

SSR 54TH ANNUAL MEETING

Reproductive Biology:
Solutions for Adult Disease

Dec. 15–18, 2021

St. Louis Union Station Hotel
St. Louis, MO



Reproduction... Where
the Future is Conceived

CONTENTS



6 GENERAL INFORMATION

12 SPONSORS

14 AWARDS

46 TRAINEE AFFAIRS COMMITTEE

51 SPECIAL EVENTS

52 SESSIONS AT-A-GLANCE

SESSIONS

54 TUESDAY

54 WEDNESDAY

55 THURSDAY

66 FRIDAY

73 SATURDAY

85 FLASH TALKS

POSTERS

91 THURSDAY

100 FRIDAY

110 SATURDAY

118 VIRTUAL

132 AUTHOR INDEX

ANNUAL MEETING PROGRAM SUPPORT

Bill and Melinda Gates Foundation

Ferring Pharmaceuticals

Emd Serono (US Division of Merck KGaA)

Eunice Kennedy Shriver National Institute
of Child Health and Human Development

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March of Dimes

EARMARKED SUPPORT

Diversity Symposium and Diversity
Committee Activities

Burroughs Wellcome Fund
Research Triangle Park, North Carolina

SSR New Investigator Award

Virendra B. Mahesh New Investigator
Endowment Fund
Madison, Wisconsin

USDA Nifa-Afri Merit Awards

USDA National Institutes of Food & Agriculture
Bethesda, Maryland

Lalor Foundation Post-Doctoral Travel
Fellowships

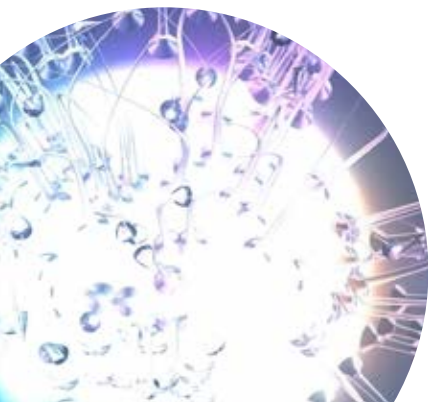
Lalor Foundation, Inc
Boston, Massachusetts

Burroughs Wellcome Fund Career
Development Fellows

Burroughs Wellcome Fund
Research Triangle Park, North Carolina

Science Education Outreach Program

Burroughs Wellcome Fund
Research Triangle Park, North Carolina



PAST PRESIDENT'S MESSAGE



I would like to welcome you to the SSR Annual meeting! As we all know this is not exactly what we planned 1.5 years ago but the content of the meeting is brilliant, we have excellent speakers and spaces to reconnect, reimagine and reflect on all facets of reproductive biology. We also have an exceptional venue in the historical St Louis Train Station. Hopefully, you are as ready as I

am to see old friends, acknowledge the accomplishments of many and to make new connections. I know the meeting we have planned will be a great one and I am so very happy to see you here in-person! I also am excited that we will have a hybrid portion of attendees that will be with us virtually. This will be our first venture into a hybrid meeting and we welcome your constructive feedback. We know many are not able to join us due to travel restrictions. We would not have made this journey to virtual offerings as fast without COVID and with our need to maintain our membership connections.

Since I will be the first Past-President to be in charge of the SSR meeting, I thought it was necessary to do a little reflection on my year as president and all that has happened since then. We have navigated changes in our journal and our society that have made us stronger and better than ever before. We have also moved through our COVID journey, sometimes seeming to peer into a crystal ball to determine when we might be able to come together in person. I would like to extend my thanks to each and every one of our SSR members for your patience, loyalty and resilience as we planned, re-planned and then planned again for this meeting! I have many people to thank including the management team at Virtual, the SSR Board and executive team—many who have supported me as we have tried to do our best for our SSR members.

I also am indebted to my two Program Co-Chairs: Jannette Dufour and Rebecca Krisher for their unfailing constancy and persistence. They have been my heroes. They have kept everything organized, reconfigured sessions, come up with exciting speakers and themes and included many of the SSR committees in plenary sessions. Please give them an extra smile, word of thanks and encouragement as you see them at the meeting. We are especially pleased to bring discussions about culture and inclusion into our meeting to start to provide tools for our members and trainees as they face challenges in the workplace. We are also pleased to have the Diversity, WiNRS, and Trainee Affairs Committees help us with different aspects of this critical theme.

As I reflect on my last duty as your Past-Past President I am extremely pleased with all that SSR has accomplished during my time on the SSR Board and beyond! While I am not sure I would have ever imagined my journey to be this unique, I have been so happy to contribute to this great organization and to maintain and improve its reach in the last couple of years. I invite you to join me at our final party (our BBQ) where I will say a cheers with you with an eggstra-special signature drink to celebrate our research, friendships, and achievements from the last 1.5 years!

Sincerely,

Andrea Cupp, Past President, SSR (2020-2021)

WELCOME FROM THE 2021 SSR PROGRAM COMMITTEE CO-CHAIRS



Andrea S. Cupp



Rebecca
Krisher



Jannette
Dufour

Dear Colleagues and Friends,

Welcome to St. Louis and the 54th Annual Meeting of the Society for the Study of Reproduction.

Our meeting's theme, "Reproductive Biology: Solutions for Adult Disease," is supported by a set of exciting lectures that highlight new and dramatic advances in our understanding of the basic science and translational applications of reproductive biology. We will begin the meeting on Wednesday with a Keynote lecture by Kent L. Thornburg, PhD Director, Moore Institute for Nutrition and Wellness Oregon Health & Science University. Dr. Thornburg will discuss his pioneering work on the effect of in utero stressors on the placenta and offspring health.

Our Plenary session on Thursday will feature the President Symposium I Lecture featuring Kathryn Clancy, PhD, Associate Professor, University of Illinois. She will discuss the science of culture in the workplace and how gender inequities and practices that are not inclusive affect scientists' success.

On Friday, the Plenary Session will include the President Symposium II Lecture featuring Robin Lovell-Badge, PhD, The Francis Crick Institute, who will speak about Chromatin landscapes and sex determination, and the storm of genome edited babies, and the State of the Art I Lecture featuring Giuliano Testa, MD, MBA, FACS, Annette C. and Harold C. Simmons Transplant Institute, Baylor University Medical Center, who will speak about uterus transplantation as a solution to absolute uterine infertility.

On Saturday, the Plenary Session will feature the State of the Art II Lecture by Dr. Nicolas Rivron, Institute of Molecular Biotechnology, who will focus on the use of blastoids to model mouse in utero implantation and President Symposium III by Evelyn Telfer, PhD, Professor, The University of Edinburgh, who will speak on her work over new developments in human in vitro folliculogenesis.

The meeting will offer 25 Focus Sessions on topics representing the full breadth of ongoing research in reproductive and stem cell biology. Over 400 posters will be presented online and in person, some of which will be highlighted during pre-recorded flash talks, and there will be plenty of time for networking. St. Louis is an apt venue for what we anticipate will be a transformative program for the 54th SSR Annual Meeting!

Andrea S. Cupp

SSR Past President (2020-2021)

Rebecca Krisher and Jannette Dufour

2021 SSR Program Co-Chairs

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**Cell phones must be
turned off or silenced
during presentations.**

Thank you for
your cooperation.

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Reston, Virginia

GENERAL INFORMATION

Accommodations & Conference Location

St. Louis Union Station Hotel | 1820 Market Street | St. Louis, MO 63103

Check-in: 4:00 pm | **Check-out:** 11:00 am

Free WiFi: Complimentary internet in the guestrooms.

Currency Exchange

It is recommended that visitors exchange currency before they arrive. The accepted currency in the area is **USD**.

■ St. Louis Lambert International Airport offers currency exchange services:

- > US Bank operates a branch out of the airport and offers foreign currency exchange for existing US Bank customers. Located on the lower level of Terminal 1, near the C Gates security checkpoint.
- > Open Monday – Friday: 8:00 am – 5:00 pm

Additionally, Bank ATMs are prevalent throughout St. Louis should you wish to use your bank card or credit card.

Time Zone

St. Louis is located in the **Central Daylight Time** (GMT – 6 hours) time zone. Daylight Savings Time begins at 2:00 am on the second Sunday in March as clocks are switched forward one hour. It ends at 2:00 am on the first Sunday in November, when clocks are switched back to Standard Time.

Taxes

The **9.679%** sales tax rate in Saint Louis consists of 4.225% Missouri state sales tax and 5.454% Saint Louis tax. There is no applicable county tax or special tax.

Temperature

St. Louis has four distinct seasons but is also known for unpredictable weather shifts. Missouri writer Mark Twain once said, “If you don’t like the weather in New England, just wait a few minutes.” His statement applies to St. Louis as well. Still, winters in the city are often cold—so pack warm clothing, including a heavy coat, a hat, and gloves.

Average December temperatures:

High – 42 F (6 C)

Low – 24 F (-4 C)

Electricity

The standard frequency in the United States is **120V** and **60Hz**.

Telephone

The area code for St. Louis and the surrounding area is **314**. Before dialing locally, use 314 and then the 7-digit phone number.

Emergencies

In case of emergency, use the following telephone numbers.

- **Emergency:** 911
- **Poison Information Center:** (314) 772-8300
- **St. Louis Fire Services** (Non-Emergency): (314) 533-3406
- **St. Louis Metropolitan Police** (Non-Emergency): (314) 231-1212

Liquor/Tobacco Laws

By law, individuals must be aged 21 or older to drink alcoholic beverages in the United States. The sale of alcoholic beverages is limited to those properties and businesses that have secured an Alcoholic Beverage Control license, including ABC stores, bars, restaurants, grocery stores, markets, and event venues.

St. Louis adheres to the Clean Air Act of 2009, which prohibits smoking in enclosed public spaces, except for those private properties and businesses that have secured the proper exemptions. Refer to notifications and postings for individual property policies and regulations.

Airport & Transit

Airport Information

The St. Louis Lambert International Airport is located in St. Louis, Missouri, just 13 miles from downtown. Travelers can fly direct to St. Louis from 67 cities across the United States and 3 cities abroad.

Terminal Shuttle:

STL Airport provides **free** 24-hour shuttle service between **Terminal 1** and **Terminal 2**. The shuttle runs between Exit 12 at both terminals in **8–15-minute** intervals.

Taxis

Taxi Zones:

- Terminal 1: Exit Door 14 to Garage Yellow Level
- Terminal 2: Exit Door 12

Exact fares depend on the final destination. Each taxi will have an Airport Use Fee of **\$4.00** per pickup.

Airport taxis are regulated by the Metropolitan Taxicab Commission. For general information email: info@stl-taxi.com

ADA accessible taxis are available through the following companies:

- Airport On-Call Taxicabs (see Taxi Booth for information)
- Metro West Transport (call to reserve ADA taxicab at **(636) 272-TAXI** or visit <http://www.metrowesttaxi.net>)

Ride App

Ride App companies Lyft and Uber operate at St. Louis Lambert International Airport. **Reservations must be made online.**

Ride App Pickup zones:

- Terminal 1: Exit 6 (Ticketing Level)
- Terminal 2: Exit 15

Light Rail (MetroLink)

MetroLink is the St. Louis metropolitan region's light rail system and is operated by Metro as part of a fully integrated regional transportation system. MetroLink has 37 stations and stretches 46 miles. It serves several municipalities in St. Louis County, Missouri, St. Clair and Monroe Counties in Illinois, and the City of St. Louis.

Advance fare required.

- MetroLink Station Terminal 1 is at Exit Door 1, Ticketing Level, east of all ticket counters.
- MetroLink Station Terminal 2 is at Exit Door 12, through the parking garage.

Greyhound and Local Bus Service

The Bus Port at St. Louis Lambert International Airport is the pickup location for all local MetroBus and Greyhound Bus Service. It is located just south of Terminal 1 on Lambert International Boulevard.

Terminal Shuttle to Bus Port:

- Terminal 1: Exit Door 12
- Terminal 2: Exit Door 12

The Bus Port may also be accessed via a tunnel on the yellow level of the Terminal 1 Garage, outside of exit 16.

For additional help planning your route, getting schedule and transfers information, or to get walking directions, call Metro Transit at **(314) 231-2345**.

Ground Transportation Providers

St. Louis Lambert International Airport offers access to a number of local bus, limo, sedan and van services to accommodate the unique needs of our travelers.

- Best Transportation, Inc: (314) 989-1500
- Corporate Transportation: (314) 423-1516
- Dollar Rent-A-Car: (314) 423-4004
- Elite Transportation: (314) 274-6317

- Express Car Service: (314) 579-9399
- Jed Limousine Service, Inc: (314) 429-2200
- MO-X: (573) 256-1991
- Premium Transportation Services, Inc.: (314) 750-1177
- St. Louis Transportation, LLC: (314) 344-1975
- STL Shuttle Service: (314) 450-6453
- USA Express: (800) 872-9399

COVID-19 Testing Center

If you feel unwell on-site or require testing for travel, please visit the closest urgent care facility — Downtown Urgent Care.

Address: 916 Olive Street, St. Louis, MO 63101

Phone: (314) 436-9300

Health and Safety Guidelines for Annual Meeting

Our colleagues and friends in the SSR are like our family. SSR is committed to the health and safety of our guests attending the Annual Meeting in St. Louis and outline steps we will take below to ensure that we can all enjoy a productive and healthy annual meeting. SSR will continue to monitor the COVID-19 pandemic, CDC recommendations and guidelines as well as state and local guidelines and we will provide updates as needed.

Below are the guidelines for health and safety at the Annual Meeting:

- **Face coverings will be REQUIRED at all SSR indoor public settings regardless of vaccination status** (Exceptions: when speaking/presenting in an official capacity at SSR events or when immediately eating/drinking).
- Face coverings will be required, regardless of current city, county, or state policies at the time of the meeting.
- In addition, SSR is requesting that all attendees be vaccinated or have a negative COVID-19 test within 72 hours of arriving at the meeting. SSR is asking for attestation of compliance by all in-person meeting participants by filling out an attestation form confirming vaccination or negative test status in addition to adherence to the face covering policy.
- Check your flight and travel arrangements — Ensure you've checked the requirements of your airline and the destinations from which you will be travelling.

Registration Information

Registration Fees

Payment of registration fees is required to participate in the meeting. Registration covers attendance at all scientific sessions, the Opening and Closing Reception, light breakfasts, and morning and afternoon refreshment breaks.

Optional events require separate tickets, early purchase is encouraged; many of these events sell out quickly. Spouses and guests wishing to attend the optional events must purchase a ticket. Optional event tickets are nonrefundable. An SSR 2021 Annual Meeting badge is required for access to all food functions in the Midway. Pre-purchased tickets are required for the trainee luncheon and happy hour events, as well as the opening and closing receptions. **Registration fees are discounted for SSR members.**

Photos, Videos, and Social Media

No Taking Pictures/Videos of Presentations

SSR supports learning and collaboration through presentation and discussion of the science. If you like what you see, talk to the presenter: you will have a better, more long-term experience and relationship than just a photo. Respect the research. **No photos please.**

Social Media

#SSR2021 and @SSRRepro—Follow and like SSR!

You may share photos of yourself at the meeting on SSR's social media outlets (which will be monitored throughout the meeting), but you should obtain consent before posting photos of others at the meeting. Be nice.

Consent to Use of Photographic/Video Images

Registration and attendance at, or participation in, the SSR Annual Meeting and related special events constitutes an agreement by the attendee to allow the SSR free use and distribution of the attendee's image or voice in various media forms, including but not limited to photographs, videotapes, and electronic reproductions, in print or electronic format.

Presenter Information

Invited Speakers and Oral Talks

Upon arrival at St. Louis Station Hotel, please pick up your registration materials and proceed to the Speaker Ready Room (Station Master Room), where all invited speakers and presenters of oral talks are required to check in and review their presentations. This room will have computers and trained personnel available for assistance should technical difficulties arise. Speakers may modify their presentation up to 24 hours prior to their scheduled session. A timed rehearsal is recommended. The slide preview room will be open during the following hours:

Speaker Ready Room (Station Master Room):

Tuesday, December 14	12:00 pm – 8:00 pm
Wednesday, December 15	12:00 pm – 6:00 pm
Thursday, December 16	7:00 am – 4:00 pm
Friday, December 17	7:00 am – 4:00 pm
Saturday, December 18	7:00 am – 1:30 pm

Poster Presentations

Poster sessions will be held at the St. Louis Union Station Hotel: Midway.

