of Forced-Choice Recognition. Do not inform the examinee that there will be a later CVLT–II trial.*

Corsi Blocks

In this task participants will see boxes randomly placed on the screen. Boxes will light up and afterwards participants will be asked to recreate the order the boxes were lit in.

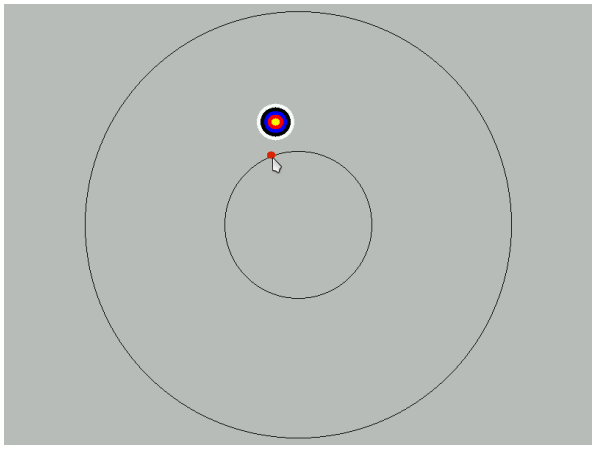


Finger Tapping Test

Participants will be asked to press the space bar as many times as they can in a 10 second interval on 5 consecutive trials for both hands starting with the dominant hand.

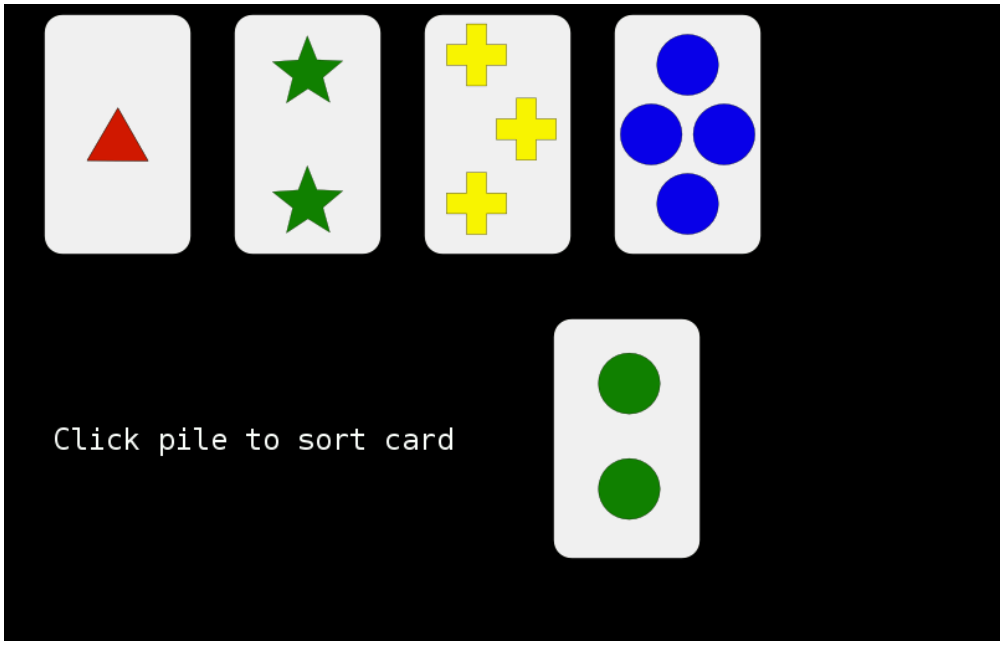
Manual Dexterity

Participants are asked to move a cursor to specific locations on the screen under different levels of jitter-noise. Participants will complete 80 trials in blocks of 10 trials. Each block will be set to one of the eight different jitter-noise conditions.



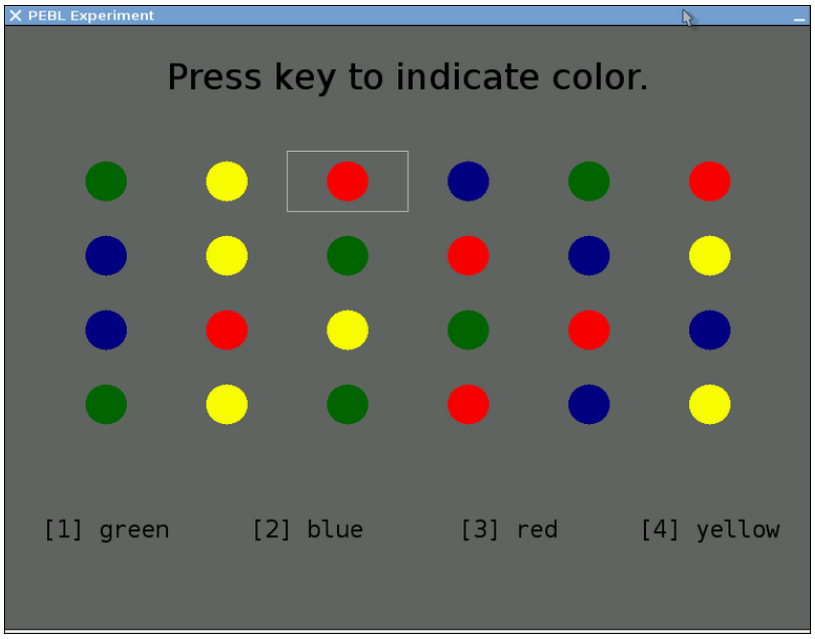
Berg Card Sorting Test

Participants will see 4 piles of cards and be asked to put new cards into the correct pile. Participants will not be told which cards go in which pile, the goal of the task is for the participant to figure out the rule through feedback on whether their responses are correct or incorrect. Throughout the test the rule may change without warning and the participant will need to pay attention to pick up on the change and adapt their responses.



Victoria Stroop

The Victoria Stroop Task uses three screens made of four rows of six colored items containing only the colors red, green, blue, and yellow. For the purpose of the game the number keys 1-4 are linked to one of the colors. For each screen participants must press the correct number keys as fast they can to name the color of each item in the rows starting at the beginning of the first row. For the first screen the rows will be made of colored dots, for the second screen the rows will be made of neutral words (i.e., *when, hard, and, over*) printed in color, and the final screen will have the color names printed in colors not corresponding to the words themselves. The computer based task will only allow the participant to move to the next colored item on each screen only after they have pressed the correct number key.



Go/No Go Task

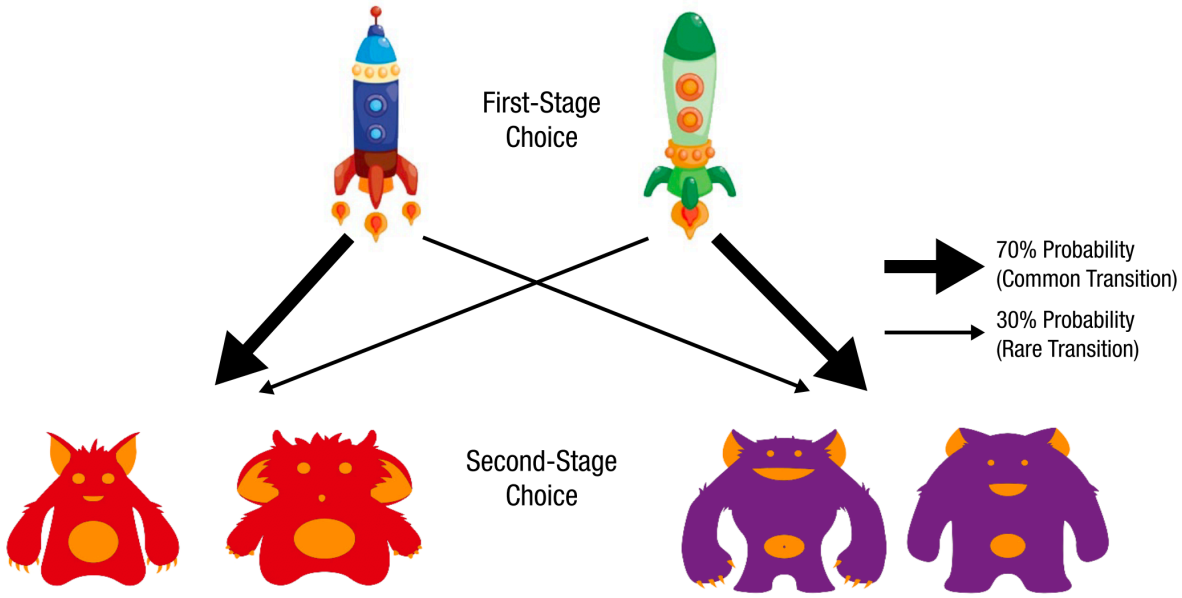
This task is designed to measure the ability to withhold a response, and has been designed to have a military relevance. Participants will have to decide whether or not to press a response button depending on 1) the context scene (urban or rural) and 2) the color of the soldier's uniform in the image (tan or green). At the beginning of the task, participants will be shown images of an urban scene or of a rural scene, and each image will have a solider in either a tan or green uniform. Participants will be told that some images will be "shoot" images and other images will be "no-shoot" images. They will need to decide if the context is a "shoot" or "no-shoot" situation. They will be required to press a response button to "shoot" when the images depict 1) an urban scene with the solider wearing a tan uniform and 2) a rural scene with the solider wearing a green uniform. Participants will withhold a response ("no-shoot") when the images depict 1) an urban scene with the solider wearing a green uniform and 2) a rural scene with the solider wearing a tan uniform.

"No-Shoot"

"Shoot"

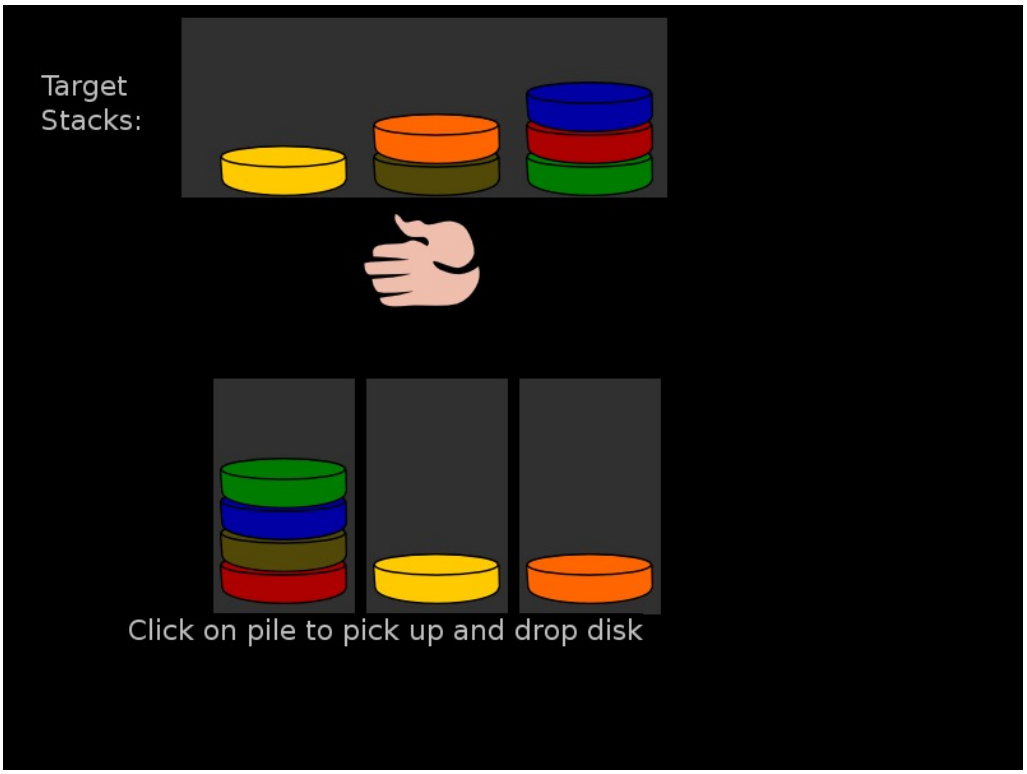
Two Step Task

In this task participants will have the option on each trial to pick between two spaceships. Each spaceship if chosen has a certain probability of leading to a specific planet. On each planet is two aliens and each if selected has a probability of either awarding the participant with a treasure or not. The task consists of 200 trials split into four fifty trial blocks following the pattern described above.



Tower of London

Participants will be shown a stack of rings and will be asked to copy the pattern shown using another stack of rings. The participant will be asked to move the stack of rings using the fewest moves possible to recreate the example shown.



Cognitive Reflection Test

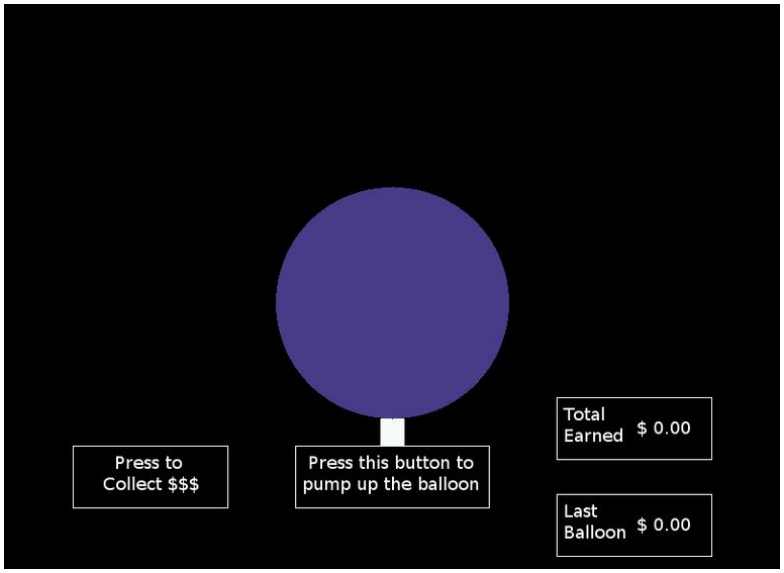
Please complete the survey below.

Thank you!

A bat and a ball cost $1.10 in total. The bat costs $1 more than the ball. How much does the ball cost?	_____
In a lake, there is a patch of lily pads. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half of the lake?	_____ (days)
If it takes five machines five minutes to make five widgets, how long does it take 100 machines to make 100 widgets?	_____ (minutes)
Score	_____

Balloon Analog Risk Task

In this task participants are told they can earn money for blowing up a balloon. Every time they click a button the balloon will inflate and the amount of money they can earn increases by a set amount that is the same for all trials. If the balloon pops, the participant will not receive any money on that trial. If the participant decides to stop before the balloon pops, they will earn whatever money they have earned during the trial. All money earned during this game is hypothetical and will not be given to the participant. It will be explained to the participant that any money they earn during the game will be used to calculate their bonus earnings.



60 Seconds to Survival

60 Seconds to Survival is a video-game style screen based simulation intended primarily for paramedics and EMTs. In the simulation, participants must perform primary disaster triage for both child and adult disaster victims, in a time limited setting in which some patients can wait, others are critically ill or injured, and still others are deceased as a result of the event. Scenarios encountered in the simulation include a school shooting, a multiple-family house fire, and the aftermath of a mall struck by a tornado. The simulation was designed by paramedics, pediatric emergency medicine physicians, and educational design experts. The work was sponsored by a grant from the federal agency Emergency Medical Services for Children.

The *Moral Competence Test* (MCT)*
- English version -

* formerly called *Moral Judgment Test* (MJT), German: MUT

The MCT is designed for research and for the evaluation of programs and policies only. It is **not** designed as an instrument for evaluating people, groups of people or individual institutions, or for the use as a high-stakes test. Such use represents a case of *misuse*. The MCT can be applied with participants with average schooling from age of 11 years upward. Disadvantaged subjects may require some adaption of the administration of the MCT.

The MCT has been constructed on the basis of Lind´s *Dual Aspect Theory* of moral judgment and development to assess subjects' moral judgment competence. Though it uses Lawrence Kohlberg´s (1964, p. 425) definitions, the MCT employs a different psychological and psychometric theory. For more details please visit this web-site: *http//www.uni-konstanz.de/ag-moral/.*

In pretest-posttest-studies, test weariness may be a problem, resulting in a lowering of the C-score on the retest. The following instruction helps to avoid this problem: "Some of the questions will be the same as you have been given the first time. We want to know whether your thoughts have changed. Please fill them out as sincerely as you did the first time."

This version of the MCT, which has been in use since 1977, was slightly revised in December 2001, replacing "acceptability" judgments by "acceptance" and "rejection" judgments, and in June 2007, modifying the language of the stories (of the English version only) for more reading ease using the Flesch-Kincaid grade level formula. I wish to thank Dr. Michael Hauan and Mrs. Kirsten Byrnes, respectively, for their suggestions.

Change (July 31, 2009): Old: "The doctor complied with the wish of the woman." New: "The doctor decided to give her an overdose of morphine". I felt that we cannot know whether the doctor "complied" or did it for other reasons.

Correction (Feb. 5, 2015): Item 15, missing word "ignore" added in the question.

Note: Do <u>not</u> publish this test without written consent by the author.

[1]Contact: em. Prof. Dr. Georg Lind,E-mail: *Georg.Lind@uni-konstanz.de*.
Web site: *http://www.uni-konstanz.de/ag-moral/*

Dear participant,

On the following pages you will find two short stories. In both stories someone has to make a decision. You will be asked: What do you think about that decision?

After each decision you will find reasons pro and contra this decision. You will be asked: Do you agree with these reasons or reject them?

Please respond to all questions. Do not skip any. There is no time limit. But do hesitate too long, either.

Please do not write down your name anywhere.

I will repeat this survey with you sometime. In order to able to couple your answers I need some information. Enter always two letters or digits only.

Please turn over

(Instruction for second MCT administration, e.g. in evaluation studies)

What follows are the two stories which you know already. You will also be given the same questions as the first time, so we can see whether your responses have changed.

Please turn over

Workers

Recently a company fired some people for unknown reasons. Some workers think that their bosses are listening in on their private conversations through cameras and microphones in the building and using the information against them. The bosses say that they are not listening in. The workers cannot legally do anything until they can prove that their bosses are listening in on their conversations.

Two workers then break into the main office and take the tapes that prove their bosses were listening in.

1. Would you agree or disagree with the workers' action ...

I strongly disagree — I strongly agree

-3	-2	-1	0	1	2	3

How acceptable do you find the following arguments *in favor* of the two workers' action? Suppose someone argued they were *right* for breaking in . . .

I strongly reject — I strongly accept

2. because they didn't cause much damage to the company.

-4	-3	-2	-1	0	1	2	3	4

3. because the company did not follow the law that says that they should not listen in, the actions of the two workers were allowed to bring back law and order.

-4	-3	-2	-1	0	1	2	3	4

4. because most of the workers would approve of their action and many would be happy about it.

-4	-3	-2	-1	0	1	2	3	4

5. because trust between people and individual dignity count more than the company's rules.

-4	-3	-2	-1	0	1	2	3	4

6. because the company had done something wrong first by listening in, the two workers were right in breaking into the main office.

-4	-3	-2	-1	0	1	2	3	4

7. because the two workers saw no legal ways of proving the company misused their trust by listening in, and therefore chose what they considered the lesser of two evils.

-4	-3	-2	-1	0	1	2	3	4

How acceptable do you find the following arguments against the two workers´ actions? Suppose someone argued they were wrong for breaking in . . .

I strongly reject — I strongly accept

8. because if everyone acted as the two workers did, we would be going against law and order in our society.

-4	-3	-2	-1	0	1	2	3	4

9. because a person must not break such a basic right as the right to protection of property and take the law into one's own hands, unless there is universal moral principle that says it is o.k. to do so.

-4	-3	-2	-1	0	1	2	3	4

10. because risking getting fired from the company in order to help other workers is not very smart.

-4	-3	-2	-1	0	1	2	3	4

11. because the two workers should have used all the legal ways available to them without breaking a law.

-4	-3	-2	-1	0	1	2	3	4

12. because a person doesn't steal if he wants to be considered decent and honest.

-4	-3	-2	-1	0	1	2	3	4

13. because the firing of other workers had nothing to do with them, the two workers had no reason to steal the tapes.

-4	-3	-2	-1	0	1	2	3	4

Doctor

A woman had cancer and she had no hope of being saved. She was in terrible pain and was so weak that a large dose of a painkiller such as morphine would have caused her to die. During a brief period of improvement, she begged the doctor to give her enough morphine to kill her. She said she could no longer stand the pain and would be dead in a few weeks anyway. After some thinking, the doctor decided to give her an overdose of morphine.

14. Do you agree or disagree with the doctor's action?

I strongly disagree — I strongly agree

-3	-2	-1	0	1	2	3

How acceptable do you find the following arguments in favor of the doctor's actions? Suppose someone said he acted in a right way . . .

15. because the doctor had to act according to his conscience and what he believed was right. The woman's pain made it right for the doctor to ignore his moral obligation to preserve life.

16. because the doctor was the only one who could do what the woman asked; respect for her wish made him act the way he did.

17. because the doctor only did what the woman talked him into doing. He does not need to worry about negative consequences.

18. because the woman would have died anyway and it didn't take much effort for him to give her an overdose of a painkiller

19. because the doctor didn't really break the law. Nobody could have saved the woman and he only wanted to shorten her suffering.

20. because most of his fellow doctors would most probably have done the same thing in a similar situation.

I strongly reject — I strongly accept

-4	-3	-2	-1	0	1	2	3	4

How acceptable do you find the arguments presented *against* the doctor's action? Suppose someone said that he acted in a *wrong* way. . .

21. because he acted opposite to other doctors´ beliefs. If the rest of them are against mercy-killing, then the doctor shouldn't have done it.

22. because a person should be able to have complete faith in a doctor's commitment to save every life even if someone with great pain would rather die.

23. because protection of life is everyone's highest moral duty. We have no clear moral way of telling the difference between mercy-killing and plain murder.

24. because the doctor could get himself into a lot of trouble. Other doctors were punished before for doing the same thing.

25. because he could have had it much easier if he had waited and not interfered with the woman's dying.

26. because the doctor broke the law. If a person thinks that mercy-killing is illegal, then one should refuse such requests from the patient.

I strongly reject — I strongly accept

-4	-3	-2	-1	0	1	2	3	4

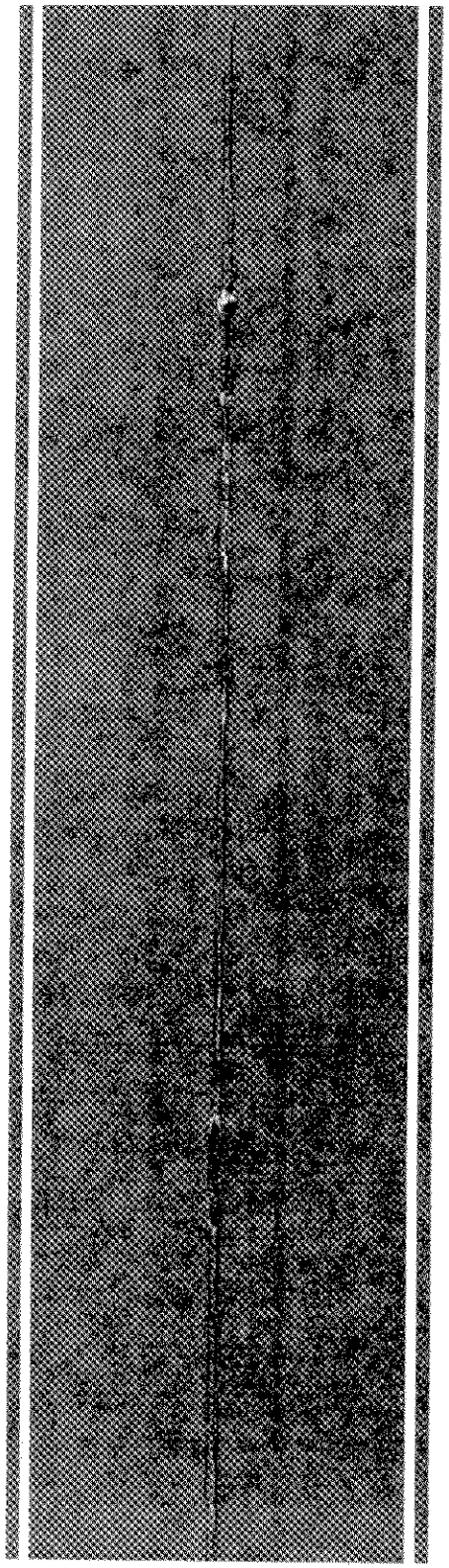
27. How difficult was it for you to fill out this questionnaire?

Not difficult at all — Very difficult

0	1	2	3	4	5	6	7	8

28. Roughly how much time did it take you to fill it out? _____ minutes

Thank you!



TASK LOAD INDEX

(NASA-TLX)

V 1.0

NASA
Ames Research Center

NASA TASK LOAD INDEX (TLX)

v. 1.0

Paper and Pencil Package

Human Performance Research Group
NASA Ames Research Center
Moffett Field, California
(415)694-6072

Appendix D.

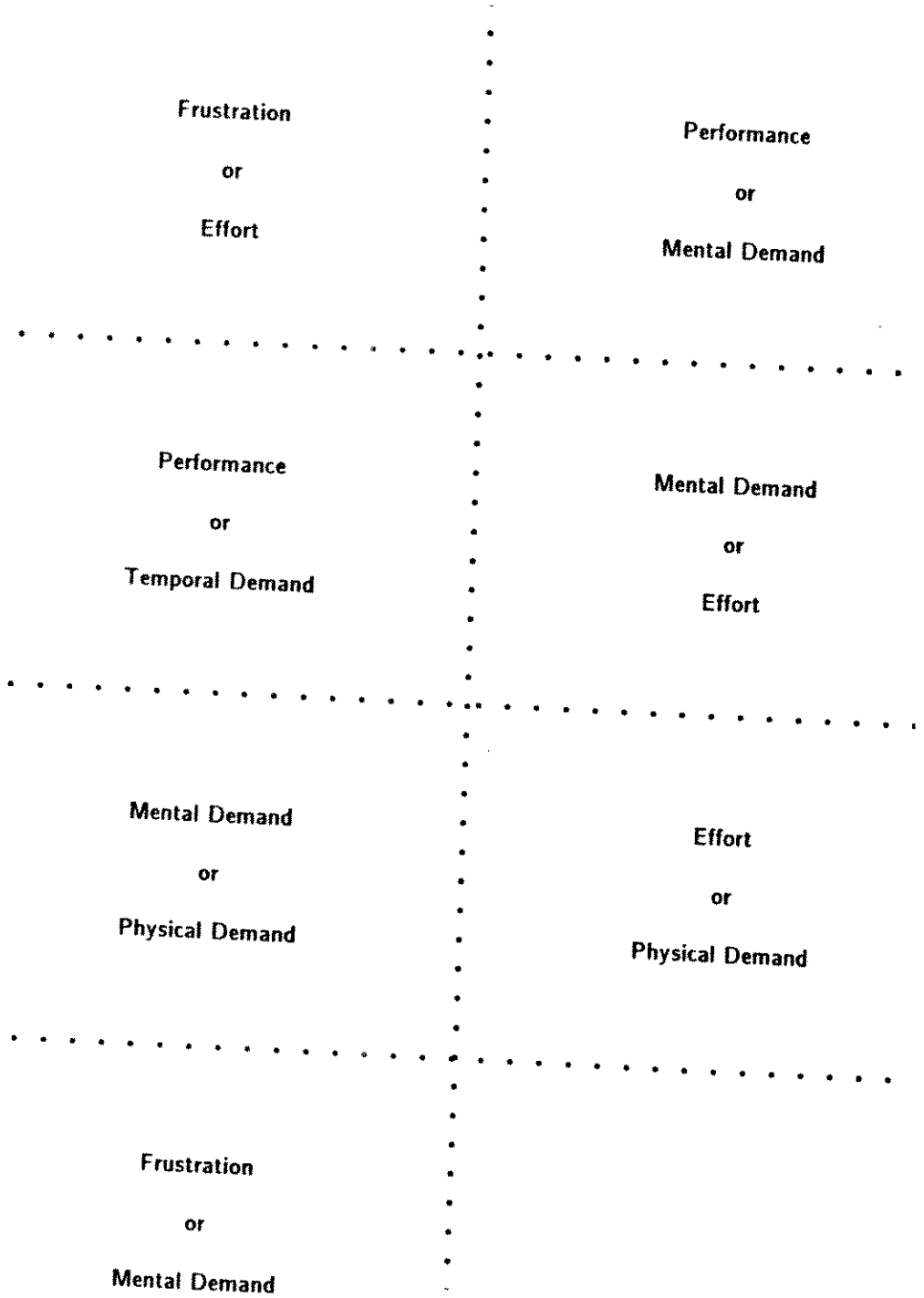
Subject ID: _____ **Date:** _____

SOURCES-OF-WORKLOAD TALLY SHEET		
Scale Title	*Tally*	*Weight*
MENTAL DEMAND		
PHYSICAL DEMAND		
TEMPORAL DEMAND		
PERFORMANCE		
EFFORT		
FRUSTRATION		

Total count = _____

(NOTE - The total count is included as a check. If the total count is not equal to 15, then something has been miscounted. Also, no weight can have a value greater than 5.)

Table of Contents



NASA Task Load Index (NASA-TLX)
Version 1.0

Paper and Pencil Package

This booklet contains the materials necessary to collect subjective workload assessments with the NASA Task Load Index. This procedure for collecting workload ratings was developed by the Human Performance Group at NASA Ames Research Center during a three year research effort that involved more than 40 laboratory, simulation, and inflight experiments. Although the technique is still undergoing evaluation, this booklet is being distributed to allow other researchers to use it in their own experiments. Comments or suggestions about the procedure would be greatly appreciated. This package is intended to fill a "nuts and bolts" function of describing the procedure. A bibliography provides background information about previous empirical findings and the logic that supports the procedure.

1. BACKGROUND

The NASA Task Load Index is a multi-dimensional rating procedure that provides an overall workload score based on a weighted average of ratings on six subscales: Mental Demands, Physical Demands, Temporal Demands, Own Performance, Effort, and Frustration. A definition of each subscale is provided in Appendix A.

An earlier version of the scale had nine subscales. It was designed to reduce between-rater variability by using the *a priori* workload definitions of subjects to weight and average subscale ratings. This technique (referred to as the "NASA Bipolar Rating Scale") was quite successful in reducing between-rater variability, and it provided diagnostic information about the magnitudes of different sources of load from subscale ratings (Hart, Battiste, & Lester, 1984; Vidulich & Tsang, 1985a & b). However, its sensitivity to experimental manipulations, while better than found for other popular techniques and for a global unidimensional workload rating, was still not considered sufficient. In addition, it was felt that nine subscales are too many, making the scale impractical to use in a simulation or operational environment. Finally, several of the subscales were found to be irrelevant to workload (e.g., Fatigue) or redundant (e.g., Stress and Frustration). For these reasons, the NASA Task Load Index was developed. Some of the subscales from the original scale were revised or combined, others deleted.

Appendix B.

Sources-of-Workload Comparison Cards

The Task Load Index has been tested in a variety of experimental tasks that range from simulated flight to supervisory control simulations and laboratory tasks (e.g., the Sternberg memory task, choice reaction time, critical instability tracking, compensatory tracking, mental arithmetic, mental rotation, target acquisition, grammatical reasoning, etc.). The results of the first validation study are summarized in Hart & Staveland (in press). The derived workload scores have been found to have substantially less between-rater variability than unidimensional workload ratings, and the subscales provide diagnostic information about the sources of load.

2.2. Sources of Load (Weights)

The NASA Task Load Index is a two-part evaluation procedure consisting of both weights and ratings. The first requirement is for each rater to evaluate the contribution of each factor (its weight) to the workload of a specific task. These weights account for two potential sources of between-rater variability: differences in workload definition between raters within a task, and differences in the sources of workload between tasks. In addition, the weights themselves provide diagnostic information about the nature of the workload imposed by the task.

There are 15 possible pair-wise comparisons of the six scales (Apppendix B). Each pair is presented on a card. Subjects circle the member of each pair that contributed more to the workload of that task. The number of times that each factor is selected is tallied. The tallies can range from 0 (not relevant) to 5 (more important than any other factor).

A different set of weights is obtained for each distinctly different task or task element upon its completion. The same set of weights can be used for many different versions of the same task if the contributions of the six factors to their workload is fairly similar. For example, the same set of weights was used for many different versions of a target acquisition task in which time pressure, target acquisition difficulty, and decision making load were varied. Obtaining separate weights for different experimental manipulations increased the sensitivity of the derived workload score only slightly, and did not warrant the additional time required to gather them. On the other hand, the weights obtained from the same subjects for a compensatory tracking task or a memory search task would not have been appropriate for the target acquisition task.

7. SUBJECT INSTRUCTIONS: SOURCES-OF-WORKLOAD EVALUATION

Throughout this experiment the rating scales are used to assess your experiences in the different task conditions. Scales of this sort are extremely useful, but their utility suffers from the tendency people have to interpret them in individual ways. For example, some people feel that mental or temporal demands are the essential aspects of workload regardless of the effort they expended on a given task or the level of performance they achieved. Others feel that if they performed well the workload must have been low and if they performed badly it must have been high. Yet others feel that effort or feelings of frustration are the most important factors in workload; and so on. The results of previous studies have already found every conceivable pattern of values. In addition, the factors that create levels of workload differ depending on the task. For example, some tasks might be difficult because they must be completed very quickly. Others may seem easy or hard because of the intensity of mental or physical effort required. Yet others feel difficult because they cannot be performed well, no matter how much effort is expended.

The evaluation you are about to perform is a technique that has been developed by NASA to assess the relative importance of six factors in determining how much workload you experienced. The procedure is simple: You will be presented with a series of pairs of rating scale titles (for example, Effort vs. Mental Demands) and asked to choose which of the items was more important to your experience of workload in the task(s) that you just performed. Each pair of scale titles will appear on a separate card.

Circle the Scale Title that represents the more important contributor to workload for the specific task(s) you performed in this experiment.

After you have finished the entire series we will be able to use the pattern of your choices to create a weighted combination of the ratings from that task into a summary workload score. Please consider your choices carefully and make them consistent with how you used the rating scales during the particular task you were asked to evaluate. Don't think that there is any *correct* pattern; we are only interested in your opinions.

If you have any questions, please ask them now. Otherwise, start whenever you are ready. Thank you for your participation.

the number of task conditions (including practice).

3.4. Weights

Subjects complete the "Sources-of-Workload Evaluation" once for each task or group of tasks included in the experiment that share a common structure (although difficulty levels may vary). For example, in an experiment with several memory tasks and several tracking tasks, two Sources-of-Workload Evaluations would be performed: one for the memory tasks and one for the tracking tasks. One set of cards should be made in advance of the experiment for each subject X evaluation condition combination. The pairs of factors should be cut apart and presented individually in a different, randomly selected, order to each subject. Subject instructions for doing the Sources-of-Workload Evaluation are in Section 7. (Note that the exact time when the weights are obtained is not critical. However, in order for them to provide useful information, they must be obtained after at least some exposure to the relevant task conditions.)

3.5. Summary

Following this procedure, you should end up with: (1) a set of workload weights from each subject for each group of similar tasks, and (2) at least one rating sheet for each subject for each experimental task. Typically, we have run within-subject experiments and therefore ended up with a larger number of rating sheets for each subject.

To conserve paper and speed up the subsequent analysis, we often enclose the Rating Sheet and the Sources-of-Workload comparison cards in clear plastic. Subjects mark the scales with an erasable felt tip marker. Immediately after they are marked, the experimenter transfers the responses onto the appropriate form or worksheet. Then the plastic sheets are cleaned and reused. If this procedure is followed, *DOUBLE CHECK YOURSELF BEFORE ERASING THE SUBJECT'S RESPONSES!*

4. DATA ANALYSIS PROCEDURE

The procedure for computing a weighted workload score follows:

Vidulich, M. A., & Tsang, P. S. (1986). Collecting NASA Workload Ratings: A Paper and Pencil Package. Working Paper. Moffett Field, CA: NASA Ames Research Center.

Vidulich, M. A. & Tsang, P. S. (in press). Techniques of subjective workload assessment: A comparison of SWAT and the NASA Bipolar Method. *Ergonomics*.

Yeh, Y.-Y., & Wickens, C. D. (1985). The effect of varying task difficulty on subjective workload. In *Proceedings of the Human Factors Society 29th Annual Meeting*. (pp. 765-769). Santa Monica, CA: Human Factors Society.

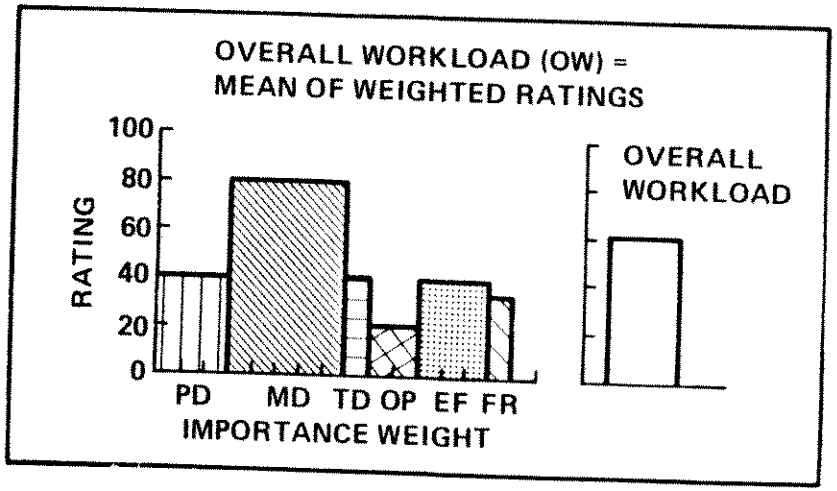


Figure 1: Graphic example of the composition of a weighted workload score

written to gather ratings and weights, and compute the weighted workload scores. These are available upon request from NASA Ames Research Center. However, if this is not a viable option, all the necessary materials are included in this booklet. If you have any questions, comments, or suggestions please do not hesitate to contact us. This procedure is still under evaluation and we are always looking for new ideas.

5. BIBLIOGRAPHY

Biferno, M. A. (1985). *Mental workload measurement: Event-related potentials and ratings of workload and fatigue* (NASA CR 177354). Moffett Field, CA: NASA Ames Research Center.

Bortolussi, M. R., Kantowitz, B. H., & Hart, S. G. (1985). Measuring pilot workload in a motion base trainer: A comparison of four techniques. In R. S. Jensen & J. Adrion (Eds.), *Proceedings of the Third Symposium on Aviation Psychology* (pp. 263-270). Columbus, OH: OSU Aviation Psychology Laboratory.

Hart, S. G., Battiste, V., & Lester, P. T. (1984). Popcorn: A supervisory control simulation for workload and performance research. In *Twentieth Annual Conference on Manual Control* (pp. 431-454). Washington, D.C.: NASA Conference Publication 2341.

Hart, S. G., Battiste, V., Chesney, M. A., Ward, M. M., and McElroy, M. (1986). Comparison of workload, performance, and cardiovascular measures: Type A personalities vs Type B. Working paper. Moffett Field, CA: NASA Ames Research Center.

Hart, S. G., Sellers, J. J., & Guthart, G. (1984). The impact of response selection and response execution difficulty on the subjective experience of workload. *Proceedings of the 28th Annual Meeting of the Human Factors Society* (pp. 732-736). Santa Monica, CA: Human Factors Society.

Hart, S. G., Shively, R. J., Vidulich, M. A., & Miller, R. C. (1986). The effects of stimulus modality and task integrality: Predicting dual-task performance and workload from single-task levels. In *Twenty-First Annual Conference on Manual Control* (pp. 5.1-5.18). Washington, D. C.: NASA Conference Publication 2428.

Hart, S. G., & Staveland, L. E. (In press). Development of a multi-dimensional workload rating scale: Results of empirical and theoretical research. In P. A. Hancock & N. Meshkati (Eds.), *Human Mental Workload*. Amsterdam, The Netherlands: Elsevier.

Haworth, L. A., Bivens, C. C., & Shively, R. J. (1986). An investigation of single-piloted advanced cockpit and control configurations for nap-of-the-earth helicopter combat mission tasks. *Proceedings of the 1986 Meeting of the American Helicopter Society* (pp. 657-672). Washington, D.C.

Kantowitz, B. H., Hart, S. G., Bortolussi, M. R., Shively, R. J., & Kantowitz, S. C. (1984). Measuring pilot workload in a moving-base simulator: II Building levels of workload. In *Twentieth Annual Conference on Manual Control* (pp. 359-372). Washington, D.C.: NASA Conference Publication 2341.

Miller, R. C., & Hart, S. G. (1984). Assessing the subjective workload of directional orientation tasks. In *Twentieth Annual Conference on Manual Control* (pp. 85-95). Washington, D.C.: NASA Conference Publication 2341.

Mosier, K. L., & Hart, S. G. (1986). Levels of information processing in a Fitts Law task (LIPFitts). In *Twenty-First Annual Conference on Manual Control* (pp. 4.1-4.15). Washington, D.C.: NASA Conference Publication 2428.

Staveland, L. E., Hart, S. G., & Yeh, Y.-Y. (1986). Memory and subjective workload assessment. In *Twenty-First Annual Meeting on Manual Control*. (pp. 7.1-7.13). Washington, D.C.: NASA Conference Publication 2428.

Vidulich, M. A., & Tsang, P. S. (1985a). Techniques of subjective workload assessment: A comparison of two methodologies. In R. S. Jensen & J. Adrion (Eds.), *Proceedings of the Third Symposium on Aviation Psychology* (pp. 239-246). Columbus, OH: OSU Aviation Psychology Laboratory.

Vidulich, M. A., & Tsang, P. S. (1985b). Assessing subjective workload assessment: A comparison of SWAT and the NASA-Bipolar methods. *Proceedings of the Human Factors Society 29th Annual Meeting*. (pp. 71-75). Santa Monica, CA: Human Factors Society.

1.1. Tally Sheet

For each subject, the "Sources-of-Workload Tally Sheet" (Appendix D) is used to compute the weight for each factor. The scorer simply leafs through the evaluation cards and puts a mark on the appropriate row of the tally column for each response of the subject (e.g., each time the subject circled "Mental Demand" on a comparison card, the experimenter would put a mark in the "Mental Demand" row of the tally column). After going through the Sources-of-Workload evaluation, the experimenter adds the tallies for each scale and writes the totals in the "Weight" column.

1.2. Worksheet

The Weight column from the tally sheet is then transferred to the "Weighted Rating Worksheet" (Appendix E). Each subject would have his or her individual workload parameters count placed on a separate worksheet for the appropriate task or set of similar tasks. If subjects rated more than one task, the appropriate number of copies of the worksheet should be made. Ratings are placed in the "Raw Rating" column of the worksheet. The "Adjusted Rating" is formed by multiplying the Raw Rating by the Sources-of-Workload Weight. The adjusted ratings are summed across the different scales. The sum is divided by 15 to obtain the overall weighted workload score for the subject in that one task condition.

The weighted ratings are then used as a dependent measure in whatever type of analyses the experimenter chooses.

Figure 1 depicts the composition of a weighted workload score graphically. The bar graph on the left represents six subscale ratings. The width of the subscale bars reflects the importance of each factor (its weight), and the height represents the magnitude of each factor (its rating) in a particular task. The weighted workload score (the bar on the right) represents the average *area* of the subscale bars.

1.3. Summary

The above procedure, although simple, can be laborious for a large experiment. Thus it is highly advantageous to computerize the procedure. A set of programs that run on IBM-PC compatible machines has been

6. SUBJECT INSTRUCTIONS: RATING SCALES

We are not only interested in assessing your performance but also the experiences you had during the different task conditions. Right now we are going to describe the technique that will be used to examine your experiences. In the most general sense we are examining the "workload" you experienced. Workload is a difficult concept to define precisely, but a simple one to understand generally. The factors that influence your experience of workload may come from the task itself, your feelings about your own performance, how much effort you put in, or the stress and frustration you felt. The workload contributed by different task elements may change as you get more familiar with a task, perform easier or harder versions of it, or move from one task to another. Physical components of workload are relatively easy to conceptualize and evaluate. However, the mental components of workload may be more difficult to measure.

Since workload is something that is experienced individually by each person, there are no effective "rulers" that can be used to estimate the workload of different activities. One way to find out about workload is to ask people to describe the feelings they experienced. Because workload may be caused by many different factors, we would like you to evaluate several of them individually rather than lumping them into a single global evaluation of overall workload. This set of six rating scales was developed for you to use in evaluating your experiences during different tasks. Please read the descriptions of the scales carefully. If you have a question about any of the scales in the table, please ask me about it. It is extremely important that they be clear to you. You may keep the descriptions with you for reference during the experiment.

After performing each of the tasks, you will be given a sheet of rating scales. You will evaluate the task by putting an "X" on each of the six scales at the point which matches your experience. Each line has two endpoint descriptors that describe the scale. Note that "own performance" goes from "good" on the left to "bad" on the right. This order has been confusing for some people. Please consider your responses carefully in distinguishing among the different task conditions. Consider each scale individually. Your ratings will play an important role in the evaluation being conducted, thus, your active participation is essential to the success of this experiment and is greatly appreciated by all of us.

2.3. Magnitude of Load (Ratings)

The second requirement is to obtain numerical ratings for each scale that reflect the magnitude of that factor in a given task. The scales are presented on a rating sheet (Appendix C). Subjects respond by marking each scale at the desired location. In operational situations, rating sheets or verbal responses are more practical, while a computerized version (available from NASA Ames Research Center) is more efficient for most simulation and laboratory settings. Ratings may be obtained either during a task, after task segments, or following an entire task. Each scale is presented as a 12-cm line divided into 20 equal intervals anchored by bipolar descriptors (e.g., High/Low). The 21 vertical tick marks on each scale divide the scale from 0 to 100 in increments of 5. If a subject marks between two ticks, the value of the right tick is used (i.e., round up).

2.4. Weighting and Averaging Procedure

The overall workload score for each subject is computed by multiplying each rating by the weight given to that factor by that subject. The sum of the weighted ratings for each task is divided by 15 (the sum of the weights). (See Appendix D and E for a sample Tally Sheet and Worksheet.)

3. EXPERIMENTAL PROCEDURE

The usual sequence of events for collecting data with the NASA Task Load Index is as follows:

3.1. Instructions

Subjects read the scale definitions and instructions. A set of generic instructions is included in Section 6. Some modifications may be necessary depending on your situation.

3.2. Familiarization

Subjects practice using the rating scales after performing a few tasks to insure that they have developed a standard technique for dealing with the scales.

3.3. Ratings

Subjects perform the experimental tasks, providing ratings on the six subscales following all task conditions of interest. The number of rating sheets needed equals the number of subjects X

RATING SCALE DEFINITIONS

Title	Endpoints	Descriptions
MENTAL DEMAND	*Low/High*	How much mental and perceptual activity was required (e.g., thinking, deciding, calculating, remembering, looking, searching, etc.)? Was the task easy or demanding, simple or complex, exacting or forgiving?
PHYSICAL DEMAND	*Low/High*	How much physical activity was required (e.g., pushing, pulling, turning, controlling, activating, etc.)? Was the task easy or demanding, slow or brisk, slack or strenuous, restful or laborious?
TEMPORAL DEMAND	*Low/High*	How much time pressure did you feel due to the rate or pace at which the tasks or task elements occurred? Was the pace slow and leisurely or rapid and frantic?
PERFORMANCE	*good/poor*	How successful do you think you were in accomplishing the goals of the task set by the experimenter (or yourself)? How satisfied were you with your performance in accomplishing these goals?
EFFORT	*Low/High*	How hard did you have to work (mentally and physically) to accomplish your level of performance?
FRUSTRATION LEVEL	*Low/High*	How insecure, discouraged, irritated, stressed and annoyed versus secure, gratified, content, relaxed and complacent did you feel during the task?

and two added. Three dimensions relate to the demands imposed on the subject (Mental, Physical, and Temporal Demands) and three to the interaction of a subject with the task (Effort, Frustration, and Performance).

Although it is clear that definitions of workload do indeed vary among experimenters and among subjects (contributing to confusion in the workload literature and between-rater variability), it was found that the specific sources of loading imposed by different tasks are an even more important determinant of workload experiences. Thus, the current version of the scale (the Task Load Index) combines subscale ratings that are weighted according to their subjective importance to raters in a specific task, rather than their *a priori* relevance to raters' definitions of workload in general.

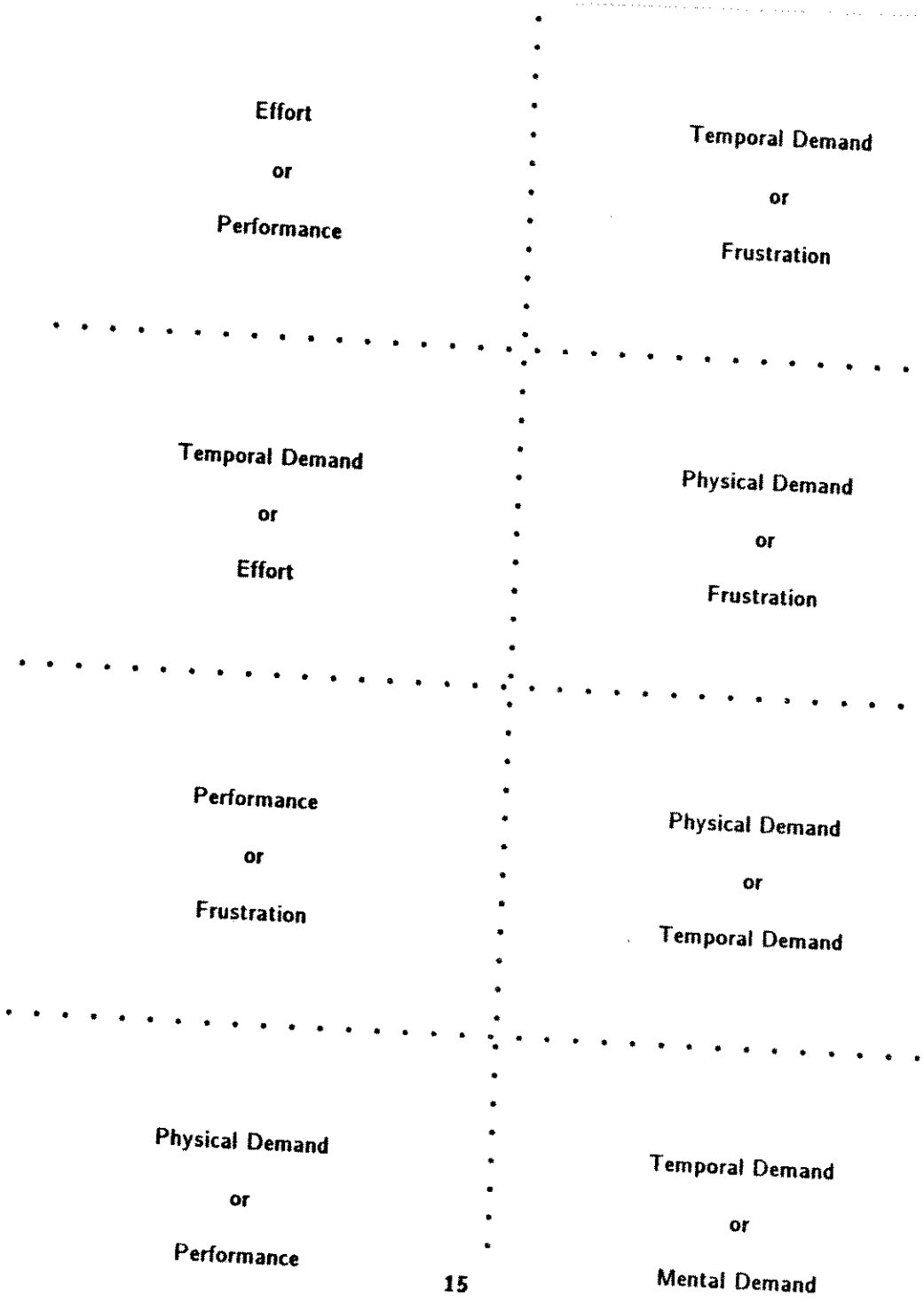
2. DESCRIPTION

2.1. General Information

The degree to which each of the six factors contribute to the workload of the specific task to be evaluated, from the raters' perspectives, is determined by their responses to pair-wise comparisons among the six factors. Magnitude ratings on each subscale are obtained after each performance of a task or task segment. Ratings of factors deemed most important in creating the workload of a task are given more weight in computing the overall workload score, thereby enhancing the sensitivity of the scale.

The weights and ratings may or may not covary. For example, it is possible for mental demands to be the primary source of loading for a task, even though the magnitude of the mental demands might be low. Conversely, the time pressure under which a task is performed might be the primary source of its workload, and the time demands might be rated as being high for some versions of the task and low for others.

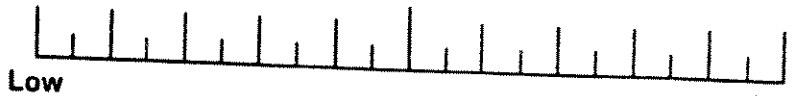
Since subjects can give ratings quickly, it may be possible to obtain them in operational settings. However, a videotaped replay or computer regeneration of the operator's activities may be presented as a mnemonic aid that can be stopped after each segment to obtain ratings retospectively. It was shown in a helicopter simulation and in a supervisory control simulation (Hart, Battiste, Chesney, Ward, & McElroy, 1986; Haworth, Bivens, and Shively, 1986) that little information was lost when ratings were given retrospectively; a high correlation was found between ratings that were obtained "online" and those that were obtained retrospectively with a visual re-creation of the task.



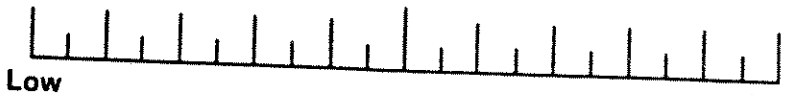
Subject ID: _____ Task ID: _____

RATING SHEET

MENTAL DEMAND

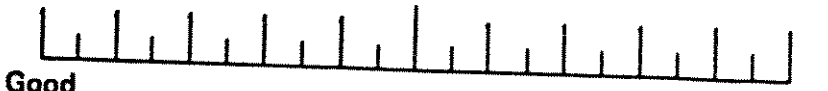


PHYSICAL DEMAND

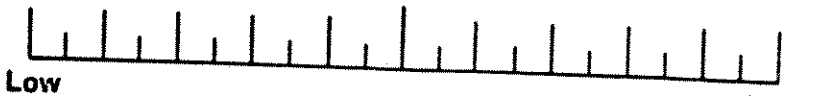


TEMPORAL DEMAND

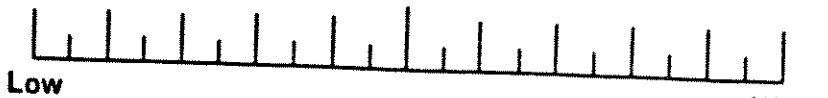
PERFORMANCE



EFFORT



FRUSTRATION



Appendix E

Subject ID: _____ **Task ID:** _____

WEIGHTED RATING WORKSHEET			
Scale Title	*Weight*	*Raw Rating*	*Adjusted Rating* (Weight X Raw)
MENTAL DEMAND			
PHYSICAL DEMAND			
TEMPORAL DEMAND			
PERFORMANCE			
EFFORT			
FRUSTRATION			

Sum of "Adjusted Rating" Column = _____

WEIGHTED RATING =
[i.e., (Sum of Adjusted Ratings)/15]

Emotional State and Personality: A Proof-of-Concept Model for Predicting Performance Under Stress

Log Number: A-20131; Award Number: W81XWH-17-C-0088

PI: William Killgore, Ph.D. **Org:** University of Arizona **Award Amount:** $1,231,091

Study/Product Aim(s)

Aim 1: Identify key personality dimensions that interact with emotional state to influence cognitive task performance to develop a predictive model.

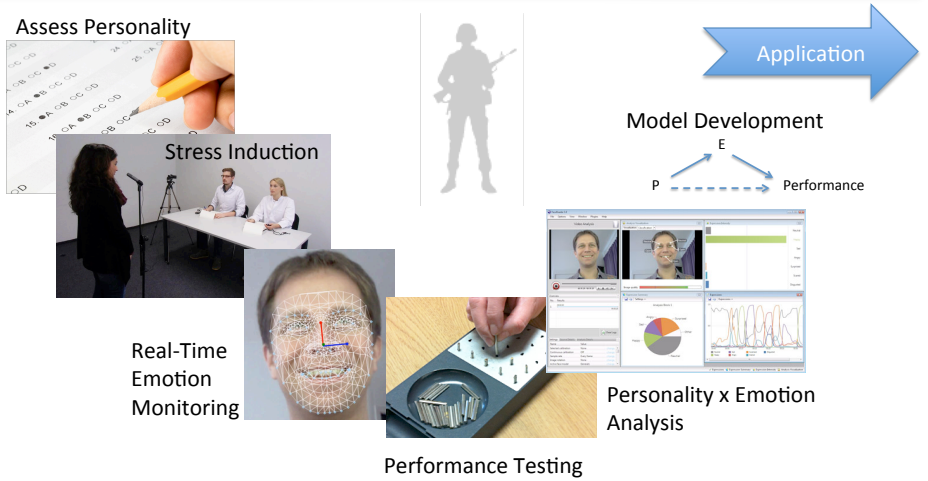
Aim 2: Determine the validity and generalizability of the predictive model under sleep deprivation and novel stressors.

Approach

Study 1: 120 healthy participants will complete personality questionnaires prior to undergoing a social stress paradigm. During the stress protocol, subjects will undergo mood induction (negative, neutral, or positive) and complete a variety of neurocognitive assessments.

Study 2: 48 healthy participants will undergo a sleep deprivation protocol and mood induction procedure with novel stressors while completing personality and neurocognitive assessments.

A model that predicts performance under stress based on emotion and personality variables will be developed and cross-validated.



Accomplishments: Phase 1 protocol has received all IRB approvals, personnel are hired and trained, and equipment has been purchased. Data collection is underway. Phase 1 data collection is 76% complete. Phase II protocol has been submitted to local IRB for approval.

Timeline and Cost

Activities	CY17	CY18	CY19
Complete IRB/HRPO Approval			
Procure Equipment			
Hiring/Training			
Data Collection: Study 1 (n = 120)			
Develop Predictive Model			
Data Collection: Study 2 (n = 48)			
Apply Predictive Model for Cross-Validation			
Analysis/Publication			
Estimated Total Budget ($K)	$154	$616	$461

Updated: 25 SEP 2018

Goals/Milestones

CY17 Goals – Complete IRB/HRPO Approval/Procure Equipment

☑ Obtain Local IRB Approvals

☑ Obtain HRPO Approvals

☑ Obtain all necessary equipment/hire and train personnel

CY17 Goal – Initiate Phase I

☑ Begin collecting data for predictive model (76% complete)

CY18 Goal – Complete Phase I

☐ Finish Phase I Data collection

☐ Develop and cross-validate predictive model

CY19 Goal – Complete Phase II

☐ Collect data for sleep deprivation stress study (Phase II)

☐ Apply predictive model for cross-validation

☐ Publish findings/provide model for next phase of development

Budget Expenditure to Date

Projected Expenditure: $615,000

Actual Expenditure: $488,116

Curriculum Vitae

DATE PREPARED: **September 8, 2018**

NAME: WILLIAM DALE (SCOTT) KILLGORE

OFFICE ADDRESS: 7303B
Department of Psychiatry
University of Arizona HSC
1501 North Campbell Ave.
PO Box 245002
Tucson, AZ 85724 United States

[redacted]

WORK PHONE: (520) 621-0605

WORK EMAIL: Killgore@psychiatry.arizona.edu

WORK FAX: (520) 626-6050

[redacted]

CHRONOLOGY OF EDUCATION

8/83 - 5/85 A.A. (Liberal Arts), San Antonio College
8/83 - 5/85 A.A.S (Radio-TV-Film), San Antonio College
8/85 - 5/90 B.A. (Psychology), *Summa cum laude* with Distinction, University of New Mexico
8/90 - 5/92 M.A. (Clinical Psychology), Texas Tech University
8/92 - 8/96 Ph.D. (Clinical Psychology), Texas Tech University
Dissertation Title: *Development and validation of a new instrument for the measurement of transient mood states: The facial analogue mood scale (FAMS)*. Lubbock, TX: Texas Tech University;1995. Advisor: Bill Locke, Ph.D.

POST-DOCTORAL TRAINING

8/95 - 7/96 Predoctoral Fellow, Clinical Psychology, Yale School of Medicine
8/96 - 7/97 Postdoctoral Fellow, Clinical Neuropsychology, University of OK Health Sciences Center
8/97 - 7/99 Postdoctoral Fellow, Clinical Neuropsychology, University of Pennsylvania Medical School
7/99 - 9/00 Research Fellow, Neuroimaging, McLean Hospital/ Harvard Medical School
9/13 - 5/14 Certificate in Applied Biostatistics, Harvard Medical School

LICENSURE/CERTIFICATION

2001 - Licensed Psychologist, #966, State of New Hampshire

CHRONOLOGY OF EMPLOYMENT

Academic Appointments

10/00 - 8/02	Instructor in Psychology in the Department of Psychiatry Harvard Medical School, Boston, MA
9/02 - 7/07	Clinical Instructor in Psychology in the Department of Psychiatry Harvard Medical School, Boston, MA
8/07 - 10/10	Instructor in Psychology in the Department of Psychiatry Harvard Medical School, Boston, MA
4/08-	Faculty Affiliate, Division of Sleep Medicine Harvard Medical School, Boston, MA
10/10 - 10/12	Assistant Professor of Psychology in the Department of Psychiatry Harvard Medical School, Boston, MA
10/12 - 6/14	Associate Professor of Psychology in the Department of Psychiatry Harvard Medical School, Boston, MA
7/14-	Associate Professor of Psychology in the Department of Psychiatry (part-time) Harvard Medical School, Boston, MA
7/14-	Professor of Psychiatry—Tenured University of Arizona College of Medicine, Tucson, AZ
7/14-	Professor of Medical Imaging University of Arizona College of Medicine, Tucson, AZ
9/14-	Professor of Psychology University of Arizona College of Science, Tucson, AZ

Hospital/Clinical/Institutional Appointments

10/00 - 8/02	Assistant Research Psychologist, McLean Hospital, Belmont, MA
8/02 - 7/04	Research Psychologist, Department of Behavioral Biology, Walter Reed Army Institute of Research, Silver Spring, MD
7/04 - 10/07	Chief, Neurocognitive Performance Branch, Walter Reed Army Institute of Research, Silver Spring, MD
10/07 - 3/10	DoD Contractor, Chief Psychologist, GovSource, Inc., U.S. Department of Defense (DoD)
8/08	Consulting Psychologist, The Brain Institute, University of Utah
9/02 - 4/05	Special Volunteer, National Institute on Deafness and Other Communication Disorders (NIDCD), National Institutes of Health (NIH), Bethesda, MD
9/02 - 7/07	Research Consultant, McLean Hospital, Belmont, MA
8/05 - 5/06	Neuropsychology Postdocotoral Research Program Training Supervisor, Walter Reed Hospital, Washington, DC
8/07 -	Research Psychologist, McLean Hospital, Belmont, MA
7/10 - 6-11	DoD Contractor, Consulting Psychologist, Clinical Research Management (CRM)
7/11 - 6/14	Director, Social Cognitive, and Affective Neuroscience (SCAN) Laboratory, McLean Hospital, Belmont, MA
7/14-	Director, Social, Cognitive, and Affective Neuroscience (SCAN) Laboratory, University of Arizona, Tucson, AZ
3/16 -	ORISE Knowledge Preservation Fellow; Walter Reed Army Institute of Research, Silver Spring, MD

Military Positions

11/01 - 8/02	First Lieutenant, Medical Service Corps, United States Army Reserve (USAR)
8/02 - 7/05	Captain, Medical Service Corps, United States Army-Active Regular Army (RA)
8/05 - 10/07	Major, Medical Service Corps, United States Army-Active Regular Army (RA)
10/07 - 7/12	Major, Medical Service Corps, United States Army Reserve (USAR)
7/12 -	Lieutenant Colonel, Medical Service Corps, United States Army Reserve (USAR)
3/16 -	Deputy Consultant to the Surgeon General of the Army (SGA) for 71F Research Psychology, US Army Reserves

HONORS AND AWARDS

1990	Outstanding Senior Honors Thesis in Psychology, University of New Mexico
1990-1995	Maxey Scholarship in Psychology, Texas Tech University
2001	Rennick Research Award, Co-Author, International Neuropsychological Society
2002	Honor Graduate, AMEDD Officer Basic Course, U.S. Army Medical Department Center and School
2002	Lynch Leadership Award Nominee, AMEDD Officer Basic Course, U.S. Army Medical Department Center and School
2003	Outstanding Research Presentation Award, 2003 Force Health Protection Conference, U.S. Army Center for Health Promotion and Preventive Medicine
2003	Who's Who in America
2004	Who's Who in Medicine and Healthcare
2005	Edward L. Buescher Award for Excellence in Research by a Young Scientist, Walter Reed Army Institute of Research (WRAIR) Association
2009	Merit Poster Award, International Neuropsychological Society
2009	Outstanding Research Presentation Award, 2009 Force Health Protection Conference, U.S. Army Center for Health Promotion and Preventive Medicine
2010	Best Paper Award, Neuroscience, 27th U.S. Army Science Conference
2011	Published paper included in *Best of Sleep Medicine 2011*
2011	Blue Ribbon Finalist, 2011 Top Poster Award in Clinical and Translational Research, Society of Biological Psychiatry
2012	Defense Advance Research Projects Agency (DARPA) Young Faculty Award in Neuroscience
2014	Blue Ribbon Finalist, 2014 Top Poster Award in Basic Neuroscience, Society of Biological Psychiatry
2014	Harvard Medical School Excellence in Mentoring Award Nominee
2014	AASM Young Investigator Award (co-author), Honorable Mention, American Academy of Sleep Medicine
2018	Abstract Merit Award (co-author), Sleep Research Society.

SERVICE/OUTREACH

Local/State Service/Outreach

2003	Scientific Review Committee, Walter Reed Army Institute of Research (WRAIR), Silver Spring, MD

2005 Scientific Review Committee, Walter Reed Army Institute of Research (WRAIR), Silver Spring, MD
2012- McLean Hospital Research Committee, McLean Hospital, Belmont, MA
2016- House Ad Hoc Committee on Treatment of Traumatic Brain Injuries and Benefits of Hyperbaric Oxygen Therapy, Arizona House of Representatives

National/International Service/Outreach

2004 University of Alabama, Clinical Nutrition Research Center (UAB CNRC) Pilot/Feasibility Study Program Review Committee
2006 U.S. Small Business Administration, Small Business Technology Transfer (STTR) Program Review Committee
2006 Cognitive Performance Assessment Program Area Steering Committee, U.S. Army Military Operational Medicine Research Program Funding Panel
2006 External Member, Doctoral Thesis Committee, Belinda J. Liddle, Ph.D., University of Sydney, Australia
2007 Cognitive Performance Assessment Program Area Steering Committee, U.S. Army Military Operational Medicine Research Program Funding Panel
2008 United States Army Medical Research and Materiel Command (USAMRMC) Congressionally Directed Medical Research Programs (CDMRP) Extramural Grant Review Panel
2009 NIH-CSR Brain Disorders and Clinical Neuroscience N02 Member Study Conflict Section Review Panel
2009 Sleep Physiology and Fatigue Interventions Program Area Steering Committee, U.S. Army Military Operational Medicine Research Program
2009 Scotland, UK, Biomedical and Therapeutic Research Committee, Grant Reviewer
2010 Canada, Social Sciences and Humanities Research Council of Canada, Grant Reviewer
2011 National Science Foundation (NSF) Grant Reviewer
2011- National Network of Depression Centers (NNDC), Military Task Group
2011 Israel, Israel Science Foundation (ISF), Grant Reviewer
2011 Scientific Review Committee, US Army Institute of Environmental Medicine (USARIEM)
2012 National Science Foundation (NSF) Grant Reviewer
2012- American Academy of Sleep Medicine, Member
2013 Israel, Israel Science Foundation (ISF), Grant Reviewer
2014- Organization for Human Brain Mapping, Member
2015- Human Affectome Project Advisory Board Member
2016- Sleep Research Society Member
2017-2018 External Reviewer, Doctoral Thesis Reviewer, Kalina R. Rossa, Queensland University of Technology, Australia.
2018 Marsden Fund Council Grant Proposal Referee, Royal Society Te Aparangi, New Zealand.

Departmental Committees

2006 Chair, Undergraduate Honors Thesis Committee, Jessica Richards, Department of Psychology, University of Maryland, Baltimore County, MD
2012- Member, Research Committee, McLean Hospital, Belmont, MA
2014 Psychiatry Senior Research Manager Candidate Search Committee, Department of Psychiatry, University of Arizona, Tucson, AZ

2014-2015 Member, Faculty Search Committee, Department of Psychology, University of Arizona, Tucson, AZ.

2014-2016 Member, Comprehensive Examination Committee, Natalie Bryant, Department of Psychology, University of Arizona, Tucson, AZ

2014-2015 Chair/Research Faculty Mentor, Undergraduate Honors Thesis Committee, Haley Kent, Department of Biochemistry, University of Arizona, Tucson, AZ

2014- Member, Psychiatry Research Investigator Committee, Department of Psychiatry, University of Arizona, Tucson, AZ.

2015 Member, Dissertation Committee, Ryan S. Smith, Ph.D., Department of Psychology, University of Arizona, Tucson AZ.

2015 Imaging Excellence Cluster Hire Search Committee, Department of Medical Imaging, University of Arizona, Tucson, AZ

2015- Member, Mentoring Committee, Department of Psychiatry, University of Arizona, Tucson, AZ

2016- Member, Chief of Neuroradiology Faculty Search Committee, Department of Medical Imaging, University of Arizona, Tucson, AZ

2016-2017 Member, Dissertation Committee, Brian Arizmendi, Department of Psychology, University of Arizona, Tucson, AZ

2016-2017 Member, Masters Thesis Committee, Saren Seeley, Department of Psychology, University of Arizona, Tucson, AZ

2016-2017 Member, Masters Thesis Committee, Mairead McConnell, Department of Psychology, University of Arizona, Tucson, AZ

2016- Member, Masters Thesis Committee, John Vanuk, Department of Psychology, University of Arizona, Tucson, AZ

2016-2017 Faculty Advisor, Undergraduate Honor Thesis Committee, Matthew Nettles, Neuroscience/Cognitive Science, University of Arizona, Tucson, AZ

2016- Scientific Review Committee, Department of Psychiatry, University of Arizona, Tucson, AZ

2017- Faculty Advisor, Undergraduate Honors Thesis Committee, Debby Waugaman, Psychology, University of Arizona, Tucson, AZ

2017- Faculty Advisor, Undergraduate Honors Thesis Committee, Jun Lee, Department of Psychology, University of Arizona, Tucson, AZ

2017- Chair, Psychiatry Research Committee, Department of Psychiatry, University of Arizona, Tucson, AZ

2017- Member, Promotion and Tenure Committee, Department of Psychiatry, University of Arizona, Tucson, AZ

2017- Member, Mentoring Committee, Department of Psychiatry, University of Arizona, Tucson, AZ

University Committees/Service

2014 Ad Hoc Member, Interview Committee for Defense and Security Research Institute Director Position, University of Arizona, Tucson, AZ.

2014- Member, Mechanisms of Emotion, Social Relationships, and Health Interdisciplinary Developing Research Program, Clinical and Translational Science Institute, BIO5, University of Arizona, Tucson, AZ

2015 Vice President's Executive Committee for Defense and Security Strategic Planning, University of Arizona, Tucson, AZ

2015-	MRI Operations Committee, University of Arizona, Tucson, AZ
2016	Faculty Mentor, Undergraduate Biology Research Program (UBRP), University of Arizona, Tucson, AZ
2016	Faculty Mentor, Border Latino & American Indian Summer Exposure to Research (BLAISER) Program, University of Arizona, Tucson, AZ
2016	Faculty Mentor, Medical Student Research Committee (MSRC) Program, University of Arizona College of Medicine, Tucson, AZ
2018	Department Chair Administrative Review Committee.

Editorial Board Membership

2009-	Editorial Board Member, International Journal of Eating Disorders
2012-	Editorial Board Member, Dataset Papers in Neuroscience
2012-	Editorial Board Member, Dataset Papers in Psychiatry
2012-	Editor, Journal of Sleep Disorders: Treatment and Care

Ad Hoc Journal Reviewer (99 Journals)

2001-2012	Reviewer, Psychological Reports
2001-2012	Reviewer, Perceptual and Motor Skills
2002	Reviewer, American Journal of Psychiatry
2002-2013	Reviewer, Biological Psychiatry
2003	Reviewer, Clinical Neurology and Neurosurgery
2004-2016	Reviewer, NeuroImage
2004-2006	Reviewer, Neuropsychologia
2004-2016	Reviewer, Journal of Neuroscience
2004	Reviewer, Consciousness and Cognition
2005	Reviewer, Experimental Brain Research
2005	Reviewer, Schizophrenia Research
2005-2012	Reviewer, Archives of General Psychiatry
2005	Reviewer, Behavioral Brain Research
2005-2009	Reviewer, Human Brain Mapping
2005-2013	Reviewer, Psychiatry Research: Neuroimaging
2006	Reviewer, Journal of Abnormal Psychology
2006	Reviewer, Psychopharmacology
2006	Reviewer, Developmental Science
2006	Reviewer, Acta Psychologica
2006, 2015	Reviewer, Neuroscience Letters
2006-2018	Reviewer, Journal of Sleep Research
2006-2016	Reviewer, Physiology and Behavior
2006-2018	Reviewer, SLEEP
2007	Reviewer, Journal of Clinical and Experimental Neuropsychology
2008	Reviewer, European Journal of Child and Adolescent Psychiatry
2008	Reviewer, Judgment and Decision Making
2008-2010	Reviewer, Aviation, Space, & Environmental Medicine
2008	Reviewer, Journal of Psychophysiology

2008	Reviewer, Brazilian Journal of Medical and Biological Research
2008	Reviewer, The Harvard Undergraduate Research Journal
2008	Reviewer, Bipolar Disorders
2008-2013	Reviewer, Chronobiology International
2008	Reviewer, International Journal of Obesity
2009	Reviewer, European Journal of Neuroscience
2009-2018	Reviewer, International Journal of Eating Disorders
2009	Reviewer, Psychophysiology
2009	Reviewer, Traumatology
2009	Reviewer, Clinical Medicine: Therapeutics
2009	Reviewer, Acta Pharmacologica Sinica
2009	Reviewer, Collegium Antropologicum
2009	Reviewer, Journal of Psychopharmacology
2009-2014	Reviewer, Obesity
2009	Reviewer, Scientific Research and Essays
2009	Reviewer, Child Development Perspectives
2009-2010	Reviewer, Personality and Individual Differences
2009-2010	Reviewer, Noise and Health
2009-2010	Reviewer, Sleep Medicine
2010	Reviewer, Nature and Science of Sleep
2010	Reviewer, Psychiatry and Clinical Neurosciences
2010	Reviewer, Learning and Individual Differences
2010	Reviewer, Cognitive, Affective, and Behavioral Neuroscience
2010	Reviewer, BMC Medical Research Methodology
2010-2011	Reviewer, Journal of Adolescence
2010-2012	Reviewer, Brain Research
2011	Reviewer, Brain
2011	Reviewer, Social Cognitive and Affective Neuroscience
2011	Reviewer, Journal of Traumatic Stress
2011	Reviewer, Social Neuroscience
2011-2014	Reviewer, Brain and Cognition
2011	Reviewer, Frontiers in Neuroscience
2011-2012	Reviewer, Sleep Medicine Reviews
2012	Reviewer, Journal of Experimental Psychology: General
2012	Reviewer, Ergonomics
2012-2017	Reviewer, Behavioral Sleep Medicine
2012	Reviewer, Neuropsychology
2012	Reviewer, Emotion
2012	Reviewer, JAMA
2012	Reviewer, BMC Neuroscience
2012-2015	Reviewer, Cognition and Emotion
2012	Reviewer, Journal of Behavioral Decision Making
2012	Reviewer, Psychosomatic Medicine
2012-2014	Reviewer, PLoS One
2012	Reviewer, American Journal of Critical Care
2012-2014	Reviewer, Journal of Sleep Disorders: Treatment and Care
2013	Reviewer, Experimental Psychology
2013	Reviewer, Clinical Interventions in Aging

2013	Reviewer, Frontiers in Psychology
2013	Reviewer, Brain Structure and Function
2013	Reviewer, Appetite
2013-2018	Reviewer, JAMA Psychiatry
2014	Reviewer, Acta Psychologica
2014	Reviewer, Neurology
2014	Reviewer, Applied Neuropsychology: Child
2014-2016	Reviewer, Journal of Applied Psychology
2015	Reviewer, Early Childhood Research Quarterly
2015	Reviewer, Behavioral Neuroscience
2015-2018	Reviewer, Scientific Reports
2016-2018	Reviewer, Neuroscience & Biobehavioral Reviews
2016	Reviewer, Psychological Science
2016	Reviewer, Medicine & Science in Sports and Exercise
2016	Reviewer, Archives of Clinical Neuropsychology
2016	Reviewer, Advances in Cognitive Psychology
2017	Reviewer, Data in Brief
2017	Reviewer, Neuroscience
2017-2018	Reviewer, Sleep Health
2017	Reviewer, Journal of Experimental Social Psychology
2017-2018	Reviewer, Neural Plasticity
2018	Reviewer, NeuroImage: Clinical
2018	Reviewer, Journal of Psychiatric Research

PUBLICATIONS/CREATIVE ACTIVITY

Refereed Journal Articles

1. **Killgore WD**. The Affect Grid: a moderately valid, nonspecific measure of pleasure and arousal. Psychol Rep. 83(2):639-42, 1998.