Program numbers will be indicated on the poster boards, and two posters will be positioned on each side of the poster boards. All posters will be on display for the duration of the meeting and will be presented at the following times:

Poster Presentations		
Poster Session A:	Thursday, December 16	8:00 – 10:00 am
Poster Session B:	Friday, December 17	8:00 – 10:00 am
Poster Session C:	Saturday, December 18	8:00 – 10:00 am

You are required to present during the session time indicated in your presentation notification. **All posters must be mounted by Wednesday, December 15 between noon and 6:00 pm, and must remain in place through 10:00 am on Saturday, December 18.** When pinning posters on boards, please do not rearrange the poster numbers. If you need assistance fitting your poster on the board, please visit the registration desk for help. Please remove your posters at the conclusion of Poster Session C. Posters still in place by 11:00 am on Saturday will be discarded. Poster Presentations whose abstracts have also been selected for a 2-minute Poster Flash Talk Presentation must also prepare a poster for their assigned regular poster session.

Food Service

An SSR 2021 Annual Meeting in the Midway. **Badge is required** for access to all SSR supported food functions.

Additionally, special event tickets are required for access to special food events such as the Opening & Closing Receptions, Trainee Happy Hour, and Trainee Luncheons.

Meals

A light breakfast will be provided Thursday, Friday, and Saturday from 8:00 am – 10:00 am. For all other meals, attendees are responsible for their own food, except where indicated with an event or purchased as a separate ticket.

Coffee Breaks

There will be a coffee and refreshment break on Friday, Saturday and Sunday 3:00pm – 3:30 in the Exhibit Hall.

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Andrea S. Cupp, PhD, President SSR (2019-2020)



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Exhibitors



Thank You for Your Continued Support!



AWARDS COMMITTEE AND AWARDEE CITATIONS

Chair Welcome Message



The Awards Committee would like to extend our sincere congratulations to this year's SSR Awardees who represent the best of our society. This talented group of scientists are truly exceptional in their research, service, and mentoring in the field of reproductive biology. We are honored to call them our colleagues and friends and pleased that their outstanding con-

tributions have been recognized by their peers. The members of the Awards Committee also thank the SSR membership for their hard work preparing nominations and encourage you to nominate deserving colleagues for SSR awards next year. A description of the awards, application process, and application deadlines can be found on the SSR Awards website.

Melissa Pepling | Chair

T. Rajendra Kumar | Associate Chair

2021 Awards Committee Members

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2021 Carl G. Hartman Award

Asgj T. Fazleabas, PhD



Nominated by Thomas Spencer, PhD

Dr. Asgerally "Asgj" T. Fazleabas is the recipient of the 2021 Carl G. Hartman Award. Dr. Fazleabas received his undergraduate degree from the California State University in Fresno and his MS and PhD degrees from the University of Illinois at Urbana-Champaign. He began his academic career at the University of Illinois College of Medicine at Chicago in 1983 after completing his postdoctoral training in Biochemistry and Molecular Biology of Reproduction at the University of Florida. Between 1983 and 1995, he advanced to the rank of Professor of Physiology in the Departments of Obstetrics and Gynecology and Physiology and Biophysics and became Director of the Center for Women's Health and Reproduction in 2002. In 2011, Dr. Fazleabas moved to Michigan State University where he is currently Professor and Associate Chair for Research in the Department of Obstetrics and Gynecology and Reproductive Biology as well as Director of the Center for Women's Health Research in Grand Rapids. Recently, he was named a University Distinguished Professor (2017) and MSU Foundation Professor (2018), which are the highest honors and rank that a faculty member can achieve at Michigan State University. As recognition of Dr. Fazleabas as an innovator and scholar by his peers, Dr. Fazleabas has received SSR awards for Research and Distinguished Service and is an AAAS Fellow.

This award is presented to a scientist for their Originality, Experimental Practices, and Leadership, and Dr. Fazleabas possesses excellence in each of those criteria. Throughout his distinguished career, he has been outstanding by making influential observations, generating novel animal models for reproductive research, conducting team research, and aiding other researchers to achieve their scientific goals. Indeed, his research program has been funded continuously by the National Institutes of Health since 1986 for studies using the baboon as a model for reproductive biology research. The work in his laboratory has significant translational relevance related to improved pregnancy outcomes in infertile women as well as understanding the etiology and the pathophysiology associated with the development of endometriosis. A significant area of his research emphasis has been to study the early events associated with maternal-fetal interactions during the establishment of pregnancy and the mechanisms by which these interactions are affected in women and non-human primates with endometriosis.

Aside from his pioneering research and outstanding training program, he has provided critical leadership and selfless service to our society and Reproductive Biology. At the national level, he was a member of the NIH study section on Human Embryology and Development for five years (1992-1997) and then served on the Reproductive Biology Study section from 2000-2004 and chaired this study section from 2002- 2004. He also continues to serve regularly on several other NIH study sections and Special Emphasis Panels. Further, he was Vice Chair and Chair of the Gordon Research Conference on Reproductive Tract Biology in 2002 and 2004, respectively, and has organized several international workshops and symposia. Most importantly, Dr. Fazleabas has served SSR at all levels including serving as a member of the Editorial Board and Board of Directors, Chair of many standing

and ad hoc committees including strategic planning, and service as President Elect, President and Past-President of our society. Recently, he served as Chair of the Local Arrangements Committee for the Grand Rapids SSR meeting and as Co-Chair of the very successful SSR Golden Anniversary Fundraising Campaign.

From 2001 to 2004, he served as the Lead Director for the Frontiers in Reproduction (FIR) Course held annually at Woods Hole, MA. In recognition of his efforts, he was honored with the Beacon Award in 2005 that is bestowed upon an individual who has served as an outstanding source of enlightened guidance to the national reproductive science community's "Frontiers in Reproduction program" in its efforts to advance promising young scholars' research careers in the field of reproductive sciences research. Indeed, he was Chair of the FIR Training Program board from 2011-2016. After moving to Michigan State University in 2009, he used his acumen as Associate Chair for Research and Director of the Center for Women's Health Research to develop a program to expand Reproductive Biology. In summary, very few SSR members have served in so many leadership roles at all different levels of our society and positively impacted so many individuals in the Reproductive Biology community.

2021 SSR Research Award



P. Jeremy Wang, MD, PhD

Nominated by Wei Yan, PhD

The SSR Research Award recognizes an active member of the Society who has published outstanding research in the past six years based on originality, experimental practices, leadership, and contributions to the Society. This year's recipient of the SSR

Research Award is Dr. Jeremy Wang, MD, PhD.

Dr. Wang's research focuses on understanding the regulation of meiosis, a cell division unique to germ cells that allows for the reciprocal exchange of genetic material between paternal and maternal genomes and plays an essential role in reproduction. By assessing the functions of a large number of novel meiosis-specific proteins identified in his laboratory, he has published more than 50 papers on this topic. These studies not only provide molecular insights into the regulation of germ cell development but also have important implications in understanding the genetic causes of human male infertility and in the development of non-hormonal contraceptives for men. His outstanding research track record has established his stature as a leader in the field of mammalian meiosis.

Dr. Wang has always been at the forefront of the development of novel experimental methodologies. In 2001 (pre-microarray era), he conducted a genome-wide screen using a cDNA subtraction approach and discovered 24 uncharacterized X-linked

germ cell-specific genes in mice. In 2013, using a robust cost-effective proteomics screen, his laboratory identified 32 uncharacterized meiotic chromatin-associated proteins in mouse testes. Genes identified through the two innovative screens have been the subject of intensive research by not only his lab but also other labs in the reproduction field for the past two decades. Over the last 6 years, Dr. Wang has published ~20 papers in high-impact journals, including *Nature Communications*, *Genes & Development*, *PNAS*, *EMBO Molecular Medicine*, and *Human Molecular Genetics*. These functional studies have had a high impact on our understanding of meiotic recombination, piRNA biogenesis, retrotransposon silencing, and male infertility in humans.

Dr. Wang is also an expert in gene knockout and genome editing. Under his directorship, the Center for Animal Transgenesis & Germ Cell Research has not only provided transgenic animal services to Penn researchers but also functioned as a nucleus for germ cell research at Penn Vet. He is a strong advocate for research in reproduction at Penn and received the Zoetis Prize at Penn Vet for his research excellence. He is the “go-to” person at Penn for many researchers from other fields, who need expert advice on characterizing fertility defects in their transgenic mice. Dr. Wang has always shared the many knockout mouse models and unique antibodies generated in his lab. Dr. Wang is a frequent speaker at national and international conferences.

Dr. Wang has been an active member of SSR. He served on the BOR Board of Reviewing Editors (2013-2017) and just completed his term as BOR Associate Editor (2017-2021). He is also a guest editor for *PLoS Genetics* and *Science Advances*. He served as a standing member on the NIH CMIR study section (2012-2018) and as an ad hoc reviewer for numerous NIH study sections and special emphasis panels, as well as funding agencies of Germany, France, China, etc.

In summary, Dr. Jeremy Wang is a well-regarded, eminent reproductive biologist in the mammalian meiosis and fertility field who has identified and functionally characterized a large number of meiosis-specific factors. Dr. Wang has made paradigm-shifting discoveries in the field of reproductive biology and contributed seminal new knowledge to our understanding of germ cell development, germline genome integrity, male contraception, and the etiology of infertility in men. Dr. Wang's excellence in research earned him this well-deserved recognition. Congratulations!

2021 SSR Jansen Distinguished Leadership and Service Award



Bernard Robaire, PhD

Nominated by Sally Darney, PhD

Bernard Robaire exemplifies both leadership and service. As such, he is a model for us all. His influence in SSR is mighty, as it is in the field of reproductive sciences globally and in his home institution, McGill University in Montreal.

After receiving his BA in Bacteriology from the University of California at Los Angeles, Bernard moved to Canada to pursue his PhD at McGill University in the Department of Pharmacology and Therapeutics, graduating in 1974. He then dug into the reproductive sciences during postdoctoral studies with Larry Ewing at The Johns Hopkins School of Hygiene and Public Health. His early research on testosterone biosynthesis, androgen action, and epididymal function led to lifelong interest in these areas. Returning to McGill in 1977, he steadily rose in the ranks to Full Professor in the Departments of Obstetrics and Gynecology, and Pharmacology and Therapeutics. At McGill, he both founded and directs The Center for the Study of Reproduction.

He also expanded his research program to include both fundamental and translational projects in endocrine disruptors, reproductive aging, male-mediate developmental effects of chemotherapy and exposure to toxicants, and mechanisms of DNA damage in sperm and embryos. In recent years, he has mobilized inter-sectoral research teams and competed successfully in CIHR initiatives designed to bring basic scientists together with clinicians, engineers, social scientists, and governmental authorities to translate fundamental information into real-world solutions, policies, and regulations. For example, a recent program project has developed safe alternatives (replacements) for the plasticizers which currently pose a risk to reproductive health. Importantly, by mentoring trainees in these programs, he expects them to take leadership roles in the conduct and presentation of the research and its findings. Many of his trainees have gone on to assume leadership roles not only in SSR but also in the Canadian Government.

Throughout his career, Bernard has been the “prime mover” in organizing scientific meetings. Noteworthy is his sustained leadership on the organizing committee of the North American Testis Workshop, for which he recently assumed the chairmanship (2014-2020). He also served on planning committees of the Endocrine Society and International Society of Andrology as well as program committees in SSR, and the American Society of Andrology (ASA), and helped organize timely symposia on emerging topics such as Male Mediated Development Toxicology, and Reproductive Hazards in the Workplace. He has hosted or co-hosted many important meetings in Montreal including the annual meeting of SSR on two occasions, the ASA annual meeting, the International Congress of Toxicology, and the International Conference on the Epididymis. Again, he is a grand mobilizer!

His leadership extends to influencing research directions and funding in Canada and abroad. As a member of the Advisory Board of the Institute of Human Development, Child and Youth Health (IHDCYH) of the Canadian Institutes of Health Research (CIHR) from 2010-2018 he helped to inform the objectives and priorities of several major research initiatives to include research on environmental stress and reproductive function. Among his many contributions to the Canadian government are service for the Ministry of Education, and the Center for Indigenous Peoples, as well as membership on CIHR. His expertise has been sought in the U.S. by the US EPA and NIH on grant and program review panels of special relevance to SSR is Bernard's extensive service to our journal, our scientific programs, and the overall well-being of our society. On behalf of Biology of Reproduction Bernard was an Associate Editor (2004-2008) and then Co-Editor in Chief (2008-2012) where he was known for being thorough, objectively critical, fair, and timely. Several years ago, he served on the committee charged by the Board with soliciting publishing proposals to enhance BOR in line with contemporary online tools and new publishing practices. Bernard's experience as Editor and understanding of publication processes helped the Board in transitioning our journal to a new publishing model with Oxford University Press. On the heels of that effort, Bernard chaired the committee that solicited and reviewed proposals from Management Services companies for management of SSR. This involved defining SSR's needs and codifying our practices to provide applicants with the information they needed to be responsive to the RFP, as well as visiting/interviewing the top contenders before making a well-informed recommendation to the Board.

In addition to his longstanding membership in and commitment to SSR, Bernard has been a prominent leader in other Societies. For example, he served as President of the ASA, and as Editor of (and author in) the ASA's Handbook of Andrology. His contributions to important committees and as a speaker at annual meetings are numerous, not only for SSR and ASA, but also for The Endocrine Society, the Canadian Fertility and Andrology Society, and to many advisory groups and major international conferences and symposia.

To Conclude: Bernard has consistently acted upon his belief in service. He accepts responsibility for projects when asked to help out. While he has received many awards for his work, he does not expect recognition for it. He follows up with concrete action, whether contributing to his laboratory, his Department, McGill University at large, the Canadian government, or the needs of various international groups. He enacts his intentions based on the principles of sound science and governance, for the benefit of his SSR colleagues and for mankind in general. His leadership is guided by fairness, objectivity, and hard work. He does what he says he will do, and he mobilizes others to be sure it gets done. Along the way, others learn from his leadership and service and pass it on!

2021 SSR Virendra B. Mahesh New Investigator Award

Sue Hammoud, PhD



Nominated by Humphrey Hung-Chang Yao, PhD

Dr. Saher Sue Hammoud completed her doctoral and postdoctoral training under the guidance of Bradley Cairns at University of Utah. Both as a graduate student and a post-doc, she has actively sought to tackle significant questions central to development and disease

of male reproduction. During her graduate work in Brad Cairns Lab, Sue pioneered the study to examine sperm chromatin state in mammals, particularly the differential packaging between sperm genome and a somatic cell genome. In 2012, Sue received a postdoctoral fellowship from Helen Hay Whitney Research Foundation and transitioned to working with mice and focused on addressing how germ cells maintain competency for totipotency while executing a parallel and complex unipotent developmental pathway. Through the use of high-throughput genomics, she uncovered an atypical chromatin-transcriptional program, which involves the transcription of DNA methylated promoters. The DNA methylated yet transcribed gene promoters are limited to a class of genes required for germ cell differentiation. This unique attribute of the germ line allows germ cell differentiation to occur without compromising their poised developmental program. Her subsequent work focused on identifying important pathways for spermatogonial (SSC) specification and maintenance, SSC heterogeneity and developmental transitions prior to and post puberty. To better understand these processes, she conducted extensive genomic profiling of multiple postnatal SSC sub-populations enriched for particular markers (Thy1, Kit, Oct4, ID4 or GFRa1) at several developmental time-points. Her findings suggest two broad spermatogonial cell populations in juveniles: a mesenchymal and an epithelial SSC. The mesenchymal SSCs display unique transcriptional profiles and undergo extensive DNA methylation dynamics at many genes including all paternally imprinted genes. These global changes in chromatin are completed by puberty and correspond to a critical window in human development. These findings together revealed several unexpected biological features in both neonatal and adult SSCs, which will provide a foundation for functional studies.