2. **Killgore WD**. Empirically derived factor indices for the Beck Depression Inventory. Psychol Rep. 84(3 Pt 1):1005-13, 1999.

3. **Killgore WD**. Affective valence and arousal in self-rated depression and anxiety. Percept Mot Skills. 89(1):301-4, 1999.

4. **Killgore WD**, Adams RL. Prediction of Boston Naming Test performance from vocabulary scores: preliminary guidelines for interpretation. Percept Mot Skills. 89(1):327-37, 1999.

5. **Killgore WD**, Gangestad SW. Sex differences in asymmetrically perceiving the intensity of facial expressions. Percept Mot Skills. 89(1):311-4, 1999.

6. **Killgore WD**. The visual analogue mood scale: can a single-item scale accurately classify depressive mood state? Psychol Rep. 85(3 Pt 2):1238-43, 1999.

7. **Killgore WD**, DellaPietra L, Casasanto DJ. Hemispheric laterality and self-rated personality traits. Percept Mot Skills. 89(3 Pt 1):994-6, 1999.

8. **Killgore WD**, Glosser G, Casasanto DJ, French JA, Alsop DC, Detre JA. Functional MRI and the Wada test provide complementary information for predicting post-operative seizure control. Seizure. 8(8):450-5, 1999.

9. **Killgore WD**. Evidence for a third factor on the Positive and Negative Affect Schedule in a college student sample. Percept Mot Skills. 90(1):147-52, 2000.

10. **Killgore WD**, Dellapietra L. Item response biases on the logical memory delayed recognition subtest of the Wechsler Memory Scale-III. Psychol Rep. 86(3 Pt 1):851-7, 2000.

11. **Killgore WD**, Casasanto DJ, Yurgelun-Todd DA, Maldjian JA, Detre JA. Functional activation of the left amygdala and hippocampus during associative encoding. Neuroreport. 11(10):2259-63, 2000.

12. Yurgelun-Todd DA, Gruber SA, Kanayama G, **Killgore WD**, Baird AA, Young AD. fMRI during affect discrimination in bipolar affective disorder. Bipolar Disord. 2(3 Pt 2):237-48, 2000.

13. **Killgore WD**. Sex differences in identifying the facial affect of normal and mirror-reversed faces. Percept Mot Skills. 91(2):525-30, 2000.

14. **Killgore WD**, DellaPietra L. Using the WMS-III to detect malingering: empirical validation of the rarely missed index (RMI). J Clin Exp Neuropsychol. 22(6):761-71, 2000.

15. **Killgore WD**. Academic and research interest in several approaches to psychotherapy: a computerized search of literature in the past 16 years. Psychol Rep. 87(3 Pt 1):717-20, 2000.

16. Maldjian JA, Detre JA, **Killgore WD**, Judy K, Alsop D, Grossman M, Glosser G. Neuropsychologic performance after resection of an activation cluster involved in cognitive memory function. AJR Am J Roentgenol. 176(2):541-4, 2001.

17. **Killgore WD**, Oki M, Yurgelun-Todd DA. Sex-specific developmental changes in amygdala responses to affective faces. Neuroreport. 12(2):427-33, 2001.

18. **Killgore WD**, Yurgelun-Todd DA. Sex differences in amygdala activation during the perception of facial affect. Neuroreport. 12(11):2543-7, 2001.

19. Casasanto DJ, **Killgore WD**, Maldjian JA, Glosser G, Alsop DC, Cooke AM, Grossman M, Detre JA. Neural correlates of successful and unsuccessful verbal memory encoding. Brain Lang. 80(3):287-95, 2002.

20. **Killgore WD**. Laterality of lesions and trait-anxiety on working memory performance. Percept Mot Skills. 94(2):551-8, 2002.

21. **Killgore WD**, Cupp DW. Mood and sex of participant in perception of happy faces. Percept Mot Skills. 95(1):279-88, 2002.

22. Yurgelun-Todd DA, **Killgore WD**, Young AD. Sex differences in cerebral tissue volume and cognitive performance during adolescence. Psychol Rep. 91(3 Pt 1):743-57, 2002.

23. Yurgelun-Todd DA, **Killgore WD**, Cintron CB. Cognitive correlates of medial temporal lobe development across adolescence: a magnetic resonance imaging study. Percept Mot Skills. 96(1):3-17, 2003.

24. **Killgore WD**, Young AD, Femia LA, Bogorodzki P, Rogowska J, Yurgelun-Todd DA. Cortical and limbic activation during viewing of high- versus low-calorie foods. Neuroimage. 19(4):1381-94, 2003.

25. **Killgore WD**, Yurgelun-Todd DA. Activation of the amygdala and anterior cingulate during nonconscious processing of sad versus happy faces. Neuroimage. 21(4):1215-23, 2004.

26. **Killgore WD**, Yurgelun-Todd DA. Sex-related developmental differences in the lateralized activation of the prefrontal cortex and amygdala during perception of facial affect. Percept Mot Skills. 99(2):371-91, 2004.

27. **Killgore WD**, Glahn DC, Casasanto DJ. Development and Validation of the Design Organization Test (DOT): a rapid screening instrument for assessing visuospatial ability. J Clin Exp Neuropsychol. 27(4):449-59, 2005.

28. **Killgore WD**, Yurgelun-Todd DA. Body mass predicts orbitofrontal activity during visual presentations of high-calorie foods. Neuroreport. 16(8):859-63, 2005.

29. Wesensten NJ, **Killgore WD**, Balkin TJ. Performance and alertness effects of caffeine, dextroamphetamine, and modafinil during sleep deprivation. J Sleep Res. 14(3):255-66, 2005.

30. **Killgore WD**, Yurgelun-Todd DA. Social anxiety predicts amygdala activation in adolescents viewing fearful faces. Neuroreport. 16(15):1671-5, 2005.

31. **Killgore WD**, Yurgelun-Todd DA. Developmental changes in the functional brain responses of adolescents to images of high and low-calorie foods. Dev Psychobiol. 47(4):377-97, 2005.

32. Kahn-Greene ET, Lipizzi EL, Conrad AK, Kamimori GH, **Killgore WD**. Sleep deprivation adversely affects interpersonal responses to frustration. Pers Individ Dif. 41(8):1433-1443, 2006.

33. McBride SA, Balkin TJ, Kamimori GH, **Killgore WD**. Olfactory decrements as a function of two nights of sleep deprivation. J Sens Stud. 24(4):456-63, 2006.

34. **Killgore WD**, Yurgelun-Todd DA. Ventromedial prefrontal activity correlates with depressed mood in adolescent children. Neuroreport. 17(2):167-71, 2006.

35. **Killgore WD**, Vo AH, Castro CA, Hoge CW. Assessing risk propensity in American soldiers: preliminary reliability and validity of the Evaluation of Risks (EVAR) scale--English version. Mil Med. 171(3):233-9, 2006.

36. **Killgore WD**, Balkin TJ, Wesensten NJ. Impaired decision making following 49 h of sleep deprivation. J Sleep Res. 15(1):7-13, 2006.

37. **Killgore WD**, Stetz MC, Castro CA, Hoge CW. The effects of prior combat experience on the expression of somatic and affective symptoms in deploying soldiers. J Psychosom Res. 60(4):379-85, 2006.

38. **Killgore WD**, McBride SA, Killgore DB, Balkin TJ. The effects of caffeine, dextroamphetamine, and modafinil on humor appreciation during sleep deprivation. Sleep. 29(6):841-7, 2006.

39. **Killgore WD**, McBride SA. Odor identification accuracy declines following 24 h of sleep deprivation. J Sleep Res. 15(2):111-6, 2006.

40. **Killgore WD**, Yurgelun-Todd DA. Affect modulates appetite-related brain activity to images of food. Int J Eat Disord. 39(5):357-63, 2006.

41. Kendall AP, Kautz MA, Russo MB, **Killgore WD**. Effects of sleep deprivation on lateral visual attention. Int J Neurosci. 116(10):1125-38, 2006.

42. Yurgelun-Todd DA, **Killgore WD**. Fear-related activity in the prefrontal cortex increases with age during adolescence: a preliminary fMRI study. Neurosci Lett. 406(3):194-9, 2006.

43. **Killgore WD**, Killgore DB, Ganesan G, Krugler AL, Kamimori GH. Trait-anger enhances effects of caffeine on psychomotor vigilance performance. Percept Mot Skills. 103(3):883-6, 2006.

44. **Killgore WD**, Yurgelun-Todd DA. Unconscious processing of facial affect in children and adolescents. Soc Neurosci. 2(1):28-47, 2007.

45. **Killgore WD**, Yurgelun-Todd DA. The right-hemisphere and valence hypotheses: could they both be right (and sometimes left)?. Soc Cogn Affect Neurosci. 2(3):240-50, 2007.

46. **Killgore WD**, Killgore DB. Morningness-eveningness correlates with verbal ability in women but not men. Percept Mot Skills. 104(1):335-8, 2007.

47. **Killgore WD**, Killgore DB, Day LM, Li C, Kamimori GH, Balkin TJ. The effects of 53 hours of sleep deprivation on moral judgment. Sleep. 30(3):345-52, 2007.

48. Rosso IM, **Killgore WD**, Cintron CM, Gruber SA, Tohen M, Yurgelun-Todd DA. Reduced amygdala volumes in first-episode bipolar disorder and correlation with cerebral white matter. Biol Psychiatry. 61(6):743-9, 2007.

49. Kahn-Greene ET, Killgore DB, Kamimori GH, Balkin TJ, **Killgore WD**. The effects of sleep deprivation on symptoms of psychopathology in healthy adults. Sleep Med. 8(3):215-21, 2007.

50. **Killgore WD**. Effects of sleep deprivation and morningness-eveningness traits on risk-taking. Psychol Rep. 100(2):613-26, 2007.

51. **Killgore WD**, Gruber SA, Yurgelun-Todd DA. Depressed mood and lateralized prefrontal activity during a Stroop task in adolescent children. Neurosci Lett. 416(1):43-8, 2007.

52. **Killgore WD**, Yurgelun-Todd DA. Positive affect modulates activity in the visual cortex to images of high calorie foods. Int J Neurosci. 117(5):643-53, 2007.

53. Vo AH, Satori R, Jabbari B, Green J, **Killgore WD**, Labutta R, Campbell WW. Botulinum toxin type-a in the prevention of migraine: a double-blind controlled trial. Aviat Space Environ Med. 78(5 Suppl):B113-8, 2007.

54. **Killgore WD**, Yurgelun-Todd DA. Neural correlates of emotional intelligence in adolescent children. Cogn Affect Behav Neurosci. 7(2):140-51, 2007.

55. **Killgore WD**, Kendall AP, Richards JM, McBride SA. Lack of degradation in visuospatial perception of line orientation after one night of sleep loss. Percept Mot Skills. 105(1):276-86, 2007.

56. **Killgore WD**, Lipizzi EL, Kamimori GH, Balkin TJ. Caffeine effects on risky decision making after 75 hours of sleep deprivation. Aviat Space Environ Med. 78(10):957-62, 2007.

57. **Killgore WD**, Richards JM, Killgore DB, Kamimori GH, Balkin TJ. The trait of Introversion-Extraversion predicts vulnerability to sleep deprivation. J Sleep Res. 16(4):354-63, 2007.

58. **Killgore WD**, Kahn-Green ET, Killgore DB, Kamimori GH, Balkin TJ. Effects of acute caffeine withdrawal on Short Category Test performance in sleep-deprived individuals. Percept Mot Skills. 105(3 pt.2):1265-74, 2007.

59. **Killgore WD**, Killgore DB, McBride SA, Kamimori GH, Balkin TJ. Odor identification ability predicts changes in symptoms of psychopathology following 56 hours of sleep deprivation. J Sensory Stud. 23(1):35-51, 2008.

60. **Killgore WD**, Rupp TL, Grugle NL, Reichardt RM, Lipizzi EL, Balkin TJ. Effects of dextroamphetamine, caffeine and modafinil on psychomotor vigilance test performance after 44 h of continuous wakefulness. J Sleep Res. 17(3):309-21, 2008.

61. Huck NO, McBride SA, Kendall AP, Grugle NL, **Killgore WD**. The effects of modafinil, caffeine, and dextroamphetamine on judgments of simple versus complex emotional expressions following sleep deprivation. Int. J Neuroscience. 118(4):487-502, 2008.

62. **Killgore WD**, Kahn-Greene ET, Lipizzi EL, Newman RA, Kamimori GH, Balkin TJ. Sleep deprivation reduces perceived emotional intelligence and constructive thinking skills. Sleep Med. 9(5):517-26, 2008.

63. **Killgore WD**, Grugle NL, Killgore DB, Leavitt BP, Watlington GI, McNair S, Balkin TJ. Restoration of risk-propensity during sleep deprivation: caffeine, dextroamphetamine, and modafinil. Aviat Space Environ Med. 79(9):867-74, 2008.

64. **Killgore WD**, Muckle AE, Grugle NL, Killgore DB, Balkin TJ. Sex differences in cognitive estimation during sleep deprivation: effects of stimulant countermeasures. Int J Neurosci. 118(11):1547-57, 2008.

65. **Killgore WD**, Cotting DI, Thomas JL, Cox AL, McGurk D, Vo AH, Castro CA, Hoge CW. Post-combat invincibility: violent combat experiences are associated with increased risk-taking propensity following deployment. J Psychiatr Res. 42(13):1112-21, 2008.

66. **Killgore WD**, Gruber SA, Yurgelun-Todd DA. Abnormal corticostriatal activity during fear perception in bipolar disorder. Neuroreport. 19(15):1523-7, 2008.

67. **Killgore WD**, McBride SA, Killgore DB, Balkin TJ, Kamimori GH. Baseline odor identification ability predicts degradation of psychomotor vigilance during 77 hours of sleep deprivation. Int. J Neurosci. 118(9):1207-1225, 2008.

68. **Killgore WD**, Rosso HM, Gruber SA, Yurgelun-Todd DA. Amygdala volume and verbal memory performance in schizophrenia and bipolar disorder. Cogn Behav Neur. 22(1):28-37, 2009.

69. **Killgore WD**, Kahn-Greene ET, Grugle NL, Killgore DB, Balkin TJ. Sustaining executive functions during sleep deprivation: A comparison of caffeine, dextroamphetamine, and modafinil. Sleep. 32(2):205-16, 2009.

70. **Killgore WD**, Grugle NL, Reichardt RM, Killgore DB, Balkin TJ. Executive functions and the ability to sustain vigilance during sleep loss. Aviat Space Environ Med. 80(2):81-7, 2009.

71. Picchioni, D, **Killgore, WD,** Braun, AR, & Balkin, TJ. Positron emission tomography correlates of EEG microarchitecture waveforms during non-REM sleep. Int J Neurosci. 119: 2074-2099, 2009.

72. **Killgore, WD**, Lipizzi, EL, Grugle, NL, Killgore, DB, & Balkin, TJ. Handedness correlates with actigraphically measured sleep in a controlled environment. Percept Mot Skills. 109: 395-400, 2009.

73. **Killgore, WD**, Killgore, DB, Grugle, NL, & Balkin, TJ. Odor identification predicts executive function deficits during sleep deprivation. Int J Neurosci, 120: 328-334, 2010.

74. **Killgore, WD**, Ross, AJ, Kamiya, T, Kawada, Y, Renshaw, PF, & Yurgelun-Todd, DA. Citicoline affects appetite and cortico-limbic responses to images of high calorie foods. Int J Eat Disord. 43: 6-13, 2010.

75. **Killgore, WD,** & Yurgelun-Todd, DA. Cerebral correlates of amygdala responses during non-conscious perception of facial affect in adolescent and pre-adolescent children. Cogn Neurosci, 1: 33-43, 2010.

76. **Killgore, WD**, & Yurgelun-Todd, DA. Sex differences in cerebral responses to images of high vs low calorie food. Neuroreport, 21: 354-358, 2010.

77. **Killgore, WD**, Grugle, NL, Killgore, DB, & Balkin, TJ. Sex differences in self-reported risk-taking propensity on the Evaluation of Risks scale. Percept Mot Skills, 106: 693-700, 2010.

78. **Killgore, WD**, Kelley, AM, & Balkin, TJ. So you think you're bulletproof: Development and validation of the Invincibility Belief Index. Mil Med, 175: 499-508, 2010.

79. **Killgore, WD**, Castro, CA, & Hoge, CW. Preliminary Normative Data for the Evaluation of Risks Scale—Bubble Sheet Version (EVAR-B) for Large Scale Surveys of Returning Combat Veterans. Mil Med, 175: 725-731, 2010.

80. Britton, JC, Rauch, SL, Rosso, IM, **Killgore, WD**, Price, LM, Ragan, J, Chosak, A, Hezel, D, Pine, DS, Leibenluft, E, Pauls, DL, Jenike, MA, Stewart, SE. Cognitive inflexibility and frontal cortical activation in pediatric obsessive-compulsive disorder. J Am Acad Child Adolesc Psychiatry, 49: 944-953, 2010.

81. Britton, JC, Stewart, SE, **Killgore, WD**, Rosso, IM, Price, LM, Gold, AL, Pine, DS, Wilhelm, S, Jenike, MA, & Rauch, SL. Amygdala activation in response to facial expressions in pediatric obsessive-compulsive disorder. Depress Anxiety, 27: 643-651, 2010.

82. Rupp, TL, **Killgore, WD**, & Balkin, TJ. Socializing by day may affect performance by night: Vulnerability to sleep deprivation is differentially mediated by social exposure in extraverts vs. introverts. Sleep, 33: 1475-1485, 2010.

83. Rosso, IM, Makris, N, Britton, JC, Price, LM, Gold, AL, Zai, D, Bruyere, J, Deckersbach, T, **Killgore, WD**, & Rauch, SL. Anxiety sensitivity correlates with two indices of right anterior insula structure in specific animal phobia. Depress Anxiety, 27: 1104-1110, 2010.

84. **Killgore, WD**, Britton, JC, Price, LM, Gold, AL, Deckersbach, T, & Rauch, SL. Neural correlates of anxiety sensitivity during masked presentation of affective faces. Depress Anxiety, 28: 243-249, 2011.

85. **Killgore, WD**, Kamimori, GH, & Balkin, TJ. Caffeine protects against increased risk-taking propensity during severe sleep deprivation. J Sleep Res 20: 395-403, 2011.

86. Capaldi, VF, Guerrero, ML, & **Killgore, WD**. Sleep disruption among returning combat veterans from Iraq and Afghanistan. Mil Med, 176: 879-888, 2011.

87. **Killgore, WD**, Grugle, NL, & Balkin, TJ. Gambling when sleep deprived: Don't bet on stimulants. Chronobiol Int, 29: 43-54, 2012.

88. Gruber, SA, Dahlgren, MK, Sagar, KA, Gonenc, A, & **Killgore, WD.** Age of onset of marijuana use impacts inhibitory processing. Neurosci Lett 511(2):89-94, 2012.

89. **Killgore, WD**, Capaldi, VF, & Guerrero, ML. Nocturnal polysomnographic correlates of daytime sleepiness. Psychol Rep, 110(10), 63-72, 2012.

90. **Killgore, WD**, Weber, M, Schwab, ZJ, DelDonno, SR, Kipman, M, Weiner, MR, & Rauch, SL. Grey matter correlates of trait and ability models of emotional intelligence. Neuroreport 23,

551-555, 2012.

91. **Killgore, WD**, Schwab, ZJ, Kipman, M, DelDonno, SR, Weber, M. Voxel-based morphometric grey matter correlates of daytime sleepiness. Neurosci Lett, 518(1), 10-13, 2012.

92. **Killgore, WD**, Schwab, ZJ, & Weiner, MR. Self-reported nocturnal sleep duration is associated with next-day resting state functional connectivity. Neuroreport, 23, 741-745, 2012.

93. **Killgore, WD**, & Schwab, ZJ. Sex differences in the association between physical exercise and cognitive ability. Perceptual and Motor Skills, 115, 605-617, 2012.

94. Kipman, M, Weber, M, Schwab, ZJ, DelDonno, SR, & **Killgore, WD**. A funny thing happened on the way to the scanner: Humor detection correlates with gray matter volume. Neuroreport, 23, 1059-1064, 2012.

95. **Killgore, WD**, Schwab, ZJ, Weber, M, Kipman, M, DelDonno, SR, Weiner, MR, & Rauch, SL. Daytime sleepiness affects prefrontal regulation of food intake. NeuroImage, 71, 216-223, 2013.

96. **Killgore, WD**, Schwab, ZJ, Kipman, M, DelDonno, SR, & Weber, M. Insomnia-related complaints correlate with functional connectivity between sensory-motor regions. Neuroreport, 24, 233-240, 2013.

97. Weber, M, Webb, CA, DelDonno, SR, Kipman, M, Schwab, ZJ, Weiner, MR, & **Killgore, WD**. Habitual 'Sleep Credit' is associated with greater gray matter volume of the medial prefrontal cortex, higher emotional intelligence, and better mental health. Journal of Sleep Research, 22, 527-534, 2013.

98. Weber, M., **Killgore, WD**, Rosso, IM, Britton, JC, Schwab, ZJ, Weiner, MR, Simon, NM, Pollack, MH, & Rauch, SL. Voxel-based morphometric gray matter correlates of posttraumatic stress disorder. Journal of Anxiety Disorders, 27, 413-419, 2013.

99. **Killgore, WD**, Schwab, ZJ, Tkachenko, O, Webb, CA, DelDonno, SR, Kipman M, Rauch SL, and Weber M. Emotional intelligence correlates with functional responses to dynamic changes in facial trustworthiness. Social Neuroscience, 8, 334-346, 2013.

100. **Killgore, WD**. Self-reported sleep correlates with prefrontal-amygdala functional connectivity and emotional functioning. Sleep, 36, 1597-1608, 2013.

101. **Killgore, WD**, Kipman, M, Schwab, ZJ, Tkachenko, O, Preer, L, Gogel, H, Bark, JS, Mundy, EA, Olson, EA, & Weber, M. Physical exercise and brain responses to images of high calorie food. Neuroreport, 24, 962-967, 2013.

102. **Killgore, WD**, Weber, M, Schwab, ZJ, Kipman, M, DelDonno, SR, Webb, CA, & Rauch, SL. Cortico-limbic responsiveness to high-calorie food images predicts weight status among women. International Journal of Obesity, 37, 1435-1442, 2013.

103. Thomas, JJ, Hartman, AS, & **Killgore, WD**. Non-fat-phobic eating disorders: Why we need to investigate implicit associations and neural correlates. International Journal of Eating Disorders, 46, 416-419, 2013.

104. Webb, CA, Schwab, ZJ, Weber, M, DelDonno, SR, Kipman M, Weiner, MR, & **Killgore WD**. Convergent and divergent validity of integrative versus mixed model measures of emotional intelligence. Intelligence, 41, 149-156, 2013.

105. Weber, M, Webb, CA, & **Killgore, WD**. A brief and selective review of treatment approaches for sleep disturbance following traumatic brain injury. Journal of Sleep Disorders and Therapy, 2 (2), 1-5, 2013 (electronic publication).

106. **Killgore, WD,** Olson, EA, & Weber, M. Physical exercise habits correlate with gray matter volume of the hippocampus in healthy humans. Scientific Reports, 3, 3457, doi: 10.1038/srep0347, 2013.

107. **Killgore, WD**, Britton, JC, Schwab, ZJ, Price, LM, Weiner, MR, Gold, AL, Rosso, IM, Simon, NM, Pollack, MH, & Rauch, SL. Cortico-Limbic Responses to Masked Affective Faces Across PTSD, Panic Disorder, and Specific Phobia. Depression & Anxiety, 31, 150-159, 2014.

108. Cohen-Gilbert, JE, **Killgore, WD**, White, CN, Schwab, ZJ, Crowley, DJ, Covell, MJ, Sneider, JT, & Silveri, MM. Differential influence of safe versus threatening facial expressions on decision-making during an inhibitory control task in adolescence and adulthood. Developmental Science, 17, 212-223, 2014.

109. Dillon, DG, Rosso, IM, Pechtel, P, **Killgore, WD**, Rauch, SL, & Pizzagalli, DA. Peril and pleasure: An RDoC-inspired examination of threat responses and reward processing in anxiety and depression. Depression and Anxiety, 31, 233-249, 2014.

110. Preer, L, Tkachenko, O, Gogel, H., Bark, JS, & **Killgore, WD**. Personality traits associated with sleep initiation problems. Journal of Sleep Disorders: Treatment and Care, 3, 1-5, doi:10.4172/2325-9639.1000127, 2014.

111. Tkachenko, O, Olson, EA, Weber, M, Preer, LA, Gogel, H, & **Killgore, WD.** Sleep difficulties are associated with elevated symptoms of psychopathology. Experimental Brain Research, 232, 1567-1574, 2014.

112. Cui, J., Olson, EA, Weber, M, Schwab, ZJ, Rosso, IM, Rauch, SL, & **Killgore, WD**. Trait emotional suppression is associated with increased activation of the rostral anterior cingulate cortex in response to masked angry faces. NeuroReport, 25, 771-776, 2014.

113. Webb, CA, DelDonno, S, & **Killgore, WD**. The role of cognitive versus emotional intelligence in Iowa Gambling Task performance: What's emotion got to do with it? Intelligence, 44, 112-119, 2014.

114. **Killgore WD**, & Gogel, H. The Design Organization Test (DOT): Further Demonstration of Reliability and Validity as a Brief Measure of Visuospatial Ability. Applied Neuropsychology:

Adult, 21, 297-309, 2014.

115. Webb, CA, Weber, M, Mundy, EA, & **Killgore, WD**. Reduced gray matter volume in the anterior cingulate, orbitofrontal cortex and thalamus as a function of mild depressive symptoms: A voxel-based morphometric analysis. Psychological Medicine, 44, 2833-2843, 2014.

116. **Killgore, WD**, Kamimori, GH, & Balkin, TJ. Caffeine improves the efficiency of planning and sequencing abilities during sleep deprivation. Journal of Clinical Psychopharmacology, 34, 660-662, 2014.

117. Rosso, IM, Olson, EA, Britton, JC, Steward, SE, Papadimitriou, G, **Killgore, WD**, Makris, N, Wilhelm, S, Jenike, MA, & Rauch SL. Brain white matter integrity and association with age at onset in pediatric obsessive-compulsive disorder. Biology of Mood & Anxiety Disorders, 4:13, 1-10, 2014.

118. Cui, J, Tkachenko, O, Gogel, H, Kipman, M, Preer, LA, Weber, M, Divatia, SC, Demers, LA, Olson, EA, Buchholz, JL, Bark, JS, Rosso, IM, Rauch, SL, & **Killgore, WD**. Microstructure of frontoparietal connections predicts individual resistance to sleep deprivation. NeuroImage, 106, 123-133, 2015.

119. Brennan, BP, Tkachenko, O, Schwab, ZJ, Juelich, RJ, Ryan, EM, Athey, AJ, Pope, HG, Jenike, MA, Baker, JT, **Killgore, WD**, Hudson, JI, Jensen, JE, & Rauch, SL. An examination of rostral anterior cingulate cortex function and neurochemistry in obsessive-compulsive disorder. Neuropsychopharmacology, 40, 1866-1876, 2015.

120. Alkozei, A, & **Killgore WD**. Emotional intelligence is associated with reduced insula responses to angry faces. NeuroReport, 26, 567-571, 2015.

121. Mundy, EA, Weber, M, Rauch, SL, **Killgore, WD**, Simon, NM, Pollack, MH, & Rosso, IM. Adult anxiety disorders in relation to trait anxiety and perceived stress in childhood. Psychological Reports, 117, 1-17, 2015.

122. **Killgore, WD**, Vanuk, JR, Knight, SA, Markowski, SM, Pisner, D, Shane B, Fridman, A, & Alkozei, A. Daytime sleepiness is associated with altered resting thalamocortical connectivity. NeuroReport, 26, 779-784, 2015.

123. Olson, EA, Rosso, IM, Demers, LA, Divatia, S., & **Killgore, WD**. Sex differences in psychological factors associated with social discounting. Journal of Behavioral Decision Making, 29, 60-66, 2016.

124. Alkozei, A, Schwab, ZJ, & **Killgore, WD**. The role of emotional intelligence during an emotionally difficult decision-making task. Journal of Nonverbal Behavior, 40, 39-54, 2016.

125. **Killgore, WD**, Singh, P, Kipman, M, Pisner, D, Fridman, A, and Weber, M. Gray matter volume and executive functioning correlate with time since injury following mild traumatic brain injury. Neuroscience Letters, 612, 238-244, 2016.

126. Alkozei, A, Smith, R, & **Killgore, WD**. Exposure to blue wavelength light modulates anterior cingulate cortex activation in response to 'uncertain' versus 'certain' anticipation of positive stimuli. Neuroscience Letters, 616, 5-10, 2016.

127. Olson, EA, Weber, M, Rauch, SL, & **Killgore, WD**. Daytime sleepiness is associated with reduced integration of temporally distant outcomes on the Iowa Gambling Task. Behavioral Sleep Medicine, 14, 200-211, 2016.

128. **Killgore, WD**, Sonis, LA, Rosso, IM, & Rauch, SL. Emotional intelligence partially mediates the association between anxiety sensitivity and anxiety symptoms. Psychological Reports, 118, 23-40, 2016.

129. Freed, MC, Novak, LA, **Killgore, WD**, Rauch, S, Koehlmoos, TP, Ginsberg, JP, Krupnick, J, Rizzo, AS, Andrews, A, & Engle, CC. IRB and research regulatory delays within the military healthcare setting: Do they really matter? And if so, why and for whom? American Journal of Bioethics, 16, 30-37, 2016.

130. Alkozei, A, Smith, R, Pisner, D, Vanuk, JR, Markowski, SM, Fridman, A, Shane, BR, Knight, SA, & **Killgore, WD**. Exposure to blue light increases later functional activation of the prefrontal cortex during working memory. SLEEP, 39, 1671-1680, 2016.

131. Smith, R, Alkozei, A, Lane, RD, & **Killgore, WD**. Unwanted reminders: The effects of emotional memory suppression on subsequent neuro-cognitive processing. Consciousness and Cognition, 44, 103-113, 2016.

132. Kelly, MR, **Killgore, WD**, Haynes, PL. Understanding recent insights in sleep and posttraumatic stress disorder from a research domain criteria (RDoC) framework. Current Sleep Medicine Reports, 2, 223-232, 2016.

133. Rosso, IM, **Killgore, WD**, Olson, EA, Webb, CA, Fukunaga, R, Auerbach, RP, Gogel, H, Buchholz, JL, & Rauch, SL. Internet-based cognitive behavior therapy for major depressive disorder: A randomized controlled trial. Depression and Anxiety, 34, 236-245, 2017.

134. Alkozei, A, Smith, R, Kotzin, MD, Waugaman, DL, & **Killgore, WD**. The association between trait gratitude and self-reported sleep quality is mediated by depressive mood state. Behavioral Sleep Medicine, 1-9, 2017.

135. Smith, R, Alkozei, A, & **Killgore, WD**. Contributions of self-report and performance-based individual differences measures of social cognitive ability on large-scale network functioning. Brain Imaging and Behavior, 11, 685-697, 2017.

136. Pisner, DA, Smith, R, Alkozei, A, Klimova, A, & **Killgore, WD**. Highways of the emotional intellect: White matter microstructural correlates of an ability-based measure of emotional intelligence. Social Neuroscience, 12, 253-267, 2017.

137. **Killgore, WD**, Balkin, TJ, Yarnell, AM, & Capaldi, VF. Sleep deprivation impairs recognition of specific emotions. Neurobiology of Sleep and Circadian Rhythms, 3, 10-16, 2017.

138. Smith, R, Lane, R, Alkozei, A, Bao, J, Smith, C, Sanova, A, Nettles, M, & **Killgore, WD**. Maintaining the feelings of others in working memory is associated with activation of the left anterior insula and left frontal-parietal control networks. Social, Cognitive, and Affective Neuroscience, 12, 848-860, 2017.

139. Marin, MF, Zsido, RG, Song, H, Lasko, NB, **Killgore, WD**, Rauch SL, Simon, NM, & Milad, MR. Skin conductance responses and neural activations during fear conditioning and extinction recall across anxiety disorders. JAMA Psychiatry, 74, 622-631, 2017.

140. Alkozei, A, Smith, R, & **Killgore, WD**. Gratitude and subjective wellbeing: A Proposal of two causal frameworks. Journal of Happiness Studies, 5, 1519-1542, 2018.

141. Smith, R, Alkozei, A, & **Killgore, WD**. Conflict-Related Dorsomedial Frontal Cortex Activation During Healthy Food Decisions is Associated with Increased Cravings for High-Fat Foods. Brain Imaging and Behavior, 12, 685-696, 2018.

142. Alkozei, A*, **Killgore, WD***, Smith, R, Dailey, NS, Bajaj, S, & Haack M. Chronic sleep restriction increases negative implicit attitudes toward Arab Muslims. Scientific Reports, 7: 4285, 1-6, 2017. (*authors contributed equally).

143. **Killgore, WD**, Smith, R, Olson EA, Weber, M, Rauch, SL, & Nickerson, LD. Emotional intelligence is associated with connectivity within and between resting state networks. Social Cognitive and Affective Neuroscience, 12, 1624-1636, 2017.

144. Smith, R, Alkozei, A, Bao, J, & **Killgore WD**. Successful goal-directed memory suppression is associated with increased inter-hemispheric coordination between right and left fronto-parietal control networks. Psychological Reports, 121, 93-111, 2018.

145. Smith, R, Alkozei, A, Bao, J, Lane, RD, & **Killgore, WD**. Resting state functional connectivity correlates of emotional awareness. NeuroImage, 159, 99-106, 2017.

146. Webb, CA, Olson, EA, **Killgore, WD**, Pizzagalli, DA, Rauch, SL, & Rosso, IM. Rostral anterior cingulate cortex morphology predicts treatment response to internet-based CBT for depression. Biological Psychiatry: Cognitive Neuroscience and Neuroimaging, 3, 255-262, 2018.

147. Smith, R, **Killgore, WD**, & Lane, RD. The structure of emotional experience and its relation to trait emotional awareness: A theoretical review. Emotion, 18, 670-692, 2018.

148. Alkozei, A, Smith, R, Dailey, NS, Bajaj, S, & **Killgore, WD**. Acute exposure to blue wavelength light during memory consolidation improves verbal memory performance. PLoS One, 12, e0184884, 2017.

149. Smith, R, Alkozei, A, **Killgore, WD**, & Lane, RD. Nested positive feedback loops in the maintenance of major depression: An integration and extension of previous models. Brain, Behavior, and Immunity, 67, 374-397, 2018.

150. Alkozei, A, **Killgore, WD**, Smith, R, Dailey, N.S., Bajaj, S, Raikes, A, & Haack, M. Chronic sleep restriction differentially affects implicit biased toward food among men and women:

Preliminary evidence. Journal of Sleep Research, 27, e12629, 2018.

151. Bajaj, S, Vanuk, JR, Smith, R, Sailey, NS, & **Killgore, WD**. Blue light therapy following mild traumatic brain injury: Effects on white mater water diffusion in the brain. Frontiers in Neurology, 8, 616, 2017.

152. Smith, R, Bajaj, S, Dailey, NS, Alkozei, A, Smith, C, Sanova, A, Lane, RD, & **Killgore, WD**. Greater cortical thickness within the limbic visceromotor network predicts higher levels of trait emotional awareness. Consciousness and Cognition, 57, 54-61, 2018.

153. Bajaj, S, Alkozei, A, Dailey, NS, & **Killgore, WD**. Brain aging: Uncovering cortical characteristics of healthy aging in you adults. Frontiers in Aging Neuroscience, 9, 412, 2017.

154. Bajaj, S, Dailey, NS, Rosso, IM, Rauch, SL, & **Killgore, WD**. Time-dependent differences in cortical measures and their associations with behavioral measures following mild traumatic brain injury. Human Brain Mapping, 39, 1886-1897, 2018.

155. Smith, R, Lane, RD, Alkozei, A, Bao, J, Smith, C, Sanova, A, Nettles, M, & **Killgore, WD**. The role of medial prefrontal cortex in the working memory maintenance of one's own emotional responses. Scientific Reports, 8, 3460, 2018.

156. **Killgore, WD**, Kent, HC, Knight, SA, & Alkozei, A. Changes in morning salivary melatonin correlate with prefrontal responses during working memory performance. NeuroReport, 29, 488-494, 2018.

157. Alkozei, A, Smith, R, Demers, LA, Divatia, S, Weber, M, Berryhill, SM, & **Killgore, WD**. Increases in emotional intelligence after an online training program are associated with better decision-making in the Iowa Gambling Task. Psychological Reports, 33294118771705, 2018.

158. Dailey, NS, Smith, R, Bajaj, S, Alkozei, A, Gottschlisch, MK, Raikes, AC, Satterfield, BC, & **Killgore, WD**. Elevated aggression and reduced white matter integrity in mild traumatic brain injury: A DTI study. Frontiers in Behavioral Neuroscience, 12, 118, 2018.

159. Raikes, AC, Bajaj, S, Dailey, NS, Smith, R, Alkozei, A, Satterfield, BC, & **Killgore, WD**. Diffusion tensor imaging (DTI) correlates of self-reported sleep quality and depression following mild traumatic brain injury. Frontiers in Neurology, 9, 468, 2018.

160. Smith, R, Sanova, A, Alkozei, A, Lane, RD, & **Killgore, WD**. Higher levels of trait emotional awareness are associatd with more efficient global information integration throughout the brain: A graph-theoretic analysis of resting state functional connectivity. Social Cognitive and Affective Neuroscience (in press).

161. Alkozei, A, Smith, R, & **Killgore, WD**. Implicit self-esteem is associated with higher levels of trait gratitude in women but not men. Journal of Positive Psychology (in press).

162. Bajaj, S, Raikes, A, Smith, R, Dailey, NS, Alkozei, A, Vanuk, JR, & **Killgore, WD**. The relationship between general intelligence and cortical structure in healthy individuals.

Neuroscience, 388, 36-44, 2018.

163. Alkozei, A, Haack, M, Skalamera, J, Smith, R, Satterfield, BC, Raikes, A, & **Killgore, WD**. Chronic sleep restriction affects the associations between implicit bias and explicit social decision-making. Sleep Health (in press).

164. Raikes, A, & **Killgore, WD**. Potential for the development of light therapies in mild traumatic brain injury. Concussion (in press).

165. Smith, R, Lane, RD, Sanova, A, Smith, C, & **Killgore, WD**. Common and unique neural systems underlying the working memory maintenance of emotional vs. bodily reactions to affective stimuli: The moderating role of trait emotional awareness. Frontiers in Human Neuroscience (in press).

166. Dailey, NS, Smith, R, Vanuk, JR, Raikes, AC, & **Killgore, WD**. Resting-state functional connectivity as a biomarker of aggression in mild traumatic brain injury. NeuroReport (in press).

167. Raikes, AC, Satterfield, BC, & **Killgore, WD**. Evidence of actigraphic and subjective sleep disruption following mild traumatic brain injury. Sleep Medicine (in press).

168. McConnell, MH, **Killgore, WD**, & O'Connor, MF. Yearning predicts subgenual anterior cingulate activity in bereaved individuals. Heliyon (in press).

169. Smith, R, Weihs, KL, Alkozei, A, **Killgore, WD**, & Lane RD. An embodied neurocomputational framework for organically integrating biopsychosocial processes: An application to the role of social support in health and disease. Psychosomatic Medicine (accepted).

Book Chapters/Editorials/Other Published Articles

1. **Killgore, WD.** Cortical and limbic activation during visual perception of food. In Dube, L, Bechara, A, Dagher, A, Drewnowski, A, Lebel, J, James, P, & Yada, R. (Eds), Obesity Prevention: The Role of Brain and Society on Individual Behavior. Elsevier, Boston, 2010, pp. 57-71.

2. **Killgore, WD.** Asleep at the trigger: Warfighter judgment and decision-making during prolonged wakefulness. In Bartone, P. (Ed), Applying Research Psychology to Improve Performance and Policy. 2010, pp. 59-77.

3. **Killgore, WD.** Effects of Sleep Deprivation on Cognition. In Kerkhof, G. & Van Dongen, H. Progress in Brain Research: Sleep and Cognition. Elsevier, B.V. New York, 2010, pp. 105-129.

4. **Killgore, WD.** Caffeine and other alerting agents. In Thorpy, M. & Billiard, M. (Eds), Sleepiness: Causes, Consequences, Disorders and Treatment. Cambridge University Press, UK, 2011, pp. 430-443.

5. **Killgore WD.** Priorities and challenges for caffeine research: Energy drinks, PTSD, and

withdrawal reversal. The Experts Speak Column, J Caffeine Res, 1, 11-12, 2011.

6. **Killgore, WD.** Odor identification ability predicts executive function deficits following sleep deprivation. In Lee-Chiong, T (Ed), Best of Sleep Medicine 2011. National Jewish Health, Denver CO, 2011, pp. 31-33.

7. **Killgore, WD.** Socio-emotional and neurocognitive effects of sleep loss. In Matthews, G. (Ed), Handbook of Operator Fatigue. Ashgate, London UK, 2012, pp. 227-243.

8. **Killgore, WD.** Sleepless nights and bulging waistlines (Editorial). Journal of Sleep Disorders: Treatment and Care, 1(1), doi: 10.4172/jsdtc.1000e101, 2012.

9. **Killgore, WD**, & Penetar, DM. Sleep and Military Operational Effectiveness. In Kushida, CA (Ed), The Encyclopedia of Sleep, 2013, vol. 1, pp. 311-319. Academic Press, Waltham, MA.

10. **Killgore, WD**, Weiner, MR, & Schwab, ZJ. Sleep deprivation, personality, and psychopathic changes. In Kushida, CA (Ed), The Encyclopedia of Sleep, 2013, vol. 1, pp. 264-271. Academic Press, Waltham, MA.

11. Schoenberg, MR, & **Killgore, WD**. Psychologic and Psychiatric Assessment. In Kushida, CA (Ed), The Encyclopedia of Sleep, 2013, vol. 2, pp. 23-26. Academic Press, Waltham, MA.

12. **Killgore, WD.** Sleep loss and performance. In Moore, BA, & Barnett, JE (Eds), Military Psychologists' Desk Reference, 2013, pp. 241-246. Oxford University Press, New York.

13. Weber, M., & **Killgore, WD**. What are the emerging therapeutic uses of bright light therapy for neurological disorders? (Editorial). Future Neurology, 8, 495-497, 2013.

14. **Killgore WD** & Weber, M. Sleep deprivation and cognitive performance. In Bianchi, M (Ed), Sleep Deprivation and Disease: Effects on the Body, Brain and Behavior, 2014, pp. 209-229. Springer, New York.

15. **Killgore, WD**. Sleep deprivation and behavioral risk taking. In Watson, RR, Sleep Modulation by Obesity, Diabetes, Age and Diet, 2015, pp. 279-287. Elsevier, San Diego, CA.

16. **Killgore, WD**. Lighting the way to better sleep and health (Editorial). Journal of Sleep Disorders: Treatment and Care, 5:1, 2016.

17. Singh, P, & **Killgore WD**. Time dependent differences in gray matter volume post mild traumatic brain injury. Neural Regeneration Research, 11, 920-921, 2016.

18. Klimova, A, Singh, P, & **Killgore WD**. White matter abnormalities in MS: Advances in diffusion tensor imaging/tractography. In Watson, RR & Killgore, WD (Eds), Nutrition and Lifestyle in Neurological Autoimmune Diseases: Multiple Sclerosis. Elsevier, San Diego, CA, pp. 21-28, 2017.

19. Alkozei, A, Smith, R, & **Killgore, WD**. Grateful people are happy and healthy—But why? Frontiers for Young Minds (in press).

20. Smith, R, Alkozei, A, & **Killgore WD**. How do emotions work? Frontiers for Young Minds (in press).

21. Satterfield, B. C., & **Killgore, WD**. Sleep loss, executive function, and decision-making. In Grandner, MG (Ed), Sleep and Health. Elsevier, San Diego (in press).

Books

1. Watson, RR, **& Killgore, WD** (Eds.). Nutrition and lifestyle in neurological autoimmune diseases: Multiple Sclerosis. Elsevier, San Diego, CA, 2017.

Published U.S. Government Technical Reports

1. **Killgore, WD**, Estrada, A, Rouse, T, Wildzunas, RM, Balkin, TJ. Sleep and performance measures in soldiers undergoing military relevant training. USAARL Report No. 2009-13. June, 2009.

2. Kelley, AM, **Killgore, WD**, Athy, JR, Dretsch, M. Risk propensity, risk perception, and sensation seeking in U.S. Army Soldiers: A preliminary study of a risk assessment battery. USAARL Report No. 2010-02. DTIC #: ADA511524. October, 2009.

CONFERENCES/SCHOLARLY PRESENTATIONS

Colloquia

2000	*The Neurobiology of Emotion in Children*, McLean Hospital, Belmont, MA *[Invited Lecture]*
2001	*The Neurobiology of Emotion in Children and Adolescents*, McLean Hospital, Belmont, MA *[Invited Lecture]*
2002	Cortico-Limbic Activation in Adolescence and Adulthood, Youth Advocacy Project, Cape Cod, MA [Invited Lecture]
2008	Lecture on *Sleep Deprivation, Executive Function, and Resilience to Sleep Loss*; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*
2008	Lecture on *The Role of Research Psychology in the Army*; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*
2008	Lecture on *Combat Stress Control: Basic Battlemind Training*; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*

2009 Lecture entitled *Evaluate a Casualty, Prevent Shock, and Prevent Cold Weather injuries*; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA*[Invited Lecture]*

2009 Lecture on *Combat Exposure and Sleep Deprivation Effects on Risky Decision-Making*; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*

2009 Lecture on the *Sleep History and Readiness Predictor (SHARP)*; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*

2009 Lecture on *The Use of Actigraphy for Measuring Sleep in Combat and Military Training*; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*

2010 Lecture entitled *Casualty Evaluation*; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*

2010 Lecture entitled *Combat Stress and Risk-Taking Behavior Following Deployment*; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*

2010 Lecture entitled *Historical Perspectives on Combat Medicine at the Battle of Gettysburg*; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*

2010 Lecture entitled *Sleep Loss, Stimulants, and Decision-Making*; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*

2010 Lecture entitled *PTSD: New Insights from Brain Imaging*; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*

2011 Lecture entitled *Effects of bright light therapy on sleep, cognition and brain function after mild traumatic brain injury*; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*

2011 Lecture entitled *Laboratory Sciences and Research Psychology in the Army*; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*

2011 Lecture entitled *Tools for Assessing Sleep in Military Settings*; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*

2011 Lecture entitled *The Brain Basis of Emotional Trauma and Practical Issues in Supporting Victims of Trauma*, U.S. Department of Justice, United States Attorneys Office, Serving Victims of Crime Training Program, Holyoke, MA *[Invited Lecture]*

2011 Lecture entitled *The Brain Altering Effects of Traumatic Experiences*; 105th Reinforcement Training Unit (RTU), U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*

2012 Lecture entitled *Sleep Loss, Caffeine, and Military Performance*; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*

2012 Lecture entitled *Using Light Therapy to Treat Sleep Disturbance Following Concussion*; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*

2013 Lecture entitled *Brain Responses to Food: What you See Could Make you Fat*; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*

2013 Lecture entitled *Predicting Resilience Against Sleep Loss*; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*

2014 Lecture entitled *Get Some Shut-Eye or Get Fat: Sleep Loss Affects Brain Responses to Food*; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*

2014 Lecture entitled *Emotional Intelligence: Developing a Training Program*; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*

2014 Lecture entitled *Supporting Cognitive and Emotional Health in Warfighters*. Presented to the Senior Vice President for the Senior Vice President for Health Sciences and Dean of the Medical School, University of Arizona, Tucson, AZ *[Invited Lecture]*

2015 Lecture entitled *Understanding the Effects of Mild TBI (Concussion) on the Brain*; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*

2015 Presentation entitled Superhuman Brains: The Neurocircuitry that Underlies the Ability to Resist Sleep Deprivation. Presented at the Neuroscience Datablitz, University of Arizona, Tucson, AZ *[Invited Lecture]*

2015 Presentation entitled: SCAN Lab Traumatic Stress Study. Presented at the Tucson Veteran Center, Tucson AZ *[Invited Lecture]*

2016 Presentation entitled: SCAN Lab Overview. Presented at the University of Arizona 2016 Sleep workshop, Tucson, AZ *[Invited Lecture]*

2016 Lecture entitled *Trauma Exposure and the Brain*; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*

2016 Presentation entitled *Supporting Cognitive and Emotional Health in Warfighters*. UAHS Development Team, University of Arizona Health Sciences Center, Tucson, AZ *[Invited Lecture]*

2016 Lecture entitled Novel Approaches for Reducing Depression in the Military; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*

2016 Presentation entitled: SCAN Lab Traumatic Stress and TBI Studies. Presented at the Tucson Veteran Center, Tucson AZ *[Invited Lecture]*

2016 Lecture entitled The Battle for Mosul: An S2 Brief; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*

2017 Lecture entitled *A New Experimental Treatment for Sleep Problems Following Mild TBI*; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*

2017 Lecture entitled *Basics of Neuroimaging Research*; UA Psychiatry Resident Neuroscience Course, University of Arizona Department of Psychiatry, Tucson, AZ *[Invited Lecture]*

Seminars

2001 *Using Functional MRI to Study the Developing Brain*, Judge Baker Children's Center, Harvard Medical School, Boston, MA *[Invited Lecture]*

2002 Lecture on the *Changes in the Lateralized Structure and Function of the Brain during Adolescent Development*, Walter Reed Army Institute of Research, Washington, DC *[Invited Lecture]*

2005 Lecture on *Functional Neuroimaging, Cognitive Assessment, and the Enhancement of Soldier Performance*, Walter Reed Army Institute of Research, Washington, DC *[Invited Lecture]*

2005 Lecture on *The Sleep History and Readiness Predictor*: Presented to the Medical Research and Materiel Command, Ft. Detrick, MD *[Invited Lecture]*

2006 Lecture on *Optimization of Judgment and Decision Making Capacities in Soldiers Following Sleep Deprivation*, Brain Imaging Center, McLean Hospital, Belmont MA *[Invited Lecture]*

2006 Briefing to the Chairman of the Cognitive Performance Assessment Program Area Steering Committee, U.S. Army Military Operational Medicine Research Program, entitled *Optimization of Judgment and Decision Making Capacities in Soldiers Following Sleep Deprivation*, Walter Reed Army Institute of Research *[Invited Lecture]*

2005 Briefing to the Chairman of the National Research Council (NRC) Committee on Strategies to Protect the Health of Deployed U.S. Forces, John H. Moxley III, on the *Optimization of Judgment and Decision Making Capacities in Soldiers Following Sleep Deprivation*, Walter Reed Army Institute of Research, Washington, DC *[Invited Lecture]*

2006 Lecture on *Norming a Battery of Tasks to Measure the Cognitive Effects of Operationally Relevant Stressors*, Cognitive Performance Assessment Program Area Steering Committee, U.S. Army Military Operational Medicine Research Program, Washington, DC *[Invited Lecture]*

2007 Lecture on *Cerebral Responses During Visual Processing of Food*, U.S. Army Institute of Environmental Medicine, Natick, MA *[Invited Lecture]*

2007 Briefing on the *Measurement of Sleep-Wake Cycles and Cognitive Performance in Combat Aviators*, U.S. Department of Defense, Defense Advanced Research Projects Agency (DARPA), Washington, DC *[Invited Lecture]*

2007 Lecture on *The Effects of Fatigue and Pharmacological Countermeasures on Judgment and Decision-Making*, U.S. Army Aeromedical Research Laboratory, Fort Rucker, AL *[Invited Lecture]*

2008 Lecture on the *Validation of Actigraphy and the SHARP as Methods of Measuring Sleep and Performance in Soldiers*, U.S. Army Aeromedical Research Laboratory, Fort Rucker, AL *[Seminar]*

2009 Lecture on Sleep Deprivation, *Executive Function, and Resilience to Sleep Loss*: Walter Reed Army Institute of Research AIBS Review, Washington DC *[Invited Lecture]*

2009 Lecture Entitled *Influences of Combat Exposure and Sleep Deprivation on Risky Decision-Making*, Evans U.S. Army Hospital, Fort Carson, CO *[Invited Lecture]*

2009 Lecture on *Making Bad Choices: The Effects of Combat Exposure and Sleep Deprivation on Risky Decision-Making*, 4th Army, Division West, Quarterly Safety Briefing to the Commanding General and Staff, Fort Carson, CO*[Invited Lecture]*

2010 Lecture on *Patterns of Cortico-Limbic Activation Across Anxiety Disorders*, Center for Anxiety, Depression, and Stress, McLean Hospital, Belmont, MA *[Invited Lecture]*

2010 Lecture on *Cortico-Limbic Activation Among Anxiety Disorders*, Neuroimaging Center, McLean Hospital, Belmont, MA *[Invited Lecture]*

2011 Lecture on *Shared and Differential Patterns of Cortico-Limbic Activation Across Anxiety Disorders*, McLean Research Day Brief Communications, McLean Hospital, Belmont, MA *[Invited Lecture]*

2011 Lecture Entitled *The effects of emotional intelligence on judgment and decision making, Military Operational Medicine Research Program Task Area C*, R & A Briefing, Walter Reed Army Institute of Research, Silver Spring, MD *[Invited Lecture]*

2011 Lecture Entitled *Effects of bright light therapy on sleep, cognition, brain function, and neurochemistry following mild traumatic brain injury*, Military Operational Medicine Research Program Task Area C, R & A Briefing, Walter Reed Army Institute of Research, Silver Spring, MD *[Invited Lecture]*

2012 Briefing to GEN (Ret) George Casey Jr., former Chief of Staff of the U.S. Army, entitled *Research for the Soldier*. McLean Hospital, Belmont, MA. *[Invited Lecture]*

2012 Lecture Entitled *Effects of bright light therapy on sleep, cognition, brain function, and neurochemistry following mild traumatic brain injury*, Military Operational Medicine Research Program In Progress Review (IPR) Briefing, U.S. Army Medical Research and Materiel Command, Fort Detrick, MD *[Invited Lecture]*

2013 Lecture Entitled *Update on the Effects of Bright light therapy on sleep, cognition, brain function, and neurochemistry following mild traumatic brain injury*, Military Operational Medicine Research Program In Progress Review (IPR) Briefing, U.S. Army Medical Research and Materiel Command, Fort Detrick, MD *[Invited Lecture]*

2013 Lecture Entitled *Internet Based Cognitive Behavioral Therapy: Effects on Depressive Cognitions and Brain Function*, Military Operational Medicine Research Program In Progress Review (IPR) Briefing, U.S. Army Medical Research and Materiel Command, Fort Detrick, MD [*Invited Lecture*]

2013 Seminar Entitled *Predicting Resilience Against Sleep Loss*, United States Military Academy at West Point, West Point, NY [*Invited Symposium*].

2014 Lecture entitled *Sleep Loss, Brain Function, and Cognitive Performance*, presented to the Psychiatric Genetics and Translational Research Seminar, Massachusetts General Hospital/Harvard Medical School, Boston, MA *[Invited Lecture]*

2014 Grand Rounds Lecture entitled *Sleep Loss, Brain Function, and Performance of the Emotional-Executive System*. University of Arizona Psychiatry Grand Rounds, Tucson, AZ *[Invited Lecture]*

2014 Psychology Department Colloquium entitled *Sleep Loss, Brain Function, and Performance of the Emotional-Executive System*. University of Arizona Department of Psychology, Tucson, AZ *[Invited Lecture]*

2014 Lecture Entitled *Internet Based Cognitive Behavioral Therapy: Effects on Depressive Cognitions and Brain Function*, Military Operational Medicine Research Program In Progress Review (IPR) Briefing, U.S. Army Medical Research and Materiel Command, Fort Detrick, MD *[Invited Lecture]*

2014 Lecture Entitled *The Neurobiological Basis and Potential Modification of Emotional Intelligence Through Affective/Behavioral Training*, Military Operational Medicine Research Program In Progress Review (IPR) Briefing, U.S. Army Medical Research and Materiel Command, Fort Detrick, MD *[Invited Lecture]*

2014 Lecture entitled *Supporting Cognitive and Emotional Health in Warfighters*. Presented to the Senior Vice President for t for Health Sciences and Dean of the Medical School, University of Arizona, Tucson, AZ *[Invited Lecture]*

2015 Lecture entitled *Sleep Loss and Brain Responses to Food*. Presented for the Sleep Medicine Lecture Series, University of Arizona Medical Center, Tucson, AZ *[Invited Lecture]*

2015 Presentation entitled *Superhuman Brains: The Neurocircuitry that Underlies the Ability to Resist Sleep Deprivation*. Presented at the Neuroscience Datablitz, University of Arizona, Tucson, AZ *[Invited Lecture]*

2015 Lecture entitled *Sleep Deprivation Selectively Impairs Emotional Aspects of Cognition*. Presented at the Pamela Turbeville Speaker Series, McClelland Institute for Children, Youth, and Families, Tucson, AZ, *[Invited Lecture]*

2015 Lecture Entitled Multimodal Neuroimaging to Predict Resistance to Sleep Deprivation, presented at the Pulmonary Research Conference, Department of Medicine, Sleep Medicine Sleep Lecture Series, University of Arizona College of Medicine, Tucson, AZ *[Invited Lecture]*.

2015 Lecture entitled Sleep Deprivation Selectively Impairs Emotional Aspects of Cognition. Presented at the Pamela Turbeville Speaker Series, McClelland Institute for Children, Youth, and Families, Tucson, AZ, *[Invited Lecture]*

2015 Lecture Entitled *Effects of bright light therapy on sleep, cognition, brain function, and neurochemistry following mild traumatic brain injury*, Military Operational Medicine Research Program In Progress Review (IPR) Briefing, U.S. Army Medical Research and Materiel Command, Fort Detrick, MD *[Invited Lecture]*

2015 Lecture Entitled *A Non-Pharmacologic Method for Enhancing Sleep in PTSD*, Military Operational Medicine Research Program In Progress Review (IPR) Briefing, U.S. Army Medical Research and Materiel Command, Fort Detrick, MD *[Invited Lecture]*

2015 Lecture Entitled *Internet Based Cognitive Behavioral Therapy: Effects on Depressive Cognitions and Brain Function*, Military Operational Medicine Research Program In Progress Review (IPR) Briefing, U.S. Army Medical Research and Materiel Command, Fort Detrick, MD *[Invited Lecture]*

2015 Lecture Entitled *Operating Under the Influence: The Effects of Sleep Loss and Stimulants on Decision-Making and Performance.* Presented at the annual SAFER training for interns and residents, University of Arizona Department of Psychiatry, Tucson AZ *[Invited Lecture]*

2016 Lecture entitled *Translational Neuroimaging: Using MRI Techniques to Promote Recovery and Resilience*. Functional Neuroimaging Course, Spring 2016, Psychology Department, University of Arizona, Tucson, AZ *[Invited Lecture]*

2016 Lecture entitled *Supporting Cognitive and Emotional Health in Warfighters*. Presented at the Department of Behavioral Biology, Walter Reed Army Institute of Research, Silver Spring, MD *[Invited Lecture]*

2016 Lecture Entitled *Internet Based Cognitive Behavioral Therapy: Effects on Depressive Cognitions and Brain Function*, Military Operational Medicine Research Program In Progress Review (IPR) Briefing, U.S. Army Medical Research and Materiel Command, Fort Detrick, MD *[Invited Lecture]*

2016 Lecture Entitled *A Model for Predicting Cognitive and Emotional Health from Structural and Functional Neurocircuitry following TBI*, Military Operational

Medicine Research Program In Progress Review (IPR) Briefing, U.S. Army Medical Research and Materiel Command, Fort Detrick, MD *[Invited Lecture]*

2016 Lecture Entitled *Refinement and Validation of a Military Emotional Intelligence Training Program*, Military Operational Medicine Research Program 2016 Resilience In Progress Review (IPR) Briefing, U.S. Army Medical Research and Materiel Command, Fort Detrick, MD *[Invited Lecture]*

2017 Lecture Entitled *Bright Light Therapy for Treatment of Sleep Problems following Mild TBI*, Military Operational Medicine Research Program Combat Casualty Care In Progress Review (IPR) Briefing, U.S. Army Medical Research and Materiel Command, Fort Detrick, MD *[Invited Lecture]*

2017 Lecture Entitled *Refinement and Validation of a Military Emotional Intelligence Training Program*, Military Operational Medicine Research Program 2017 Resilience In Progress Review (IPR) Briefing, U.S. Army Medical Research and Materiel Command, Fort Detrick, MD *[Invited Lecture]*

2018 Lecture Entitled *Introduction to Chronobiology (Part 1)*, Sleep Research Seminar Series, Walter Reed Army Institute of Research, Silver Spring, MD *[Invited Lecture]*

2018 Lecture Entitled *Introduction to Chronobiology (Part 2)*, Sleep Research Seminar Series, Walter Reed Army Institute of Research, Silver Spring, MD *[Invited Lecture]*

2018 Lecture Entitled *A Non-Pharmacologic Method for Enhancing Sleep in PTSD*, Military Operational Medicine Research Program In Progress Review (IPR) Briefing, U.S. Army Medical Research and Materiel Command, Fort Detrick, MD *[Invited Lecture]*

2018 Lecture Entitled *Refinement and Validation of a Military Emotional Intelligence Training Program*, Military Operational Medicine Research Program In Progress Review (IPR) Briefing, U.S. Army Medical Research and Materiel Command, Fort Detrick, MD *[Invited Lecture]*

Symposia/Conferences

1999 Oral Platform Presentation entitled *Functional MRI lateralization during memory encoding predicts seizure outcome following anterior temporal lobectomy*, 27th Annual Meeting of the International Neuropsychological Society, Boston, MA. *[Submitted Presentation]*

2000 Lecture on the *Neurobiology of Emotional Development in Children*, 9th Annual Parents as Teachers Born to Learn Conference, St. Louis, MO *[Invited Lecture]*

2001 Oral Platform Presentation entitled *Sex differences in functional activation of the amygdala during the perception of happy faces*, 29th Annual Meeting of the International Neuropsychological Society, Chicago, IL. *[Submitted Presentation]*

2002 Oral Platform Presentation entitled *Developmental changes in the lateralized activation of the prefrontal cortex and amygdala during the processing of facial affect*, 30th Annual Meeting of the International Neuropsychological Society, Toronto, Ontario, Canada. *[Submitted Presentation]*

2002 Oral Platform Presentation *Gray and white matter volume during adolescence correlates with cognitive performance: A morphometric MRI study*, 30th Annual Meeting of the International Neuropsychological Society, Toronto, Ontario, Canada. *[Submitted Presentation]*

2004 Lecture on *Sleep Deprivation, Cognition, and Stimulant Countermeasures*: Seminar Presented at the Bi-Annual 71F Research Psychology Short Course, Ft. Detrick, MD, U.S. Army Medical Research and Materiel Command *[Invited Lecture]*

2004 Lecture on the *Regional Cerebral Blood Flow Correlates of Electroencephalographic Activity During Stage 2 and Slow Wave Sleep: An H215O PET Study*: Presented at the Bi-Annual 71F Research Psychology Short Course, Ft. Detrick, MD, U.S. Army Medical Research and Materiel Command *[Invited Lecture]*

2004 Oral Platform Presentation entitled *Regional cerebral metabolic correlates of electroencephalographic activity during stage-2 and slow-wave sleep: An H215O PET Study*, 18th Associated Professional Sleep Societies Annual Meeting, Philadelphia, PA. *[Submitted Presentation]*

2006 Lecture on *The Sleep History and Readiness Predictor*: Presented at the Bi-Annual 71F Research Psychology Short Course, Ft. Rucker, AL, U.S. Army Medical Research and Materiel Command *[Invited Lecture]*

2007 Symposium on *Cortical and Limbic Activation in Response to Visual Images of Low and High-Caloric Foods*, 6th Annual Meeting of the International Society for Behavioral Nutrition and Physical Activity (ISBNPA), Oslo, Norway *[Invited Lecture]*

2008 Lecture on *Sleep Deprivation, Executive Function, & Resilience to Sleep Loss*, First Franco-American Workshop on War Traumatism, IMNSSA, Toulon, France *[Invited Lecture]*

2009 Symposium Entitled *Sleep Deprivation, Judgment, and Decision-Making*, 23rd Annual Meeting of the Associated Professional Sleep Societies, Seattle, WA *[Invited Symposium]*

2009 Symposium Session Moderator for *Workshop on Components of Cognition and Fatigue: From Laboratory Experiments to Mathematical Modeling and Operational Applications*, Washington State University, Spokane, WA *[Invited Speaker]*

2009 Lecture on *Comparative Studies of Stimulant Action as Countermeasures for Higher Order Cognition and Executive Function Impairment that Results from Disrupted Sleep*

Patterns, Presented at the NIDA-ODS Symposium entitled: Caffeine: Is the Next Problem Already Brewing, Rockville, MD *[Invited Lecture]*

2010 Oral Platform Presentation entitled *Sleep deprivation selectively impairs emotional aspects of cognitive functioning*, 27th Army Science Conference, Orlando, FL. *[Submitted Presentation]*

2010 Oral Platform Presentation entitled *Exaggerated amygdala responses to masked fearful faces are specific to PTSD versus simple phobia*, 27th Army Science Conference, Orlando, FL. *[Submitted Presentation]*

2012 Oral Symposium Presentation entitled *Shared and distinctive patterns of cortico-limbic activation across anxiety disorders*, 32nd Annual Conference of the Anxiety Disorders Association of America, Arlington, VA. *[Invited Symposium]*

2012 Oral Platform Presentation entitled *Shared and unique patterns of cortico-limbic activation across anxiety disorders*. 40th Meeting of the International Neuropsychological Society, Montreal, Canada. *[Submitted Presentation]*

2013 Lecture entitled *Brain responses to visual images of food: Could your eyes be the gateway to excess?* Presented to the NIH Nutrition Coordinating Committee and the Assistant Surgeon General of the United States, Bethesda, MD *[Invited Lecture]*

2014 Symposium Entitled *Operating Under the Influence: The Effects of Sleep Loss and Stimulants on Decision-Making and Performance*, Invited Faculty Presenter at the 34th Annual Cardiothoracic Surgery Symposium (CREF), San Diego, CA [*Invited Symposium*].

2014 Symposium Entitled *The Effects of Sleep Loss on Food Preference*, SLEEP 2014, Minneapolis, MN *[Invited Symposium]*

2015 Symposium Entitled *The Neurobiological Basis and Potential Modification of Emotional Intelligence in Military Personnel*. Invited presentation at the Yale Center for Emotional Intelligence, New Haven, CT *[Invited Lecture]*

2015 Lecture Entitled *Predicting Resilience to Sleep Loss with Multi-Modal Neuroimaging*. Invited presentation at the DARPA Sleep Workshop 2015, Arlington, VA *[Invited Lecture]*

2015 Symposium Entitled: *The Brain and Food: How your (sleepy) Eyes Might be the Gateway to Excess*, Invited Faculty Presenter at the 2015 University of Arizona Update on Psychiatry, Tucson, AZ [*Invited Symposium*].

2015 Oral Platform presentation entitled *Multimodal Neuroimaging to Predict Resistance to Sleep Deprivation*, Associated Professional Sleep Societies (APSS) SLEEP meeting, Seattle, WA *[Invited Lecture]*

2015 Symposium Entitled presentation entitled *Sleep Deprivation and Emotional Decision Making*, Virginia Tech Sleep Workshop, Arlington, VA *[Invited Symposium]*

2016 Oral Platform presentation entitled *Default Mode Activation Predicts Vulnerability to Sleep Deprivation in the Domains of Mood, Sleepiness, and Vigilance*. Presentation given at the Associated Professional Sleep Societies (APSS) SLEEP meeting, Denver, CO *[Invited Lecture]*

2016 Symposium presentation entitled *Short Wavelength Light Therapy Facilitates Recovery from Mild Traumatic Brain Injury*, 2016 Military Health Systems Research Symposium (MHSRS), Orlando, FL *[Invited Lecture]*

2017 Lecture Entitled: *Military Update on Blue Light Therapy for mTBI*. Lecture presented at the DoD Sleep Research Meeting breakout session at the Associated Professional Sleep Societies (APSS) SLEEP meeting, Boston, MA *[Invited Lecture]*

2017 Symposium entitled: *Judgment and Decision Making During Sleep Loss*. Invited symposium presentation at the SLEEP 2017 Trainee Symposium Series, Associated Professional Sleep Societies (APSS) SLEEP meeting, Boston, MA *[Invited Lecture]*

2017 Oral Platform presentation entitled *Short Wavelength Light Therapy Facilitates Recovery from Mild Traumatic Brain Injury*. Presentation given at the Associated Professional Sleep Societies (APSS) SLEEP meeting, Boston, MA *[Invited Lecture]*

2017 Symposium entitled: What makes a super-soldier: Identifying the neural correlates of individual differences in resilience against sleep deprivation. Invited symposium presentation at the 2017 Military Health Systems Research Symposium (MHSRS), Orlando, FL *[Invited Lecture]*

2018 Oral Platform presentation entitled: Short Wavelength Light Therapy Enhances Brain and Cognitive Recovery Following Mild Traumatic Brain Injury. Presentation given at the Arizona Research Institute for Biomedical Imaging (ARIBI) Workshop, Tucson, AZ *[Invited Lecture]*

2018 Session Chair: Healthy Shiftwork? Measures, Mitigation and Functional Outcomes. Session presented at the Associated Professional Sleep Societies (APSS) SLEEP Conference (Session O02), Baltimore, MD *[Session Chair]*

2018 Lecture Entitled: *Lapses During Sleep Loss are Predicted by Gray Matter Volume of the Ascending Reticular Activating Systems*. Lecture presented at the 2nd Annual DoD Sleep Research Meeting breakout session at the Associated Professional Sleep Societies (APSS) SLEEP meeting, Baltimore, MD *[Invited Lecture]*

2018 Oral Platform presentation entitled *Resistance to Sleep Deprivation is Predicted by Gray Matter Volume in the Posterior Brain Stem*. Presentation given at the Associated Professional Sleep Societies (APSS) SLEEP meeting, Baltimore, MD *[Invited Lecture]*

2018 Oral Platform presentation entitled *Why Can't You Just Stay Awake? Resistance to Sleep Deprivation is Associated with Measurable Differences in Brainstem Gray Matter*. Presentation given at the Military Health Systems Research Symposium (MHSRS), Orlando, FL *[Invited Lecture]*

Peer Reviewed Published Abstracts

1. **Killgore, WD.** Development and validation of a new instrument for the measurement of transient mood states: The facial analogue mood scale (FAMS) [Abstract]. Dissertation Abstracts International: Section B: The Sciences & Engineering 1995; 56 (6-B): 3500.

2. **Killgore, WD,** & Locke, B. A nonverbal instrument for the measurement of transient mood states: The Facial Analogue Mood Scale (FAMS) [Abstract]. Proceedings of the Annual Conference of the Oklahoma Center for Neurosciences 1996, Oklahoma City, OK.

3. **Killgore, WD,** Scott, JG, Oommen, KJ, & Jones, H. Lateralization of seizure focus and performance on the MMPI-2 [Abstract]. Proceedings of the Annual Conference of the Oklahoma Center for Neurosciences 1996, Oklahoma City, OK.

4. **Killgore, WD,** & Adams, RL. Vocabulary ability and Boston Naming Test performance: Preliminary guidelines for interpretation [Abstract]. Archives of Clinical Neuropsychology 1997; 13(1).

5. **Killgore, WD**, Glosser, G, Cooke, AN, Grossman, M, Maldjian, J, Judy, K, Baltuch, G, King, D, Alsop, D, & Detre, JA. Functional activation during verbal memory encoding in patients with lateralized focal lesions [Abstract]. Epilepsia 1998; 39(Suppl. 6): 99.

6. **Killgore, WD.** A new method for assessing subtle cognitive deficits: The Clock Trail Making Test [Abstract]. Archives of Clinical Neuropsychology 1998; 14(1): 92.

7. **Killgore, WD,** & DellaPietra, L. Item response biases on the WMS-III Auditory Delayed Recognition Subtests [Abstract]. Archives of Clinical Neuropsychology 1998; 14(1): 92.

8. **Killgore, WD,** Glosser, G, Alsop, DC, Cooke, AN, McSorley, C, Grossman, M, & Detre, JA. Functional activation during material specific memory encoding [Abstract]. NeuroImage 1998; 7: 811.

9. **Killgore, WD,** & DellaPietra, L. Using the WMS-III to detect malingering: Empirical development of the Rarely Missed Index. [Abstract]. Journal of the International Neuropsychological Society 1999; 5(2).

10. **Killgore, WD,** Glosser, G, & Detre, JA. Prediction of seizure outcome following anterior temporal lobectomy: fMRI vs. IAT [Abstract]. Archives of Clinical Neuropsychology 1999; 14(1): 143.

11. **Killgore, WD,** Glosser, G, King, D, French, JA, Baltuch, G, & Detre, JA. Functional MRI lateralization during memory encoding predicts seizure outcome following anterior temporal lobectomy [Abstract]. Journal of the International Neuropsychological Society 1999; 5(2): 122.

12. **Killgore, WD,** Casasanto, DJ, Maldjian, JA, Alsop, DC, Glosser, G, French, J, & Detre, J. A. Functional activation of mesial temporal lobe during nonverbal encoding [abstract]. Epilepsia, 1999; 40 (Supplement 7): 188.

13. **Killgore, WD,** Casasanto, DJ, Maldjian, JA, Gonzales-Atavales, J, & Detre, JA. Associative memory for faces preferentially activates the left amygdala and hippocampus [abstract]. Journal of the International Neuropsychological Society, 2000; 6: 157.

14. Casasanto, DJ, **Killgore, WD,** Maldjian, JA, Gonzales-Atavales, J, Glosser, G, & Detre, JA. Task-dependent and task-invariant activation in mesial temporal lobe structures during fMRI explicit encoding tasks [abstract]. Journal of the International Neuropsychological Society, 2000; 6: 134. ***[*Winner of Rennick Research Award]***.

15. **Killgore, WD,** Glahn, D, & Casasanto, DJ. Development and validation of the Design Organization Test (DOT): A rapid screening instrument for assessing for visuospatial ability [abstract]. Journal of the International Neuropsychological Society, 2000; 6: 147.

16. Casasanto DJ, **Killgore, WD,** Glosser, G, Maldjian, JA, & Detre, JA. Hemispheric specialization during episodic memory encoding in the human hippocampus and MTL. Proceedings of the Society for Cognitive Science 2000: Philadelphia, PA.

17. Casasanto, DJ, Glosser, G, **Killgore, WD,** Siddiqi, F, Falk, M, Maldjian, J, Lev-Reis, I, & Detre, JA. FMRI evidence for the functional reserve model of post-ATL neuropsychological outcome prediction. Poster Presented at the David Mahoney Institute of Neurological Sciences 17th Annual Neuroscience Retreat, University of Pennsylvania, April 17, 2000.

18. Casasanto, DJ, **Killgore, WD,** Maldjian, JA, Glosser, G, Grossman, M, Alsop, D. C, & Detre, JA. Neural Correlates of Successful and Unsuccessful Verbal Encoding [abstract]. Neuroimage, 2000 11: S381.

19. Siddiqui, F, Casasanto, DJ, **Killgore, WD,** Detre, JA, Glosser, G, Alsop, DC, & Maldjian, JA. Hemispheric effects of frontal lobe tumors on mesial temporal lobe activation during scene encoding [abstract]. Neuroimage, 2000 11: S448.

20. Oki, M, Gruber, SA, **Killgore, WD,** Yurgelun-Todd, DA. Bilateral thalamic activation occurs during lexical but not semantic processing [abstract]. Neuroimage, 2000 11: S353.

21. Yurgelun-Todd, DA, Gruber, SA, **Killgore, WD,** & Tohen, M. Neuropsychological performance

in first-episode bipolar disorder [Abstract]. Collegium Internationale Neuro-Psychopharmacologicum. Brussels, Belgium. July, 2000.

22. **Killgore, WD,** & DellaPietra, L. Detecting malingering with the WMS-III: A revision of the Rarely Missed Index (RMI) [abstract]. Journal of the International Neuropsychological Society, 2001; 7 (2): 143-144.

23. Casasanto, DJ, Glosser, G, **Killgore, WD,** Siddiqi, F, Falk, M, Roc, A, Maldjian, JA, Levy-Reis, I, Baltuch, G, & Detre, JA. Presurgical fMRI predicts memory outcome following anterior temporal lobectomy [abstract]. Journal of the International Neuropsychological Society, 2001; 7 (2): 183.

24. **Killgore, WD,** & Yurgelun-Todd, DA. Amygdala but not hippocampal size predicts verbal memory performance in bipolar disorder [abstract]. Journal of the International Neuropsychological Society, 2001; 7 (2): 250-251.