In 2015, Sue became an independent investigator at University of Michigan and embarked on two lines of new research in her own lab. Her first effort was to understand the molecular genetics program of germ cell differentiation using mouse as a model organism. To date, the molecular understanding of the process of spermatogenesis has relied on genetic transcript profiling, which lacks the specific, time-dependent interplay of RNA gene expression and intercellular communication. To fill the gaps in knowledge in the spermatogenesis program, Sue embarked a high-throughput single-cell RNA sequence profiling in mouse, monkey and humans, one of the first of such approaches in the field at the time. Sue's groundbreaking work in mice has led to a new single-cell molecular "atlas" containing: (1) a catalog of seven distinct somatic cell types (including two unexpected cell types (Innate lymphoid and Tcf21 fibroblast population), (2) the identification of multiple spermatogonial stem cell states, and (3) a continuous time-course trajectory of germ cell differentiation leading to mature sperm. The atlas includes several cellular subtypes within the major cell types, and markers to specify these cell types for labeling and enrichment. Sue's studies provide new insights into the development of

new techniques to restore fertility, including efforts towards making germ cells in a dish. Sue is a member of the Human Cell Atlas of the Female Reproductive System funded by the Chan Zuckerberg Initiative. She is also the recipient of the NIH Directors New Innovator Award, numerous NIH grants from NIH and the State of Michigan. Sue is currently serving as on the Board of Reviewing Editors for Biology of Reproduction and also the Program Committee for the SSR.

In summary, in just a few years after starting her independent position, Sue has established herself as one of the rising stars in reproductive biology field. Her ability to identify critical voids in the field and to utilize novel multidisciplinary approaches that combine genomics, stem cell biology, cancer biology, epigenetics, and transcriptional regulation, are a reflection of her originality and creativity. She has established a mature and independent program that few junior scientists can match. It is hard to imagine a more deserving candidate than Sue for the SSR New Investigator Award.

2021 SSR Trainee Mentoring Award



Joy L. Pate, PhD

Nominated by Warren Nothnick, PhD

Dr. Joy Pate is an outstanding mentor, a well-respected scientist, and an exceptional educator and role model to her trainees. While it is likely that Dr. Pate's scientific contributions initially attract prospective trainees to join her laboratory, it is ultimately her attentiveness, dedication and pride in their growth and development as young scientists that affirms their decision.

Among Dr. Pate's pioneering efforts in the area of reproductive biology are her contributions most notably emphasizing the physiology of the corpus luteum. As a graduate student, Dr. Pate developed the groundbreaking methods of serum-free culture of bovine luteal cells. This then led to a series of insightful discoveries entailing cutting-edge work involving immunology during her professional career, including the first discovery of major histocompatibility complex (MHC) expression on bovine luteal cells, the impact of cytokines on luteal prostaglandin synthesis, the influence of T-lymphocyte subpopulations on luteal physiology, and the potential role and regulation of luteal microRNAs on luteal function.

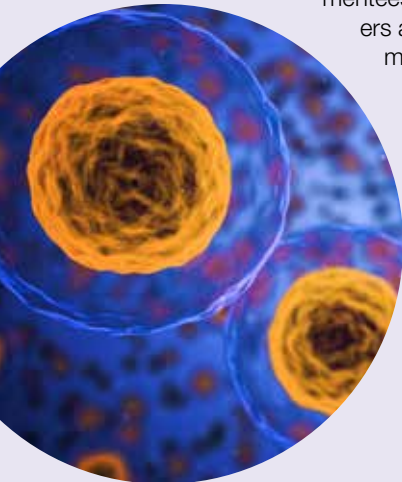
Within the Society for the Study for Reproduction (SSR), Dr. Pate has served on multiple committees, for multiple terms, and has provided leadership throughout by chairing those committees. She has served on the SSR board of directors, and previously held positions of secretary, president-elect and president of the society. Dr. Pate has also served on the editorial board for Biology of Reproduction, and has made important contributions to other scientific journals and professional societies, including the American Society of Reproductive Immunology and the World Congress of Reproductive Biology. Throughout these activities, Dr. Pate has always championed the importance of graduate students and postdoctoral fellows not only becoming members of a professional scientific society, such as SSR, but she also encouraged them to meet and engage with the prominent scientists of our time at the annual meetings. She would undoubtedly argue that the best way to appreciate

some of the greatest scientists and their work is to actually meet them and talk with them face-to-face. She always encourages her trainees to become connected with others, and she places great stock in nurturing those friendships and connections.

Dr. Pate's drive and passion for research has attracted numerous trainees to explore the seemingly infinite mysteries of the corpus luteum. She has trained 11 masters, 12 PhDs, and 8 postdoctoral fellows during her career. She has been, and continues to be, not only a generous mentor to her trainees, but also a caring colleague and friend that anyone can reach out to for advice and guidance. The words 'creativity' and 'critical-thinking' carry weight for Dr. Pate. Her trainees are expected to embrace these ideals during and beyond their training. Trainees are challenged to read journals outside of their comfort zone, and by doing so have gained a greater appreciation for cutting-edge work in immunology and reproductive physiology. Dr. Pate is certainly a proponent of new discovery and novelty, but she always couples her thinking, and mentoring, with a healthy-dose of proper experimental design, appropriate controls, and exploring all angles.

Although the paths that led to Dr. Pate's laboratory were quite diverse for her trainees, the path leaving her laboratory was consistently clear, exemplified by knowledge, confidence and independence. She has given all of her trainees a great gift—a greater appreciation for science and scientists through the lens of diverse cultures. Trainees from across the globe, sometimes with limited English-speaking skills have quickly become part of her laboratory, and their life experiences and familiarity with species unique to their region have enriched conversations about "economically-important" species to agriculture and perhaps highlighted some peculiarities about basic reproductive physiology. Several of Dr. Pate's trainees have gone on to successful careers in reproductive biology and hold key leadership positions at their respective institutions including chairs, deans and center directors, consistent with her ability to not only train top level researchers, but also leaders.

In summary, Dr. Joy Pate is an exceptional individual, an accomplished scientist, and a nurturing educator and mentor. She has given countless hours to her work and her trainees as well as the Society for the Study of Reproduction. Dr. Pate has been instrumental in the growth and development of numerous mentees, who have gone on to be top-level scientists, leaders and mentors themselves. She has served as a role model for not only her direct trainees but many others with whom she has interacted both formally and informally. It is for these reasons that she is most deserving of the SSR Mentor Award.



2021 Fuller W. Bazer SSR International Scientist Award

Shaw-Jenq (Sean) Tsai, PhD



Nominated by Humphrey Hung-Chang Yao, PhD

Professor Shaw-Jenq (Sean) Tsai received his PhD degree at the University of Wisconsin-Madison in 1997 under the guidance of Professor Milo Wiltbank. During his PhD training, Dr. Tsai studied the molecular mechanisms that regulate prostaglandin (PG) F_{2α} production and action in the corpus luteum. In 1998, Dr. Tsai returned to his home country, Taiwan, and became an assistant professor in the Department of Physiology, College of Medicine, National Cheng Kung University. He was promoted to distinguished professor in 2008. Dr. Tsai is a leader in the reproductive field in Asia. He is currently the Ambassador of the World Endometriosis Society, President of the Chinese Physiological Society, President of the Asian Society of Endometriosis and Adenomyosis, and the Councilor of the Society for Experimental Biology and Medicine. His research accomplishment is highly regarded by his peers, evidenced by the numerous awards he received, including Distinguished Research Award from the Ministry of Science and Technology in Taiwan and Distinguished Scientist Award from the Society for Experimental Biology and Medicine. He is also the editor of *Chinese Journal of Physiology* and *Journal of Adaptive Medicine* and editorial board members of *Journal of Endocrinology* and *Journal of Molecular Endocrinology*.

After starting his own independent research program in Taiwan, Dr. Tsai switched his focus from reproductive physiology to reproductive pathology, particularly on the molecular mechanisms underlying human reproductive diseases such as polycystic ovarian syndrome, endometriosis, and cancer. He has published over 120 papers in prestigious journals including *Nature*, *Developmental Cell*, *Journal of Clinical Investigation*, *Nature Communications*, *Cancer Research* and more. Dr. Tsai's scientific achievement was recognized by the Society for Experimental Biology and Medicine, which awarded him "distinguished scientist of 2014" and selected him as a fellow in 2018.

Dr. Tsai's research program focuses on endometriosis, a highly prevalent disease that not only causes severe pain but also accounts for 50% of female infertility. One of Dr. Tsai's research focuses is to investigate molecular mechanisms that may lead to develop non-hormonal therapeutic regimens for treating endometriosis. In the past twenty years or so, Dr. Tsai has made substantial contributions to the field of reproductive biology not only by conducting outstanding research but also dedicating to promote education and raise the awareness of endometriosis disease.

In addition to his research excellence, Dr. Tsai is a strong advocate in promoting reproductive physiology education and endometriosis awareness. As the current president of Chinese Physiological Society, Dr. Tsai held annual workshops that help junior faculties with their teaching and research abilities so they can survive in the highly competitive scientific society. In addition, the Chinese Physiological Society, under Dr. Tsai's leadership, also actively involves in promoting physiology education, a program organized by Federation of the Asian and Oceanian Physiological Societies. During his career in endometriosis research, Dr. Tsai understands that most women

with endometriosis were diagnosed 10-16 years after the onset of disease. The delayed diagnosis makes the diseases even harder to manage. This is due to the unawareness of the disease in general population and a lack of professional knowledge of doctors in many underdeveloped countries, especially in Asia. Therefore, Dr. Tsai and four professionals from China, Japan, Korea, and Turkey funded the Asian Society of Endometriosis and Adenomyosis (ASEA) in 2012. The establishment of ASEA provides an international platform for researchers/physicians in all areas of Asian countries to exchange their medical experiences and to advance their scientific knowledge via the annual meeting and bilateral visiting. Dr. Tsai is the current president of ASEA and he has travelled to many developing or undeveloped Asian countries such as Turkey, Jordan, Iran, India, Indonesia, and Thailand to promote the research and management of endometriosis and to raise the awareness of this disease. Dr. Tsai's efforts earn the respect from not only doctors and scientists in Asian countries but also World Endometriosis Society, which elected him to be an Ambassador of the society.

In summary, Dr. Tsai is not only a scientist who devotes himself to perform excellent research to advance the understanding of the disease pathogenesis of endometriosis, but also an activist who dedicates his time and effort to improve the awareness of this common yet enigmatic disease. He is the most qualified distinguished scientist to receive the Fuller W. Bazer SSR International Scientist Award.

2021 Janice Bahr Junior Scientist Travel Fund



Jean-Ju L. Chung, PhD

Jean-Ju L. Chung received her bachelor's and master's degree from Seoul National University, Korean and her PhD from Johns Hopkins University in 2007. She did her postdoctoral training with David E. Clapham at Harvard Medical School. She joined Yale's Department of Cellular and Molecular Physiology as a faculty member in September 2015.

Her research has been devoted to investigating cellular signaling via membrane receptors and ion channels. Her laboratory seeks to understand the complex process of regulating mammalian sperm motility and fertilizing capacity, with a current focus on dissecting the function and composition of the primary calcium channel of spermatozoa, CatSper, which is essential for sperm hyperactivation. To this end, her lab continues to apply novel technologies to sperm biology and reproductive research and seeks to study physiologically relevant molecular changes during mammalian fertilization.

2021 Biology of Reproduction Top Research Article Award



Aritro Sen, PhD

Michigan State University, USA

Dr. Sen received his undergraduate degree in Microbiology from Bangalore University and Master's degree in Biochemistry from University of Calcutta, India. Thereafter, he joined the PhD program in Cell and Molecular Biology at West Virginia University, where he worked with Dr. Jorge A Flores and Dr. Keith E Inskeep. Following his PhD, Dr. Sen moved to Michigan State University for his post-doctoral training in Reproductive Endocrinology in the laboratory of Dr. George W. Smith at the Department of Animal Science. Later, Dr. Sen joined the laboratory of Dr. Stephen R Hammes in the Division of Endocrinology and Metabolism at University of Texas Southwestern Medical Center, Dallas for a second post-doctoral fellowship in Molecular Endocrinology and then moved to Rochester in Upstate New York to join the faculty at the University of Rochester Medical Center. In August of 2017, he joined the Reproductive and Developmental Sciences Program in the Department of Animal Science at Michigan State University. His current research focuses on three closely related but distinct areas: (1) Role of Androgens in Women's Health (2) Anti-Müllerian Hormone and Female Fertility, and (3) Developmental Origins of Health and Diseases. His research has been funded by the National Institute of Health (NIH), USDA, Ferring Pharmaceuticals and the Foundation for Reproductive Medicine. He has published 41 peer-reviewed manuscripts in leading scientific journals and serves as a reviewer and in the editorial board of many scientific journals. Dr. Sen has been awarded the Endocrine Society's Pfizer Early Career Investigator Award and has also been the recipient of Larry Ewing trainee award from the Society for the Study of Reproduction. He is a longstanding member of SSR since his graduate school days.

SSR

Society for
the Study of
Reproduction

New Memberships

<http://www.ssr.org/NewMembers>

Membership Renewal

<http://www.ssr.org/Renewal>

The SSR Congratulates the 2021 Distinguished Fellows!

The SSR Distinguished Fellowship recognizes active SSR members for their outstanding contributions to the field of reproductive biology and to the Society, illustrated by sustained high impact research, leadership, service and mentorship.



Asgerally (Asgi) Fazleabas, PhD

Michigan State University

Dr. Fazleabas received his BS degree from California State University, Fresno and his PhD in Reproductive Physiology from the University of Illinois at Urbana – Campaign. Following his post-doctoral training in Reproductive Biology/Cell and Molecular Biology at the University of Florida in Gainesville he joined the Department of Obstetrics and Gynecology at the University of Illinois at Chicago where he held the rank of Professor and Director of Women's Health and Reproduction until October 2009. He is currently a University Distinguished Professor and MSU Foundation Professor at Michigan State University and Associate Chair of Research in the Department of Obstetrics, Gynecology and Reproductive Biology and Director of the Center for Women's Health Research and Co-Director of the Reproductive and Developmental Sciences Program at Michigan State University.

Dr. Fazleabas has been funded continuously by the National Institutes of Health in the USA since 1986 for studies using the baboon as a model for reproductive biology research. The work in his laboratory has significant translational relevance related to improved pregnancy outcomes in infertile women as well as understanding the etiology and the pathophysiology associated with the development of endometriosis. A significant area of his research emphasis has been to study the early events associated with maternal-fetal interactions during the establishment of pregnancy and the mechanisms by which these interactions are affected in women and non-human primates with endometriosis. His laboratory was the first to demonstrate that chorionic gonadotropin acts directly on the uterus in vivo and using this "simulated pregnancy model" went on to demonstrate that the early luteotrophic signal from the primate embryo is critical for initiating the decidualization response and remodeling the luminal epithelium to enhance trophoblast invasion. The baboon model of endometriosis that has been extensively used in laboratory has led to fundamental discoveries on the mechanisms by which the presence of endometriotic lesions impact uterine receptivity as well as understanding the early cellular and molecular events that contribute to lesion development and the pathophysiology of disease progression.

Amongst his many honors, he was elected as a Fellow of the American Association for the Advancement of Science and has been a recipient of the Research Award, Distinguished Service Award and the Carl G. Hartman Award from SSR.



Bruce D. Murphy, PhD

Université de Montréal

Bruce D. Murphy was born in Denver Colorado. He earned his BSc and MSc in biology and physiology at Colorado State University and was awarded PhD in reproductive biology from the University of Saskatchewan. He is currently a Senior Scientist in the Centre de recherche en reproduction et fertilité (CRRF) at the Université de Montréal. Following his first academic appointment at the University of Idaho, he returned to Saskatchewan, where he founded and directed the Reproductive Biology Research Unit in the Department Obstetrics and Gynecology. In 1991 he moved to the Université de Montréal as Director of the CRRA (predecessor of the CRRF) and served in that capacity until 2013. He has held visiting appointments at Cornell University, the Institute of Genetics, Cellular and Molecular Biology, Louis Pasteur University and the School of Biosciences, University of Melbourne. He chaired the Advisory Board of the Canadian Institute of Human Development and the CIHR Standing Committee in Reproductive Biology. He founded the Réseau Québécois en Reproduction (RQR), and served as its Director from 2008 to 2017. This network currently comprises more than 80 scientists and is supported by federal and provincial research agencies.