25. **Killgore, WD,** Kanayama, G, & Yurgelun-Todd, DA. Sex differences in functional activation of the amygdala during the perception of happy faces [abstract]. Journal of the International Neuropsychological Society, 2001; 7 (2): 198.

26. **Killgore, WD,** Gruber, SA, Oki, M, & Yurgelun-Todd, DA. Amygdalar volume and verbal memory in schizophrenia and bipolar disorder: A correlative MRI study [abstract]. Meeting of the International Congress on Schizophrenia Research. Whistler, British Columbia. April 2001.

27. Kanayama, G, **Killgore, WD,** Gruber, SA, & Yurgelun-Todd, DA. FMRI BOLD activation of the supramarginal gyrus in schizophrenia [abstract]. Meeting of the International Congress on Schizophrenia Research. Whistler, British Columbia. April 2001.

28. Gruber, SA, **Killgore, WD,** Renshaw, PF, Pope, HG. Jr, Yurgelun-Todd, DA. Gender differences in cerebral blood volume after a 28-day washout period in chronic marijuana smokers [abstract]. Meeting of the International Congress on Schizophrenia Research. Whistler, British Columbia. April 2001.

29. Rohan, ML, **Killgore, WD,** Eskesen, JG, Renshaw, PF, & Yurgelun-Todd, DA. Match-warped EPI anatomic images and the amygdala: Imaging in hard places. Proceedings of the International Society for Magnetic Resonance in Medicine, 2001; 9: 1237.

30. **Killgore, WD** & Yurgelun-Todd, DA. Developmental changes in the lateralized activation of the prefrontal cortex and amygdala during the processing of facial affect [Abstract]. Oral platform paper presented at the 30th Annual Meeting of the International Neuropsychological Society, Toronto, Ontario, Canada, February 13-16, 2002.

31. Yurgelun-Todd, DA. & **Killgore, WD.** Gray and white matter volume during adolescence correlates with cognitive performance: A morphometric MRI study [Abstract]. Oral platform paper presented at the 30th Annual Meeting of the International Neuropsychological Society, Toronto, Ontario, Canada, February 13-16, 2002.

32. **Killgore, WD,** Reichardt, R. Kautz, M, Belenky, G, Balkin, T, & Wesensten, N. Daytime melatonin-zolpidem cocktail: III. Effects on salivary melatonin and performance [abstract]. Poster presented at the 17th Annual Meeting of the Associated Professional Sleep Societies, Chicago, Illinois, June 3-8, 2003.

33. **Killgore, WD,** Young, AD, Femia, LA, Bogorodzki, P, Rogowska, J, & Yurgelun-Todd, DA. Cortical and limbic activation during viewing of high- versus low-calorie foods [abstract]. Poster Presented at the Organization for Human Brain Mapping Annual Meeting, New York, NY, June 18-22, 2003.

34. **Killgore, WD,** & Yurgelun-Todd, DA. Amygdala activation during masked presentations of sad and happy faces [abstract]. Poster presented at the Organization for Human Brain Mapping Annual Meeting, New York, NY, June 18-22, 2003.

35. **Killgore, WD,** Stetz, MC, Castro, CA, & Hoge, CW. Somatic and emotional stress symptom expression prior to deployment by soldiers with and without previous combat experience [abstract]. Poster presented at the 6th Annual Force Health Protection Conference, Albuquerque, NM, August, 11-17, 2003. ***[*Best Paper Award]***

36. Wesensten, NJ, Balkin, TJ, Thorne, D, **Killgore, WD,** Reichardt, R, & Belenky, G. Caffeine, dextroamphetamine, and modafinil during 85 hours of sleep deprivation: I. Performance and alertness effects [abstract]. Poster presented at the 75th Annual Meeting of the Aerospace Medical Association, Anchorage, AK, May 2-6 2004.

37. **Killgore, WD,** Braun, AR, Belenky, G, Wesensten, NJ, & Balkin, TJ. Regional cerebral metabolic correlates of electroencephalographic activity during stage-2 and slow-wave sleep: An H215O PET Study [abstract]. Oral platform presentation at the 18th Associated Professional Sleep Societies Annual Meeting, Philadelphia, PA, June 5-10, 2004.

38. **Killgore, WD,** Arora, NS, Braun, AR, Belenky, G, Wesensten, NJ, & Balkin, TJ. Sleep strengthens the effective connectivity among cortical and subcortical regions: Evidence for the restorative effects of sleep using H215O PET [abstract]. Poster presented at the 17th Congress of the European Sleep Research Society, Prague, Czech Republic, October 5-9, 2004.

39. **Killgore, WD,** Arora, NS, Braun, AR, Belenky, G, Wesensten, NJ, & Balkin, TJ An H215O PET study of regional cerebral activation during stage 2 sleep [abstract]. Poster presented at the 17th Congress of the European Sleep Research Society, Prague, Czech Republic, October 5-9, 2004.

40. Wesensten, N, **Killgore, WD,** Belenky, G, Reichardt, R, Thorne, D, & Balkin, T. Caffeine, dextroamphetamine, and modafinil during 85 H of sleep deprivation. II. Effects of tasks of executive function [abstract]. Poster presented at the 17th Congress of the European Sleep Research Society, Prague, Czech Republic, October 5-9, 2004.

41. Balkin, T, Reichardt, R, Thorne, D, **Killgore, WD,** Belenky, G, & Wesensten, N. Caffeine, dextroamphetamine, and modafinil during 85 hours of sleep deprivation. I. Psychomotor vigilance and objective alertness effects [abstract]. Oral paper presentation at the 17th Congress of the European Sleep Research Society, Prague, Czech Republic, October 5-9,

2004.

42. Belenky, G, Reichardt, R, Thorne, D, **Killgore, WD,** Balkin, T, & Wesensten, N. Caffeine, dextroamphetamine, and modafinil during 85 hours of sleep deprivation. III. Effect on recovery sleep and post-recovery sleep performance [abstract]. Oral paper presentation at the 17th Congress of the European Sleep Research Society, Prague, Czech Republic, October 5-9, 2004.

43. Vo, A, Green, J, Campbell, W, **Killgore, WD,** Labutta, R, & Redmond, D. The quantification of disrupted sleep in migraine via actigraphy: A pilot study [abstract]. Abstract presented at the Associated Professional Sleep Societies 19th Annual Meeting, Denver, CO, June 18-23, 2005. SLEEP, 28 (Supplement), A281.

44. Kendall, AP, **Killgore, WD,** Kautz, M, & Russo, MB. Left-visual field deficits in attentional processing after 40 hours of sleep deprivation [abstract]. Abstract presented at the Associated Professional Sleep Societies 19th Annual Meeting, Denver, CO, June 18-23, 2005. SLEEP, 28 (Supplement), A143.

45. Reichardt, RM, Grugle, NL, Balkin, TJ, & **Killgore, WD.** Stimulant countermeasures, risk propensity, and IQ across 2 nights of sleep deprivation [abstract]. Abstract presented at the Associated Professional Sleep Societies 19th Annual Meeting, Denver, CO, June 18-23, 2005. SLEEP, 28 (Supplement), A145.

46. Killgore, DB, McBride, SA, Balkin, TJ, & **Killgore, WD.** Post-stimulant hangover: The effects of caffeine, modafinil, and dextroamphetamine on sustained verbal fluency following sleep deprivation and recovery sleep [abstract]. Abstract presented at the Associated Professional Sleep Societies 19th Annual Meeting, Denver, CO, June 18-23, 2005. SLEEP, 28 (Supplement), A137.

47. **Killgore, WD,** Balkin, TJ, & Wesensten, NJ. Impaired decision-making following 49 hours of sleep deprivation [abstract]. Abstract presented at the Associated Professional Sleep Societies 19th Annual Meeting, Denver, CO, June 18-23, 2005. SLEEP, 28 (Supplement), A138.

48. **Killgore, WD,** McBride, SA, Killgore, DB, & Balkin, TJ. Stimulant countermeasures and risk propensity across 2 nights of sleep deprivation [abstract]. Abstract presented at the Associated Professional Sleep Societies 19th Annual Meeting, Denver, CO, June 18-23, 2005. SLEEP, 28 (Supplement), A136.

49. McBride, SA, Balkin, TJ, & **Killgore, WD.** The effects of 24 hours of sleep deprivation on odor identification accuracy [abstract]. Abstract presented at the Associated Professional Sleep Societies 19th Annual Meeting, Denver, CO, June 18-23, 2005. SLEEP, 28 (Supplement), A137.

50. Picchioni, D, **Killgore, WD,** Braun, AR, & Balkin, TJ. PET correlates of EEG activity during non-REM sleep. Poster presentation at the annual UCLA/Websciences Sleep Training Workshop, Lake Arrowhead, CA, September, 2005.

51. **Killgore, WD,** Killgore, DB, McBride, SA, & Balkin, TJ. Sustained verbal fluency following

sleep deprivation and recovery sleep: The effects of caffeine, modafinil, and dextroamphetamine. Poster presented at the 34th Meeting of the International Neuropsychological Society, Boston, MA, February 1-4, 2006.

52. **Killgore, WD,** Balkin, TJ, & Wesensten, NJ. Decision-making is impaired following 2-days of sleep deprivation. Poster presented at the 34th Meeting of the International Neuropsychological Society, Boston, MA, February 1-4, 2006.

53. **Killgore, WD,** & Yurgelun-Todd, DA. Neural correlates of emotional intelligence in adolescent children. Poster presented at the 34th Meeting of the International Neuropsychological Society, Boston, MA, February 1-4, 2006.

54. **Killgore, WD,** & Yurgelun-Todd, DA. Social anxiety predicts amygdala activation in adolescents viewing fearful faces. Poster presented at the 34th Meeting of the International Neuropsychological Society, Boston, MA, February 1-4, 2006.

55. McBride, SA & **Killgore, WD.** Sleepy people smell worse: Olfactory deficits following extended wakefulness. Paper presented at the Workshop on Trace Gas Detection Using Artificial, Biological, and Computational Olfaction. Monell Chemical Senses Center, Philadelphia, PA, March 29-31, 2006.

56. **Killgore, WD,** Day LM, Li, C, Kamimori, GH, Balkin, TJ, & Killgore DB. Moral reasoning is affected by sleep deprivation [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A137.

57. **Killgore, WD,** Killgore DB, Kahn-Green, E, Conrad, A, Balkin, TJ, & Kamimori, G. H. Introversion-Extroversion predicts resilience to sleep loss [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A137.

58. Newman, R, Kamimori, GH, **Killgore, WD.** Sleep deprivation diminishes constructive thinking [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A136-137.

59. Huck, NO, Kendall, AP, McBride, SA, **Killgore, WD.** The perception of facial emotion is enhanced by psychostimulants following two nights of sleep deprivation [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A136.

60. O'Sullivan, M, Reichardt, RM, Krugler, AL, Killgore, DB, & **Killgore, WD.** Premorbid intelligence correlates with duration and quality of recovery sleep following sleep deprivation [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A372.

61. McBride, SA, **Killgore, WD,** Kahn-Green, E, Conrad, A, & Kamimori, GH. Caffeine administered to maintain overnight alertness does not disrupt performance during the daytime withdrawal period [abstract]. Abstract presented at the 20th Meeting of the Associated

Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A136.

62. McBride, SA, Killgore DB, Balkin, TJ, Kamimori, GH, & **Killgore, WD.** Sleepy people smell worse: Olfactory decrements as a function of sleep deprivation [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A135.

63. Day, LM, Li, C, Killgore, DB, Kamimori, GH, & **Killgore, WD.** Emotional intelligence moderates the effect of sleep deprivation on moral reasoning [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A135.

64. Murray, CJ, Killgore, DB, Kamimori, GH, & **Killgore, WD.** Individual differences in stress management capacity predict responsiveness to caffeine during sleep deprivation [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A43.

65. Murray, CJ, Newman, R, O'Sullivan, M, Killgore, DB, Balkin, TJ, & **Killgore, WD.** Caffeine, dextroamphetamine, and modafinil fail to restore Stroop performance during sleep deprivation [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A370-371.

66. Richards, J, Killgore, DB, & **Killgore, WD.** The effect of 44 hours of sleep deprivation on mood using the Visual Analog Mood Scales [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A132.

67. Richards, J, & **Killgore, WD.** The effect of caffeine, dextroamphetamine, and modafinil on alertness and mood during sleep deprivation [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A43.

68. Lipizzi, EL, Leavitt, BP, Killgore, DB, Kamimori, GH, & **Killgore, WD.** Decision making capabilities decline with increasing duration of wakefulness [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A131.

69. Lipizzi, EL, Killgore, DB, Kahn-Green, E, Kamimori, GH, & **Killgore, WD.** Emotional intelligence scores decline during sleep deprivation [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A131.

70. Kahn-Green, E, Day, L, Conrad, A, Leavitt, BP, Killgore, DB, & **Killgore, WD.** Short-term vs. long-term planning abilities: Differential effects of stimulants on executive function in sleep deprived individuals [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A370.

71. Kahn-Green, E, Conrad, A, Killgore, DB, Kamimori, GH, & **Killgore, WD.** Tired and frustrated: Using a projective technique for assessing responses to stress during sleep deprivation [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A130.

72. Killgore, DB, Kahn-Green, E, Balkin, TJ, Kamimori, GH, & **Killgore, WD.** 56 hours of wakefulness is associated with a sub-clinical increase in symptoms of psychopathology [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A130.

73. Killgore, DB, McBride, SA, Balkin, TJ, Leavitt, BP, & **Killgore, WD.** Modafinil improves humor appreciation during sleep deprivation [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A42.

74. Reichardt, RM, Killgore, DB, Lipizzi, EL, Li, CJ, Krugler, AL, & **Killgore, WD.** The effects of stimulants on recovery sleep and post-recovery verbal performance following 61-hours of sleep deprivation [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A42.

75. Bailey, JD, Richards, J, & **Killgore, WD.** Prediction of mood fluctuations during sleep deprivation with the SAFTE Model [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A60.

76. Kendall, AP, McBride, S. A, & **Killgore, WD.** Visuospatial perception of line orientation is resistant to one night of sleep loss [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A369.

77. Kendall, AP, McBride, SA, Kamimori, GH, & **Killgore, WD.** The interaction of coping skills and stimulants on sustaining vigilance: Poor coping may keep yoiu up at night [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A129.

78. Muckle, A, Killgore, DB, & **Killgore, WD.** Gender differences in the effects of stimulant medications on the ability to estimate unknown quantities when sleep deprived [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A369.

79. Krugler, AL, **Killgore, WD,** & Kamimori, G. H. Trait anger predicts resistance to sleep loss [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A129.

80. **Killgore, WD,** Cotting, DI, Vo, A. H, Castro, CA, & Hoge, CW. The invincibility syndrome: Combat experiences predict risk-taking propensity following redeployment [abstract].

Abstract presented at the 9th Annual Force Health Protection Conference, Albuquerque, NM, August 6-11, 2006.

81. **Killgore, WD,** Wesensten, NJ, & Balkin, TJ. Stimulants improve tactical but not strategic planning during prolonged wakefulness [abstract]. Abstract presented at the 9th Annual Force Health Protection Conference, Albuquerque, NM, August 6-11, 2006.

82. **Killgore, WD,** Balkin, TJ, Wesensten, NJ, & Kamimori, G. H. The effects of sleep loss and caffeine on decision-making [abstract]. Abstract presented at the 9th Annual Force Health Protection Conference, Albuquerque, NM, August 6-11, 2006.

83. **Killgore, WD,** Balkin, TJ, & Kamimori, GH. Sleep loss can impair moral judgment [abstract]. Abstract presented at the 9th Annual Force Health Protection Conference, Albuquerque, NM, August 6-11, 2006.

84. **Killgore, WD,** Lipizzi, EL, Reichardt, RM, Kamimori, GH, & Balkin, TJ. Can stimulants reverse the effects of sleep deprivation on risky decision-making [abstract]? Abstract presented at the 25th Army Science Conference, Orlando, FL, November 27-30, 2006.

85. **Killgore, WD,** Killgore, DB, Kamimori, GH, & Balkin, TJ. Sleep deprivation impairs the emotional intelligence and moral judgment capacities of Soldiers [abstract]. Abstract presented at the 25th Army Science Conference, Orlando, FL, November 27-30, 2006.

86. **Killgore, WD,** Cotting, DI, Vo, AH, Castro, C.A, & Hoge, CW. The post-combat invincibility syndrome: Combat experiences increase risk-taking propensity following deployment [abstract]. Abstract presented at the 25th Army Science Conference, Orlando, FL, November 27-30, 2006.

87. Adam, GE, Szelenyi, ER, **Killgore, WD,** & Lieberman, HR. A double-blind study of two days of caloric deprivation: Effects on judgment and decision-making. Oral paper presentation at the Annual Scientific Meeting of the Aerospace Medical Association, New Orleans, LA, May, 2007.

88. Killgore, DB, Kahn-Greene, ET, Kamimori, GH, & **Killgore, WD.** The effects of acute caffeine withdrawal on short category test performance in sleep deprived individuals [abstract]. Abstract presented at the 21st Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 9-14, 2007. SLEEP, 30 (Supplement), A43.

89. Richards, JM, Lipizzi, EL, Kamimori, GH, & **Killgore, WD.** Extroversion predicts change in attentional lapses during sleep deprivation [abstract]. Abstract presented at the 21st Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 9-14, 2007. SLEEP, 30 (Supplement), A137.

90. Lipizzi, EL, Richards, JM, Balkin, TJ, Grugle, NL, & **Killgore, WD.** Morningness-Eveningness and Intelligence [abstract]. Abstract presented at the 21st Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 9-14, 2007. SLEEP, 30 (Supplement), A345.

91. Lipizzi, EL, Richards, JM, Balkin, TJ, Grugle, NL, & **Killgore WD.** Morningness-Eveningness affects risk-taking propensity during sleep deprivation [abstract]. Abstract presented at the 21st Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 9-14, 2007. SLEEP, 30 (Supplement), A136.

92. McBride, SA, Ganesan, G, Kamimori, GH, & **Killgore, WD.** Odor identification ability predicts vulnerability to attentional lapses during 77 hours of sleep deprivation [abstract]. Abstract presented at the 21st Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 9-14, 2007. SLEEP, 30 (Supplement), A135.

93. Smith, KL, McBride, S. A, Kamimori, GH, & **Killgore, WD.** Individual differences in odor discrimination predict mood dysregulation following 56 hours of sleep deprivation [abstract]. Abstract presented at the 21st Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 9-14, 2007. SLEEP, 30 (Supplement), A136.

94. McBride, SA, Leavitt, BP, Kamimori, GH, & **Killgore, WD.** Odor identification accuracy predicts resistance to sleep loss. Abstract presented at the 21st Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 9-14, 2007. SLEEP, 30 (Supplement), A137.

95. Killgore, DB, McBride, SA, Balkin, TJ, Grugle, NL. & **Killgore, WD.** Changes in odor discrimination predict executive function deficits following 45 hours of wakefulness [abstract]. Abstract presented at the 21st Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 9-14, 2007. SLEEP, 30 (Supplement), A136.

96. Rupp, TL, Killgore, DB, Balkin, TJ, Grugle, NL, & **Killgore, WD.** The effects of modafinil, dextroamphetamine, and caffeine on verbal and nonverbal fluency in sleep deprived individuals [abstract]. Abstract presented at the 21st Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 9-14, 2007. SLEEP, 30 (Supplement), A43.

97. Newman, RA, Krugler, AL, Kamimori, GH, & **Killgore, WD.** Changes in state and trait anger following 56 hours of sleep deprivation [abstract]. Abstract presented at the 21st Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 9-14, 2007. SLEEP, 30 (Supplement), A138.

98. Rupp, TL, Grugle, NL, Krugler, AL, Balkin, TJ, & **Killgore, WD.** Caffeine, dextroamphetamine, and modafinil improve PVT performance after sleep deprivation and recovery sleep [abstract]. Abstract presented at the 21st Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 9-14, 2007. SLEEP, 30 (Supplement), A44.

99. **Killgore, WD,** Lipizzi, EL, Balkin, TJ, Grugle, NL, & Killgore, DB. The effects of sleep deprivation and stimulants on self-reported sensation seeking propensity [abstract]. Abstract presented at the 21st Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 9-14, 2007. SLEEP, 30 (Supplement), A42.

100. **Killgore, WD,** Richards, JM, Balkin, TJ, Grugle, NL, & Killgore DB. The effects of sleep deprivation and stimulants on risky behavior [abstract]. Abstract presented at the 21st Meeting

of the Associated Professional Sleep Societies, Minneapolis, MN, June 9-14, 2007. SLEEP, 30 (Supplement), A41.

101. Newman, RA, Smith, KL, Balkin, TJ, Grugle, NL, & **Killgore, WD.** The effects of caffeine, dextroamphetamine, and modafinil on executive functioning following 45 hours of sleep deprivation [abstract]. Abstract presented at the 21st Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 9-14, 2007. SLEEP, 30 (Supplement), A45.

102. Richards, JM, Lipizzi, EL, Balkin, TJ, Grugle, NL, & **Killgore, WD.** Objective alertness predicts mood changes during 44 hours of sleep deprivation [abstract]. Abstract presented at the 21st Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 9-14, 2007. SLEEP, 30 (Supplement), A56.

103. **Killgore, WD,** & Yurgelun-Todd, DA. Cortical and Limbic Activation in Response to Visual Images of Low and High-Caloric Food [abstract]. Oral symposium presented at the 6th Annual Conference of the Society of Behavioral Nutrition and Physical Activity (ISBNPA), Oslo, Norway, June 20-23, 2007. Proceedings of the ISBNPA, 2007, 75.

104. Estrada, A, **Killgore, WD,** Rouse, T, Balkin, TJ, & Wildzunas, RM. Total sleep time measured by actigraphy predicts academic performance during military training [abstract]. Abstract presented at the 22nd Meeting of the Associated Professional Sleep Societies, Baltimore, MD, June 7-12, 2008. SLEEP, 31 (Supplement), A134.

105. **Killgore, WD,** Lipizzi, EL, Smith, KL, Killgore, DB, Rupp, TL, Kamimori, GH, & Balkin, T. J. Nonverbal intelligence is inversely related to the ability to resist sleep loss [abstract]. Abstract presented at the 22nd Meeting of the Associated Professional Sleep Societies, Baltimore, MD, June 7-12, 2008. SLEEP, 31 (Supplement), A134.

106. **Killgore, WD,** Lipizzi, EL, Killgore, DB, Rupp, TL, Kamimori, GH, & Balkin, TJ. Emotional intelligence predicts declines in emotion-based decision-making following sleep deprivation [abstract]. Abstract presented at the 22nd Meeting of the Associated Professional Sleep Societies, Baltimore, MD, June 7-12, 2008. SLEEP, 31 (Supplement), A134.

107. Reid, CT, Smith, K, **Killgore, WD,** Rupp, TL, & Balkin, TJ. Higher intelligence is associated with less subjective sleepiness during sleep restriction [abstract]. Abstract presented at the 22nd Meeting of the Associated Professional Sleep Societies, Baltimore, MD, June 7-12, 2008. SLEEP, 31 (Supplement), A375.

108. Newman, R, **Killgore, WD,** Rupp, T. L, & Balkin, TJ. Better baseline olfactory discrimination is associated with worse PVT and MWT performance with sleep restriction and recovery [abstract]. Abstract presented at the 22nd Meeting of the Associated Professional Sleep Societies, Baltimore, MD, June 7-12, 2008. SLEEP, 31 (Supplement), A375.

109. Smith, KL, Reid, CT, **Killgore, WD,** Rupp, TL, & Balkin, TJ. Personality factors associated with performance and sleepiness during sleep restriction and recovery [abstract]. Abstract presented at the 22nd Meeting of the Associated Professional Sleep Societies, Baltimore, MD, June 7-12, 2008. SLEEP, 31 (Supplement), A376.

110. Lipizzi, EL, **Killgore, WD,** Rupp, TL, & Balkin, TJ. Risk-taking behavior is elevated during recovery from sleep restriction [abstract]. Abstract presented at the 22nd Meeting of the Associated Professional Sleep Societies, Baltimore, MD, June 7-12, 2008. SLEEP, 31 (Supplement), A376.

111. Lipizzi, EL, Rupp, TL, **Killgore, WD,** & Balkin, TJ. Sleep restriction increases risk-taking behavior [abstract]. Poster presented at the 11th Annual Force Health Protection Conference, Albuquerque, NM, August, 9-15, 2008.

112. **Killgore, WD,** Estrada, A, Balkin, TJ, & Wildzunas, RM. Sleep duration during army training predicts course performance [abstract]. Poster presented at the 6th Annual Force Health Protection Conference, Albuquerque, NM, August, 11-17, 2008.

113. **Killgore, WD,** Lipizzi, EL, Smith, KL, Killgore, DB, Rupp, TL, Kamimori, GH, & Balkin, TJ. Higher cognitive ability is associated with reduced relative resistance to sleep loss [abstract]. Poster presented at the 6th Annual Force Health Protection Conference, Albuquerque, NM, August, 11-17, 2008.

114. **Killgore, WD,** Rupp, TL, Grugle, NL, Lipizzi, EL, & Balkin, TJ. Maintaining alertness during sustained operations: Which stimulant is most effective after 44 hours without sleep [abstract]? Poster presented at the 6th Annual Force Health Protection Conference, Albuquerque, NM, August, 11-17, 2008.

115. **Killgore, WD,** Newman, RA, Lipizzi, EL, Kamimori, GH, & Balkin, TJ. Sleep deprivation increases feelings of anger but reduces verbal and physical aggression in Soldiers [abstract]. Poster presented at the 6th Annual Force Health Protection Conference, Albuquerque, NM, August, 11-17, 2008.

116. Kelley, AM, Dretsch, M, **Killgore, WD,** & Athy, JR. Risky behaviors and attitudes about risk in Soldiers. Abstract presented at the 29th Annual Meeting of the Society for Judgment and Decision Making, Chicago, IL, November, 2008.

117. **Killgore, WD,** Ross, AJ, Silveri, MM, Gruber, SA, Kamiya, T, Kawada, Y, Renshaw, PF, & Yurgelun-Todd, DA. Citicoline affects appetite and cortico-limbic responses to images of high calorie foods. Abstract presented at the Society for Neuroscience, Washington DC, November 19, 2008.

118. Britton, JC, Stewart, SE, Price, LM, **Killgore, WD,** Gold, AL, Jenike, MA, & Rauch, SL. Reduced amygdalar activation in response to emotional faces in pediatric Obsessive-Compulsive Disorder. Abstract presented at the Annual meeting of the American College of Neuropsychopharmacology, Scottsdale, AZ, December 7-11, 2008.

119. **Killgore, WD,** Balkin, TJ, Estrada, A, & Wildzunas, RM. Sleep and performance measures in soldiers undergoing military relevant training. Abstract presented at the 26th Army Science Conference, Orlando, FL, December 1-4, 2008.

120. **Killgore, WD** & Yurgelun-Todd, DA. Cerebral correlates of amygdala responses during non-conscious perception of affective faces in adolescent children. Abstract presented at the 37th

Annual Meeting of the International Neuropsychological Society, Atlanta, GA, February 11-14, 2009.

121. **Killgore, WD,** Killgore, DB, Grugle, NL, & Balkin, TJ. Odor identification ability predicts executive function deficits following sleep deprivation. Abstract presented the 37th Annual Meeting of the International Neuropsychological Society, Atlanta, GA, February 11-14, 2009.

122. **Killgore, WD,** Rupp, TL, Killgore, DB, Grugle, NL, and Balkin, TJ. Differential effects of stimulant medications on verbal and nonverbal fluency during sleep deprivation. Abstract presented the 37th Annual Meeting of the International Neuropsychological Society, Atlanta, GA, February 11-14, 2009.

123. **Killgore, WD,** Killgore, DB, Kamimori, GH, & Balkin, TJ. When being smart is a liability: More intelligent individuals may be less resistant to sleep deprivation. Abstract presented the 37th Annual Meeting of the International Neuropsychological Society, Atlanta, GA, February 11-14, 2009.

124. **Killgore, WD,** Britton, JC, Price, LM, Gold, AL, Deckersbach, T, & Rauch, SL. Introversion is associated with greater amygdala and insula activation during viewing of masked affective stimuli. Abstract presented the 37th Annual Meeting of the International Neuropsychological Society, Atlanta, GA, February 11-14, 2009.

125. **Killgore, WD,** Britton, JC, Price, LM, Gold, AL, Deckersbach, T, & Rauch, SL. Amygdala responses of specific animal phobics do not differ from healthy controls during masked fearful face perception. Abstract presented the 37th Annual Meeting of the International Neuropsychological Society, Atlanta, GA, February 11-14, 2009.

126. **Killgore, WD,** Britton, JC, Price, LM, Gold, AL, Deckersbach, T, & Rauch, SL. Small animal phobics show sustained amygdala activation in response to masked happy facial expressions. Abstract presented the 37th Annual Meeting of the International Neuropsychological Society, Atlanta, GA, February 11-14, 2009. ***[*Merit Poster Award]***

127. Price, LM, **Killgore, WD,** Britton, JC, Kaufman, ML, Gold, AL, Deckersbach, T, & Rauch, SL. Anxiety sensitivity correlates with insula activation in response to masked fearful faces in specific animal phobics and healthy subjects. Abstract presented at the Annual Conference of the Anxiety Disorders Association of America, Santa Ana Pueblo, New Mexico, March 12-15, 2009.

128. **Killgore, WD,** Britton, JC, Price, LM, Gold, AL, Deckersbach, T, & Rauch, SL. Neuroticism is inversely correlated with amygdala and insula activation during masked presentations of affective stimuli. Abstract presented at the Annual Conference of the Anxiety Disorders Association of America, Santa Ana Pueblo, New Mexico, March 12-15, 2009.

129. **Killgore, WD,** Kelley, AM, & Balkin, TJ. Development and validation of a scale to measure the perception of invincibility. Abstract presented at the Annual Conference of the Anxiety Disorders Association of America, Santa Ana Pueblo, New Mexico, March 12-15, 2009.

130. Kelly, AM, **Killgore WD,** Athy, J, & Dretsch, M. Risk propensity, risk perception, risk aversion,

and sensation seeking in U.S. Army soldiers. Abstract presented at the 80th Annual Scientific Meeting of the Aerospace Medical Association, Los Angeles, CA, May 3-7, 2009.

131. Britton, JC, Stewart, SE, Price, LM, **Killgore, WD,** Jenike, MA, & Rauch, SL. The neural correlates of negative priming in pediatric obsessive-compulsive disorder (OCD). Abstract presented at the 64th Annual Scientific Meeting of the Society of Biological Psychiatry, Vancouver, Canada, May 14-16, 2009.

132. **Killgore, WD,** Killgore, DB, Kamimori, GH, & Balkin, TJ. Caffeine protects against increased risk-taking behavior during severe sleep deprivation. Abstract presented at the 23rd Annual Meeting of the Associated Professional Sleep Societies, Seattle, Washington, June 7-12, 2009.

133. Killgore, DB, **Killgore, WD,** Grugle, NL, & Balkin, TJ. Executive functions predict the ability to sustain psychomotor vigilance during sleep loss. Abstract presented at the 23rd Annual Meeting of the Associated Professional Sleep Societies, Seattle, Washington, June 7-12, 2009.

134. **Killgore, WD,** & Yurgelun-Todd, DA. Trouble falling asleep is associated with reduced activation of dorsolateral prefrontal cortex during a simple attention task. Abstract presented at the 23rd Annual Meeting of the Associated Professional Sleep Societies, Seattle, Washington, June 7-12, 2009.

135. **Killgore, WD,** Kelley, AM, & Balkin, TJ. A new scale for measuring the perception of invincibility. Abstract presented at the 12th Annual Force Health Protection Conference, Albuquerque, New Mexico, August 14-21, 2009.

136. **Killgore, WD,** Killgore, DB, Grugle, NL, & Balkin, TJ. Executive functions contribute to the ability to resist sleep loss. Abstract presented at the 12th Annual Force Health Protection Conference, Albuquerque, New Mexico, August 14-21, 2009.

137. **Killgore, WD,** Killgore, DB, Kamimori, GH, & Balkin, TJ. Caffeine reduces risk-taking behavior during severe sleep deprivation. Abstract presented at the 12th Annual Force Health Protection Conference, Albuquerque, New Mexico, August 14-21, 2009. ***[*Best Paper: Research]***

138. **Killgore, WD,** Castro, CA, & Hoge, CW. Normative data for the Evaluation of Risks Scale—Bubble Sheet Version (EVAR-B) for large scale surveys of returning combat veterans. Abstract presented at the 12th Annual Force Health Protection Conference, Albuquerque, New Mexico, August 14-21, 2009.

139. **Killgore, WD,** Castro, CA, & Hoge, CW. Combat exposure and post-deployment risky behavior. Abstract presented at the 12th Annual Force Health Protection Conference, Albuquerque, New Mexico, August 14-21, 2009.

140. **Killgore, WD**, Price, LM, Britton, JC, Simon, N, Pollack, MH, Weiner, MR, Schwab, ZJ, Rosso, IM, & Rauch, SL. Paralimbic responses to masked emotional faces in PTSD: Disorder and valence specificity. Abstract presented at the Annual McLean Hospital Research Day, January 29, 2010.

141. **Killgore, WD**, Killgore, DB, Kamimori, GH, & Balkin, TJ. Caffeine minimizes behavioral risk-taking during 75 hours of sleep deprivation. Abstract presented at the 38th Annual Meeting of the International Neuropsychological Society, Acapulco, Mexico, February 3-6, 2010.

142. **Killgore, WD** & Balkin, TJ. Vulnerability to sleep loss is affected by baseline executive function capacity. Abstract presented at the 38th Annual Meeting of the International Neuropsychological Society, Acapulco, Mexico, February 3-6, 2010.

143. **Killgore, WD**, Smith, KL, Reichardt, RM., Killgore, DB, & Balkin, TJ. Intellectual capacity is related to REM sleep following sleep deprivation. Abstract presented at the 38th Annual Meeting of the International Neuropsychological Society, Acapulco, Mexico, February 3-6, 2010.

144. **Killgore, WD** & Yurgelun-Todd, DA. Cerebral correlates of amygdala responses to masked fear, anger, and happiness in adolescent and pre-adolescent children. Abstract presented at the 38th Annual Meeting of the International Neuropsychological Society, Acapulco, Mexico, February 3-6, 2010.

145. **Killgore, WD**, Post, A, & Yurgelun-Todd, DA. Sex differences in cortico-limbic responses to images of high calorie food. Abstract presented at the 38th Annual Meeting of the International Neuropsychological Society, Acapulco, Mexico, February 3-6, 2010.

146. **Killgore, WD** & Yurgelun-Todd, DA. Self-reported insomnia is associated with increased activation within the default-mode network during a simple attention task. Abstract presented at the 38th Annual Meeting of the International Neuropsychological Society, Acapulco, Mexico, February 3-6, 2010.

147. **Killgore, WD**, Price, LM, Britton, JC, Gold, AL, Deckersbach, T, & Rauch, SL. Neural correlates of anxiety sensitivity factors during presentation of masked fearful faces. Abstract presented at the 38th Annual Meeting of the International Neuropsychological Society, Acapulco, Mexico, February 3-6, 2010.

148. **Killgore, WD**, Grugle, NL, Conrad, TA, & Balkin, TJ. Baseline executive function abilities predict risky behavior following sleep deprivation. Abstract presented at the 24th Annual Meeting of the Associated Professional Sleep Societies, San Antonio, Texas, June 5-9, 2010.

149. **Killgore, WD**, Grugle, NL, & Balkin, TJ. Judgment of objective vigilance performance is affected by sleep deprivation and stimulants. Abstract presented at the 24th Annual Meeting of the Associated Professional Sleep Societies, San Antonio, Texas, June 5-9, 2010.

150. Killgore, DB, **Killgore, WD**, Grugle, NL, & Balkin, TJ. Resistance to sleep loss and its relationship to decision making during sleep deprivation. Abstract presented at the 24th Annual Meeting of the Associated Professional Sleep Societies, San Antonio, Texas, June 5-9, 2010.

151. Killgore DB, **Killgore, WD**, Grugle, NL, & Balkin, TJ. Subjective sleepiness and objective performance: Differential effects of stimulants during sleep deprivation. Abstract presented at the 24th Annual Meeting of the Associated Professional Sleep Societies, San Antonio, Texas,

June 5-9, 2010.

152. Rupp, TL, **Killgore, WD**, & Balkin, TJ. Vulnerability to sleep deprivation is differentially mediated by social exposure in extraverts vs. introverts. Oral presentation at the "Data Blitz" section at the 24th Annual Meeting of the Associated Professional Sleep Societies, San Antonio, Texas, June 5-9, 2010.

153. Rupp, TL, **Killgore, WD**, & Balkin, TJ. Extraverts may be more vulnerable than introverts to sleep deprivation on some measures of risk-taking and executive functioning. Abstract presented at the 24th Annual Meeting of the Associated Professional Sleep Societies, San Antonio, Texas, June 5-9, 2010.

154. Rupp, TL, **Killgore, WD**, & Balkin, TJ. Vulnerability to sleep deprivation is differentially mediated by social exposure in extraverts vs. introverts. Abstract presented at the 24th Annual Meeting of the Associated Professional Sleep Societies, San Antonio, Texas, June 5-9, 2010.

155. Capaldi, VF, Guerrero, ML, & **Killgore, WD**. Sleep disorders among OIF and OEF Soldiers. Abstract presented at the 24th Annual Meeting of the Associated Professional Sleep Societies, San Antonio, Texas, June 5-9, 2010.

156. **Killgore, WD**, Killgore, DB, Kamimori, GH, & Balkin, TJ. Caffeine reduces behavioral risk-taking during sleep deprivation. Abstract presented at the 65th Annual Meeting of the Society for Biological Psychiatry, New Orleans, Louisiana, May 20-22, 2010.

157. **Killgore, WD**, Price, LM, Britton, JC, Simon, N, Pollack, MH, Weiner, MR, Schwab, ZJ, Rosso, IM, & Rauch, SL. Paralimbic responses to masked emotional faces in PTSD: Disorder and valence specificity. Abstract presented at the 65th Annual Meeting of the Society for Biological Psychiatry, New Orleans, Louisiana, May 20-22, 2010.

158. Rosso, IM, Makris, N, Britton, JC, Price, LM, Gold, AL, Deckersbach, T, **Killgore, WD**, & Rauch SL. Anxiety sensitivity correlates with insular cortex volume and thickness in specific animal phobia. Abstract presented at the 65th Annual Meeting of the Society for Biological Psychiatry, New Orleans, Louisiana, May 20-22, 2010.

159. Rupp, TL, **Killgore, WD**, & Balkin, TJ. Vulnerability to sleep deprivation is mediated by social exposure in extraverts versus introverts. Oral platform presentation at the 20th Congress of the European Sleep Research Society, Lisbon, Portugal, September 14-18, 2010.