Dr. Murphy has devoted much of his career to service for the Society for the Study of Reproduction (SSR), including serving as Treasurer from 2000-2009, and as President in 2015-2016. Dr. Murphy sits on the editorial boards of five journals and served as Co-Editor-In-Chief of Biology of Reproduction (BOR), 2009-2013. He is currently Consulting Editor of BOR. His laboratory has been continuously funded for studies of embryonic diapause and ovarian function since he began his career as an independent investigator. He is author of more than 250 scientific publications, and has been plenary and symposium lecturer at numerous international conferences. His many awards include the SSR Distinguished Service Award, Pfizer Award for Research Excellence, CFAS Award for Excellence in Reproductive Medicine, SRB Career Achievement Award, SSR Trainee-Mentoring Award and CRCQ Mentor of the Year Award. He was elected as a Fellow of the Canadian Academy of Health Sciences, to the Argentine Academy of Agricultural Science, as Profesor Honorario, Universidad Nacional Mayor de San Marcos, and is Laureate of the Fonds du Québec. Dr. Murphy has trained more than 60 graduate students and postdoctoral fellows during his long career as a scientist, many of his trainees have established their own successful laboratories in reproductive biology.



Fuller Warren Bazer, PhD

Texas A&M University

Dr. Bazer received the BS, Biology, Centenary College of Louisiana, Shreveport, LA, 1960; MS, Animal Science, Louisiana State University, Baton Rouge, LA, 1963; PhD Animal Science (Reproductive Biology), North Carolina State University, Raleigh, NC, 1969. His research in reproductive biology focuses on uterine biology, nutrition, and pregnancy with particular interests in mechanisms for pregnancy recognition signaling from conceptus to maternal system by molecules such as interferon tau and

estrogen from ruminant and pig conceptuses, respectively. His laboratory also studies transport proteins, regulatory molecules, growth factors, enzymes and nutrients secreted or transported into the uterine lumen to support conceptus development. The endocrinology of pregnancy, especially the roles of lactogenic and growth hormones in fetal-placental development and uterine functions are being studied as are effects of endocrine disrupters on uterine biology and pregnancy. The mechanism(s) of action and potential therapeutic value of conceptus interferons and uterine-derived hematopoietic growth factors are areas of research with both pigs and sheep as models for human disease.



Janice Bailey, PhD

Université Laval

Janice Bailey is currently the Scientific Director of the Fonds de recherche du Québec – Nature and Technologies (FRQNT), a government funding agency that supports academic research in Québec.

The mandate of the FRQNT to develop and promote research activities to solve societal challenges and stimulate socio-economic development. In doing so, the FRQNT prioritises trainee support, interdisciplinary international collaboration, research partnerships, and diversity in its approaches.

Professor Bailey completed a PhD in animal reproduction at the University of Guelph and a postdoctoral fellowship in the Department of Medicine at the University of Pennsylvania. Prior to joining the FRQNT, she was a professor of Animal Sciences & Research Associate Dean, Faculty of Agriculture & Food Sciences with an adjunct professorship in the Faculty of Medicine, Laval University (Québec City, Canada). Professor Bailey is a founding member of the Reproduction, Development and Intergenerational Health Research Centre, composed of researchers from the Faculties of Medicine and Food & Agricultural Sciences at Laval University. She was also Co-Director of the Quebec Reproduction Research Network, which included teams from six research-intensive universities in the province of Québec.

As an active scientist for over 25 years, her research explored the impact of the environment, such as toxicant exposure, temperature, and nutrition, on fertility, reproductive development and the ability to produce healthy offspring across multiple generations. She worked on a range of species, including bees, fish, agriculturally important animals, laboratory models and human studies.

Professor Bailey has served as Chair or member multiple grant review panels in Canada and the USA, including for NSERC, the CIHR, NIH and Agriculture & AgriFood Canada. She has also participated on the editorial boards of several journals, including the official Society for the Study of Reproduction journal, *Biology of Reproduction*. She has been involved in the organisation of numerous international congresses in Canada, the USA, Australia, Denmark and South Africa, and is currently Co-Chair of the World Congress of the International Society of Developmental Origins of Health & Disease. Over her career, she has been elected to executive governance roles in various national and international scholarly societies, notably as President of the Society for the Study of Reproduction.

She has served numerous advisory roles, on the governing boards of research groups. She is currently a member of the expert panel for the Canadian Council of the Academies assessment on International Practices for Funding Natural Science and Engineering Research. She was an invited authority at the World Health Organisation Expert Meeting on Avoidable Early Environmental Exposures (2016). Other examples of her service include as a member of the assessment committee on Infrastructure for Agricultural Research for the Canadian Foundation for Infrastructure (2015), the advisory group on Mapping and Measuring Investments to Impacts in Agriculture Research for Agriculture & AgriFood Canada (2015), and to assist the Senatorial Committee on Forestry & Agriculture on the Necessity and Value of Research to Canadians: Current Challenges to Academic Researchers (2012-3). Professor Bailey has previously been honoured by the American Society of Andrology and the Canadian Society of Animal Science for her research contributions.



Joanne S. Richards, PhD

Baylor College of Medicine

JoAnne S. Richards obtained a BS degree from Oberlin College, a PhD from Brown University and did postdoctoral training at the University of Michigan. She is currently Professor in the Department of Molecular and Cellular Biology at Baylor College of Medicine where since 1981 she has conducted research in the area of the hormonal control of ovarian follicular development. Using molecular approaches and mutant mouse models she has identified key factors that control follicular development and ovulation. Her laboratory is currently analyzing the roles of androgens and the androgen receptor in theca cells in relation to normal follicle growth and as a model of Polycystic Ovary Syndrome (PCOS). Her laboratory is also interested in the roles of steroids and mutant forms of the tumor protein 53 (p53) in ovarian cancer. I have enjoyed working with many talented and wonderful colleagues, postdoctoral fellows and graduate students, all of whom have contributed immensely to our ovarian research studies.



John S. Davis, PhD

University of Nebraska Medical Center

John S. Davis is Professor and Director of Research and Development at the Olson Center for Women's Health in the Department of Obstetrics and Gynecology, University of Nebraska Medical Center, Omaha, Nebraska. Dr. Davis is also a Senior Research Career Scientist at the Omaha VA Medical Center. He earned BS degrees (1975) in biology and chemistry from Minot State University, Minot, North Dakota; and an MS (1977) and a PhD (1979) from the Department of Physiology at the University of North Dakota. His postdoctoral research with Dr. John Marsh at the Endocrine Laboratory, University of Miami, propelled his fascination with the discovery and understanding of novel cell signaling mechanisms involved in follicular development and corpus luteum function. In 1983 he joined the University of South Florida, Tampa, as Assistant Professor in the Departments of Internal Medicine and

Pharmacology where he worked closely with a group of endocrinologists. In 1988, Dr. Davis returned to the “Great Midwest” to join the Women’s Research Institute at the University of Kansas School of Medicine and VA Hospital in Wichita, Kansas. He has served in his current position at the University of Nebraska Medical Center since 2001. He has maintained his affiliation and Department of Veteran Affairs for 30 years and was awarded the Senior VA Research Career Scientist designation in 2014. He provides leadership for the training and research programs at the University of Nebraska Medical Center and VA.

Dr. Davis’ research focuses on a number of interconnected themes ranging from fundamental reproductive biology, to animal science, and to women’s health research. His work in ovarian physiology, particularly on molecular and cellular signaling mechanisms, has provided new information on the mechanisms of action of the gonadotropins LH and FSH, prostaglandins, and growth factors involved in follicular development and the formation and regression of the corpus luteum. His research on the bovine corpus luteum has contributed to current understanding of the role of small and large luteal cells, endothelial cells, fibroblasts, and immune cells as they impact the function and life span of the corpus luteum. His work on ovarian cancer has provided unique insight into novel mechanisms that contribute to the development of ovarian granulosa cell tumors and serous ovarian cancers. Another line of research examines the effect of immunosuppressants on the ovary and uterus in women with solid organ transplants. His research utilizes human, domestic animal, and rodent models. Dr. Davis is a strong supporter of collaborative research and mentoring junior investigators. He is also a strong advocate of graduate education and student mentoring, and is actively involved in training and mentoring programs on the University of Nebraska Medical Center campus in Omaha and on the University of Nebraska campus in Lincoln. His research has attracted support from the National Institutes of Health, the Department of Veterans Affairs, and the National Institute for Food and Agriculture (USDA), as well as local and private sources.

Dr. Davis has been an active member of the SSR since 1983. He was elected to serve in the presidential chain (2016-2019) served as President of SSR in 2018 for the annual meeting held in New Orleans. He has served the society as a member of the Program Committee (1997, 2004-2008), Membership Committee (2002-2004), Publications Committee (1994-1995), Nominating Committee (1999-2001, 2019), Awards Committee (2004, 2012), Future Meeting Sites Committee (1989-1990, 1992, 2006, 2008-2016), Local Arrangements Committee (2005-2006), and Industrial Relations Subcommittee of the Development Committee (2006). He has chaired the Publications (1995), Future Meeting Sites (1993, 2013-2016), and Development (co-chair, 2019) committees. Dr. Davis was directly involved with the 2006 Local Arrangements Committee for the successful 2006 SSR meeting in Omaha. He also served the SSR as Assistant Editor (1989-1995) for our journal *Biology of Reproduction*, and later as Associate Editor (2004-2008) and member of the Board of Reviewing Editors (2008-2011).

His appointments also include service on the Board of Directors for the Ovarian Workshops (1998-2004). He was the Scientific Director for the 2004 Ovarian Workshop held in Vancouver, BC. Dr. Davis has served as a regular member of the NIH Reproductive Endocrinology Study Section (1994-1998), the NIH Cellular, Molecular and Integrative Reproduction Study Section (2006-2010), the VA Merit Review Panel for Oncology (2003-2007), and he chaired of the American Cancer Society Tumor Biochemistry and Endocrinology review panel. He has also chaired or served as an ad hoc member of many NIH, USDA, and NSF review panels. Dr. Davis is an active member of the Endocrine Society, The American Society for Cell Biology (ASCB), the Society for Reproductive Investigation (SRI), and the American Association for Cancer Research (AACR). He has served on and currently serves various editorial boards. In addition to his academic experience, Dr. Davis served as an enlisted man and later as an officer in the Army and Army Reserve for over 25 years (retired in 2004).



Lois A. Salamonsen, PhD

Hudson Institute of Medical Research

Lois A. Salamonsen, PhD (1987) is a Distinguished Scientist at the Hudson Institute of Medical Research and Adjunct Professor in the Faculty of Medicine, Nursing and Health Sciences at Monash University, Melbourne, Australia. She was previously Head of the Centre for Reproductive Health and of the Endometrial Remodelling laboratory at the Hudson Institute. Her >30 years of transformative research have provided scientific/clinical impacts in her field of endometrial function. Early studies in sheep/mice make her unusual in recognising the considerable species differences in events of embryo implantation. Using novel approaches and new models, she has addressed key issues in human endometrial remodelling, normal and abnormal uterine bleeding, endometrial receptivity and implantation with a strong focus on clinical problems. Her breadth of molecular studies included critical roles for matrix metalloproteinases, cytokines/chemokines, immune cells and most recently extracellular vesicles in endometrial function and embryo-maternal interactions for implantation. Prof Salamonsen is an elected Fellow of the Australian Academy of Sciences, honorary Fellow of the Australia and New Zealand College of Obstetrics and Gynaecology and Fellow of both SSR and the Society for Reproductive Biology (SRB) (Australasia). She was awarded the Founder's lecture of SRB, the Beacon Award from Frontiers in Reproduction and a Lifetime Achievement award from the Faculty of Medicine at Monash University. Lois is passionate about training and mentoring the new generation of reproductive scientists. She is recognised as a 'rare women at the top of her discipline' who can guide young women through their special difficulties with life-work balance. Many of her PhD graduates and post-doc trainees now hold Professorial positions world-wide. She has contributed to Societies (including President, SRB; Co-program chair with Jon Hennebold for SSR; co-organiser with Joy Pate of the 1st International Congress of Reproductive Biology), and served on Editorial Boards (including Biology of Reproduction) and NHMRC Grant panels.



Thomas E. Spencer, PhD

University of Missouri – Columbia

Tom Spencer is a Curators' Distinguished Professor in the Division of Animal Sciences and Department of Obstetrics, Gynecology and Women's Health at the University of Missouri in Columbia, Missouri.

The long-term goal of his research program is to discover and understand key physiological and genetic mechanisms regulating development and function of the uterus and placenta and translate that knowledge to improvement of fertility in domestic animals and humans. His research in reproductive and developmental biology utilizes a number of different animal models (sheep, beef cattle, dairy cattle, mice) as well as human tissues. Broadly, current discovery foci of the program include understanding: (1) cellular and molecular mechanisms regulating gland development and function in the uterus using genetically engineered mice and sheep; (2) genetic pathways regulating fertility in beef cattle, dairy cattle, mice and humans; and (3) physiological pathways regulating pregnancy recognition and establishment using cattle, sheep and mice.

Spencer has a vigorous research and graduate education program that has earned several awards including: Society for the Study of Reproduction Research Award; American Society of Animal Science Physiology and Endocrinology Award; and Fellow of the American Association for the Advancement of Science. In 2019, he was elected as a member of the National Academy of Sciences. He has published over 300 scientific articles, reviews and book chapters. His research is funded by active grants from the NIH (R01 and R21), USDA NIFA (Challenge, Dual Purpose, and Foundational), and Science Foundation Ireland.



Marilyn Renfree, AO, FAA, FAIBiol, PhD, DSc DSc (Hon.) LLD (Hon.)

The University of Melbourne

Marilyn is a reproductive and developmental biologist whose research has focused almost entirely on marsupials not only because of their intrinsic interest but also for the opportunities they provide as biomedical models for understanding mammalian reproduction and development (although elephants, women, sheep and mice have also had a look-in in her research career). Her laboratory is known internationally for its study of the reproduction and development of marsupials that have resulted in a number of discoveries that challenged the accepted dogma in several areas including early mammalian development, physiological and molecular control of embryonic diapause, placentation, sexual differentiation, virilisation and genomic imprinting as well as conservation and evolution and even bringing a gene from the extinct Tasmanian Tiger back to life! She has also been involved in genome studies of the platypus, koala, echidna and especially the tammar wallaby genome project. She is an enthusiastic mentor and was awarded the Eureka Prize for Outstanding Mentor of Young Researchers. Marilyn graduated from the Australian National University then had a Fulbright Fellowship at University of Tennessee and a Ford Foundation Fellowship at the University of Edinburgh then academic staff appointments at Murdoch University, an NHMRC Fellowship at Monash University before her appointment

as the Ian Potter Chair of Zoology and Head of Department at The University of Melbourne from 1991-2003. She was awarded an ARC Federation Fellowship 2003-2008, was Director of the ARC Centre of Excellence for Kangaroo Genomics from 2008-2010 and was appointed Officer of the Order of Australia in 2013. She was elected as a Fellow of the Australian Academy of Sciences in 1997 and served as Vice President and Secretary, Biological Sciences from 2011-2015. She is currently a Laureate Professor of the University of Melbourne. She received the Carl G Hartman award of the SSR in 2019.