160. **Killgore, WD**, Estrada, A, & Balkin, TJ. A tool for monitoring soldier fatigue and predicting cognitive readiness: The Sleep History and Readiness Predictor (SHARP). Abstract presented at the 27th Army Science Conference, Orlando, FL, November 29-December 2, 2010.

161. **Killgore, WD**, Kamimori, GH, & Balkin, TJ. Caffeinated gum minimizes risk-taking in soldiers during prolonged sleep deprivation. Abstract presented at the 27th Army Science Conference, Orlando, FL, November 29-December 2, 2010.

162. **Killgore, WD**, Britton, JC, Schwab, ZJ, Weiner, MR, Rosso, IM, & Rauch, SL. Exaggerated amygdala responses to masked fearful faces are specific to PTSD versus simple phobia. Oral

platform presentation at the 27th Army Science Conference, Orlando, FL, November 29-December 2, 2010. ***[*Winner Best Paper in Neuroscience]***

163. **Killgore, WD**, Kamimori, GH, & Balkin, TJ. Sleep deprivation selectively impairs emotional aspects of cognitive functioning. Oral platform presentation at the 27th Army Science Conference, Orlando, FL, November 29-December 2, 2010.

164. Rupp, TL, **Killgore, WD**, & Balkin, TJ. Evaluation of personality and social exposure as individual difference factors influencing response to sleep deprivation. Oral platform presentation at the 27th Army Science Conference, Orlando, FL, November 29-December 2, 2010.

165. **Killgore, WD**, Britton, JC, Rosso, IM, Schwab, ZJ, Weiner, MR, & Rauch, SL. Shared and differential patterns of amygdalo-cortical activation across anxiety disorders. Abstract presented at the 49th Annual Meeting of the American College of Neuropsychopharmacology, Miami Beach, FL, December 5-9, 2010.

166. Rosso, IM, **Killgore, WD**, Britton, JC, Weiner, MR, Schwab, ZJ, & Rauch, SL. Neural correlates of PTSD symptom dimensions during emotional processing: A functional magnetic resonance imaging study. Abstract presented at the 49th Annual Meeting of the American College of Neuropsychopharmacology, Miami Beach, FL, December 5-9, 2010.

167. **Killgore, WD,** Rosso, IM, Britton, JC, Schwab, ZJ, Weiner, MR, & Rauch, SL. Cortico-limbic activation differentiates among anxiety disorders with and without a generalized threat response. Abstract presented at the McLean Hospital Research Day, January 13, 2011.

168. Weiner, MR, Schwab, ZJ, Rauch, SL, & **Killgore WD**. Personality factors predict brain responses to images of high-calorie foods. Abstract presented at the McLean Hospital Research Day, January 13, 2011.

169. Schwab, ZJ, Weiner, MR, Rauch, SL, & **Killgore, WD.** Emotional and cognitive intelligence: Support for the neural efficiency hypothesis. Abstract presented at the McLean Hospital Research Day, January 13, 2011.

170. Crowley, DJ, Covell, MJ, **Killgore, WD**, Schwab, ZJ, Weiner, MR, Acharya, D, Rosso, IM, & Silveri, MM. Differential influence of facial expression on inhibitory capacity in adolescents versus adults. Abstract presented at the McLean Hospital Research Day, January 13, 2011.

171. **Killgore, WD**, Britton, JC, Rosso, IM, Schwab, ZJ, Weiner, MR, & Rauch, SL. Similarities and differences in cortico-limbic responses to masked affect probes across anxiety disorders. Abstract presented at the 39th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 2-5, 2011.

172. Rosso, IM, **Killgore, WD**, Britton, JC, Weiner, MR, Schwab, ZJ, & Rauch, SL. Hyperarousal and reexperiencing symptoms of post-traumatic stress disorder are differentially associated with limbic-prefrontal brain responses to threatening stimuli. Abstract presented at the 39th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 2-5, 2011.

173. Schwab, ZJ, Weiner, MR, Rauch, SL, & **Killgore, WD**. Neural correlates of cognitive and emotional intelligence in adults. Abstract presented at the 39th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 2-5, 2011.

174. Schwab, ZJ, Weiner, MR, Rauch, SL, & **Killgore, WD**. Cognitive and emotional intelligences: Are they distinct or related constructs? Abstract presented at the 39th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 2-5, 2011.

175. Schwab, ZJ, Weiner, MR, Rauch, SL, & **Killgore, WD**. Discrepancy scores between cognitive and emotional intelligence predict neural responses to affective stimuli. Abstract presented at the 39th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 2-5, 2011.

176. **Killgore, WD**, Schwab, ZJ, Weiner, MR, & Rauch, SL. Smart people go with their gut: Emotional intelligence correlates with non-conscious insular responses to facial trustworthiness. Abstract presented at the 39th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 2-5, 2011.

177. **Killgore, WD**, Weiner, MR, Schwab, ZJ, & Rauch, SL. Whom can you trust? Neural correlates of subliminal perception of facial trustworthiness. Abstract presented at the 39th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 2-5, 2011.

178. Weiner, MR, Schwab, ZJ, & Rauch, SL, **Killgore, WD**. Impulsiveness predicts responses of brain reward circuitry to high-calorie foods. Abstract presented at the 39th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 2-5, 2011.

179. Weiner, MR, Schwab, ZJ, & Rauch, SL, **Killgore, WD**. Conscientiousness predicts brain responses to images of high-calorie foods. Abstract presented at the 39th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 2-5, 2011.

180. Crowley, DJ, Covell, MJ, **Killgore, WD**, Schwab, ZJ, Weiner, MR, Acharya, D, Rosso, IM, & Silveri, MM. Differential influence of facial expression on inhibitory capacity in adolescents versus adults. Abstract presented at the 39th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 2-5, 2011.

181. Gruber, SA, Dahlgren, MK, **Killgore, WD**, Sagar, KA, & Racine, MT. Marijuana: Age of onset of use impacts executive function and brain activation. Abstract presented at the 39th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 2-5, 2011.

182. **Killgore, WD,** Conrad, TA, Grugle, NL, & Balkin, TJ. Baseline executive function abilities correlate with risky behavior following sleep deprivation. Abstract presented at the 39th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 2-5, 2011.

183. **Killgore, WD,** Grugle, NL, Killgore, DB, & Balkin, TJ. Resistance to sleep loss and decision making during sleep deprivation. Abstract presented at the 39th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 2-5, 2011.

184. **Killgore, WD,** Rosso, IM, Britton, JC, Schwab, ZJ, Weiner, MR, & Rauch, SL. Cortico-limbic activation differentiates among anxiety disorders with and without a generalized threat response. Abstract presented at the 66th Annual Meeting of the Society for Biological Psychiatry, San Francisco, CA, May 12-14, 2011. ***[*Blue Ribbon Finalist: Clinical/Translational]***

185. Schwab, ZJ, Weiner, MR, Rauch, SL, & **Killgore, WD.** Emotional and cognitive intelligence: Support for the neural efficiency hypothesis. Abstract presented at the 66th Annual Meeting of the Society for Biological Psychiatry, San Francisco, CA, May 12-14, 2011.

186. Weiner, MR, Schwab, ZJ, Rauch, SL, & **Killgore WD**. Personality factors predict brain responses to images of high-calorie foods. Abstract presented at the 66th Annual Meeting of the Society for Biological Psychiatry, San Francisco, CA, May 12-14, 2011.

187. **Killgore, WD,** Grugle, NL, & Balkin, TJ. Sleep deprivation impairs recognition of specific emotions. Abstract presented at the 25th Annual Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 11-15, 2011.

188. **Killgore, WD,** & Balkin, TJ. Does vulnerability to sleep deprivation influence the effectiveness of stimulants on psychomotor vigilance? Abstract presented at the 25th Annual Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 11-15, 2011.

189. Killgore, DB, **Killgore, WD,** Grugle, NJ, & Balkin, TJ. Sleep deprivation impairs recognition of specific emotions. Abstract presented at the 25th Annual Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 11-15, 2011.

190. Weiner, MR, Schwab, ZJ, & **Killgore, WD.** Daytime sleepiness is associated with altered brain activation during visual perception of high-calorie foods: An fMRI study. Abstract presented at the 25th Annual Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 11-15, 2011.

191. Schwab, ZJ, Weiner, MR, & **Killgore, WD.** Functional MRI correlates of morningness-eveningness during visual presentation of high calorie foods. Abstract presented at the 25th Annual Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 11-15, 2011.

192. **Killgore, WD,** Weiner, MR, & Schwab, ZJ. Daytime sleepiness affects prefrontal regulation of food intake. Abstract presented at the McLean Hospital Research Day, January 11, 2012.

193. Kipman, M, Schwab ZJ, Weiner, MR, DelDonno, S, Rauch SL, & **Killgore WD**. The insightful yet bitter comedian: The role of emotional versus cognitive intelligence in humor appreciation. Abstract presented at the McLean Hospital Research Day, January 11, 2012.

194. Weber, M, & **Killgore, WD**. Gray matter correlates of emotional intelligence. Abstract presented at the McLean Hospital Research Day, January 11, 2012.

195. Schwab, ZJ, & **Killgore, WD**. Sex differences in functional brain responses to food. Abstract

presented at the McLean Hospital Research Day, January 11, 2012.

196. DelDonno, S, Schwab, ZJ, Kipman M, Rauch, SL, & **Killgore, WD**. The influence of cognitive and emotional intelligence on performance on the Iowa Gambling Task. Abstract presented at the McLean Hospital Research Day, January 11, 2012.

197. Song, CH, Kizielewicz, J, Schwab, ZJ, Weiner, MR, Rauch, SL, & **Killgore, WD**. Time is of the essence: The Design Organization Test as a valid, reliable, and brief measure of visuospatial ability. Abstract presented at the 40th Annual Meeting of the International Neuropsychological Society, Montreal, CA, February 15-18, 2012.

198. Kipman, M, Schwab, ZJ, DelDonno, S, & **Killgore, WD**. Gender differences in the contribution of cognitive and emotional intelligence to the left visual field bias for facial perception. Abstract presented at the 40th Annual Meeting of the International Neuropsychological Society, Montreal, CA, February 15-18, 2012.

199. Kipman, M., Schwab, ZJ, Weiner, MR, DelDonno, S, Rauch, SL, & **Killgore, WD**. Contributions of emotional versus cognitive intelligence in humor appreciation. Abstract presented at the 40th Annual Meeting of the International Neuropsychological Society, Montreal, CA, February 15-18, 2012.

200. Schwab, ZJ, & **Killgore, WD**. Disentangling emotional and cognitive intelligence. Abstract presented at the 40th Annual Meeting of the International Neuropsychological Society, Montreal, CA, February 15-18, 2012.

201. Schwab, ZJ, & **Killgore, WD**. Sex differences in functional brain responses to food. Abstract presented at the 40th Annual Meeting of the International Neuropsychological Society, Montreal, CA, February 15-18, 2012.

202. DelDonno, S, Schwab, ZJ, Kipman, M, Rauch, SL, & **Killgore, WD**. The influence of cognitive and emotional intelligence on performance on the Iowa Gambling Task. Abstract presented at the 40th Annual Meeting of the International Neuropsychological Society, Montreal, CA, February 15-18, 2012.

203. **Killgore, WD**, Britton, JC, Rosso, IM, Schwab, ZJ, Weiner, MR, & Rauch, SL. Shared and unique patterns of cortico-limbic activation across anxiety disorders. Abstract presented at the 40th Annual Meeting of the International Neuropsychological Society, Montreal, CA, February 15-18, 2012.

204. **Killgore, WD**, & Balkin, TJ. Sleep deprivation degrades recognition of specific emotions. Abstract presented at the 40th Annual Meeting of the International Neuropsychological Society, Montreal, CA, February 15-18, 2012.

205. **Killgore, WD**, & Schwab, ZJ. Emotional intelligence correlates with somatic marker circuitry responses to subliminal cues of facial trustworthiness. Abstract presented at the 40th Annual Meeting of the International Neuropsychological Society, Montreal, CA, February 15-18, 2012.

206. **Killgore, WD**, & Schwab, ZJ. Trust me! Neural correlates of the ability to identify facial trustworthiness. Abstract presented at the 40th Annual Meeting of the International Neuropsychological Society, Montreal, CA, February 15-18, 2012.

207. **Killgore, WD**, Schwab, ZJ, Weiner, MR, Kipman, M, DelDonno, S, & Rauch SL. Overeating is associated with altered cortico-limbic responses to images of high calorie foods. Abstract presented at the 40th Annual Meeting of the International Neuropsychological Society, Montreal, CA, February 15-18, 2012.

208. **Killgore, WD**, Weiner, MR, & Schwab, ZJ. Daytime sleepiness affects prefrontal regulation of food intake. Abstract presented at the 40th Annual Meeting of the International Neuropsychological Society, Montreal, CA, February 15-18, 2012.

209. Weber, M, DelDonno, S, Kipman M, Schwab, ZJ, & **Killgore WD**. Grey matter correlates of self-reported sleep duration. Abstract presented at the Harvard Medical School Research Day, Boston, MA, March 28, 2012.

210. **Killgore, WD**. Overlapping and distinct patterns of neurocircuitry across PTSD, Panic Disorder, and Simple Phobia. Abstract presented at the 32nd Annual Conference of the Anxiety Disorders Association of America, Arlington, VA, April 12-15, 2012.

211. **Killgore, WD**, Britton, JC, Rosso, IM, Schwab, ZJ, & Rauch, SL. Shared and unique patterns of cortico-limbic activation across anxiety disorders. Abstract presented at the 67th Annual Meeting of the Society of Biological Psychiatry, Philadelphia, PA, May 3-5, 2012.

212. **Killgore, WD**, Schwab, ZJ, & Rauch, SL. Daytime sleepiness affects prefrontal inhibition of food consumption. Abstract presented at the 67th Annual Meeting of the Society of Biological Psychiatry, Philadelphia, PA, May 3-5, 2012.

213. Rosso, IM, Britton, JC, Makris, N, **Killgore, WD**, Rauch SL, & Stewart ES. Impact of major depression comorbidity on prefrontal and anterior cingulate volumes in pediatric OCD. Abstract presented at the 67th Annual Meeting of the Society of Biological Psychiatry, Philadelphia, PA, May 3-5, 2012.

214. Kipman, M, Weber, M, DelDonno, S., Schwab, ZJ, & **Killgore, WD**. Morningness-Eveningness correlates with orbitofrontal gray matter volume. Abstract presented at the 26th Annual Meeting of the Associated Professional Sleep Societies, Boston, MA, June 9-13, 2012.

215. Kipman, M, Schwab, ZJ, Weber, M, DelDonno, S, & **Killgore, WD**. Yawning frequency is correlated with reduced medial thalamic volume. Abstract presented at the 26th Annual Meeting of the Associated Professional Sleep Societies, Boston, MA, June 9-13, 2012.

216. Weber, M, DelDonno, S, Kipman M, Schwab, ZJ, & **Killgore WD**. Grey matter correlates of daytime sleepiness. Abstract presented at the 26th Annual Meeting of the Associated Professional Sleep Societies, Boston, MA, June 9-13, 2012.

217. Weber, M, DelDonno, S, Kipman M, Schwab, ZJ, & **Killgore WD**. Grey matter correlates of self-reported sleep duration. Abstract presented at the 26th Annual Meeting of the Associated

Professional Sleep Societies, Boston, MA, June 9-13, 2012.

218. DelDonno, S, Weber, M, Kipman M, Schwab, ZJ, & **Killgore, WD**. Resistance to insufficient sleep correlates with olfactory cortex gray matter. Abstract presented at the 26th Annual Meeting of the Associated Professional Sleep Societies, Boston, MA, June 9-13, 2012.

219. DelDonno, S, Schwab, ZJ, Kipman, M, Weber, M, & **Killgore, WD**. Weekend sleep is related to greater coping and resilience capacities. Abstract presented at the 26th Annual Meeting of the Associated Professional Sleep Societies, Boston, MA, June 9-13, 2012.

220. Schwab, ZJ, DelDonno, S, Weber, M, Kipman M, & **Killgore, WD**. Habitual caffeine consumption and cerebral gray matter volume. Abstract presented at the 26th Annual Meeting of the Associated Professional Sleep Societies, Boston, MA, June 9-13, 2012.

221. Schwab, ZJ, & **Killgore, WD**. Daytime sleepiness affects prefrontal regulation of food intake. Abstract presented at the 26th Annual Meeting of the Associated Professional Sleep Societies, Boston, MA, June 9-13, 2012.

222. **Killgore, WD**, Schwab, ZJ, DelDonno S, Kipman, M, Weber M, & Rauch, SL. Greater nocturnal sleep time is associated with increased default mode functional connectivity. Abstract presented at the 26th Annual Meeting of the Associated Professional Sleep Societies, Boston, MA, June 9-13, 2012.

223. **Killgore, WD**, Kamimori, GH, & Balkin, TJ. Caffeine improves efficiency of planning and sequencing abilities during sleep deprivation. Abstract presented at the 26th Annual Meeting of the Associated Professional Sleep Societies, Boston, MA, June 9-13, 2012.

224. Sneider, JT, **Killgore, WD**, Crowley, DJ, Cohen-Gilbert, JE, Schwab, ZJ, & Silveri, MM. Inhibitory capacity in emerging adult binge drinkers: Influence of Facial Cues. Abstract presented at the 35th Annual Scientific Meeting of the Research Society on Alcoholism, San Francisco, CA, June 23-27, 2012.

225. **Killgore WD**. Multimodal neuroimaging to predict cognitive resilience against sleep loss. Abstract presented at the DARPA Young Faculty Award 2012 Meeting, Arlington, VA, July 30-31, 2012. ***[*Winner Young Faculty Award in Neuroscience]***

226. Cohen-Gilbert, JE, **Killgore WD**, Crowley, DJ, Covell, MJ, Schwab, ZJ, Weiner, MR, Acharya, D, Sneider, JT, & Silveri, MM. Differential influence of safe versus threatening facial expressions on inhibitory control across adolescence and adulthood. Abstract presented at the Society for Neuroscience 2012 Meeting, New Orleans, LA, October 13-17, 2012.

227. Weber, M, DelDonno, S, Kipman M, Schwab, ZJ, & **Killgore WD**. Grey matter correlates of self-reported sleep duration. Abstract presented at the Harvard Division of Sleep Medicine Annual Poster Session, Boston, MA, September 27, 2012.

228. Weber, M, DelDonno, SR, Kipman, M, Preer, LA, Schwab ZJ, Weiner, MR, & **Killgore, WD.** The effect of morning bight light therapy on sleep, cognition and emotion following mild traumatic brain injury. Abstract presented at the 2012 Sleep Research Network Meeting, 22-23

October 2012, Bethesda, MD.

229. Sneider, JT, **Killgore, WD**, Crowley, DJ, Cohen-Gilbert, JE, Schwab, ZJ, & Silveri, MM. Inhibitory capacity in emerging adult binge drinkers: Influence of Facial Cues. Abstract presented at the Annual McLean Hospital Research Day, January 16, 2013.

230. Cohen-Gilbert, JE, **Killgore WD**, Crowley, DJ, Covell, MJ, Schwab, ZJ, Weiner, MR, Acharya, D, Sneider, JT, & Silveri, MM. Differential influence of safe versus threatening facial expressions on inhibitory control across adolescence and adulthood. Abstract presented at the Annual McLean Hospital Research Day, January 16, 2013.

231. Tkachenko, O, Schwab, ZJ, Kipman, M, DelDonno, S, Gogel, H., Preer, L, & **Killgore, WD**. Smarter women need less sleep. Abstract presented at the Annual McLean Hospital Research Day, January 16, 2013.

232. DelDonno, S, Kipman, M, Schwab, ZJ, & **Killgore, WD**. The contributions of emotional intelligence and facial perception to social intuition. Abstract presented at the Annual McLean Hospital Research Day, January 16, 2013.

233. Kipman, M, Schwab, ZJ, DelDonno, S, Weber, M, Rauch, SL, & **Killgore, WD**. The neurocircuitry of impulsive behavior. Abstract presented at the Annual McLean Hospital Research Day, January 16, 2013.

234. Preer, LA, Tkachenko, O, Gogel, H, Schwab, ZJ, Kipman, M, DelDonno, SR, Weber, M, Webb, CA, & **Killgore, WD**. Emotional intelligence as a mediator of the association between anxiety sensitivity and anxiety symptoms. Abstract presented at the Annual McLean Hospital Research Day, January 16, 2013.

235. Gogel, H, DelDonno, S, Kipman M, Preer, LA, Schwab, ZJ, Tkachenko, O, & **Killgore, WD**. Validation of the Design Organization Test (DOT) in a healthy population. Abstract presented at the Annual McLean Hospital Research Day, January 16, 2013.

236. Brennan, BP, Schwab, ZS, Athey, AJ, Ryan, EM, Pope, HG, **Killgore, WD**, Jenike, MA, & Rauch, SL. A functional magnetic resonance imaging study of rostral anterior cingulate cortex activation in obsessive-compulsive disorder using an emotional counting stroop paradigm. Abstract presented at the Annual McLean Hospital Research Day, January 16, 2013.

237. Cohen-Gilbert, JE, Schwab, ZJ, **Killgore, WD**, Crowley, DJ, & Silveri MM. Influence of Binge Drinking on the Neural Correlates of Inhibitory Control during Emotional Distraction in Young Adults. Abstract presented at the 3rd International Conference on Applications of Neuroimaging to Alcoholism (ICANA-3), New Haven, CT, February 15-18, 2013.

238. Weber, M, & **Killgore, WD**. The interrelationship between 'sleep credit', emotional intelligence and mental health – a voxel-based morphometric study. Abstract presented at Harvard Medical School Psychiatry Research Day, April 10, 2013.

239. Cohen-Gilbert, JE, Schwab, ZJ, **Killgore, WD**, Crowley, DJ, & Silveri MM. Influence of Binge Drinking on the Neural Correlates of Inhibitory Control during Emotional Distraction in

Young Adults. Abstract presented at Harvard Medical School Psychiatry Research Day, April 10, 2013.

240. Mundy, EA, Weber, M, Rauch, SL, **Killgore, WD**, & Rosso, IM. The relationship between subjective stress levels in childhood and anxiety as well as perceived stress as an adult. Abstract presented at Harvard Medical School Psychiatry Research Day, April 10, 2013.

241. Webb, CA, **Killgore, WD**, Britton, JC, Schwab, ZJ, Price, LM, Weiner, MR, Gold, AL, Rosso, IM, Simon, NM, Pollack, MH, & Rauch, SL. Comparing categorical versus dimensional predictors of functional response across three anxiety disorders. Abstract presented at the 68th Annual Meeting of the Society of Biological Psychiatry, San Francisco, CA, May 16-18, 2013.

242. Preer, LA, Tkachenko, O, Gogel, H, Schwab, ZJ, Kipman, M, DelDonno, SR, Weber, M, Webb, CA, Rauch, SL, & **Killgore, WD**. Linking Sleep Trouble to Neuroticism, Emotional Control, and Impulsiveness. Abstract presented at the 68th Annual Meeting of the Society of Biological Psychiatry, San Francisco, CA, May 16-18, 2013.

243. Preer, LA, Tkachenko, O, Gogel, H, Schwab, ZJ, Kipman, M, DelDonno, SR, Weber, M, Webb, CA, Rauch, SL, & **Killgore, WD**. Emotional Intelligence as a Mediator of the Association between Anxiety Sensitivity and Anxiety Symptoms. Abstract presented at the 68th Annual Meeting of the Society of Biological Psychiatry, San Francisco, CA, May 16-18, 2013.

244. Kipman, M, Schwab, ZJ, DelDonno, S, Weber, M, Rauch, SL, & **Killgore, WD**. The neurocircuitry of impulsive behavior. Abstract presented at the 68th Annual Meeting of the Society of Biological Psychiatry, San Francisco, CA, May 16-18, 2013.

245. Weber, M, **Killgore, WD**, Rosso, IM, Britton, JC, Simon, NM, Pollack, MH, & Rauch, SL. Gray matter correlates of posttraumatic stress disorder—A voxel based morphometry study. Abstract presented at the 68th Annual Meeting of the Society of Biological Psychiatry, San Francisco, CA, May 16-18, 2013.

246. Weber, M, Penetar, DM, Trksak, GH, DelDonno, SR, Kipman, M, Schwab, ZJ, & **Killgore, WD**. Morning blue wavelength light therapy improves sleep, cognition, emotion and brain function following mild traumatic brain injury. Abstract presented at the 68th Annual Meeting of the Society of Biological Psychiatry, San Francisco, CA, May 16-18, 2013.

247. Tkachenko, O, Schwab, ZJ, Kipman, M, Preer, LA, Gogel, H, DelDonno, SR, Weber, M, Webb, CA, Rauch, SL, & **Killgore, WD**. Difficulty in falling asleep and staying asleep linked to a sub-clinical increase in symptoms of psychopathology. Abstract presented at the 68th Annual Meeting of the Society of Biological Psychiatry, San Francisco, CA, May 16-18, 2013.

248. **Killgore, WD**, Schwab, ZJ, Kipman, M, DelDonno, SR, Rauch, SL, & Weber, M. Problems with sleep initiation and sleep maintenance correlate with functional connectivity among primary sensory cortices. Abstract presented at the 68th Annual Meeting of the Society of Biological Psychiatry, San Francisco, CA, May 16-18, 2013.

249. **Killgore, WD**, Schwab, ZJ, Kipman, M, DelDonno, SR, Rauch, SL, & Weber, M. A Couple of Hours Can Make a Difference: Self-Reported Sleep Correlates with Prefrontal-Amygdala

Connectivity and Emotional Functioning. Abstract presented at the 68th Annual Meeting of the Society of Biological Psychiatry, San Francisco, CA, May 16-18, 2013.

250. Brennan, BP, Schwab, ZS, Athey, AJ, Ryan, EM, Pope, HG, **Killgore, WD**, Jenike, MA, & Rauch, SL. A functional magnetic resonance imaging study of rostral anterior cingulate cortex activation in obsessive-compulsive disorder using an emotional counting stroop paradigm. Abstract presented at the 68th Annual Meeting of the Society of Biological Psychiatry, San Francisco, CA, May 16-18, 2013.

251. Weber, M, & **Killgore, WD**. The interrelationship between 'sleep credit', emotional intelligence and mental health – a voxel-based morphometric study. Abstract presented at the SLEEP 2013 Annual Meeting, Baltimore, MD, June 1-5, 2013.

252. Weber, M, Penetar, DM, Trksak, GH, DelDonno, SR, Kipman, M, Schwab, ZJ, & **Killgore, WD**. Morning blue wavelength light therapy improves sleep, cognition, emotion and brain function following mild traumatic brain injury. Abstract presented at the SLEEP 2013 Annual Meeting, Baltimore, MD, June 1-5, 2013.

253. **Killgore, WD**, Schwab, ZJ, Kipman, M, DelDonno, SR, & Weber, M. Problems with Sleep Initiation and Sleep Maintenance Correlate with Functional Connectivity Among Primary Sensory Cortices. Abstract presented at the SLEEP 2013 Annual Meeting, Baltimore, MD, June 1-5, 2013.

254. **Killgore, WD**, Schwab, ZJ, Kipman, M, DelDonno, SR, & Weber, M. A Couple of Hours Can Make a Difference: Self-Reported Sleep Correlates with Prefrontal-Amygdala Connectivity and Emotional Functioning. Abstract presented at the SLEEP 2013 Annual Meeting, Baltimore, MD, June 1-5, 2013.

255. Tkachenko, O, Schwab, ZJ, Kipman, M, DelDonno, SR, Preer, LA, Gogel, H, Weber, M, Webb, CA, & **Killgore, WD**. Difficulty in falling asleep and staying asleep linked to a sub-clinical increase in symptoms of psychopathology. Abstract presented at the SLEEP 2013 Annual Meeting, Baltimore, MD, June 1-5, 2013.

256. Preer, LA, Tkachenko, O, Gogel, H, Schwab, ZJ, Kipman, M, DelDonno, SR, Weber, M, Webb, CA, & **Killgore, WD**. Linking Sleep Initiation Trouble to Neuroticism, Emotional Control, and Impulsiveness. Abstract presented at the SLEEP 2013 Annual Meeting, Baltimore, MD, June 1-5, 2013.

257. **Killgore, WD**. Sleep duration contributes to cortico-limbic functional connectivity, emotional functioning, & psychological health. Abstract presented at the 52nd Annual Meeting of the American College of Neuropsychopharmacology, Hollywood, FL, December 8-12, 2013.

258. Preer, L, Tkachenko, O, Gogel, H, Bark, JS, Kipman, M, Olson, EA, & **Killgore, WD**. The role of personality in sleep initiation problems. Abstract presented at the Annual McLean Hospital Research Day, January 22, 2014.

259. Demers, LA, Olson, EA, Weber, M, Divatia, S, Preer, L, & **Killgore, WD**. Paranoid traits are related to deficits in complex social decision-making and reduced superior temporal sulcus

volume. Abstract presented at the Annual McLean Hospital Research Day, January 22, 2014.

260. Tkachenko, O, Weber, M, Gogel, H, & **Killgore, WD**. Predisposition towards unhealthy foods linked with increased gray matter in the cerebellum. Abstract presented at the Annual McLean Hospital Research Day, January 22, 2014.

261. Olson, EA, Weber, M, Tkachenko, O, & **Killgore, WD**. Daytime sleepiness is associated with decreased integration of remote outcomes on the IGT. Abstract presented at the Annual McLean Hospital Research Day, January 22, 2014.

262. Cui, J, Tkachenko, O, & **Killgore, WD**. Can the activation of anterior cingulate predict the emotional suppression? An fMRI study with masked faces. Abstract presented at the Annual McLean Hospital Research Day, January 22, 2014.

263. Gogel, H, & **Killgore WDS**. A psychometric validation of the Design Organization Test (DOT) in a healthy sample. Abstract presented at the 42nd Annual Meeting of the International Neuropsychological Society, Seattle WA, February 12-15, 2014.

264. **Killgore, WD**, Kipman, M, Tkachenko, O, Gogel, H., Preer, L, Demers, LA, Divatia, SC, Olson, EA, & Weber, M. Predicting resilience against sleep loss with multi-modal neuroimaging. Abstract presented at the 42nd Annual Meeting of the International Neuropsychological Society, Seattle WA, February 12-15, 2014.

265. **Killgore, WD**, Weber, M, Bark, JS, Kipman, M, Gogel, H, Preer, L, Tkachenko, O, Demers, LA, Divatia, SC, & Olson, EA. Physical exercise correlates with hippocampal volume in healthy adults. Abstract presented at the 42nd Annual Meeting of the International Neuropsychological Society, Seattle WA, February 12-15, 2014.

266. **Killgore, WD**, Tkachenko, O, Weber, M, Kipman, M, Preer, L, Gogel, H, & Olson, EA. The association between sleep, functional connectivity, and emotional functioning. Abstract presented at the 42nd Annual Meeting of the International Neuropsychological Society, Seattle WA, February 12-15, 2014.

267. Preer, L, Tkachenko, O, Gogel, H, Bark, JS, Kipman, M, Olson, EA, & **Killgore, WD**. The role of personality in sleep initiation problems. Abstract presented at the 42nd Annual Meeting of the International Neuropsychological Society, Seattle WA, February 12-15, 2014.

268. Tkachenko, O, Weber, M, Olson, EA, Gogel, H, Preer, LA, Divatia, SC, Demers, LA, & **Killgore, WD**. Gray matter volume within the medial prefrontal cortex correlates with behavioral risk taking. Abstract presented at the 42nd Annual Meeting of the International Neuropsychological Society, Seattle WA, February 12-15, 2014.

269. Olson, EA, Weber, M, Bark JS, Demers L, Divatia, SC, Gogel, H, Kipman M, Preer, L, Tkachenko, O, & **Killgore, WD**. Sex differences in threat evaluation of emotionally neutral faces. Abstract presented at the 42nd Annual Meeting of the International Neuropsychological Society, Seattle WA, February 12-15, 2014.

270. Cui, J, Tkachenko, O, & **Killgore, WD**. Can the activation of anterior cingulate predict the

emotional suppression? An fMRI study with masked faces. Abstract presented at the 36nd Annual Conference of the Anxiety Disorders Association of America, Chicago, IL, March 27-30, 2014.

271. Webb, CA, Weber, M, Mundy, EA, & **Killgore, WD**. Reduced gray matter volume in the anterior cingulate, orbitofrontal cortex and thalamus as a function of depressive symptoms: A voxel-based morphometric analysis. Abstract presented at the 36nd Annual Conference of the Anxiety Disorders Association of America, Chicago, IL, March 27-30, 2014.

272. Weber, M, Penetar, DM, Trksak, GH, Kipman, M, Tkachenko, O, Bark, JS, Jorgensen, AL, Rauch, SL, & **Killgore, WD**. Light therapy may improve sleep and facilitate recovery from mild traumatic brain injury. Abstract presented at the 10th World Congress on Brain Injury, San Francisco, CA, March 19-22, 2014.

273. Cui, J, Tkachenko, O, & **Killgore, WD**. Can the activation of anterior cingulate predict the emotional suppression? An fMRI study with masked faces. Abstract presented at the 21st Annual Meeting of the Cognitive Neuroscience Society, Boston, MA, April 5-8, 2014.

274. Divatia, S, Demers, LA, Preer, L, Olson, EA, Weber, M, & **Killgore, WD**. Advantageous decision making linked with increased gray matter volume in the ventromedial prefrontal cortex. Abstract presented at the 21st Annual Meeting of the Cognitive Neuroscience Society, Boston, MA, April 5-8, 2014.

275. Demers, LA, Olson, EA, Weber, M, Divatia, S, Preer, L, & **Killgore, WD**. Paranoid traits are related to deficits in complex social decision making and reduced superior temporal sulcus volume. Abstract presented at the 21st Annual Meeting of the Cognitive Neuroscience Society, Boston, MA, April 5-8, 2014.

276. Preer, LA, Weber, M, Tkachenko, O, Divatia, S, Demers, LA, Olson, EA, & **Killgore, WD**. Gray matter volume in the amygdala is associated with facial assessments of trustworthiness. Abstract presented at the 21st Annual Meeting of the Cognitive Neuroscience Society, Boston, MA, April 5-8, 2014.

277. Tkachenko, O, Weber, M, Gogel, H, & **Killgore, WD**. Predisposition towards unhealthy foods linked with increased gray matter volume in the cerebellum. Abstract presented at the 21st Annual Meeting of the Cognitive Neuroscience Society, Boston, MA, April 5-8, 2014.

278. Olson, EA, Weber, M, Gogel, H, & **Killgore, WD**. Daytime sleepiness is associated with decreased integration of remote outcomes on the IGT. Abstract presented at the 21st Annual Meeting of the Cognitive Neuroscience Society, Boston, MA, April 5-8, 2014.

279. Demers, LA, Preer, LA, Gogel, H, Olson, EA, Weber, M, & **Killgore, WD**. Left-hemifield bias on sad chimeric face task correlates with interpersonal emotional intelligence. Abstract presented at the 69th Annual Meeting of the Society of Biological Psychiatry, New York, NY, May 8-10, 2014.

280. Weber, M, **Killgore, WD**, Olson, EA, Rosso, IM, & Rauch, SL. Morphological brain network organization in relation to trauma and posttraumatic stress disorder. Abstract presented at the

69th Annual Meeting of the Society of Biological Psychiatry, New York, NY, May 8-10, 2014.

281. Divatia, S, Demers, LA, Preer, L, Gogel, H, Kipman, M, & **Killgore, WD**. Schizotypal and manic traits are associated with poorer perception of emotions in healthy individuals. Abstract presented at the 69th Annual Meeting of the Society of Biological Psychiatry, New York, NY, May 8-10, 2014.

282. **Killgore, WD**, Weber, M, Olson, EA, & Rauch, SL. Sleep reduction and functioning of the emotion regulation circuitry. Abstract presented at the 69th Annual Meeting of the Society of Biological Psychiatry, New York, NY, May 8-10, 2014. ***[*Blue Ribbon Finalist for Top Poster Award: Basic Neuroscience]***

283. Webb, CA, Weber, M, Mundy, EA, & **Killgore, WD**. Reduced gray matter volume in the anterior cingulate, orbitofrontal cortex and thalamus as a function of depressive symptoms: A voxel-based morphometric analysis. Abstract presented at the 69th Annual Meeting of the Society of Biological Psychiatry, New York, NY, May 8-10, 2014.

284. Marin MF, Song H, Landau AJ, Lasko NB, Foy Preer LA, Campbell A, Pace-Schott EF, **Killgore WD**, Orr SP, Pitman RK, Simon NM, Milad MR (2014). Psychophysiological and Neuroimaging Correlates of Fear Extinction Deficits Across Anxiety Disorders. Abstract presented at the 69th Annual Meeting of the Society of Biological Psychiatry, New York, NY, May 8-10, 2014.

285. **Killgore, WD**. The effects of sleep loss on food preference. Abstract presented at SLEEP 2014, Minneapolis, MN, May 31-June 4, 2014.

286. Weber, M, & **Killgore, WD**. Sleep habits reflect in functional brain network organization. Abstract presented at SLEEP 2014, Minneapolis, MN, May 31-June 4, 2014. ***[*2014 AASM Young Investigator Award, Honorable Mention]***

287. Freed, MC, Novak, LA, **Killgore, WD**, Koehlmoos, TP, Ginsberg, JP, Krupnick, J, Rauch S, Rizzo, A, Engle, CC. DoD IRB delays: Do they really matter? And if so, why and for whom? Abstract presented at the Military Health System Research Symposium, Fort Lauderdale, FL, August 18-21, 2014.

288. Freed, MC, Novak, LA, **Killgore, WD**, Koehlmoos, TP, Ginsberg, JP, Krupnick, J, Rauch S, Rizzo, A, Engle, CC. DoD IRB delays: Do they really matter? And if so, why and for whom? Abstract presented at the AMSUS Annual Meeting, Washington DC, December 2-5, 2014.

289. **Killgore, WD**, Demers, LA, Olson, EA, Rosso, IM, Webb, CA, & Rauch, SL. Anterior cingulate gyrus and sulcus thickness: A potential predictor of remission following internet-based cognitive behavioral therapy for major depressive disorder. Abstract presented at the 53rd Annual Meeting of the American College of Neuropsychopharmacology, Phoenix, AZ, December 7-11, 2014.

290. Olson, EA, Buchholz, J, Rosso, IM, **Killgore, WD**, Webb, CA, Gogel, H, & Rauch, SL. Internet-based cognitive behavioral therapy effects on symptom severity in major depressive disorder:

preliminary results from a randomized controlled trial. Abstract presented at the 53rd Annual Meeting of the American College of Neuropsychopharmacology, Phoenix, AZ, December 7-11, 2014.

291. Brennan, B, Tkachenko, O, Schwab, Z, Ryan, E, Athey, A, Pope, H, Dougherty, D, Jenike, M, **Killgore, WD**, Hudson, J, Jensen, E, & Rauch SL. Abstract presented at the 53rd Annual Meeting of the American College of Neuropsychopharmacology, Phoenix, AZ, December 7-11, 2014.

292. Alkozei, A, Pisner, D, & **Killgore, WD**. Emotional intelligence is differentially correlated with prefrontal cortical responses to backward masked fearful and angry faces. Abstract presented at the 43rd Annual Meeting of the International Neuropsychological Society, Denver, CO, February 4-7, 2015.

293. Alkozei, A, Schwab, Z, & **Killgore, WD**. Looking for evil intent: Emotional intelligence and the use of socially relevant facial cues during an emotional decision making task. Abstract presented at the 43rd Annual Meeting of the International Neuropsychological Society, Denver, CO, February 4-7, 2015.

294. Shane, BR, Alkozei, A, & **Killgore, WD**. The contribution of general intelligence and emotional intelligence to the ability to appreciate humor. Abstract presented at the 43rd Annual Meeting of the International Neuropsychological Society, Denver, CO, February 4-7, 2015.

295. Markowski, SM, Alkozei, A, & **Killgore, WD**. Sleep onset latency and duration are associated with self-perceived invincibility. Abstract presented at the 43rd Annual Meeting of the International Neuropsychological Society, Denver, CO, February 4-7, 2015.

296. Pisner, D, Alkozei, A, & **Killgore, WD**. Visuospatial reasoning mediates the relationship between emotion recognition and emotional intelligence. Abstract presented at the 43rd Annual Meeting of the International Neuropsychological Society, Denver, CO, February 4-7, 2015.

297. Vanuk, JR, Fridman, A, Demers, LA, Divatia, S, & **Killgore, WD**. Engaging in meditation and internet based training as a means of enhancing emotional intelligence. Abstract presented at the 43rd Annual Meeting of the International Neuropsychological Society, Denver, CO, February 4-7, 2015.

298. Vanuk, JR, Divatia, S, Demers, LA, Markowski, SM, & **Killgore, WD**. Napping in conjunction with brief internet-based training as a means of enhancing emotional intelligence. Abstract presented at the 43rd Annual Meeting of the International Neuropsychological Society, Denver, CO, February 4-7, 2015.

299. Cui, J, Tkachenko, O, Gogel, H, Kipman, M, Preer, LA, Weber, M, Divatia, SC, Demers, LA, Olson, EA, Buchholz, JL, Bark, JS, Rosso, IM, Rauch, SL, & **Killgore, WD**. Fractional Anisotropy of frontoparietal connections presicts individual resistance to sleep deprivation. Abstract presented at the 43rd Annual Meeting of the International Neuropsychological Society, Denver, CO, February 4-7, 2015.

300. **Killgore, WD**, Olson, EA, Weber, M, Rauch, SL, & Nickerson, LD. Emotional intelligence is associated with coordinated resting state activity between emotion regulation and interoceptive experience networks. Abstract presented at the 43rd Annual Meeting of the International Neuropsychological Society, Denver, CO, February 4-7, 2015.

301. **Killgore, WD**, Demers, LA, Divatia, S, Kipman, M, Tkachenko, O, Weber, M, Preer, LA, Gogel, H, Olson, EA, Vanuk, JR, & Rauch, SL. Enhancing emotional intelligence via brief internet-based training. Abstract presented at the 43rd Annual Meeting of the International Neuropsychological Society, Denver, CO, February 4-7, 2015.

302. Buchholz, JL, Rosso, IM, Olson, EA, **Killgore, WD**, Fukunaga, R, Webb, CA, & Rauch, SL. Internet-based cognitive behavioral therapy is associated with symptom reduction and cognitive restructuring in adults with major depressive disorder. Abstract presented at the Anxiety and Depression Conference, Miami, FL, April 9-12, 2015.

303. Alkozei, A, Pisner, D, Rauch, SL, & **Killgore, WD**. Emotional intelligence and subliminal presentations of social threat. Abstract presented at the 70th Annual Meeting of the Society of Biological Psychiatry, Toronto, Ontario, CA, May 14-16, 2015.

304. Shane, BR, Alkozei, A, Vanuk, JR, Weber, M, & **Killgore, WD**. The effect of bright light therapy for improving sleep among individuals with mild traumatic brain injury. Abstract presented at the 70th Annual Meeting of the Society of Biological Psychiatry, Toronto, Ontario, CA, May 14-16, 2015.

305. Vanuk, JR, Shane, BR, Alkozei, A, & **Killgore, WD**. Trait emotional intelligence is associated with greater resting state functional connectivity within the default mode and task positive networks. Abstract presented at the 70th Annual Meeting of the Society of Biological Psychiatry, Toronto, Ontario, CA, May 14-16, 2015.

306. Vanuk, JR, Fridman, A, Demers, LA, & **Killgore, WD**. Engaging in meditation and internet-based training as a means of enhancing emotional intelligence. Abstract presented at the 70th Annual Meeting of the Society of Biological Psychiatry, Toronto, Ontario, CA, May 14-16, 2015.

307. Pisner, D, Alkozei, A, & **Killgore, WD**. Trait emotional suppression is associated with decreased activation of the insula and thalamus in response to masked angry faces. Abstract presented at the 70th Annual Meeting of the Society of Biological Psychiatry, Toronto, Ontario, CA, May 14-16, 2015.

308. Markowski, SM, Alkozei, A, & **Killgore, WD**. The trait of neuroticism predicts neurocognitive performance in healthy individuals. Abstract presented at the 70th Annual Meeting of the Society of Biological Psychiatry, Toronto, Ontario, CA, May 14-16, 2015.

309. Buchholz, JL, Rosso, IM, **Killgore, WD**, Fukunaga, R, Olson, EA, Demers, LA, & Rauch, SL. Amygdala volume is associated with helplessness in adults with major depressive disorder (MDD). Abstract presented at the 70th Annual Meeting of the Society of Biological Psychiatry, Toronto, Ontario, CA, May 14-16, 2015.

310. Sneider, JT, **Killgore, WD**, Rauch, SL, Jensen, JE, & Silveri, MM. Sex differences in the associations between prefrontal GABA and resistance to sleep deprivation. Abstract presented at the 70th Annual Meeting of the Society of Biological Psychiatry, Toronto, Ontario, CA, May 14-16, 2015.

311. **Killgore, WD**, Rosso, IM, Rauch, SL, & Nickerson, LD. Emotional intelligence correlates with coordinated resting state activity between brain networks involved in emotion regulation and interoceptive experience. Abstract presented at the 70th Annual Meeting of the Society of Biological Psychiatry, Toronto, Ontario, CA, May 14-16, 2015.

312. **Killgore, WD**, Demers, LA, Divatia, S, Rosso, IM, & Rauch, SL. Boosting Emotional intelligence with a brief internet-based program. Abstract presented at the 70th Annual Meeting of the Society of Biological Psychiatry, Toronto, Ontario, CA, May 14-16, 2015.

313. **Killgore, WD**, Vanuk, JR, Alkozei, A, Markowski, SM, Pisner, D, Shane, BR, Fridman, A, & Knight, SA. Greater daytime sleepiness correlates with altered thalamocortical connectivity. Abstract presented at the 70th Annual Meeting of the Society of Biological Psychiatry, Toronto, Ontario, CA, May 14-16, 2015.

314. **Killgore, WD**, Tkachenko, O, Gogel, H, Kipman, M, Sonis, LA, Divatia, SC, Demers, LA, Olson, EA, Buchholz, JL, Rosso, IM, & Rauch, SL. Activation of the ventral striatum predicts overeating during subsequent sleep loss. Abstract presented at the 70th Annual Meeting of the Society of Biological Psychiatry, Toronto, Ontario, CA, May 14-16, 2015.

315. Alkozei, A, Markowski, SM, Shane, BR, Rauch, SL, & **Killgore, WD**. Emotional resilience is not associated with increased emotional resistance to sleep deprivation. Abstract presented at the SLEEP 2015 Meeting, Seattle, WA, June 6-10, 2015.

316. Alkozei, A, Pisner, D, Markowski, SM, Rauch, SL, & **Killgore, WD**. The effect of emotional resilience on changes in appetitie for high-sugary food during sleep loss. Abstract presented at the SLEEP 2015 Meeting, Seattle, WA, June 6-10, 2015.

317. Markowski, SM, Alkozei, A, Rauch, SL, & **Killgore, WD**. Self-perceived invincibility is associated with sleep onset latency and duration. Abstract presented at the SLEEP 2015 Meeting, Seattle, WA, June 6-10, 2015.

318. Markowski, SM, Alkozei, A, Rauch, SL, & **Killgore, WD**. Sex differences in the association between personality and resistance to sleep deprivation. Abstract presented at the SLEEP 2015 Meeting, Seattle, WA, June 6-10, 2015.

319. Shane, BR, Alkozei, A, & **Killgore, WD**. Physical exercise may contribute to vulnerability to sleep deprivation. Abstract presented at the SLEEP 2015 Meeting, Seattle, WA, June 6-10, 2015.

320. Cui, J, Tkachenko, O, Gogel, H, Kipman, M, Sonis, LA, Weber, M, Divatia, SC, Demers, LA, Olson, EA, Buchholz, JL, Rosso, IM, Rauch, SL, & **Killgore, WD**. Resistance to sleep deprivation involves greater functional activation and white matter connectivity within a fronto-parietal network. Abstract presented at the SLEEP 2015 Meeting, Seattle, WA, June 6-

10, 2015.

321. Vanuk, JR, Rosso, IM, Rauch, SL, Alkozei, A, Markowski, SM, Pisner, D, Shane, BR, Fridman A, Knight, SA, & **Killgore, WD**. Daytime sleepiness is associated with altered thalamocortical connectivity. Abstract presented at the SLEEP 2015 Meeting, Seattle, WA, June 6-10, 2015.

322. Sneider, JT, Jensen JE, Silveri, MM, & **Killgore, WD**. Prefrontal GABA predicts resistance to sleep deprivation. Abstract presented at the SLEEP 2015 Meeting, Seattle, WA, June 6-10, 2015.

323. **Killgore, WD**, Tkachenko, O, Gogel, H, Kipman, M, Sonis, LA, Weber, M, Divatia, SC, Demers, LA, Olson, EA, Buchholz, JL, Rosso, IM, & Rauch, SL. Individual differences in rested activation of the ventral striatum predict overeating during sleep deprivation. Abstract presented at the SLEEP 2015 Meeting, Seattle, WA, June 6-10, 2015.

324. **Killgore, WD**, Tkachenko, O, Rosso, IM, Rauch, SL, & Nickerson, LA. Multimodal neuroimaging to predict resistance to sleep deprivation. Abstract presented at the SLEEP 2015 Meeting, Seattle, WA, June 6-10, 2015.

325. Nickerson, LD & **Killgore, WD**. Resting state brain circuits underpinning a neurobiological model of Theory of Mind and Mentalizing. Abstract presented at the Organization for Human Brain Mapping Annual Meeting, 2015, Honolulu, HI, June 14-18, 2015.

326. Rosso, IM, Olson, EA, **Killgore WD**, Fukunaga, R, Webb, CA, & Rauch SL. A randomized trial of internet-based cognitive behavioral therapy for major depressive disorder. Abstract presented at the 54th Annual Meeting of the American College of Neuropsychopharmacology, Hollywood, FL, December 6-10, 2015.

327. Alkozei, A & **Killgore, WD**. Exposure to blue wavelength light is associated with increased dorsolateral prefrontal cortex responses during a working memory task. Abstract presented at the 44th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 3-6, 2016.

328. Klimova, A, Pisner, D & **Killgore, WD**. Neural correlates of cognitive and emotional impairments in acute versus chronic mild traumatic brain injury: a diffusion tensor imaging study. Abstract presented at the 44th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 3-6, 2016.

329. Markowski, S, Alkozei, A, & **Killgore, WD.** Greater neuroticism predicts higher performance in immediate memory, language, and attention in healthy individuals. Abstract presented at the 44th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 3-6, 2016.

330. Alkozei, A & **Killgore, WD.** Exposure to blue wavelength light suppresses anterior cingulate cortex activation in response to uncertainty during anticipation of negative or positive stimuli. Abstract presented at the 44th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 3-6, 2016.

331. Smith, R, Alkozei, A, Bao, J, & **Killgore, WD.** Successful goal-directed memory suppression is associated with increased inter-hemispheric coordination between right and left fronto-parietal control networks. Abstract presented at the 44th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 3-6, 2016.

332. Singh, P, Fridman, A, Pisner, D, Singh, A, & **Killgore, WD.** A voxel based morphometric analysis of ventromedial prefrontal cortex volume related with executive function task performance post mild traumatic injury. Abstract presented at the 44th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 3-6, 2016.

333. **Killgore, WD.** Baseline responsiveness of the ventral striatum predicts overeating during subsequent sleep deprivation. Abstract presented at the 44th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 3-6, 2016.

334. **Killgore, WD** & Nickerson, LD. Predicting resistance to sleep deprivation using multimodal neuroimaging. Abstract presented at the 44th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 3-6, 2016.

335. Sneider, J, Jensen, JE, Silveri, MM, & **Killgore, WD.** Prefrontal GABA correlates with the ability to sustain vigilance during sleep deprivation. Abstract presented at the 44th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 3-6, 2016.

336. Buchholz, JL, Olson, EA, Fukunaga, R, Webb, CA, **Killgore, WD**, Rauch, SL, & Rosso, IM. Expressive suppression is associated with greater lateral orbitofrontal cortex volume in adults with major depressive disorder. Abstract presented at the 44th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 3-6, 2016.

337. Fridman, A, Pisner, D, Singh, P, & **Killgore, WD**. Gray matter volume in left medial prefrontal cortex is related to life satisfaction in individuals with mild traumatic brain injury. Abstract presented at the 44th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 3-6, 2016.

338. Singh, P, Pisner, D, Fridman, A, Roberts, S, & **Killgore, WD.** Volumetric differences in gray matter in healthy versus overweight/obese individuals post mild traumatic brain injury: A voxel based morphometric study. Abstract presented at the 44th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 3-6, 2016.

339. **Killgore, WD** & Weber, M. Blue wavelength light therapy reduces daytime sleepiness following mild traumatic brain injury. Abstract presented at the 44th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 3-6, 2016.

340. **Killgore, WD**, Weber, M, & Penetar, D. Blue wavelength light therapy improves balance following mild traumatic brain injury. Abstract presented at the 44th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 3-6, 2016.

341. Pisner, D, Smith, R, Alkozei, A, Klimova, A, & **Killgore, WD.** Highways of the emotional intellect: White matter microstructural correlates of an ability-based measure of emotional

intelligence. Abstract presented at the 44th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 3-6, 2016.

342. Vanuk, JR, Smith, R, Knight, S, & **Killgore, WD.** Resting RSA correlates with coordinated resting state activity between brain networks involved in emotion perception. Abstract presented at the 44th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 3-6, 2016.

343. Vanuk, JR, Alkozei, A, Markowski, S, & **Killgore WD.** Greater resting state functional connectivity within the default mode and task positive networks is associated with trait emotional intelligence. Abstract presented at the 44th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 3-6, 2016.

344. Fukunaga, R, Webb, CA, Olson, EA, **Killgore, WD**, Rauch, SL, & Rosso, IM. Reduced rostral anterior cingulate volume is associated with greater frequency of negative automatic thoughts in adults with major depressive disorder. Abstract presented at the 44th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 3-6, 2016.

345. Olson, EA, Fukunaga, R., Webb, CA, Rosso, IM, **Killgore, WD**, & Rauch, SL. Delay discounting and anhedonia are independently associated with suicidal ideation in depression. Abstract presented at the 44th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 3-6, 2016.

346. Pisner, D, Singh, P, Fridman, A, & **Killgore, WD**. Resilience following mild traumatic brain injury is associated with gray matter volume in the left precentral gyrus. Abstract presented at the 44th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 3-6, 2016.

347. Sing, P, Fridman, A, Pisner, D, & **Killgore, WD.** Time dependent differences in gray matter volume in individuals post mild traumatic brain injury: A voxel based morphometric study. Abstract presented at the 44th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 3-6, 2016.

348. Quan, M, Gruber, SA, Lukas, SE, Hill, KP, **Killgore, WD**, & Nickerson, LD. Altered functional connectivity within large-scale brain networks during a cognitive task in chronic marijuana smokers. Abstract presented at the Harvard Psychiatry Research Day, Boston, MA, March 23, 2016. ***[*Semi Finalist Poster: Harvard Medical School Mysell Award]***

349. Fukunaga, R, Webb, CA, Olson, EA, **Killgore, WD**, Rauch, SL, & Rosso, IM. Improvement in negative automatic thoughts as a mediator of symptom improvement in internet-based cognitive behavioral therapy for major depressive disorder. Abstract presented at the 2016 Meeting of the Anxiety and Depression Association of America, Philadelphia, PA, March 31-April 3, 2016.

350. Bernstein, AS, Pisner, D, Klimova, A, Umapathy, L, Do, L, Squire, S, **Killgore, WD**, & Trouard, T. Effects of multiband acceleration on high angular resolution diffusion imaging data collection, processing, and analysis. Abstract presented at the 24th Annual Meeting of the International Society for Magnetic Resonance in Medicine (IMSRM), Singapore, May 7-8,

2016.

351. Alkozei, A, Markowski, SM, Pisner, D, Fridman, A, Shane, BR, Vanuk, JR, Knight, SA, & **Killgore, WD.** Exposure to blue wavelength light reduces activation within the anterior cingulate cortex during anticipation of certain reward stimuli. Abstract presented at the 71st Annual Scientific Convention of the Society for Biological Psychiatry, Atlanta, GA, May 12-14, 2016.

352. Alkozei, A., Pisner, D, Markowski, SM, Vanuk, JR, Fridman, A, Shane, BR, Knight SA, & **Killgore, WD.** Increases in prefrontal activation after exposure to blue versus amber wavelength light during cognitive load. Abstract presented at the 71st Annual Scientific Convention of the Society for Biological Psychiatry, Atlanta, GA, May 12-14, 2016.

353. Pisner, DA, Smith, R, Alkozei, A, Klimova, A, Millan, M, & **Killgore, WD.** Highways of the emotional intellect: White matter mictrostructural correlates of an ability-based measure of emotional intelligence. Abstract presented at the 71st Annual Scientific Convention of the Society for Biological Psychiatry, Atlanta, GA, May 12-14, 2016.

354. Singh, P, Pisner, D, Fridman, A, Singh A, Millan, M, & **Killgore, WD.** A voxel based morphometric analysis of ventromedial prefrontal cortex volume related with executive function task performance post mild traumatic brain injury. Abstract presented at the 71st Annual Scientific Convention of the Society for Biological Psychiatry, Atlanta, GA, May 12-14, 2016.

355. Smith, R, Smith, C, Khodr, O, Nettles, M, Sanova, A, & **Killgore, WD.** Emotional working memory: A relatively unexplored aspect of emotional and cognitive ability. Abstract presented at the 71st Annual Scientific Convention of the Society for Biological Psychiatry, Atlanta, GA, May 12-14, 2016.

356. Smith, R, Nettles, M, Khodr, O, Sanova, A, Smith, C, Alkozei, A, & **Killgore, WD.** Conflict-related dorsomedial frontal activation during healthy food decisions is associated with increased cravings for high-fat foods. Abstract presented at the 71st Annual Scientific Convention of the Society for Biological Psychiatry, Atlanta, GA, May 12-14, 2016.

357. Smith, R, Sanova, A, Nettles, M, Khodr, O, Smith, C, Alkozei, A, Lane, RD, & **Killgore, WD**. Unwanted reminders: The effects of emotional memory suppression on later neuro-cognitive processing. Abstract presented at the 71st Annual Scientific Convention of the Society for Biological Psychiatry, Atlanta, GA, May 12-14, 2016.

358. **Killgore, WD**, Weber, M, Palmer, W, & Penetar, D. Blue wavelength light therapy improves balance following mild traumatic brain injury. Abstract presented at the 71st Annual Scientific Convention of the Society for Biological Psychiatry, Atlanta, GA, May 12-14, 2016.

359. **Killgore, WD**, Tkachenko, O, Palmer, W, & Rauch, SL. Default mode activation predicts vulnerability to sleep deprivation in domains of mood, sleepiness, and vigilance. Abstract presented at the 71st Annual Scientific Convention of the Society for Biological Psychiatry, Atlanta, GA, May 12-14, 2016.

360. Alkozei, A, Markowski, SM, Pisner, D, Fridman, A, Shane, BR, Vanuk, JR, Knight, SA, Grandner, MA, & **Killgore, WD.** Exposure to blue wavelength light reduces activation within the anterior cingulate cortex during anticipation of certain reward stimuli. Abstract presented at the 30th Annual Meeting of the Associated Professional Sleep Societies (SLEEP 2016), Denver, CO, June 11-15, 2016.

361. Alkozei, A, Pisner, D, Markowski, SM, Vanuk, JR, Fridman, A, Shane, BR, Knight, SA, Grandner, MA, & **Killgore, WD.** Exposure to blue wavelength light is associated with increased dorsolateral prefrontal cortex responses and increases in response times during a working memory task. Abstract presented at the 30th Annual Meeting of the Associated Professional Sleep Societies (SLEEP 2016), Denver, CO, June 11-15, 2016.

362. Davis, B, Yang, R, **Killgore, WD**, Gallagher, RA, Carrazco, Alfonso-Miller, P, Gehrels, J, & Grandner, MA. Nightmares in a community sample: Prevalence and associations with daytime function independent of poor sleep quality and depression. Abstract presented at the 30th Annual Meeting of the Associated Professional Sleep Societies (SLEEP 2016), Denver, CO, June 11-15, 2016.

363. Fisseha, E, Havens, C, **Killgore, WD**, Gallagher, RA, Carrazco, N, Alfonso-Miller, P, Gehrels, J, & Grandner, MA. Sleep duration's important role in the relationship among difficulty concentrating, fatigue, stress, and depressed mood: Data from the SHADES study. Abstract presented at the 30th Annual Meeting of the Associated Professional Sleep Societies (SLEEP 2016), Denver, CO, June 11-15, 2016.

364. Graham, PM, Goldstein, M, David, BM, Perlis, ML, Perfect, MM, Frye, S, **Killgore, WD**, Carrazco, N, Alfonso-Miller, P, Gehrels, J, & Grandner, MA. Longitudinal analysis of sleep duration using actigraphy and sleep diary: Stability and agreement over 8-11 months. Abstract presented at the 30th Annual Meeting of the Associated Professional Sleep Societies (SLEEP 2016), Denver, CO, June 11-15, 2016.

365. Granados, K, Rojo-Wissar, DM, Chakravorty, S, Prather, A, Perfect, MM, Frye, S, **Killgore, WD**, Gallagher, RA, Carrazco, N, Alfonso-Miller, P, Gehrels, J, & Grandner, MA. Adverse childhood exposures associated with adult insomnia symptoms. Abstract presented at the 30th Annual Meeting of the Associated Professional Sleep Societies (SLEEP 2016), Denver, CO, June 11-15, 2016.

366. Grandner, MA, **Killgore, WD**, Khader, W, & Perlis, ML. Positive and negative mood ratings across 24-hours. Abstract presented at the 30th Annual Meeting of the Associated Professional Sleep Societies (SLEEP 2016), Denver, CO, June 11-15, 2016.

367. Hall, C, Forbush, S, Youngstedt, S, **Killgore, WD**, Barilla, H, Gehrels, J, Alfonso-Miller, P, Palmer, W, Carrazco, N, & Grandner, MA. Habitual sleep duration and health: A possible role for exercise. Abstract presented at the 30th Annual Meeting of the Associated Professional Sleep Societies (SLEEP 2016), Denver, CO, June 11-15, 2016.

368. Jackson, N, Patterson, F, Seixas, A, Jean-Louis, G, **Killgore, WD**, & Grandner, MA. Using big data to determine the social, behavioral, and environmental, determinants of sleep duration in the U.S. population: Application of a machine learning approach to data from approximately

700,000 Americans. Abstract presented at the 30th Annual Meeting of the Associated Professional Sleep Societies (SLEEP 2016), Denver, CO, June 11-15, 2016.

369. **Killgore, WD**, Tkachenko, O, Grandner, MA, & Rauch, SL. Default mode activation predicts vulnerability to sleep deprivation in the domains of mood, sleepiness, and vigilance. Abstract presented at the 30th Annual Meeting of the Associated Professional Sleep Societies (SLEEP 2016), Denver, CO, June 11-15, 2016.

370. **Killgore, WD**, Weber, M, Grandner, MA, & Penetar, DM. Blue wavelength light therapy improves balance following mild traumatic brain injury. Abstract presented at the 30th Annual Meeting of the Associated Professional Sleep Societies (SLEEP 2016), Denver, CO, June 11-15, 2016.

371. Knight, SA & Killgore, WD. Typical sleep duration is associated with constructive thinking patterns. Abstract presented at the 30th Annual Meeting of the Associated Professional Sleep Societies (SLEEP 2016), Denver, CO, June 11-15, 2016.

372. Kotzin, MD, Alkozei, A, Knight, SA, Grandner, MA, & **Killgore, WD**. The effects of trait gratitude on quality of sleep, intrusiveness, of pre-sleep cognitions, and daytime energy in healthy individuals. Abstract presented at the 30th Annual Meeting of the Associated Professional Sleep Societies (SLEEP 2016), Denver, CO, June 11-15, 2016.

373. Markowski, SM, Alkozei, A, McIntosh, MB, Grandner, MA, & **Killgore, WD**. Chronotype and risk-taking propensity. Abstract presented at the 30th Annual Meeting of the Associated Professional Sleep Societies (SLEEP 2016), Denver, CO, June 11-15, 2016.

374. McIntosh, MB, Markowski, SM, Grandner, MA, & **Killgore, WD**. Prior-night sleep duration is negatively associated with impulsivity in women. Abstract presented at the 30th Annual Meeting of the Associated Professional Sleep Societies (SLEEP 2016), Denver, CO, June 11-15, 2016.

375. Ocano, D, Jean-Louis, G, **Killgore, WD**, Gallagher, RA, Carrazco, N, Alfonso-Miller, P, Gehrels, J, & Grandner, MA. Sleep duration and decreased social support from family, friends, and significant other: Influence of insomnia and perceived stress level. Abstract presented at the 30th Annual Meeting of the Associated Professional Sleep Societies (SLEEP 2016), Denver, CO, June 11-15, 2016.

376. Okuagu, A, Perlis, ML, Ellis, JA, Prather, AA, **Killgore, WD**, Gallagher, RA, Carrazco, N, Alfonso-Miller, P, Gehrels, J, & Grandner, MA. Does thinking keep people awake? Or does it matter what they are thinking about? Self-directed cognitions associated with insomnia and insufficient sleep. Abstract presented at the 30th Annual Meeting of the Associated Professional Sleep Societies (SLEEP 2016), Denver, CO, June 11-15, 2016.

377. Olivier, K, Gallagher, RA, **Killgore, WD**, Carrazco, N, Alfonso-Miller, P, Gehrels, J, & Grandner, MA. Development and initial validation of the Assessment of Sleep Environment: A novel inventory for describing and quantifying the impact of environmental factors on sleep. Abstract presented at the 30th Annual Meeting of the Associated Professional Sleep Societies (SLEEP 2016), Denver, CO, June 11-15, 2016.

378. Paine, KN, Forbush, S, Ellis, J, Nowakowski, S, Newman-Smith, K, **Killgore, WD**, Gallagher, RA, Carrazco, N, Alfonso-Miller, P, Gehrels, J, & Grandner, MA. Sleep duration and satisfaction with life, health, finances and relationship. Abstract presented at the 30th Annual Meeting of the Associated Professional Sleep Societies (SLEEP 2016), Denver, CO, June 11-15, 2016.

379. Rhee, JU, Haynes, P, Chakravorty, S, Patterson, F, **Killgore, WD**, Gallagher, RA, Carrazco, N, Alfonso-Miller, P, Gehrels, J, & Grandner, MA. Susceptibility to smoking during the day and its relationship with insomnia and sleep duration. Abstract presented at the 30th Annual Meeting of the Associated Professional Sleep Societies (SLEEP 2016), Denver, CO, June 11-15, 2016.

380. Roberts, SE, Singh, P, Grandner, MA, & **Killgore, WD.** Later wake up time and impulsivity. Abstract presented at the 30th Annual Meeting of the Associated Professional Sleep Societies (SLEEP 2016), Denver, CO, June 11-15, 2016.

381. Saccone, J, Davis, B, Chakravorty, S, **Killgore, WD**, Gallagher, RA, Carrazco, N, Alfonso-Miller, P, Gehrels, J, & Grandner, MA. Habitual caffeine use and motivation to consume caffeine: Associations with sleep duration, sleepiness, fatigue, and insomnia severity. Abstract presented at the 30th Annual Meeting of the Associated Professional Sleep Societies (SLEEP 2016), Denver, CO, June 11-15, 2016.

382. Singh, A, Fridman, A, Silveri, MM, Grandner, MA, & **Killgore, WD.** Medial prefrontal GABA predicts hunger ratings during sleep deprivation for men but not women. Abstract presented at the 30th Annual Meeting of the Associated Professional Sleep Societies (SLEEP 2016), Denver, CO, June 11-15, 2016.

383. Vanuk, JR, Alkozei, A, Smith, R, Pisner, D, Markowski, SM, Shane, BR, Fridman, A, Knight, SA, Grandner, MA, & **Killgore, WD.** Changes in heart rate variability due to light exposure predict frontoparietal connectivity. Abstract presented at the 30th Annual Meeting of the Associated Professional Sleep Societies (SLEEP 2016), Denver, CO, June 11-15, 2016.

384. Vanuk, JR, Alkozei, A, Knight, SA, Fridman, A, Markowski, SM, Pisner, D, Shane, BR, Grandner, MA, & **Killgore, WD.** The effects of light exposure on heart rate variability predict sleepiness and vigilance. Abstract presented at the 30th Annual Meeting of the Associated Professional Sleep Societies (SLEEP 2016), Denver, CO, June 11-15, 2016.

385. Warlick, C, Chakravorty, S, **Killgore, WD**, Gallagher, RA, Carrazco, N, Alfonso-Miller, P, Gehrels, J, & Grandner, MA. Timing of alcohol intake associated with insomnia symptoms. Abstract presented at the 30th Annual Meeting of the Associated Professional Sleep Societies (SLEEP 2016), Denver, CO, June 11-15, 2016.

386. Waugaman, DL, Markowski, SM, Alkozei, A, Grandner, MA, & **Killgore, WD.** Chronotype and Emotional Intelligence. Abstract presented at the 30th Annual Meeting of the Associated Professional Sleep Societies (SLEEP 2016), Denver, CO, June 11-15, 2016.

387. Weber, M, Grandner, MA, & **Killgore, WD.** Smaller gray matter volume of the visual cortex

predicts vulnerability to sleep deprivation. Abstract presented at the 30th Annual Meeting of the Associated Professional Sleep Societies (SLEEP 2016), Denver, CO, June 11-15, 2016.

388. Weber, M, Grandner, MA, & **Killgore, WD.** Blue wavelength light therapy reduces daytime sleepiness following mild traumatic brain injury. Abstract presented at the 30th Annual Meeting of the Associated Professional Sleep Societies (SLEEP 2016), Denver, CO, June 11-15, 2016.

389. Yang, R, Ocano, D, Chakravorty, S, **Killgore, WD**, Gallagher, RA, Carrazco, N, Alfonso-Miller, P, Gehrels, J, & Grandner, MA. Relationship between insomnia and depression moderated by caffeine. Abstract presented at the 30th Annual Meeting of the Associated Professional Sleep Societies (SLEEP 2016), Denver, CO, June 11-15, 2016.

390. **Killgore, WD**, Vanuk, JR, Pisner, D, Penetar, DM, & Weber, M. Short wavelength light therapy facilitates recovery from mild traumatic brain injury. Abstract presented at the 2016 Military Health System Research Symposium (MHSRS), Orlando, FL, August 15-18, 2016.

391. **Killgore, WD**, Alkozei, A, Smith, R, Divatia, S, & Demers, L. Enhancing emotional intelligence skills with a brief internet-based program: A pilot study. Abstract presented at the 2016 Military Health System Research Symposium (MHSRS), Orlando, FL, August 15-18, 2016.

392. **Killgore, WD**, Rosso, IM, Olson, EA, Webb, CA, Fukunaga, R, Gogel, H, Buchholz, JL, & Rauch, SL. Efficacy of an internet-based cognitive behavior therapy program for major depression. Abstract presented at the 2016 Military Health System Research Symposium (MHSRS), Orlando, FL, August 15-18, 2016.

393. **Killgore, WD**, & Nickerson, LA. Linked analysis of multimodal neuroimaging identifies neural systems associated with the ability to resist sleep deprivation. Abstract presented at the 2016 Military Health System Research Symposium (MHSRS), Orlando, FL, August 15-18, 2016.

394. Vanuk, JR, Allen, JJB, & **Killgore, WD**. Heart rate variability during light exposure and subsequent network connectivity patterns. Abstract presented at the Annual Meeting of the Society for Psychophysiological Research, Minneapolis, MN, September 21-25, 2016.

395. Haberman, JT, Olson, EA, Webb, CA, **Killgore, WD**, Rauch, SL, & Rosso, IM. The relation between treatment expectancies and outcome in internet-based cognitive behavioral therapy for major depressive disorder. Abstract presented at the Association for Behavioral and Cognitive Therapies, New York, NY, October 27-30, 2016.

396. Rosso, IM, Olson, EA, Thomas, MO, Webb, CA, **Killgore, WD**, & Rauch, SL. Anterior cingulate cortex morphology predicts remission from major depression following internet-based cognitive behavior therapy. Abstract submitted for presentation at the 55th Annual Meeting of the American College of Neuropsychopharmacology, Hollywood, FL, December 4-8, 2016.

397. Shane, BR, Vanuk, JR, Bajaj, S, Millan, M, **Killgore, WD**. Multimodal brain imaging in patients receiving bright light therapy following a mild traumatic brain injury. Abstract presented at the Western Medical Research Conference, Carmel CA, January 26-28, 2017.

398. Franco, J, Millan, M, Shane, BR, Castellanos, A, **Killgore, WD**. Blue wavelength light therapy increases thalamic grey matter volume following mild traumatic brain injury. Abstract presented at the 45th Annual Meeting of the International Neuropsychological Society, New Orleans, LA, February 1-4, 2017.

399. Alkozei, A, Smith, R, Demers, LA, Divatia, S, Weber, M, Berryhill, SM, & **Killgore, WD**. Emotional intelligence can be trained via an online training program and is associated with better performance on the IGT. Abstract accepted for oral platform presentation at the 45th Annual Meeting of the International Neuropsychological Society, New Orleans, LA, February 1-4, 2017.

400. Li, H, Gruber, S, Lukas, S, Silveri, M, Hill, K, **Killgore, WD**, & Nickerson, LD. Data fusion to investigate the effect of chronic heavy marijuana use on brain structure. Abstract submitted for presentation at the 2017 Harvard Psychiatry Research Day Poster Session, Boston, MA, April 12, 2017.

401. Challener, S, Alkozei, A, Fridman, A, Dormer A, & **Killgore, WD.** Higher depressive symptoms are associated with lower activation in the orbitofrontal cortex when anticipating negative stimuli in individuals with PTSD. Abstract presented at the 72nd Annual Convention of the Society for Biological Psychiatry, San Diego, CA, May 18-20, 2017.

402. Alkozei, A, Smith R, Fridman A, Dormer, A, Challener, S, & **Killgore, WD.** Neural responses to emotional stimuli in individuals with PTSD after daily morning blue light exposure. Abstract presented at the 72nd Annual Convention of the Society for Biological Psychiatry, San Diego, CA, May 18-20, 2017.

403. Alkozei, A, Smith R, Fridman, A, Dormer, A, Challener, S, & **Killgore, WD.** The role of trait gratitude on functional brain activation changes when anticipating negative events in individuals with PTSD. Abstract presented at the 72nd Annual Convention of the Society for Biological Psychiatry, San Diego, CA, May 18-20, 2017.

404. Fridman, AJ, Alkozei, A, Smith, R, Challener, S, Knight, SA, & **Killgore, WD**. Resiliency is associated with reduced activation within the retrosplenial cortex and secondary motor area for individuals with PTSD during anticipation of a negative event. Abstract presented at the 72nd Annual Convention of the Society for Biological Psychiatry, San Diego, CA, May 18-20, 2017.

405. Vanuk, JR, Millan, M, Shane, BR, Bajaj, S, & **Killgore, WD**. Blue light therapy following a mild traumatic brain injury improves MPFC-amygdala functional connectivity and mood. Abstract presented at the 72nd Annual Convention of the Society for Biological Psychiatry, San Diego, CA, May 18-20, 2017.

406. **Killgore, WD**, Shane, BR, Vanuk, JR, Franco, J, Castellanos, A, Millan, M, Grandner, MA, & Bajaj, S. Light therapy facilitates thalamo-cortical brain recovery from mild traumatic brain injury. Abstract presented at the 72nd Annual Convention of the Society for Biological Psychiatry, San Diego, CA, May 18-20, 2017.

407. Smith, R, Lane, RD, Alkozei, A, Bao J, Smith, C, Sanova, A, Nettles, M, & **Killgore, WD**. Common and unique neural systems underlying the maintenance of emotional vs. bodily reactions to affective stimuli: the moderating role of emotional awareness. Abstract presented at the 72nd Annual Convention of the Society for Biological Psychiatry, San Diego, CA, May 18-20, 2017.

408. Bajaj, S, Alkozei, A & **Killgore, WD**. Effect of bright light therapy on white matter abnormalities following a mild traumatic brain injury. Abstract presented at the 72nd Annual Convention of the Society for Biological Psychiatry, San Diego, CA, May 18-20, 2017.

409. Alkozei, A, Smith, R, Fridman, A, Dormer A, Challener, S, Grandner, MA, & **Killgore, WD**. Daily morning blue light exposure leads to changes in functional brain responses during emotional anticipation in individuals with PTSD. Abstract presented at the SLEEP Meeting, Boston, MA, June 3-7, 2017.

410. Gottschlich, MK, Hyman, S, Millan M, Pisner, D, Singh, A, Knight, SA, Grandner, MA, & **Killgore, WD**. Post-concussion severity is associated with sleep problems and neuropsychological status. Abstract presented at the SLEEP Meeting, Boston, MA, June 3-7, 2017.

411. Vanuk, JR, Shane, BR, Millan, M., Bajaj, S, Grandner, MA, & **Killgore, WD**. Short-wavelength light therapy as a way of improving sleep, cognition, and functional connectivity following mild traumatic brain injury. Abstract presented at the SLEEP Meeting, Boston, MA, June 3-7, 2017.