Martin M. Matzuk, MD, PhD

Baylor College of Medicine

Martin M. Matzuk, MD, PhD, is Director of the Center for Drug Discovery and Chair of the Department of Pathology & Immunology at Baylor College of Medicine (BCM). He graduated with a BA with honors in biology from the University of Chicago, earned his MD and PhD from Washington University School of Medicine, performed residency training in clinical pathology at the University of Pennsylvania and BCM, and joined the BCM faculty in 1993. Dr. Matzuk is acknowledged for his interrogation of TGF β superfamily, germ cell, and hormonal signaling pathways using functional genomics and chemical biology approaches and has published more than 370 papers. Dr. Matzuk has mentored over 50 trainees, received the 2015 Trainee Mentoring Award from the Society for the Study of Reproduction (SSR), and produced numerous trainees who are productive members of SSR and leaders in the field of reproduction. Dr. Matzuk received the 2002 SSR Research Award, was the Scientific Program Organizer for the 2007 SSR Annual Meeting in San Antonio, was Treasurer of the SSR from 2009 to 2012, has given seven plenary lectures at SSR annual meetings and a Keynote lecture at the SSR meeting in Montreal (2013), and helped to financially setup two SSR endowments in honor of Drs. John Eppig and Bruce Murphy. Nationally, he is a member of the National Advisory Child Health and Human Development Council, is discipline chair of the National Academy of Sciences Animal Genetics and Physiology Section, and chaired the NIH CMIR study section. In addition to his SSR honors, Dr. Matzuk has multiple honors from The Endocrine Society, received the 5th International Fundacion IVI Award for the Best Basic Research Record in Reproductive Medicine, has given multiple named lectures internationally, and was awarded a prestigious NIH MERIT award. He was elected to the National Academy of Sciences and The Academy of Medicine, Engineering, and Science of Texas in 2014 and as a Fellow in the National Academy of Inventors in 2016. In 2020, Dr. Matzuk was Co-Editor of the Biology of Reproduction special issue entitled, Contraceptive Development: Past, Present, and Future.



Michael D. Griswold, PhD

Washington State University

Dr. Michael D. Griswold, Regents Professor of Molecular Biosciences at Washington State University (WSU), is world-renowned for his contributions to our understanding of Sertoli cell structure and functions and the crucial role of Vitamin A in spermatogenesis and a loyal member of Society for the Study of Reproduction (SSR). Mike received a BS in Chemistry and PhD in Biochemistry from the University of Wyoming. He conducted postdoctoral studies with Dr. Philip Cohen at the University of Wisconsin, funded by an NIH Postdoctoral Fellowship, working on amphibian metamorphosis, and with Dr. Flauco P. Tocchini-Valentini in Rome, funded by an EMBO Fellowship, on *Xenopus* RNA. Mike spent a year as an Assistant Professor of Pharmacology at Baylor College of Medicine in Houston. He then spent two years as a Research Associate in the laboratory of Dr. Irving Fritz at the University of Toronto, where he acquired what would become a life-long interest in Sertoli cells. Mike joined the faculty of WSU in 1976 as an Assistant Professor of Biochemistry and Basic Medical Sciences, was promoted to Associate and then full Professor, appointed Chair of the Department of Biochemistry and Biophysics in 1994, Director of the School of Molecular Biosciences in 1999, and Dean of the College of Sciences, a position he held from 2003-2010. Mike became a Regents Professor of Molecular Biosciences in 2008, and in 2011, received the WSU Eminent Faculty Award, the highest faculty honor at WSU.

Mike's research has been continuously funded by the NIH since 1977 (with the same grant "Hormonal Control of the Maturation of Sertoli Cells"), including a Research Career Develop Award (1979-1984) and MERIT Award (1997-2007). He has published more than 230 original scientific articles, book chapters, and review articles. His recognition in the field of Sertoli cell function and spermatogenesis is evidenced by his many keynote addresses that include the SSR President's Symposium (1994 and 2007), Larry Ewing Lecture at Johns Hopkins University (2001), Andrew Nalbandov Lecture at the University of Illinois (1993), Asdell Lecture at Cornell University (2008), the Bailly Lecture at Southern Illinois University (2010), the Sero Lecturer at the Andrology Society (1994), and the Distinguished Faculty Address at WSU (1994). Mike received the WSU Sahlin Excellence in Research Award (1999) and the SSR Research Award (2006), and became an AAAS Fellow in 2009. In addition, he was the 2013 recipient of the Carl G. Hartman Award, one of the most prestigious award conferred by the Society for the Study of Reproduction.

Mike is an exemplary mentor. He trained 7 MS students, 24 graduate students that include Mike Skinner, Ken Roberts and Leslie Heckert, and 26 postdoctoral fellows and research associates that include Carlos Morales, Kwan Hee Kim, Carol Linder, Dereck McLean, and Cathryn Hogarth. Mike received the Frontiers in Reproduction Beacon Award in 2008 for his outstanding mentoring. One of his former students, Leslie Heckert wrote: "His high expectations returned dedication, creativity and independence from the members of his laboratory, which in turn produced a vibrant and exciting research environment. He led by example, support and occasionally by providing unsolicited words of encouragement...".

Mike has unselfishly served his profession, SSR, the Andrology Society, and the Testis Workshop. He was a member of the SSR Board of Directors (1989-1992), SSR Annual Meeting Program Chair (1998), SSR President-Elect and President (1997-1999), Andrology Society Board of Directors (2000-2003), and Program Committee Chair for Testis Workshop (1993 and 2007) and Andrology Society (1996). He served the NIH on the Reproductive Biology Study Section (1983-1987, and continues to do ad hoc reviews for the NIH. Mike has also served as an Editorial Board Member for *Endocrinology*, *Journal of Andrology*, *Biology of Reproduction*, *Endocrine Journal*, *Molecular Cellular Endocrinology*, and *Spermatogenesis*.

Mike's contributions to Sertoli cell physiology and spermatogenesis are impressive. His lab demonstrated in 1980 that vitamin A modulated Sertoli cell function, in 1987 that vitamin A altered Sertoli cell gene expression, and in 1987 in a landmark publication with Carlos Morales, that retinol induced synchronization of seminiferous tubules in vitamin A-deficient rats. The crucial role that vitamin A plays in regulating germ cell entry into meiosis is still being investigated today not only by the Griswold lab but also by many others in the field, including Kwan Hee Kim, Peter Koopman, and David Page. Moreover, Mike's leadership role in this area is evidenced by his collaborative publications with John McCarrey, the late Lonnie Russell, Martin Dym, Bob Braun, Kate Loveland, David Zarkower, Marvin Meistrich, and Paul Cooke.

Mike's lab pioneered microarray/gene profiling analyses of FSH-treated Sertoli cells, beginning in 2002, followed by analysis of spermatogonial stem cells, testis, seminiferous epithelium, epididymis, spermatogenesis, and embryonic development of the testis. These databases are freely available to the scientific community. The number of investigators across the world that have used these data bases is remarkable.

As evidenced from the comments above, Mike has been at the forefront of research in male reproductive biology for the past three decades. Leslie Heckert wrote: "His ideas, approaches, and results have enhanced our understanding of Sertoli cell and gamete function, improved animal models and methodologies for the study of spermatogenesis, and precipitated new concepts in testis biology, contraception and infertility. Because of Dr. Griswold, more is known about the role of retinoic acid in regulating meiosis and the cycle of the seminiferous epithelium, the actions of FSH and testosterone, Sertoli cell function, and the characteristics of spermatogonial stem cells."



Patricia Hunt, PhD

Washington State University

Dr. Hunt is the Meyer Distinguished Professor in the School of Molecular Biosciences at Washington State University, Pullman, WA. She started her research career studying human chromosome abnormalities. Her goal was to understand the high incidence of chromosomally abnormal eggs produced by human females and why the incidence is so strongly impacted by advancing maternal age. She remains fascinated by this complex problem, but the accidental exposure of her mice to bisphenol A (BPA) in

1998 focused her attention on the effects of common environmental contaminants on reproduction. Her current research focuses on chemical mixtures and trans-generational effects of exposure to endocrine disrupting chemicals. Dr. Hunt was named one of the top 50 researchers of the year by Scientific American in 2007, was elected to the Washington State Academy of Sciences in 2015 and received the Hartman Award from the Society for the Study of Reproduction in 2018. Her research has been continuously funded by the National Institutes of Health for over 25 years. Dr. Hunt is particularly interested in science communication and is dedicated to ensuring that future trainees not only will be outstanding scientists but easily able to communicate their findings to the general public.



Peter J. Hansen, PhD

University of Florida

Peter J. Hansen is a faculty member of the Dept. of Animal Sciences at the University of Florida, where he has worked since 1986. He is currently a distinguished professor and L.E. "Red" Larson Professor of Animal Sciences. His research focuses on the biology of early pregnancy and development of methods to improve fertility and assisted reproductive technologies in cattle. Particular emphasis is placed on elucidating pathways by which the mother regulates preimplantation development, minimizing effects of elevated temperature on fertility and identifying genes controlling embryonic survival and thermotolerance. Hansen received the BS in Agricultural Sciences from the University of Illinois in 1978 and the MS and PhD degrees from the University of Wisconsin in 1980 and 1983. He did a postdoctoral fellowship at the University of Florida from 1983-1984 before joining the faculty at Florida as an assistant professor in 1984. One of the most satisfying facets of his career has been participation in education of early-career scientists. He has mentored 46 graduate students, 15 postdoctoral fellows and 49 visiting scientists.



R. Michael Roberts

University of Missouri

R. Michael Roberts is a Chancellor's Professor at the University of Missouri, with appointments in Animal Sciences and Biochemistry. He is currently an investigator in the University of Missouri, Christopher S Bond Life Sciences Center. He gained his BA and D.Phil. in Plant Sciences from Oxford University, England, but since the mid 1970s has worked primarily as a reproductive biologist. Roberts' is best known for his work on uterine secretions, and particularly the iron-binding acid phosphatase, uteroferrin, in the pig, and on how the early embryo signals its presence to the mother in ruminant species through the production of small proteins called interferons. More recently, Roberts has been studying the role of other unique trophoblast proteins in pregnancy and has (with colleague Jon Green) developed a pregnancy test for cattle that is in the process of being commercialized. He is currently studying specification of trophoblast as it emerges from pluripotent stem cells, generating induced pluripotent stem cells from swine for testing the efficacy and safety of grafts in a large animal model, and creating trophoblast stem cells by reprogramming

differentiated somatic cells. Another project pertains to the role of maternal diet in regulating the sex of her offspring. His work is supported primarily through Federal Agencies such as the National Institutes of Health (NIH) and the United States Department of Agriculture (USDA), and also through Missouri State funds in support of agriculture.

Dr. Roberts has published over 340 papers in refereed scientific journals and over 70 reviews and chapters in books. He was elected to the National Academy of Sciences in 1996, and has received several international awards, including the Milstein Prize for Research on Interferons and the Wolf Prize for Agriculture (2003). Dr. Roberts also received the Carl G. Hartman Award (2006) from the Society for the Study of Reproduction. Roberts was Chief Scientist with the USDA's Competitive Grants Program (the National Research Initiative) from 1998-2000. He also served on the National Research Council's Committee that published recommendations to the Federal Drug Agency on concerns regarding the use of genetically modified animals for food (Animal Biotechnology: Science Based Concerns, National Academy of Sciences, Washington, D.C.) and chaired the NRC committee that investigated Animal Care & Management at the National Zoo.



Teresa K. Woodruff

Michigan State University

Teresa K. Woodruff, PhD, is Provost and Executive Vice President for Academic Affairs at Michigan State University. She is an MSU Foundation Professor in the Department of Obstetrics, Gynecology, and Reproductive Biology, and the Department of Biomedical Engineering. Woodruff is an internationally recognized expert in

ovarian biology and reproductive science. In 2006, she coined the term “oncofertility” to describe the merging of two fields: oncology and fertility. In addition, she championed the new National Institutes of Health (NIH) policy mandating the use of females in fundamental research.

As a leading research scientist, Woodruff was awarded the Presidential Award for Excellence in Science Mentoring by President Obama in an oval office ceremony in 2011. Most recently, Woodruff was a recipient of the Endocrine Society's 2021 Laureate Award, a top honor that recognizes the highest achievements in the field of endocrinology. She holds 13 U.S. Patents and is an elected fellow of the American Academy of Arts and Sciences (2020), the National Academy of Medicine (2018), the National Academy of Inventors (2018), the American Institute for Medical and Biomedical Engineers (2017), and the American Association for the Advancement of Science (2006).

Woodruff earned her PhD in Biochemistry, Molecular Biology, and Cell Biology from Northwestern University and holds a B.S. in Zoology and Chemistry from Olivet Nazarene University.

TRAINEE AWARDS

SSR Trainee Research Awards

SSR Trainee Research Awards are presented to the best oral talk and poster presentations by SSR Trainee members at the Annual Meeting as evaluated by the SSR Awards Committee. The finalists for the 2021 awards are listed below.

SSR Trainee Research Awards—Poster Competition will include separate categories for Pre-Doctoral trainees and Post-Doctoral trainees. Poster finalists will present during one of the three Poster Sessions:

Thursday, December 16	8:00 – 10:00 am
Friday, December 17	8:00 – 10:00 am
Saturday, December 18	8:00 – 10:00 am

The Awards Committee will **select** a 1st, 2nd, and 3rd place winner in each category (Pre-Doctoral and Post-Doctoral) on **Saturday, December 18** during the **Plenary Session III, 3:30 – 6:15 pm**

SSR Trainee Research Awards—Platform Competition. There will be two platform competitions: one for Pre-Doctoral Finalists and one for Post-Doctoral Finalists:

Platform Finalists will present during two separate categories. **Post-Doctoral** finalists will present on **Friday, December 17** at **10:30 am**. **Pre-Doctoral** finalists will present on **Friday, December 17** at **1:30 pm**. The Awards Committee evaluates the presentations according to the following criteria: (1) merit of the study, (2) presentation format, (3) delivery, (4) visual aids, and (5) response to questions during discussion.

The Awards Committee will present a 1st, 2nd and 3rd place winner in **each category** (Pre-Doctoral and Post-Doctoral) on **Saturday December 18** during the **Plenary Session III, 3:30-6:15 pm**.

2021 SSR Trainee Research Award Pre-Doctoral Platform Competition Finalist

(The SSR Pre-Doctoral Platform Awards are supported by Dr. T. Rajendra Kumar through the Makowski Family Endowment at the University of Colorado Anschutz Medical Campus)

Analysis of Fibroblast and Myofibroblast Marker Expression in the Human Ovarian Cortex Across Age

Hannah Anvari, Northwestern University, USA

GCM1 is a Critical Regulator of Human Extravillous Trophoblast Development and Function

Mariyan Jeyarajah, Western University, USA

Endometriosis Leads to Altered Glial Morphology and Activation in the Brains of Mice in a Mouse Model of Endometriosis

Shah Tauseef Bashir, University of Illinois at Urbana – Champaign, USA

Sire Influences on Trophectoderm Development in Cattle

Jason Rizo, University of Missouri, Columbia

The Consequences of Prolonged M-Phases in Mammalian Oocytes and Embryos

Adélaïde Allais, Université de Montréal, Canada

Signaling Mechanisms for Actions of DKK1 on Cell Numbers in the Preimplantation Bovine Embryo

Thiago Amaral, University of Florida, USA

Jackson Nteeba Trainee Research Award Post-Doctoral Platform Competition Finalist

Detecting Testosterone Induced Placental Inflammation Using Contrast—Enhanced Ultrasonography With Phosphatidylserine Microbubbles

Rachel Wilson, Oregon Health and Science University, USA

Testis-Specific X-Linked Mir-506 Family Regulates Sperm Competition

Zhuqing Wang, The Lundquist Institute, USA

The Spatial Transcriptomic Analysis of the Mouse Uterine Microenvironment at Early Pregnancy

Rong Li, National Institute of Environmental Health Sciences, USA

New Insights into Oocyte Behaviors During Mammalian Oviductal Transport

Deirdre Scully, Baylor College of Medicine, USA

Integration of Mouse Ovary Morphogenesis With Developmental Dynamics of the Oviduct, Ovarian Ligaments, and Rete Ovarii

Jennifer McKey, Duke University Medical Center, USA

CITED2 Regulates Placentation and The Invasive Trophoblast Cell Phenotype

Marija Kuna, University of Kansas Medical Center, USA

2021 SSR Trainee Research Award Pre-Doctoral Poster Competition Finalist

Steroidogenic Factor 1 Plays an Essential Role in the Hypothalamic-Pituitary-Ovarian Axis of Adult Female Mice

Olivia Smith, Université de Montréal, Canada

Obesity Alters the Ovarian DNA Repair Protein Response to DMBA Exposure

Jaspreet Rishi, Iowa State University, USA

Evaluation of Meiotic Reversibility in Spermatogenesis as a Novel Target for Male Contraception

Leah Simon, Cornell University

Investigation of Bovine Chromosome Architecture and Its Involvement in Large Offspring Syndrome

Yahan Li, University of Missouri

Influence Of Pre-Ovulatory Follicle Size on the Follicular Fluid Metabolome in Lactating Beef Cows

Casey C. Read, University of Tennessee, USA

Regulatory Roles of Zinc Fluxes in Early Murine Ovarian Follicle Development

Yu-Ying Chen, Northwestern University, USA

2021 SSR Trainee Research Award Post-Doctoral Poster Competition Finalist

Deletion of Negative Elongating Factor B in Sertoli Cells Leads to Disruption of Sperm Annulus and Infertility

Helena Zomer, University of Illinois at Urbana-Champaign, USA

3D Organoids Generated From Human Trophoblast Stem Cells Model Early Placental Development and Susceptibility to Emerging Viral Infections

Rowan Karvas, Washington University in St. Louis

A Mouse Model to Investigate the Reproductive Consequences of Testosterone Administration After Suppressing Puberty in Transgender Boys

Cynthia Dela Cruz, University of Michigan, USA

Steroidogenic Factor 1 (SF-1; Nr5a1) Regulates Primordial Follicle Assembly and Activation

Camilla Hughes, Université de Montréal, USA

Loss Of ERVW-1 Leads to Increased ERVFRD-1 And Interferon Receptor Expression in Human Trophoblast Stem Cells

Rachel West, Colorado Center for Reproductive Medicine, USA

A Novel Endometriotic Organoid Model for Studying Cell Interactions and The Microenvironment During Endometriotic Lesion Development

Yong Song, Michigan State University, USA

Lalor Foundation Merit Awards

(Supported by a grant from the Lalor Foundation, Inc.)

Winners are selected on the basis of abstracts submitted for presentation and evaluated by the Awards Committee according to the following criteria: scientific merit, interpretation and impact of the results, and clarity of the abstract. Each of the 10 presenters will receive a Lalor Foundation Merit Award of USD \$500, which will be presented at the 2021 Annual Meeting. Awardees will be recognized **Friday, December 17** during the **Plenary Session II, 3:30 – 5:45 pm**.

2021 Lalor Foundation Merit Award Recipients

Analysis of Fibroblast and Myofibroblast Marker Expression in the Human Ovarian Cortex Across Age

Hannah Anvari, Northwestern University, USA

GCM1 is a Critical Regulator of Human Extravillous Trophoblast Development and Function

Mariyan Jeyarajah, Western University, USA

Detecting Testosterone Induced Placental Inflammation Using Contrast-Enhanced Ultrasonography With Phosphatidylserine Microbubbles

Rachel Wilson, Oregon Health and Science University, USA

Testis-Specific X-Linked Mir-506 Family Regulates Sperm Competition

Zhuqing Wang, The Lundquist Institute, USA

Single Cell Analysis of Endometriosis Reveals a Coordinated Transcriptional Program Driving Immunotolerance and Angiogenesis Across Eutopic and Ectopic Tissues

Yuliana Tan, The Jackson Laboratory for Genomic Medicine, USA

Endometriosis Leads to Altered Glial Morphology and Activation in the Brains of Mice in a Mouse Model of Endometriosis

Shah Tauseef Bashir, University of Illinois at Urbana-Champaign, USA

The Spatial Transcriptomic Analysis of the Mouse Uterine Microenvironment at Early Pregnancy

Rong Li, National Institute of Environmental Health Sciences, USA

Steroidogenic Factor 1 (SF-1; Nr5a1) Regulates Primordial Follicle Assembly and Activation

Camilla Hughes, Université de Montréal, USA

Integration of Mouse Ovary Morphogenesis With Developmental Dynamics of the Oviduct, Ovarian Ligaments, and Rete Ovarii

Jennifer McKey, Duke University Medical Center, USA

CITED2 Regulates Placentation and The Invasive Trophoblast Cell Phenotype

Marija Kuna, University of Kansas Medical Center, USA

USDA NIFA-AFRI Merit Awards

(Supported by a grant from USDA National Institute of Food and Agriculture)

Winners are selected on the basis of abstracts submitted for presentation and evaluated according to the following criteria: relevance of research to the goal of enhancing understanding of reproduction in agriculturally important species, scientific merit, interpretation and impact of the results, and clarity of the abstract. Each of the 10 presenters will receive USD \$500, which will be presented at the 2021 Annual Meeting. Awardees will be recognized **Saturday, December 18** at **Plenary Session III, 3:30 – 6:15 pm**.

2021 USDA NIFA-AFRI Merit Awards Recipients

Ovine Utero-Placental Tissues Metabolize Creatine During Pregnancy to Support Conceptus Development

Nirvay Sah, Texas A & M University, USA

Sire Influences on Trophectoderm Development in Cattle

Jason Rizo, University of Missouri, Columbia, USA

Evaluating the Impact of the Hexosamine Biosynthesis Pathway and O-GlcNacylation on Glucose Metabolism In Bovine Granulosa Cells

Abigail Maucieri, University of Vermont, USA

Persistent Layers Differ From Non-Persistent Layers in Bodyweight and at the Ovarian Level

Laurie Francoeur, Cornell University, USA

Changes In Immune Cell Populations and Phenotype in Peripheral Blood Leukocytes of Dairy Cows and Heifers During Early Pregnancy

Maria Isabel Silva, The Pennsylvania State University, USA

Signaling Mechanisms for Actions of DKK1 on Cell Numbers in the Preimplantation Bovine Embryo

Thiago Amaral, University of Florida, USA

Investigation of Bovine Chromosome Architecture and Its Involvement in Large Offspring Syndrome

Yahan Li, University of Missouri, USA

Influence of Pre-Ovulatory Follicle Size on the Follicular Fluid Metabolome in Lactating Beef Cows

Casey C. Read, University of Tennessee, USA

Central Nucleus Positioning in Murine Oocytes is Achieved by F-actin and Maintained by Microtubules to Avoid Erroneous Chromosome Segregation

Jessica Kincade, University of Missouri–Columbia, USA

Reductions in Hematocrit and Hemoglobin Concentrations in Non-Cycling Heifers May Contribute to Delayed Pubertal Attainment

Jessica Keane, University of Nebraska – Lincoln, USA

Burroughs Wellcome Travel Awards

A grant from the Burroughs Wellcome Fund provides travel fellowships for under-represented minority trainees and junior faculty, US or International, to enable their participation in the SSR Annual Meeting. The fellowship includes reimbursement of meeting registration; up to USD \$1,200 for housing, food, and travel expenses; and complimentary SSR Membership through the next calendar year. Recipients also receive a meeting T-shirt and a ticket to a social function. Fellowships are awarded competitively on the basis of applications submitted to and evaluated by the SSR Diversity Committee. Approximately six trainees and three junior (non-tenured) faculty with a background in reproductive biology receive fellowships each year. Awardees will be recognized **Wednesday, December 15** at the **Opening Ceremony, 3:30 – 5:35 pm**.

Burroughs Wellcome Travel Award Recipients

FACULTY

Noelle Ozimek, Brigham and Women's Hospital, USA

TRAINEES

Alexis Jones, University of Missouri – Columbia, USA

Helena Debiazi Zomer, University of Florida, USA

Endia Fletcher, University of Illinois at Urbana Champaign, USA

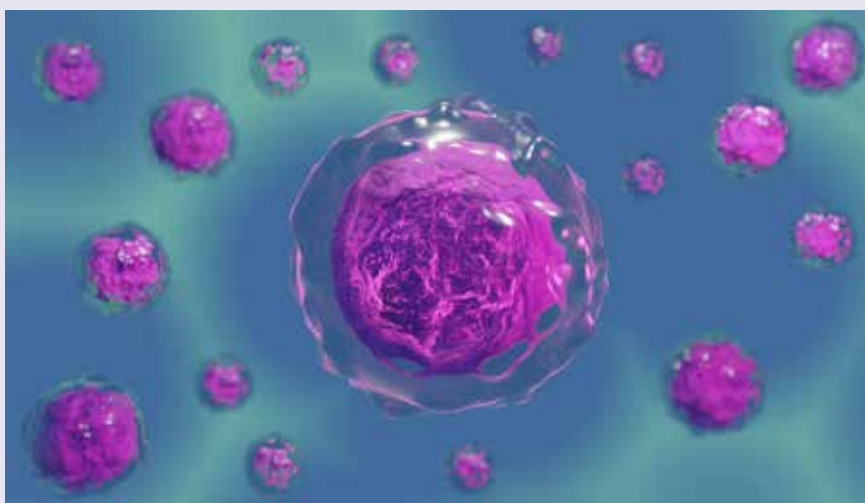
Meshach Asare-Werehene, Ottawa Hospital Research Institute, Canada

Amanda Maldonado, University of Illinois, Chicago, USA

Daniella Heredia, University of Florida, USA

Kamiya Bridges, NIEHS/ Winston – Salem State University, USA

Lauren Mayo, Tuskegee University, USA



Best International Abstracts

Awardees of the International Best Abstract Award will be announced onsite. Winners in each region were selected by Program Committee score, which were attributed to each abstract, based on technical characteristics (legibility, adherence, to the rules for submitting an abstract) and content (title, reasoning, quality of the results, conclusions, and impact in the field of reproductive biology). Awardees will be recognized **Saturday, December 18** at **Plenary Session III, 3:30 – 6:15 pm**.

Best International Abstract Recipients

DMRT1 is a Sex-Determining Gene in Rabbits

Emilie Dujardin, INRAE, France

A Homozygous Missense Variant in a Large Subunit Protein of the Mitochondrial Ribosome, MRPL50, Causes Syndromic Premature Ovarian Insufficiency

Shabnam Bakhshalizadeh, University of Melbourne, Australia

Impact of Chemotherapy Prior to Ovarian Tissue Cryopreservation on Primordial Follicles in Pre-Pubertal and Young Adult Patients

Melody Devos, Université Libre de Bruxelles, Belgium

Changes In the Utero-Placental Immune Milieu During Normal and Antigestagen-Induced Luteolysis in the Dog

Miguel Pereira, University of Zurich (UZH), Zurich, Switzerland

Impaired Decidualisation in Obese Mice Is Associated With Epigenetically Mediated Changes in Leptin Signaling

Edyta Walewska, Institute of Animal Reproduction and Food Research of PAS, Poland

Microrna-143 Inhibits Invasion and Migration by Targeting MMP-2 and MMP-9 In Trophoblast Cells

Kanika Aggarwal, All India Institute of Medical Sciences, New Delhi

Lactation Undernutrition Leads to Intergenerational Alterations in Reproductive Parameters of Male Progeny

Alicja Zochowska-Klepanska, Polish Academy of Sciences, Olsztyn, Poland

mir-125b is a Negative Regulator of Extracellular Vesicles Biogenesis and Distribution at the Embryo-Maternal Interface

Maria Guzewska, Polish Academy of Sciences, Olsztyn, Poland

Calotropis Procera Extract (CPE) Inhibits Prostate Cancer by Modulating Levels of Reactive Oxygen Species

Palak Singh, All India Institute of Medical Sciences, New Delhi

Unravelling Embryo-Maternal Communication and Interaction in the Bovine Reproductive Tract

Heather Steele, University College Dublin, Ireland

Union Station, St. Louis



TRAINEE AFFAIRS COMMITTEE

Career Consultation Center

This year's CCC coordinator is Ben Duran, who has put together a diverse and impressive list of mentors. The CCC will be run concurrently with the poster sessions from **December 16 – 18, 8:00 am – 10:00 am**. Trainees will be able to schedule a brief (30 minutes) one-on-one with a mentor of their choice (space-permitting) to discuss any career-related subject, including resume review, choosing the next career steps, the funding application process, work-life balance, or visa/green card process advice. Interested trainees should contact Ben Duran for further questions or reserve an appointment. Mentor bios will be posted on the website soon. Space is limited. Get in early to secure your spot! **Contact Ben at careers@ssr.org** if you have any questions!

Trainee Happy Hour

This is for Trainees only (no guests). Come to a casual happy hour to get to know other trainees in an informal setting on **Tuesday, December 14 from 6:15 pm – 7:30 pm** at Maggie O'Brien's Pub, 2000 Market St, St. Louis, MO before the SSR Annual Conference begins. **Tickets are \$10**.

Trainee Forum

The Trainee Forum is scheduled on **Tuesday, December 14 from 1:00 pm – 2:30 pm** and will be titled, "Searching, Applying, Interviewing, and Negotiating for Your First Job", consisting of four speakers, each with varying experience from academia, industry, and government. This year's Trainee Forum will consist of a brief introduction by each panel member followed by a question-and-answer session from trainees.

Trainee—Diversity Lunch

(Cost \$25)

Friday, 17 December, 12:00 pm – 1:15 pm

The SSR Program, Diversity, Trainee Affairs, and WINRS have put together a collaborative new plenary session followed by a trainee event exploring the need for diversity and inclusivity in STEM and within our society for the upcoming 2021 annual meeting. Plenary speaker Dr. Kathryn B.H. Clancy, an Associate Professor of Anthropology at the University of Illinois, will speak on 'The Science of Gender Harassment'. The next day, we will have a diversity focused trainee luncheon event, including a panel discussion entitled "Making a More Inclusive Scientific Society". Panelists will include Dr. Elizabeth Bonney (University of Vermont Medical Center), Dr. John Parrish (University of Wisconsin Madison), Dr. Olga Bolden-Tiller (Tuskegee University), and Dr. Lindsey Treviño (City of Hope).

Our goal for this new session is to highlight the importance of diversity in STEM, particularly for trainees, to ensure a welcoming, inclusive, and productive place for all scientists for years to come. This open discussion format will provide a safe

space for trainees to explore topics affecting women and underrepresented minorities in STEM disciplines, and unconscious bias. We hope that this session will provide a positive environment to identify strategies to address the challenges of building and maintaining a diverse and inclusive society where all SSR members feel welcomed and valued.

Virtual Fun Run 5k

This year the annual SSR 5K Fun Run will be a virtual event! Any member can attend the fun run and run any time during the week of the conference.

Trainee/Mentor Luncheon

(Cost \$25.00)

The Trainee-Mentor Luncheon (TML) for the 2021 SSR Annual Meeting will provide trainees an opportunity to engage with SSR mentors in an informal lunch setting. The TML will be **Saturday, December 18** from **12:00 pm – 1:15 pm**. Coordinators, Alison Ermisch and Carolina Gonzalez-Berrios, have been recruiting mentors from academia, editorial staff, clinicians, funding agency representatives, and embryologists. We will cap the number of trainees at 150 and work to encourage productive discussions. Please remember to sign up for the event when you register for the meeting! If you have not signed up during registration, please contact membership@ssr.org.

SSR Trainee Travel Award (SSR-TTA)

The Society for Study of Reproduction Trainee Travel Awards (SSR-TTA) were established to support participation of Trainee members at the annual meetings.

SSR will contribute up to \$500 to support each of 20 Trainee members enrolled in the Continental North America (United States and Canada) and up to \$1000 to support each of 5 international (non-North American) enrolled Trainee members as a contribution towards the costs of conference registration, travel, and accommodation. Applicants will be judged on abstract quality and volunteer service to the scientific community.