412. **Killgore, WD**, Shane, BR, Vanuk, JR, Franco, J, Castellanos, A, Millan, M, Grandner, MA, & Bajaj, S. Short wavelength light therapy facilitates recovery from mild traumatic brain injury. Abstract presented at the SLEEP Meeting, Boston, MA, June 3-7, 2017.

413. **Killgore, WD**, Capaldi, VF, Balkin, TJ, & Kamimori, GH. The trait of introversion-extraversion contributes to sustained performance on planning and sequencing abilities during sleep deprivation. Abstract presented at the SLEEP Meeting, Boston, MA, June 3-7, 2017.

414. Bajaj, S, Alkozei, A, Grandner, MA, & **Killgore, WD**. Effect of bright light therapy on brain and behavioral abnormalities following a mild traumatic brain injury. Abstract presented at the SLEEP Meeting, Boston, MA, June 3-7, 2017.

415. Oliver, K, Gallagher, R, Hale, L, Barrett, M, Branas, C, **Killgore, WD**, Parthasarathy, S, Alfonso-Miller, P, Gehrels, J, & Grandner, MA. Development and initial validation of a brief measure of control over sleep. Abstract presented at the SLEEP Meeting, Boston, MA, June 3-7, 2017.

416. Grandner, MA, Athey, A, **Killgore WD**, Alfonso-Miller, P. Preliminary results of a sleep health intervention in student athletes: Changes in sleep, energy level, and mental well-being, and body weight. Abstract presented at the SLEEP Meeting, Boston, MA, June 3-7, 2017.

417. Yang, R, Gallagher, R, Hale, L, Perlis, M, Barrett, M, Branas, C, **Killgore, WD**, Parthasarathy, S, Alfonso-Miller, P, Gehrels, J, Grandner, MA. Would you call yourself a short or long sleeper?

Perceptions of sleep category associated with reported sleep duration, insomnia, and health. Abstract presented at the SLEEP Meeting, Boston, MA, June 3-7, 2017.

418. Fisseha, E, Gallagher, R, Hale, L, Branas, C, Barrett, M, **Killgore, WD**, Alfonso-Miller, P, Jean-Louis, G, Seixas, A, Williams, N, Gehrels, J, & Grandner, MA. Habitual weekday sleep duration associated with multiple dimensions of socioeconomic status. Abstract presented at the SLEEP Meeting, Boston, MA, June 3-7, 2017.

419. Poling, K, Gallagher, R, Hale, L, Branas, C, Seixas, A, Jean-Louis, G, **Killgore, WD**, Alfonso-Miller, P, Parthasarathy, S, Gehrels, J, & Grandner, MA. Sleep partially mediates the association between food insecurity and obesity: Roles of short sleep duration, insomnia, and socioeconomic factors. Abstract presented at the SLEEP Meeting, Boston, MA, June 3-7, 2017.

420. Forbush, S, Fisseha, E, Gallagher, R, Hale, L, Malone, S, Patterson, F, Branas, C, Barrett, M, **Killgore, WD**, Gehrels, J, Alfonso-Miller, P, & Grandner, MA. Sociodemographics, poor overall health, cardiovascular disease, depression, fatigue, and daytime sleepiness associated with social jetlag independent of sleep duration and insomnia. Abstract presented at the SLEEP Meeting, Boston, MA, June 3-7, 2017.

421. Till, K, Athey, A, Chakravorty, S, **Killgore, WD**, Alfonso-Miller, P, Gehrels, J, & Grandner, MA. Insomnia and daytime tiredness in student athletes associated with risky behaviors and poor decision making when under the influence of alcohol. Abstract presented at the SLEEP Meeting, Boston, MA, June 3-7, 2017.

422. Warlick, C, Hall, C, Athey, A, Chakravorty, S, **Killgore, WD**, Alfonso-Miller, P, Gehrels, J, & Grandner, MA. Difficulty sleeping associated with substance use among student athletes. Abstract presented at the SLEEP Meeting, Boston, MA, June 3-7, 2017.

423. Jaszewski, A, Athey, A, **Killgore, WD**, Alfonso-Miller, P, Gehrels, J, & Grandner, MA. Sleep duration and quality associated with mental well-being in student athletes. Abstract presented at the SLEEP Meeting, Boston, MA, June 3-7, 2017.

424. Athey, A, Alfonso-Miller, P, **Killgore, WD**, & Grandner, MA. Preliminary results of a sleep health intervention in student athletes: Perceived changes to sleep, performance, and mental and physical wellbeing. Abstract presented at the SLEEP Meeting, Boston, MA, June 3-7, 2017.

425. Goel, N, Taylor, DM, Abel, T, **Killgore, WD**, Pearson-Leary, J, & Bhatnagar, S. MicroRNAs are cross-species markers of sleep loss in humans and rats. Abstract submitted for presentation at the Organization for Human Brain Mapping Conference, Boston, MA, June 3-7, 2017.

426. Meridew, C, Jaszewski, A, Athey, A, Alfonso-Miller, P, **Killgore, WD**, Gehrels, J, & Grandner, MA. Impact of time and activity demands on sleep of student athletes: It's not about reduced sleep opportunity. Abstract presented at the SLEEP Meeting, Boston, MA, June 3-7, 2017.

427. Bajaj, S, Rosso, IM, Rauch, SL, & **Killgore WD**. Impact of bright light therapy on volume and cortical thickness of the brain following mild traumatic brain injury. Abstract presented at the

Organization for Human Brain Mapping Conference, Vancouver, Canada, June 25-29, 2017.***[selected for travel award]**

428. Bajaj, S, Rosso, IM, Rauch, SL, & **Killgore, WD**. Effect of bright light therapy on white matter abnormalities following mild traumatic brain injury. Abstract submitted for presentation at the Organization for Human Brain Mapping Conference, Vancouver, Canada, June 25-29, June 3-7, 2017.

429. Alkozei, A, Haack, M, Smith, R, Dailey, N, Bajaj, S, & **Killgore, WD**. Chronic sleep restriction increases negative implicit attitudes toward Arab Muslims. Abstract submitted for presentation at the Military Health Systems Research Symposium, Kissimmee, FL, August 27-30, 2017.

430. **Killgore WD**, Vanuk, JR, Bajaj, S. Blue wavelength light therapy increases axonal myelination in mild traumatic brain injury. Abstract presented at the Military Health Systems Research Symposium, Kissimmee, FL, August 27-30, 2017.

431. **Killgore WD**. What makes a Super-Soldier: Identifying the neural correlates of individual differences in resilience against sleep deprivation. Abstract presented at the Military Health Systems Research Symposium, Kissimmee, FL, August 27-30, 2017.

432. Dailey, NS, Bajaj, S, Alkozei, A, & **Killgore WD**. Neural correlates of aggression during chronic and subacute stages of recovery from mild traumatic brain injury. Abstract presented at the Military Health Systems Research Symposium, Kissimmee, FL, August 27-30, 2017.

433. Bajaj, S, Alkozei, A, & **Killgore WD**. Short wavelength light therapy following mild traumatic brain injury: Can we normalize the abnormal diffusion and quantity of water within the brain? Abstract presented at the Military Health Systems Research Symposium, Kissimmee, FL, August 27-30, 2017.

434. Goel, N, Taylor, DM, Abel, T, **Killgore, WD**, Pearson-Leary, J, & Bhatnagar, S. MicroRNAs are cross-species markers of sleep loss in humans and rats. Abstract presented at the Society for Neuroscience, Washington, DC, November 11-15, 2017.

435. Dailey, NS, Bajaj, S, Alkozei, A, Smith, R, Knight, SA, & **Killgore, WD**. Neural correlates of aggression in the chronic and post-acute stages of recovery from mild traumatic brain injury: A diffusion tensor imaging study. Abstract presented at the University of Arizona Junior Investigator Poster Forum, Tucson, AZ, November 17, 2017.

436. Challener, S, Alkozei, A, Fridman, A, Dormer, A, & **Killgore, WD**. Higher depressive symptoms are associated with lower activation in the orbital frontal cortex when anticipating negative stimuli in individuals with PTSD. Abstract presented at the University of Arizona Junior Investigator Poster Forum, Tucson, AZ, November 17, 2017.

437. Alkozei, A, Smith, R, Demers, L, Divatia, S, Weber, M, Berryhill, S, & **Killgore, WD**. Emotional intelligence can be trained via an online training program and is associated with better performance on the IGT. Abstract presented at the University of Arizona Junior Investigator Poster Forum, Tucson, AZ, November 17, 2017.

438. Satterfield, B, Raikes, AC, & **Killgore, WD**. A voxel-based morphometric analysis of resilience to vigilant attention impairment during sleep deprivation. Abstract presented at the University of Arizona Junior Investigator Poster Forum, Tucson, AZ, November 17, 2017.

439. Singh, A, Thurston, MD, Gottschlich, MK, Miller, MA, & **Killgore, WD**. Trait anxiety predicts hostile tendencies post-traumatic brain injury. Abstract presented at the University of Arizona Junior Investigator Poster Forum, Tucson, AZ, November 17, 2017.

440. Raikes, AC, Satterfield, BC, Knight, SA, & **Killgore, WD**. Grey matter volumetric differences with increasing numbers of previous mild traumatic brain injuries: A voxel-based morphometric study. Abstract presented at the University of Arizona Junior Investigator Poster Forum, Tucson, AZ, November 17, 2017.

441. Bajaj, S, Dailey, N, Alkozei, A, Vanuk, JR, & **Killgore, WD**. Preservation of limbic network structure in healthy young adults. Abstract presented at the University of Arizona Junior Investigator Poster Forum, Tucson, AZ, November 17, 2017.

442. Alkozei, A, **Killgore, WD**, Smith, R, Dailey, NS, Bajaj, S, & Haack, M. Chronic sleep restriction increases negative implicit attitudes toward Arab Muslims. Abstract presented at the University of Arizona Junior Investigator Poster Forum, Tucson, AZ, November 17, 2017.

443. Skalamera, J, Alkozei, A, Haack, M, & **Killgore, WD**. Chronic sleep restriction increases racial bias and affects actual decision-making about people. Abstract presented at the University of Arizona Junior Investigator Poster Forum, Tucson, AZ, November 17, 2017.

444. Alkozei, A, Smith, R, & **Killgore, WD**. Increases in prefrontal activation after exposure to blue versus amber wavelength light during cognitive load. Abstract presented at the University of Arizona Junior Investigator Poster Forum, Tucson, AZ, November 17, 2017.

445. Knight, SA, & **Killgore, WD**. Typical sleep duration is associated with constructive thinking patterns. Abstract presented at the University of Arizona Junior Investigator Poster Forum, Tucson, AZ, November 17, 2017.

446. Nickerson, L, Li, H, Smith, S, Lukas, S, Silveri, M, Hill, K, **Killgore, WD**, & Gruber, S. Combining multi-site/study MRI data: A novel linked-ICA denoising method for removing scanner and site variability from muli-modal MRI data. Abstract presented at the American College of Neuropsychopharmacology (ACNP) 56th Annual Meeting, Palm Springs, CA, December 3-7, 2017.

447. Bajaj, S, Raikes, AC, Dailey, NS, Vanuk, JR, Weber, M, Rosso, IM, Rauch, SL, & **Killgore, WD**. Changes in cortical structure, sleep, and anxiety symptoms following blue-wavelength light therapy in individuals with mild traumatic brain injury. Abstract presented at the Big Sky Athletic Training Sports Medicine Conference, Big Sky, MT, February 4-8, 2018.

448. Dailey, NS, Raikes, AC, Smith, R, Alkozei, A, & **Killgore, WD**. The executive control network after mild traumatic brain injury: Associations between functional connectivity and aggression. Abstract presented at the Big Sky Athletic Training Sports Medicine Conference, Big Sky,

MT, February 4-8, 2018.

449. Raikes, AC, Satterfield, BC, Dailey, NS, Bajaj, S, & **Killgore, WD**. Self-reported sleep quality is related to cerebellar grey matter volume after mild traumatic brain injury. Abstract presented at the Big Sky Athletic Training Sports Medicine Conference, Big Sky, MT, February 4-8, 2018.

450. Raikes, AC, Bajaj, S, Dailey, NS, Satterfield, BC, Alkozei, A, Smith, R, & **Killgore, WD**. White matter correlates of self-reported sleep quality after a mild traumatic brain injury: A DTI study. Abstract presented at the Big Sky Athletic Training Sports Medicine Conference, Big Sky, MT, February 4-8, 2018.

451. Satterfield, BC, Raikes, AC, & **Killgore, WD**. A voxel-based morphometric analysis of resilience to vigilant attention impairment during sleep deprivation. Abstract presented at the 46th Annual Meeting of the International Neuropsychological Society, Washington, DC, February 14-17, 2018.

452. Alkozei, A, Smith, R, Dailey, NS, Bajaj, S, Knight SA, & **Killgore, WD**. Exposure to blue wavelength light during memory consolidation improves long-delay verbal memory performance. Abstract presented at the 46th Annual Meeting of the International Neuropsychological Society, Washington, DC, February 14-17, 2018.

453. Alkozei, A, Smith, R, Dailey, NS, Bajaj, S, Haack, M, & **Killgore, WD**. Men, but not Women, show a decrease in implicit preferences for low-calorie food after 3 weeks of chronic sleep restriction. Abstract presented at the 46th Annual Meeting of the International Neuropsychological Society, Washington, DC, February 14-17, 2018.

454. Alkozei, A, Smith, R, & **Killgore, WD**. A positive cognitive style mediates the relationship between trait gratitude and depressive symptoms. Abstract presented at the 46th Annual Meeting of the International Neuropsychological Society, Washington, DC, February 14-17, 2018.

455. Bajaj, S, Dailey, NS, Alkozei, A, Vanuk, JR, & **Killgore, WD**. Preservation of limbic network structure in healthy young adults. Abstract presented at the 46th Annual Meeting of the International Neuropsychological Society, Washington, DC, February 14-17, 2018.

456. Alkozei, A, Smith, R, Demers, LA, Divatia, S, Weber, M, Berryhill, SM, & **Killgore, WD**. Emotional intelligence can be trained via an online training program and is associated with better performance on the IGT. Abstract presented at the 46th Annual Meeting of the International Neuropsychological Society, Washington, DC, February 14-17, 2018.

457. Dailey, NS, Bajaj, S, Alkozei, A, Smith, R, Knight, SA, & **Killgore, WD**. Neural correlates of aggression in the chronic and post-acute stages of recovery from mild traumatic brain injury: A diffusion tensor imaging study. Abstract presented at the 46th Annual Meeting of the International Neuropsychological Society, Washington, DC, February 14-17, 2018.

458. **Killgore, WD**, Shane, BR, Vanuk, JR, Millan, M, Knight, SA, & Bajaj, S. Blue light therapy accelerates brain and cognitive recovery from mild traumatic brain injury. Abstract presented

at the 46th Annual Meeting of the International Neuropsychological Society, Washington, DC, February 14-17, 2018.

459. **Killgore, WD**. Default mode activation and the ability to resist sleep deprivation. Abstract presented at the 46th Annual Meeting of the International Neuropsychological Society, Washington, DC, February 14-17, 2018.

460. **Killgore, WD**, Capaldi, VF, Balkin, TJ, & Kamimori, GH. Personality traits predict the ability to sustain executive function abilities during sleep deprivaiton. Abstract presented at the 46th Annual Meeting of the International Neuropsychological Society, Washington, DC, February 14-17, 2018.

461. Raikes, AC, & **Killgore, WD**. Increased cerebellar grey matter in the presence of decreased subjective sleep quality following mild traumatic brain injury. Abstract presented at the 46th Annual Meeting of the International Neuropsychological Society, Washington, DC, February 14-17, 2018.

462. Raikes, AC, Satterfield, BC, Knight, SA, & **Killgore, WD**. Gray matter volumetric differences with increasing numbers of previous mild traumatic brain injuries: A voxel-based morphometric study. Abstract presented at the 46th Annual Meeting of the International Neuropsychological Society, Washington, DC, February 14-17, 2018.

463. Skalamera, J, Alkozei, A, Haack, M, & **Killgore, WD**. Chronic sleep restriction increases implicit racial biases and affects actual decision-making about people. Abstract presented at the 46th Annual Meeting of the International Neuropsychological Society, Washington, DC, February 14-17, 2018.

464. Huanjie, L, Silveri, M, Lukas, SE, Hill, K, **Killgore, WD**, Gruber, S, & Nickerson, LD. Data fusion to investigate multimodal MRI patterns associated with chronic heavy marijuana use. Abstract presented at the Harvard Psychiatry Day Poster Session, Boston, MA, April 4, 2018.

465. Bajaj, S, Dailey, NS, Vanuk, JR, Raikes, A, Weber, M, Rosso, IM, Rauch, SL, & **Killgore, WD**. Impact of blue light therapy on cortical volume, sleep and anxiety symptoms following mild traumatic brain injury. Abstract presented at the Anxiety and Depression Association of America (ADAA) Conference, Washington, DC, April 5-8, 2018.

466. Knight, SA, & **Killgore, WD**. Constructive thinking patterns correlate with typical sleep habits. Abstract presented at the Anxiety and Depression Association of America (ADAA) Conference, Washington, DC, April 5-8, 2018.

467. Raikes, AC, Dailey, NS, Bajaj, S, & **Killgore, WD**. White matter structure changes associated with depressive symptoms following recent mild traumatic brain injury. Abstract presented at the Anxiety and Depression Association of America (ADAA) Conference, Washington, DC, April 5-8, 2018.

468. Singh, A, Thurston, MD, Gottschlich, MK, Miller, MA, & **Killgore, WD**. Trait anxiety predicts hostile tendencies post-traumatic brain injury. Abstract presented at the Anxiety and Depression Association of America (ADAA) Conference, Washington, DC, April 5-8, 2018.

469. Bajaj, S, Raikes, AC, Alkozei, A, Dailey, NS, Satterfield, BC, Vanuk, JR, & **Killgore, WD**. Association between suicidal ideation and cortical volume in a sub-clinical sample of young individuals. Abstract presented at the Society of Biological Psychiatry 73rd Annual Meeting, New York, NY, May 10-12, 2018.

470. Challener, S, Alkozei, A, Young, A, Ozcan, M, Raikes, AC, & **Killgore, WD**. Sleep problems are associated with greater default mode network activation when anticipating negative stimuli in individuals with PTSD. Abstract presented at the Society of Biological Psychiatry 73rd Annual Meeting, New York, NY, May 10-12, 2018.

471. Dailey, NS, Smith, R, Raikes, AC, Alkozei, A, & **Killgore, WD**. Reduced functional connectivity in the executive control network following mild traumatic brain injury: Implications for emotional regulation. Abstract presented at the Society of Biological Psychiatry 73rd Annual Meeting, New York, NY, May 10-12, 2018.

472. **Killgore, WD**, Kent, HC, Knight, SA, & Alkozei, A. Changes in morning salivary melatonin correlate with prefrontal responses during working memory performance. Abstract presented at the Society of Biological Psychiatry 73rd Annual Meeting, New York, NY, May 10-12, 2018.

473. **Killgore, WD**, Alkozei, A, & Weber, M. Blue light therapy improves executive function following mild traumatic brain injury. Abstract presented at the Society of Biological Psychiatry 73rd Annual Meeting, New York, NY, May 10-12, 2018.

474. Ozcan, M, Challener, S, Yung, A, Alkozei, A, Raikes, AC, & **Killgore, WD**. Daytime sleepiness in individuals with PTSD is associated with greater activation in the right angular gyrus when viewing negative images. Abstract presented at the Society of Biological Psychiatry 73rd Annual Meeting, New York, NY, May 10-12, 2018.

475. Smith, R, Sanova, A, Lane, RD, & **Killgore, WD**. Graph-theoretic correlates of trait differences in emotional awareness. Abstract presented at the Society of Biological Psychiatry 73rd Annual Meeting, New York, NY, May 10-12, 2018.

476. Yung, A, Challener, S, Ozcan, M, Alkozei, A, Raikes, AC, & **Killgore, WD**. Improvements in PTSD symptom severity are associated with greater activation in the hippocampus during anticipation of negative stimuli. Abstract presented at the Society of Biological Psychiatry 73rd Annual Meeting, New York, NY, May 10-12, 2018.

477. Satterfield, BC, Silveri, M, Alkozei, A, Raikes, AC, & **Killgore, WD**. GABA: A neural marker of resilience to psychomotor vigilance impairment during sleep deprivation. Abstract accepted for presentation at the SLEEP 2018 Annual Meeting, Baltimore, MD, June 2-6, 2018. [*Trainee Merit Award]

478. Satterfield, BC, Alkozei, A, Raikes, AC, & **Killgore, WD**. Habitual sleep duration predicts caloric and mactronutrient intake during sleep deprivation. Abstract accepted for presentation at the SLEEP 2018 Annual Meeting, Baltimore, MD, June 2-6, 2018.

479. Bajaj, S, Raikes, A, Dailey, NS, Vanuk, JR, Satterfield, BC, Alkozei, A, Weber, M, Rosso, IM, Rauch, SL, Grandner, MA, & **Killgore, WD**. Impact of blue light therapy on cortical structure, sleep, and anxiety symptoms following mild traumatic brain injury. Abstract accepted for presentation at the SLEEP 2018 Annual Meeting, Baltimore, MD, June 2-6, 2018.

480. Challener, S, Alkozei, A, Yung, A, Ozcan, M, Raikes, AC, & **Killgore, WD**. Functional impairment due to excessive daytime sleepiness is associated with greater activation in the default mode network when anticipating negative stimuli in individuals with PDSD. Abstract accepted for presentation at the SLEEP 2018 Annual Meeting, Baltimore, MD, June 2-6, 2018.

481. **Killgore, WD**, Alkozei, A, Knight, SA, Miller, MA, Grandner, MA, & Weber, M. Daily morning blue light exposure enhances executive functioning in individuals with mild traumatic brain injury. Abstract accepted for presentation at the SLEEP 2018 Annual Meeting, Baltimore, MD, June 2-6, 2018.

482. **Killgore, WD**, & Nickerson, LA. Resistance to sleep deprivation is predicted by gray matter volume in the posterior brain stem. Abstract accepted for presentation at the SLEEP 2018 Annual Meeting, Baltimore, MD, June 2-6, 2018.

483. Alkozei, A, Kent, HC, Knight, SA, & **Killgore, WD**. Changes in morning salivary melatonin correlate with prefrontal responses during working memory performance. Abstract accepted for presentation at the SLEEP 2018 Annual Meeting, Baltimore, MD, June 2-6, 2018.

484. Ozcan, M, Alkozei, A, Raikes, A, & **Killgore, WD**. Pre-sleep cognitions partially mediate the relationship between depression and daytime energy. Abstract accepted for presentation at the SLEEP 2018 Annual Meeting, Baltimore, MD, June 2-6, 2018.

485. Raikes, AC, Dailey, NS, Satterfield, BC, Bajaj, S, & **Killgore, WD**. Self-reported sleep quality is associated with reductions in white-matter integrity following recent mild traumatic brain injury. Abstract accepted for presentation at the SLEEP 2018 Annual Meeting, Baltimore, MD, June 2-6, 2018.

486. Raikes, AC, Satterfield, BC, Dailey, NS, Bajaj, S, & **Killgore, WD**. Subjectively poor sleep quality is associated with increased cerebellar grey matter volume following mild traumatic brain injury. Abstract accepted for presentation at the SLEEP 2018 Annual Meeting, Baltimore, MD, June 2-6, 2018.

487. Skalamera, J, Alkozei, A, Haack, M, & **Killgore, WD**. The effect of chronic sleep restriction on implicit racial biases and explicit judgmental decision-making. Abstract accepted for presentation at the SLEEP 2018 Annual Meeting, Baltimore, MD, June 2-6, 2018.

488. Sanchez, C, Hale, L, Branas, C, Gallagher, R, **Killgore, WD**, Gehrels, J, Alfonso,-Miller, P, & Grandner, MA. RElationsihips between dietary supplement intake and sleep duration, insomnia, and fatigue. Abstract accepted for presentation at the SLEEP 2018 Annual Meeting, Baltimore, MD, June 2-6, 2018.

489. Tubbs, A, Perlis, M, Chakravorty, S, Basner, M, **Killgore, WD**, Gehreles, J, Alfonso-Miller, P, & Grandner, MA. Does increased risk of suicide at night favor one method of suicide over

another? Abstract accepted for presentation at the SLEEP 2018 Annual Meeting, Baltimore, MD, June 2-6, 2018.

490. Huanjie, L, Gruber, S, Smith, SM, Lukas, SE, Silveri, M, Hill, KP, **Killgore, WD**, & Nickerson, LD. Combining multi-site/study MRI data: A novel linked-ICA denoising method for removing scanner and site variability from multi-modal MRI data. Abstract submitted for presentation at the Joint Annual Meeting of ISMRM-ESMRMB, Paris, France, June 16-21, 2018. [*Trainee Stipend Award]

491. Bajaj, S, Raikes, AC, Alkozei, A, Dailey, NS, Vanuk, J, Satterfield, BC, & **Killgore, WD**. Suicidal ideation is associated with diminished cortical volume in a sub-clinical population. Abstract presented at the Organization for Human Brain Mapping (OHBM) Annual Meeting, Singapore, June 17-21, 2018.

492. Bajaj, S, Raikes, AC, Dailey, NS, Vanuk, J, Alkozei, A, Satterfield, BC, Weber, M, Rosso, IM, Rauch, SL, & **Killgore, WD**. Effect of blue light therapy on cortical volume, sleep, and anxiety symptoms following mild traumatic brain injury. Abstract presented at the Organization for Human Brain Mapping (OHBM) Annual Meeting, Singapore, June 17-21, 2018.

493. Dailey, NS, Bajaj, S, Smith, R, Raikes, AC, Alkozei, A, & **Killgore, WD**. Disrupted functional connectivity and elevated aggression in young adults with mild traumatic brain injury. Abstract presented at the Organization for Human Brain Mapping (OHBM) Annual Meeting, Singapore, June 17-21, 2018.

494. Raikes, AC, Bajaj, S, Dailey, NS, Alkozei, A, Smith, R, & **Killgore, WD**. Post-mTBI white matter correlates of self-reported sleep quality: A DTI study. Abstract presented at the Organization for Human Brain Mapping (OHBM) Annual Meeting, Singapore, June 17-21, 2018.

495. Nickerson, LD, Li, H, , Silveri, MM, Lukas, SE, Hill, KP, **Killgore, WD**, & Gruber, SA. Multimodal MRI data fusion reveals structure-function patterns associated with chronic heavy marijuana use. Abstract presented at the Organization for Human Brain Mapping (OHBM) Annual Meeting, Singapore, June 17-21, 2018.

496. Raikes, AC, Satterfield, BC, Alkozei, A, & **Killgore, WD**. Blue light therapy improves self-reported sleep quality in individuals with a recent mild traumatic brain injury. Abstract submitted for presentation at the Military Health Systems Research Symposium, Orlando, FL, 2018.

497. **Killgore, WD**. Executive functioning in individuals with mild traumatic brain injury is enhanced by daily morning blue light therapy. Abstract submitted for presentation at the Military Health Systems Research Symposium, Orlando, FL, 2018.

498. **Killgore, WD, &** Nickerson, LA. Why can't you just stay awake? Resistance to sleep deprivation is associated with measureable differences in brainstem gray matter. Abstract submitted for presentation at the Military Health Systems Research Symposium, Orlando, FL, 2018.

499. Dailey, NS, Smith, R, Satterfield, BC, Raikes, AC, & **Killgore, WD**. Verbal fluency following mild traumatic brain injury: The strength of switching. Abstract submitted for presentation at the American Speech-Language-Hearing Association Annual Convention, November 15-17, 2018.

500. Forbeck, B, Dailey, NS, Esbit, S, & **Killgore, WD**. Reduced information processing speed: A dynamic deficit in mild traumatic brain injury. Abstract submitted for presentation at the American Speech-Language-Hearing Association Annual Convention, November 15-17, 2018.

501. Raikes, AC, Dailey, NS, & **Killgore, WD**. Neural and neurocognitive correlates of responsiveness to blue light therapy following mild traumatic brain injury. Abstract submitted for presentation at the American Speech-Language-Hearing Association Annual Convention, November 15-17, 2018.

AWARDED GRANTS AND CONTRACTS

Completed

2001-2003 fMRI of Unconscious Affect Processing in Adolescence.
NIH, 1R03HD41542-01
PI: **Killgore** ($79,000.)

2003-2006 The Effects of Sleep-Loss and Stimulant Countermeasures on Judgment and Decision Making.
U.S. Army Medical Research and Materiel Command (USAMRMC) Competitive Medical Research Proposal Program (CMRP); Intramural Funding,
PI: **Killgore** (Total Award: $1,345,000.)

2004-2005 Sleep/wake Schedules in 3ID Aviation Brigade Soldiers.
Defense Advanced Research Projects Agency (DARPA)
PI: **Killgore** (Total Award: $60,000.)

2005-2006 Functional Neuroimaging Studies of Neural Processing Changes with Sleep and Sleep Deprivation.
U.S. Army Medical Research and Materiel Command (USAMRMC); Intramural Funding Task Area C (Warfighter Judgment and Decision Making) Program Funding
PI: **Killgore** (Total Award: $219,400.)

2006-2007 Establishing Normative Data Sets for a Series of Tasks to Measure the Cognitive Effects of Operationally Relevant Stressors.
U.S. Army Medical Research and Materiel Command (USAMRMC); Intramural Funding

Task Area C (Warfighter Judgment and Decision Making) Program Funding,
PI: **Killgore** (Total Award: $154,000.)

2006-2007 Military Operational Medicine Research Program (MOM-RP), Development of the Sleep History and Readiness Predictor (SHARP).
U.S. Army Medical Research and Materiel Command (USAMRMC); Intramural Funding
PI: **Killgore** (Total Award:$291,000.)

2009-2014 The Neurobiological Basis and Potential Modification of Emotional Intelligence through Affective Behavioral Training (W81XWH-09-1-0730).
U.S. Army Medical Research and Materiel Command (USAMRMC),
PI: **Killgore** (Total Award: $551,961.)
Major Goal: To identify the neurobiological basis of cognitive and emotional intelligence using functional and structural magnetic resonance imaging.

2011-2016 Effects of Bright Light Therapy on Sleep, Cognition, and Brain Function following Mild Traumatic Brain Injury (W81XWH-11-1-0056).
U.S. Army Medical Research and Materiel Command (USAMRMC),
PI: **Killgore** (Total Award: $941,924)
Major Goal: To evaluate the effectiveness of morning exposure to bright light as a treatment for improving in sleep patterns among individuals with post-concussive syndrome. Effects of improved sleep on recovery due to this treatment will be evaluated using neurocognitive testing as well as functional and structural neuroimaging.

2012-2014 Neural Mechanisms of Fear Extinction Across Anxiety Disorders
NIH NIMH
PI: Milad, M. Site Subcontract PI: **Killgore** (Subcontract Award: $505,065)
Major Goal: To examine the neurocircuitry involved in fear conditioning, extinction, and extinction recall across several major anxiety disorders.

2012-2014 Multimodal Neuroimaging to Predict Cognitive Resilience Against Sleep Loss
Defense Advance Research Projects Agency (DARPA) Young Faculty Award in Neuroscience (D12AP00241)
PI: **Killgore** (Total Award: $445,531)
Major Goal: To combine several neuroimaging techniques, including functional and structural magnetic resonance imaging, diffusion tensor imaging, and magnetic resonance spectroscopy to predict individual resilience to 24 hours of sleep deprivation.

2012-2015 Internet Based Cognitive Behavioral Therapy Effects on Depressive Cognitions and Brain function (W81XWH-12-1-0109).
U.S. Army Medical Research and Materiel Command (USAMRMC),
PI: Rauch, SL; Co-PI: **Killgore** (Total Award: $1,646,045)
Major Goal: To evaluate the effectiveness of an internet-based cognitive behavioral therapy treatment program on improving depressive symptoms, coping and resilience skills, cognitive processing and functional brain activation patterns within the prefrontal cortex.

Current

2012-2016 A Model for Predicting Cognitive and Emotional Health from Structural and Functional Neurocircuitry following Traumatic Brain Injury (W81WH-12-0386)
Congressionally Directed Medical Research Program (CDMRP), Psychological Health/Traumatic Brain Injury (PH/TBI) Research Program: Applied Neurotrauma Research Award.
PI: **Killgore** (Total Award: $2,272,098)
Percent Effort: 25%
Major Goal: To evaluate the relation between axonal damage and neurocognitive performance in patients with traumatic brain injury at multiple points over the recovery trajectory, in order to predict recovery.

2014-2017 Bright Light Therapy for Treatment of Sleep Problems following Mild TBI (W81XWH-14-1-0571).
Psychological Health and Traumatic Brain Injury Research Program (PH/TBI RP) Traumatic Brain Injury Research Award-Clinical Trial.
PI: **Killgore** (Total Award: $1,853,921)
Percent Effort: 40%
Major Goal: To verify the effectiveness of morning exposure to bright light as a treatment for improving in sleep patterns, neurocognitive performance, brain function, and brain structure among individuals with a recent mild traumatic brain injury.

2014-2018 A Non-pharmacologic Method for Enhancing Sleep in PTSD (W81XWH-14-1-0570)
Military Operational Medicine Research Program (MOMRP) Joint Program Committee 5 (JPC-5), FY13 Basic and Applied Psychological Health Award (BAPHA)
PI: **Killgore** (Total Award: $3,821,415)
Percent Effort: 35%
Major Goal: To evaluate the effectiveness of blue light exposure to modify sleep in PTSD and its effects on fear conditioning/extinction, symptom expression, and brain functioning.

2015 Effects of Blue Light on Melatonin Levels and EEG Power Density Spectrum
Arizona Area Health Education Centers (AHEC) Program
Co-PI: Alkozei, A.; Co-PI: **Killgore** (Total Award: $4,373)
Percent Effort: 0%
Major Goal: Adjunctive intramural funding to add a melatonin collection to an ongoing study of the effects of blue wavelength light on alertness and brain function.

2014-2018 Refinement and Validation of a Military Emotional Intelligence Training Program (JW150005)
Joint Warfighter Medical Research Program 2015
PI: **Killgore** (Total Award: $5,977,570)
Percent Effort: 45%
Major Goal: To develop and validate a new internet-based training program to enhance emotional intelligence capacities in military Service Members.

2017-2019 Emotional State and Personality: A Proof-of-Concept Model for Predicting Performance Under Stress (DM160347)
USAMRMC 2015
PI: **Killgore** (Total Award: $1,247,290)
Percent Effort: 20%
Major Goal: To develop a statistical model to predict effective cognitive performance under stress using personality and state emotion metrics.

LIST OF COLLABORATORS ON GRANTS AND PUBLICATIONS FROM LAST FIVE YEARS

Acharya, D.
Alkozei, Anna
Athey, A. J.
Baker, Justin. T.
Balkin, Thomas J.
Bark, John S.
Brennan, Brian P.
Britton, Jennifer C.
Bruyere, J.
Buchholz, Jennifer L.
Capaldi, Vincent F.
Castro, Carl A.
Chosak, A.
Cohen-Gilbert, Julia E.
Conrad, Turner A.
Covell, Michael J.
Crowley, David J.
Cui, Jiaolong
Dagher, Joseph
Dahlgren, Mary Kate
Deckersbach, Thilo
DelDonno, Sophie R.
Demers, Lauren A.
Dillon, Daniel G.
Divatia, Shreya C.
Dougherty, Darin
Engle, Charles C.
Estrada, Arthur
Freed, Michael C.
Fridman, Andrew
Fukunaga, Rena
Ginsberg, Jay P.
Gogel, Hannah
Gold, Andrea L.
Gonenc, Atilla
Gruber, Staci A.
Grugle, Nancy, L.
Guerrero, Melanie L.
Hammeroff, Stuart
Hartman, A. S.
Hezel, D.
Hoge, Charles W.
Hudson, James I.
Jenike, Michael A.
Jensen, J. Eric
Jorgensen, Alli L.
Juelich, R. J.
Kamimori, Gary H.

Kamiya, T.
Kaufmann, Marc
Kawada, Y.
Kelley, Amanda M.
Killgore, Desiree B.
Kipman, Maia
Kizielewicz, Jill
Knight, Sara A.
Koehlmoos, T. P.
Krizan, Zlatan
Krupnick, J.
Lane, Richard
Lasko, N. B.
Laundau, A. J.
Leibenluft, E.
Makris, Nicos
Marin, M. F.
Markowski, Sarah M.
Meloni, Edward G.
Milad, Mohammed R
Mundy, Elizabeth A.
Nickerson, Lisa D.
Novak, L.A.
Olson, Elizabeth A.
Orr, Scott P.
Pace-Schott, Edward F.
Papadimitriou, G.
Pauls, D. L.
Pechtel, Pia
Penetar, David M.
Pine, Daniel S.
Pisner, Derek
Pitman, R. K.
Pizzagalli, Diego A.
Pollack, M. H.
Pope, Harrison G.
Post, Alex
Preer (Sonis), Lilly
Price, Lauren M.
Racine, Megan T.
Ragan, J.
Raison, Charles L.
Rauch, Scott L.
Rauch, Shiela
Reichardt, Rebecca M.
Renshaw, Perry F.
Rizzo, Albert (Skip)
Rohan, Michael
Ross, Amy J.
Rosso, Isabelle M.
Rupp, Tracy L.
Ryan, E. M.
Sagar, Kelly A.
Schoenberg, Michael R.
Schwab, Zachary J.
Shane, Bradley R.
Silveri, Marisa M.
Simon, Naomi M.
Smith, Kacie L.
Smith, Ryan S.
Sneider, Jennifer T.
Song, Christina H.
Song, H.
Steward, S. E.
Thomas, Jennifer J.
Tkachenko, Olga
Trksak, George H.
Vanuk, John R.

Webb, Christian A.
Weber, Mareen
Weihs, Karen
Weiner, Melissa R.
Whte, C. N.
Wilhelm, S.
Yurgelun-Todd, Deborah, A.
Zai, D.

GRADUATE, POSTDOCTORAL, THESIS ADVISORS OR SPONSORS

Steven W. Gangestad, Ph.D.—Undergraduate Senior Honors Thesis Advisor

Lawrence Overby, III, Ph.D.—Masters Thesis Advisor

Bill J. Locke, Ph.D.—Doctoral Thesis Advisor

Keith A. Hawkins, Ph.D.—Doctoral Internship Advisor

Russell L. Adams, Ph.D.—Postdoctoral Fellowship Advisor

James G. Scott, Ph.D.—Postdoctoral Fellowship Advisor

Guila Glosser, Ph.D.—Postdoctoral Fellowship Advisor

Deborah A. Yurgelun-Todd, Ph.D.—Postdoctoral Fellowship Advisor

This is a true and accurate statement of my activities and accomplishments. I understand that misrepresentation in securing promotion and tenure may lead to dismissal or suspension under ABOR Policy 6-201 J.1.b.

_____

William D. “Scott” Killgore, Ph.D.