2021 SSR-TTA Recipients

CONTINENTAL NORTH AMERICA

Sperm Tracking Toward the Oocyte: In Vitro and In Vivo

Kohei Umezu, Baylor College of Medicine, USA

The Underlying Mechanism Of Cyclophosphamide-Induced Oocyte Depletion in the Ovary

Yi Luan, University of Nebraska Medical Center, USA

Human Trophoblast Exhibit Divergent Susceptibilities to Dengue and Zika Virus Infections

Megan Sheridan, University of Missouri, USA

Effects of Prenatal and Lactational Exposure to Iodoacetic Acid on the F1 Generation of Mice

Andressa Varella Gonsioroski, University of Illinois at Urbana – Champaign, USA

Ovarian Inflammation Increases Oocyte Maternal mRNAs During Maturation and Alters Expression of Cumulus Regulatory Genes Resulting in Reduced Developmental Competence

Alison Ermisch, University of Nebraska – Lincoln, USA

Investigating the Secretory Phase Changes and Decidual Hormone Response of Human Endometrial Epithelial Organoids

Harriet Fitzgerald, University of Missouri, USA

The Consequences of Prolonged M-Phases in Mammalian Oocytes and Embryos

Adélaïde Allais, Université de Montréal, Canada

Loss of ERVW-1 Leads to Increased ERVFRD-1 and Interferon Receptor expression in human trophoblast stem cells

Rachel West, Colorado Center for Reproductive Medicine, USA

The Granulosa Cell Response to Luteinizing Hormone is Partly Mediated by YAP1-Dependent Induction of Amphiregulin

Philippe Godin, Université de Montréal, Canada

Understanding the Influence of Obesity on the Endometrium Using Human Primary Endometrial Organoids

Alina Murphy, Northwestern University, USA

Involvement of Transcription Factor AP-2 Gamma in Trophoblast Cell Development and Placentation

Esteban Dominguez, University of Kansas Medical Center, USA

Species Specificity of PEG3 and TAF7L Involvement in Invasive Trophoblast Cell Development and Hemochorial Placentation

Ayelen Moreno, University of Kansas Medical Center, USA

Evaluation of Meiotic Reversibility in Spermatogenesis as a Novel Target for Male Contraception

Leah Simon, Cornell University, USA

Macrophages Enhance Ectopic Stromal Cell Invasion in a Novel Organoid Model of Endometriosis

Gregory Burns, Michigan State University, USA

Endometrial Cyclin A2 Deficiency Is Associated With Female Infertility and Recapitulated in a Conditional Uterine Ccna2 Knockout Mouse Model

Fatimah Aljubra, University of Kansas Medical Center, USA

CHTF18 Mediates Meiotic Cohesion In Females

Rebecca Holton, Drexel University, USA

Ovarian Gene Expression, Oocyte and Embryo Quality in Mice Expressing Re-Routed FSH

Suzanna Kafer, University of Colorado Anschutz Medical Campus, USA

Regulatory Roles of Zinc Fluxes in Early Murine Ovarian Follicle Development

Yu-Ying Chen, Northwestern University, USA

Three-Dimensional Biofabrication of Self-Supporting Perfused Tissues of Endometriosis and Endometriosis-Associated Ovarian Cancers

Yuliya Klymenko, Indiana University School of Medicine, USA

CDKN1C Contributes to the Regulation of Invasive Trophoblast Cells and Hemochorial Placentation

Regan Scott, University of Kansas Medical Center, USA

INTERNATIONAL

Spontaneous Calcium Signaling in Mouse Testis is Modulated by Age, Cell Type, and Endocrinal State

Justine Fiscoeder, RWTH Aachen University, Germany

Impaired Decidualisation in Obese Mice is Associated With Epigenetically Mediated Changes in Leptin Signaling

Edyta Walewska, Institute of Animal Reproduction and Food Research of PAS, Poland

Impact of Chemotherapy Prior to Ovarian Tissue Cryopreservation on Primordial Follicles in Pre-Pubertal and Young Adult Patients

Melody Devos, Université Libre de Bruxelles (ULB), Belgium

Characterization of Spermatogonia and Sertoli Cells From Juvenile Mice using Single-Channel Electrophysiology

Lina Kenzler, RWTH Aachen University, Germany

T-Shirt Sales

2021 Annual Meeting t-shirts are available for \$20 each in both female and unisex adult styles (small to XXL). Proceeds from the sales of the shirts provide much needed funding for Trainee Affairs. **Available at the Information Desk at SSR Registration!**

Trainee Volunteer Subcommittee

The Co-Chairs of the Trainee Volunteer Subcommittee, Saniya Rattan and Courtney Sutton, have worked tirelessly fielding and organizing this year's group of volunteers, who provide invaluable assistance in running the meeting! Volunteers are responsible for much of the behind-the-scenes action, including assistance with the Fun Run, posters, Trainee booth, registration, session monitoring, signage placement as well as help in the slide preview room and the operations of trainee-specific events. The SSR is especially devoted to enhancing the trainee experience; therefore, we strongly urge you to take advantage of this opportunity to participate as a trainee volunteer at next year's meeting. It's a great way to meet peers and network with influential scientists in our field.

Trainee Facebook Group

For the latest news and views of your peers in reproductive science, please join our Facebook group, Society for the Study of Reproduction Trainee Affairs at: <https://m.facebook.com/groups/165646276973350>

Trainee Contacts

Have a question? Please contact your SSR Trainee Representatives Andrew Kelleher and Taylor Pini, at trainees@ssr.org; both are more than happy to answer your questions.

Diversity Committee Activities

The Diversity Committee provides mentoring, resources, and communication to SSR members who self-identify as underrepresented, including those from underrepresented populations and individuals with disabilities. The committee also advocates to the Board of Directors and Society as needed and works to ensure appropriate access and representation.

Burroughs Wellcome Travel Fellowships for Underrepresented Trainees and Junior Faculty

The Diversity Committee receives applications from underrepresented Minority Trainees and Junior Faculty for Burroughs Wellcome Travel Fellowships and awards them on a competitive basis. Minorities shall be defined as underrepresented groups including, but not limited to, members of racial and ethnic minorities and persons with disabilities. Applicants must be enrolled as a student in or teaching at an accredited, degree-granting institution in the U.S. or International. Awardees will be recognized.



SPECIAL EVENTS



The WinRS Committee will host two Picture a Scientist Zoom Discussion Sessions

The goals of the virtual discussions would be to:

- 1) reflect
- 2) network
- 3) develop interest and questions that will benefit the special programming planned for the SSR meeting.

Discussion Schedule

Friday, December 17

Moderated by: **Niamh Forde**

University of Leeds

Discussion Times:

3:00 am (CST)

9:00 am (GMT UK)

8:00 pm (Australia)

6:00 pm (Japan)

Friday, December 17

Moderated by: **Kate Loveland**

Hudson Institute of Medical Research

Discussion Time:

7:00 pm (EST)

Saturday, December 18

Discussion Times:

11:00 am (Australia)

9:00 am (Japan)

6:00 pm (CST)



zoom links will be available on the Annual Meeting Website:

<https://ssrannualmeeting.secure-platform.com/a/organizations/main/home>

SESSIONS AT-A-GLANCE

Session 1: Male Gametes in the Age of Precision Agriculture

Thursday, December 16 | 10:30 am – 12:00 pm | Page 55

Session 2: CHA Health Systems Symposium: Prenatal Programming From Different Perspectives

Thursday, December 16 | 10:30 am – 12:00 pm | Page 56

Session 3: Dr. Milton K.H. Leong Session: Immune Response to Infection in the Male Reproductive Tract

Thursday, December 16 | 10:30 am – 12:00 pm | Page 57

Session 4: The Placenta: Development and Functional Significance

Thursday, December 16 | 10:30 am – 12:00 pm | Page 58

Session 5: Anita Payne Session: Corpus Luteum Development

Thursday, December 16 | 10:30 am – 12:00 pm | Page 59

Session 6: New Technologies and Their Application to Reproductive Science

Thursday, December 16 | 1:30 pm – 3:00 pm | Page 60

Session 7: Steroid Hormones and Nuclear Receptor Actions

Thursday, December 16 | 1:30 pm – 3:00 pm | Page 62

Session 8: CRISPR in Animal Models

Thursday, December 16 | 1:30 pm – 3:00 pm | Page 63

Session 9: Sperm Capacitation and the Fertilization Process

Thursday, December 16 | 1:30 pm – 3:00 pm | Page 64

Session 10: Dr. Kwang Yul Cha Symposium on Regenerative Medicine: Reproductive Potential of Stem Cells

Thursday, December 16 | 1:30 pm – 3:00 pm | Page 65

Session 11: William Hansel Ovarian Biology Symposium: Pathways Controlling Folliculogenesis

Friday, December 17 | 1:30 pm – 3:00 pm | Page 67

Session 12: Testis Development and Function

Friday, December 17 | 1:30 pm – 3:00 pm | Page 68

Session 13: SRI-SSR Symposium: Maternal Effects on Reproductive Efficiency

Friday, December 17 | 1:30 pm – 3:00 pm | Page 69

Session 14: Cell Fate and Embryo Quality in Early Development

Friday, December 17 | 1:30 pm – 3:00 pm | Page 70

Session 15: Trainee Research Award: Pre-Doctoral Platform Competition

Friday, December 17 | 1:30 pm – 3:00 pm | Page 71

Session 16: The Virendra B. Mahesh Neuroendocrine Session

Saturday, December 18 | 10:30 am – 12:00 pm | Page 73

Session 17: Translational Medicine in Action

Saturday, December 18 | 10:30 am – 12:00 pm | Page 74

Session 18: MCI Session: Novel Methods of Contraception

Saturday, December 18 | 10:30 am – 12:00 pm | Page 75

Session 19: Agricultural Applications Symposia I: Novel Reproductive Biology Investigations in Domestic Livestock

Saturday, December 18 | 10:00 am – 12:00 pm | Page 76

Session 20: Reproductive Cancers

Saturday, December 18 | 10:30 am – 12:00 pm | Page 77

Session 21: Growing Tissues and Organs in Vitro

Saturday, December 18 | 1:30 pm – 3:00 pm | Page 78

Session 22: The John J. Eppig Session: Components of Oocyte Quality

Saturday, December 18 | 1:30 pm – 3:00 pm | Page 79

Session 23: Agricultural Applications Symposia II: Novel Reproductive Biology Investigations in Domestic Livestock

Saturday, December 18 | 1:30 pm – 3:00 pm | Page 80

Session 24: Endometrial Physiology and Maternal Recognition of Pregnancy

Saturday, December 18 | 1:30 pm – 3:00 pm | Page 81

Session 25: Environmental Endocrine Disruptors: From the Brain to the Gonad

Saturday, December 18 | 1:30 pm – 3:00 pm | Page 82


2021 SSR ANNUAL MEETING

DETAILED SCHEDULE

TUESDAY, DECEMBER 14


1:00 pm – 2:30 pm	TRAINEE FORUM St. Louis Union Station Hotel: Regency B
6:15 pm – 7:30 pm	TRAINEE HAPPY HOUR Maggie O'Brien's 2000 Market Street, St. Louis, MO Union Station


WEDNESDAY, DECEMBER 15

3:30 pm – 5:35 pm	 OPENING CEREMONIES St. Louis Union Station Hotel: Grand DEF
	KEYNOTE LECTURE Kent Thornburg , Oregon Health and Science University, USA The Placenta as a Conduit for Offspring Health and Disease
	BIOLOGY OF REPRODUCTION TOP RESEARCH ARTICLE AWARD Aritro Sen, PhD , Michigan State University, USA
	SSR NEW INVESTIGATOR LECTURE Sue Hammoud, PhD , Assistant Professor, University of Michigan, USA
	JANICE BAHR JUNIOR SCIENTIST TRAVEL AWARD Jean-Ju L. Chung, PhD , Assistant Professor, Yale University, USA
	FULLER W. BAZER SSR INTERNATIONAL SCIENTIST AWARD Shaw-Jenq (Sean) Tsai, PhD , Professor, National Cheng Kung University, Taiwan
	BURROUGHS WELLCOME TRAVEL FELLOWSHIPS
5:35 pm – 7:30 pm	OPENING RECEPTION St. Louis Union Station Hotel: Grand Hall

Thursday, December 16


8:00 am – 10:00 am	POSTER SESSION A St. Louis Union Station Hotel: Midway
8:00 am – 10:00 am	TRAINEE CAREER CENTER St. Louis Union Station Hotel: Midway 11
10:00 – 10:15	BREAK
10:30 am – 12:00 pm	AM FOCUS SESSIONS FOCUS SESSION 1: Male Gametes in the Age of Precision Agriculture St. Louis Union Station Hotel: Regency A Session Chair: Peter Sutovsky
10:30 am	S1.1 INVITED SPEAKER: <i>(Pre-Recorded)</i> Myung-Geol Pang, PhD , Chung-Ang University, Republic of Korea Proteomics of Boar Spermatozoa as it Relates to Fertility
11:00 am	S1.2 ORAL PRESENTATION Deep Learning Classification of Boar Sperm Morphology Karl Kerns , Iowa State University, USA
11:15 am	S1.3 ORAL PRESENTATION The Testicular Transcriptome of GnRHR-II Knockdown Boars Amy Desaulniers , University of Nebraska – Lincoln, USA
11:30 am	S1.4 ORAL PRESENTATION A Deleterious Single Nucleotide Polymorphism in the TAPE Domain of EML5 is Associated With Decreased Fertility in Angus Bulls Lauren Hamilton , University of Missouri, USA

<p>11:45 am</p>	<p>S1.5</p> <p>ORAL PRESENTATION</p> <p>Changes in Immune Cell Populations and Phenotype in Peripheral Blood Leukocytes of Dairy Cows and Heifers During Early Pregnancy</p> <p>Isabel Da Silva, The Pennsylvania State University</p>
<p>ON DEMAND ONLY</p>	<p>S1.6</p> <p>ORAL PRESENTATION (<i>Available on Demand Only</i>)</p> <p>Sperm Telomere Length Could be Related to a Delay in Embryo Development From Morula to Blastocyst</p> <p>Jordi Ribas-Maynou, Universitat de Girona</p>
<p>FOCUS SESSION 2: CHA Health Systems Symposium: Prenatal Programming From Different Perspectives</p> <p>St. Louis Union Station Hotel: Grand AB</p> <p>Session Chair: Martha Susiarjo</p>	
<p>10:30 am</p> 	<p>S2.1</p> <p>INVITED SPEAKER:</p> <p>CFAS Exchange Lecturer: <i>(Pre-Recorded)</i></p> <p>Sara Kimmins, PhD, McGill University, Canada</p> <p>Environmental Impacts on the Sperm Epigenome Associated with Fertility and Offspring Development</p>
<p>11:00 am</p>	<p>S2.2</p> <p>ORAL PRESENTATION</p> <p>Influence of Pre- and Postnatal Nutritional Extremes on Gonadotropin Secretion in a Bovine Model of Fasting-Mediated Hypersensitivity to Exogenous Leptin</p> <p>Tatiane Maia, Texas A&M University, USA</p>
<p>11:15 am</p>	<p>S2.3</p> <p>ORAL PRESENTATION</p> <p>Lactation Undernutrition Leads to Intergenerational Alterations In Reproductive Parameters of Male Progeny</p> <p>Alicja Zochowska-Klepanska, Polish Academy of Sciences, Poland</p>

<p>11:30 am</p>	<p>S2.4</p> <p>ORAL PRESENTATION</p> <p>A Preconception Paternal Fish Oil Diet is Associated with a Protective Gut Microbiome in Neonatal Mice</p> <p>Jelonia Rumph, Meharry Medical College, USA</p>
<p>11:45 am</p>	<p>S2.5</p> <p>ORAL PRESENTATION</p> <p>Transcriptome Differences in Reproductive Tissues Between Pregnancies of Heifers With High and Low Circulating PAG Concentrations in Early Gestation</p> <p>Gabriela Dalmaso de Melo, Texas A&M University, USA</p>
<p>FOCUS SESSION 3: Dr. Milton K.H. Leong Session: Immune Response to Infection in the Male Reproductive Tract</p> <p>St. Louis Union Station Hotel: Grand C</p> <p>Session Chair: Elizabeth Snyder</p>	
<p>10:30 am</p> 	<p>S3.1</p> <p>INVITED SPEAKER:</p> <p>Saguna Verma, PhD, John A. Burns School of Medicine, USA</p> <p>Zika and SARS-CoV-2 Viruses: What are They Doing to the Testis?</p>
<p>11:00 am</p>	<p>S3.2</p> <p>ORAL PRESENTATION</p> <p>Left-Right Asymmetry in Masculinization Program for the Paired Male</p> <p>Jillian Wilbourne, University of Wisconsin – Madison, USA</p>
<p>11:15 am</p>	<p>S3.3</p> <p>ORAL PRESENTATION</p> <p>Investigation of Conserved Testis-Specific Ubiquitin-Proteasome Genes as Contraceptive Targets</p> <p>Kaori Nozawa, Baylor College of Medicine, USA</p>

11:30	<p>S3.4</p> <p>ORAL PRESENTATION</p> <p>The cAMP/PKA/SIK/CRTC/CREB Pathway Stimulates Fetal Leydig Cell Androgen Synthesis During the Masculinization Programming Window in Mouse Fetal Testis</p> <p>Keer Jiang, University of Wisconsin School of Veterinary Medicine, USA</p>
11:45 am	<p>S3.5</p> <p>ORAL PRESENTATION</p> <p>Identification of Candidate Mitochondrial Inheritance Determinants Using the Mammalian Gamete-Based Cell-Free System</p> <p>Dalen Zuidema, University of Missouri, USA</p>
ON DEMAND ONLY	<p>S3.6</p> <p>ORAL PRESENTATION <i>(Available on Demand Only)</i></p> <p>Spatial Dynamics of Protein Translation in Sertoli Cells</p> <p>Ana Cristina Lima, Oregon Health & Science University</p>
<p>FOCUS SESSION 4: The Placenta: Development and Functional Significance</p> <p>St. Louis Union Station Hotel: Regency C</p> <p>Session Chair: Sathish Nataranjan</p>	
10:30 am	<p>S4.1</p> <p>INVITED SPEAKER:</p> <p>Loydie Jerome-Majewska, PhD, McGill University Health, Canada</p> <p>During Labyrinth Layer Formation TMED2 is Essential for Efficient Communication Between the Allantois and Chorion</p>
11:00 am	<p>S4.2</p> <p>ORAL PRESENTATION</p> <p>Involvement of Transcription Factor AP-2 Gamma in Trophoblast Cell Development and Placentation</p> <p>Esteban Dominguez, University of Kansas Medical Center, USA</p>



<p>11:15 am</p>	<p>S4.3</p> <p>ORAL PRESENTATION</p> <p>Spiral Arteriole Remodeling in the Rat Deep Placental Bed: The Progression of Changes in Early, Trophoblast-Independent Vessel Remodeling</p> <p>Sarah Bacon, Mount Holyoke College, USA</p>
<p>11:30 am</p>	<p>S4.4</p> <p>ORAL PRESENTATION</p> <p>Disrupting the CXCL12-CXCR4 Chemokine Axis at the Fetal-Maternal Interface Alters Placental Growth Trajectory and Preeclampsia Markers by Midgestation</p> <p>Ryan L Ashley, New Mexico State University, USA</p>
<p>11:45 am</p>	<p>S4.5</p> <p>ORAL PRESENTATION</p> <p>Circadian Rhythms in the Fetus and the Placenta Develop and Change during Gestation</p> <p>Keenan Bates, Washington University in St. Louis, USA</p>
<p>FOCUS SESSION 5: Anita Payne Session: Corpus Luteum Development</p> <p>St. Louis Union Station Hotel: Regency B</p> <p>Session Chair: Joy Pate</p>	
<p>10:30 am</p> 	<p>S5.1</p> <p>INVITED SPEAKER:</p> <p>Monika M. Kaczmarek, PhD, DSc, Institute of Animal Reproduction & Food Research, Poland</p> <p>Understanding the Role of Non-Coding RNAs in Corpus Luteum During Early Pregnancy</p>
<p>11:00 am</p>	<p>S5.2</p> <p>ORAL PRESENTATION</p> <p>Influence of Commercial Inactivated and Modified-Live Virus Vaccination at Time of AI on Corpus Luteum Function and Development in Beef Cattle</p> <p>Kaitlin Epperson, Texas A&M University Department of Animal Science, USA</p>

<p>11:15 am</p>	<p>S5.3</p> <p>ORAL PRESENTATION</p> <p>Characterization of Leukocytes in the Human Ovulatory Follicle</p> <p>Yohan Choi, University of Kentucky, USA</p>
<p>11:30 am</p>	<p>S5.4</p> <p>ORAL PRESENTATION</p> <p>Periovalutary Expression and Regulation of Neurotensin and its Receptors in the Mouse Ovary</p> <p>Ketan Shrestha, University of Kentucky, USA</p>
	<p>S5.5</p> <p>ORAL PRESENTATION</p> <p>Neuregulin-1 a Pro-Survival Factor in Luteal Cell</p> <p>Indrajit Chowdhury, Morehouse School of Medicine, USA</p>
<p>ON DEMAND ONLY</p>	<p>S5.6</p> <p>ORAL PRESENTATION (<i>Available on Demand Only</i>)</p> <p>Utero-Placental Expression of Hydroxysteroid 11-Beta Dehydrogenase 1 and -2 During Canine Pregnancy: Implications for Local Metabolism of Cortisol</p> <p>Miguel Pereira, University of Zurich (UZH), Switzerland</p>
<p>12:00 pm – 1:30 pm</p>	<p>BREAK</p>
<p>1:30 pm – 3:00 pm</p>	<p>PM FOCUS SESSIONS</p> <p>FOCUS SESSION 6: New Technologies and Their Application to Reproductive Sciences</p> <p>St. Louis Union Station Hotel: Regency A</p> <p>Session Chair: Xiaoqiu Wang</p>
<p>1:30 pm</p>	<p>S6.1</p> <p>INVITED SPEAKER:</p> <p>Nicole Hashemi, PhD, Iowa State University, USA</p> <p>Placenta-on-a-Chip: A Microphysiological Model of Placenta</p>



2:00 pm	<p>S6.2</p> <p>ORAL PRESENTATION</p> <p>A Newly Identified Cilium Controls Meiotic Chromosomal Pairing Mechanics and Germ Cell Morphogenesis in Zebrafish and Mouse</p> <p>Yaniv Elkouby, The Hebrew University of Jerusalem, Israel</p>
2:15 pm	<p>S6.3</p> <p>ORAL PRESENTATION</p> <p>Zinc Exocytosis During Egg Activation is Reduced in Post Ovulatory Aged Eggs</p> <p>Hoi Chang Lee, Department of Obstetrics and Gynecology, Northwestern University Feinberg School of Medicine, USA</p>
2:30 pm	<p>S6.4</p> <p>ORAL PRESENTATION</p> <p>3D-Printed Agarose Molds Compatible With Microphysiologic Integration Enable In Vitro Maturation of Mouse Oocytes in Size Specific Indentations</p> <p>Luhan Zhou, Northwestern University, USA</p>
2:45 pm	<p>S6.5</p> <p>ORAL PRESENTATION</p> <p>Whole Animal Pulse-Chase Isotope Labeling With Proteomic Analysis Identifies Extremely Long-Lived Proteins in the Mouse Ovary and Oocyte</p> <p>Karen Velez, Department of Obstetrics and Gynecology, Feinberg School of Medicine, Northwestern University, USA</p>
ON DEMAND ONLY	<p>S6.6</p> <p>ORAL PRESENTATION <i>(Available on Demand Only)</i></p> <p>Development of New Preservation Method for Mouse Freeze-Dried Spermatozoa Using Thin Plastic Sheet</p> <p>Daiyu Ito, University of Yamanashi, Japan</p>

FOCUS SESSION 7: Steroid Hormones and Nuclear Receptor Actions

St. Louis Union Station Hotel: **Grand AB**

Session Chair:

Rodolfo Cardoso

1:30 pm



S7.1

INVITED SPEAKER:

Ripla Arora, PhD, Michigan State University, USA

Hormonal Regulation of Pre-Implantation Embryo Movement

2:00 pm

S7.2

ORAL PRESENTATION

Androgen Actions in the Ovary

Aritro Sen, Michigan State University, USA

2:15 pm

S7.3

ORAL PRESENTATION

The Granulosa Cell Response to Luteinizing Hormone is Partly Mediated by YAP1-Dependent Induction of Amphiregulin

Philippe Godin, Université de Montréal, Canada

2:30 pm

S7.4

ORAL PRESENTATION

Novel Transgenic Mice Show Classical and Nonclassical Androgen Pathways Synergize for Optimal Spermatogenesis and Prostate Development

William Walker, University of Florida, USA


2:45 pm

S7.5

ORAL PRESENTATION

Rapid Progesterone Hormone Induction of Southern Flounder Sperm Hypermotility Through Multiple Signaling Pathways

Peter Thomas, University of Texas at Austin, USA

	<p>FOCUS SESSION 8: CRISPR in Animal Models</p> <p>St. Louis Union Station Hotel: Grand C</p> <p>Session Chair: Kiho Lee</p>
1:30 pm	<p>S8.1</p> <p>INVITED SPEAKER:</p> <p>Bhanu P. Telugu, PhD, University of Maryland, USA</p> <p>Unlocking the Translational Potential of Pig Models Using Genome Editors</p>
	
2:00 pm	<p>S8.2</p> <p>ORAL PRESENTATION</p> <p>Age-Dependent Regulation of N-Glycosylation Pathway Enzymes in Gonadotropes</p> <p>Rosemary McDonald, University of Colorado Anschutz Medical Campus, USA</p>
2:15 pm	<p>S8.3</p> <p>ORAL PRESENTATION</p> <p>Embryonic PPARG is Dispensable for Bovine Conceptus Elongation</p> <p>Pablo Bermejo-Alvarez, CSIC-INIA, Spain</p>
2:30 pm	<p>S8.4</p> <p>ORAL PRESENTATION</p> <p>Role of FSTL3 in Trophoblast Cell Lineage Development and Placentation</p> <p>Mikaela Simon, University of Kansas Medical Center, USA</p>
2:45 pm	<p>S8.5</p> <p>ORAL PRESENTATION</p> <p>Generation of GDF9-Null Pigs Using the CRISPR/Cas9 System</p> <p>Paula Chen, University of Missouri, USA</p>
ON DEMAND ONLY	<p>S8.6</p> <p>ORAL PRESENTATION (<i>Available on Demand Only</i>)</p> <p>DMRT1 is a Sex-Determining Gene in Rabbits</p> <p>Emilie Dujardin, INRAE, ENVA, BREED</p>

FOCUS SESSION 9: Sperm Capacitation and the Fertilization Process

St. Louis Union Station Hotel: **Regency C**

Session Chair:

Tracy Clement

1:30 pm



S9.1

INVITED SPEAKER:

Anne Carlson, PhD, University of Pittsburgh, USA

Signaling Mechanisms of the Fast Block to Polyspermy In *Xenopus Laevis*

2:00 pm



S9.2

INVITED SPEAKER:

SRB Exchange Lecturer:

(Pre-Recorded)

John Schjenken, PhD, The University of Newcastle, Australia

Paternal Environment and Seminal Fluid Composition and Function

2:30 pm

S9.3

ORAL PRESENTATION

Sperm Tracking Toward The Oocyte: In Vitro and In Vivo

Kohei Umezu, Baylor College of Medicine, USA


2:45 pm


S9.4

ORAL PRESENTATION




Participation of the Ubiquitin-Proteasome System in Sperm Surface Proteome Remodeling During Capacitation


Michal Zigo, Division of Animal Sciences, University of Missouri, USA

	<p>FOCUS SESSION 10: Dr. Kwang Yul Cha Symposium on Regenerative Medicine: Reproductive Potential of Stem Cells</p> <p>St. Louis Union Station Hotel: Regency B</p> <p>Session Chair: Ye Yuan</p>
1:30 pm	<p>S10.1</p> <p>INVITED SPEAKER:</p> <p>Jianping Fu, PhD, University of Michigan, USA</p> <p>Synthetic Human Embryo-Like Structure: A New Paradigm for Human Embryology</p>
	
2:00 pm	<p>S10.2</p> <p>ORAL PRESENTATION</p> <p>Novel 3D Culture System to Examine BMP-Dependent Human Amniogenesis</p> <p>Nikola Sekulovski, Medical College of Wisconsin, USA</p>
2:15 pm	<p>S10.3</p> <p>ORAL PRESENTATION</p> <p>Modeling Extra-Embryonic Mesoderm Lineage Development With Human Induced Pluripotent Stem Cells</p> <p>Zukai Liu, The Jackson Laboratory for Genomic Medicine, USA</p>
2:30 pm	<p>S10.4</p> <p>ORAL PRESENTATION</p> <p>Apical Morphogenesis in a Human Epiblast Model is Driven by AP-1 Clathrin Adaptor Complex-Dependent Trafficking Machinery</p> <p>Amber Carleton, Medical College of Wisconsin, USA</p>
2:45 pm	<p>S10.5</p> <p>ORAL PRESENTATION</p> <p>The Autophagy Protein Beclin 1 is Required for Uterine Development and Receptivity During Pregnancy</p> <p>Pooja Popli, Washington University in St. Louis, USA</p>
3:00 pm – 3:30 pm	BREAK

<p>3:30 pm – 5:45 pm</p>	<p>PLENARY SESSION I St. Louis Union Station Hotel: Grand DEF</p>
	<p>PRESIDENT’S SYMPOSIUM I, DIVERSITY KEYNOTE (<i>Live Stream</i>) Kathryn Clancy, University of Illinois, USA The Science of Gender Harassment</p>
	<p>CARL G. HARTMAN AWARD Asgi Fazleabas, PhD, University Distinguished Professor and Associate Chair of Research Michigan State University, USA</p>
	<p>HERITAGE AWARDEE TALK Tribute to: Dr. Gordon Niswender Terry M. Nett, PhD, Colorado State University, USA</p>
	<p>SSR DISTINGUISHED FELLOWS</p>
	<p>SSR TRAINEE MENTOR AWARD Joy Pate, PhD, Professor, Penn State University, USA</p>
<p style="text-align: center;">Friday, December 17</p>	
<p>8:00 am – 10:00 am</p>	<p>POSTER SESSION B St. Louis Union Station Hotel: Midway</p>
<p>8:00 am – 10:00 am</p>	<p>TRAINEE CAREER CENTER St. Louis Union Station Hotel: Midway 11</p>
<p>10:00 am – 10:15 am</p>	<p>BREAK</p>
<p>10:30 am – 12:00 pm</p>	<p>JACKSON NTEEBA TRAINEE RESEARCH AWARD POST-DOCTORAL PLATFORM COMPETITION FINALIST (<i>Post-Doctoral Platform Competition</i>) St. Louis Union Station Hotel: Grand DEF</p>
<p>10:30 am</p>	<p>PC1: Detecting Testosterone Induced Placental Inflammation Using Contrast-Enhanced Ultrasonography with Phosphatidylserine Microbubbles Rachel Wilson, Oregon Health and Science University, USA</p>
<p>10:45 am</p>	<p>PC2: Testis-Specific X-Linked Mir-506 Family Regulates Sperm Competition Zhuqing Wang, The Lundquist Institute, USA</p>

11:00 am	<p>PC3: The Spatial Transcriptomic Analysis of the Mouse Uterine Microenvironment at Early Pregnancy</p> <p>Rong Li, National Institute of Environmental Health Sciences, USA</p>
11:15 am	<p>PC4: New Insights into Oocyte Behaviors During Mammalian Oviductal Transport</p> <p>Deirdre Scully, Baylor College of Medicine, USA</p>
11:30 am	<p>PC5: Integration of Mouse Ovary Morphogenesis with Developmental Dynamics of the Oviduct, Ovarian Ligaments, and Rete Ovarii</p> <p>Jennifer McKey, Duke University Medical Center, USA</p>
11:45 am	<p>PC6: CITED2 Regulates Placentation and the Invasive Trophoblast Cell Phenotype</p> <p>Marija Kuna, University of Kansas Medical Center, USA</p>
12:00 pm – 1:15 pm	<p>TRAINEE DIVERSITY LUNCH St. Louis Union Station Hotel: Frisco/Burlington</p> <p>Making a More Inclusive Scientific Society</p> <p>Panelists: Elizabeth Bonney, PhD, University of Vermont Medical Center John Parrish, PhD, University of Wisconsin – Madison Olga Bolden-Tiller, PhD, Tuskegee University Lindsey S. Treviño, PhD, City of Hope</p>
1:30 pm – 3:00 pm	<p>PM FOCUS SESSIONS</p> <p>St. Louis Union Station Hotel: Regency A</p> <p>FOCUS SESSION 11: William Hansel Ovarian Biology Symposium: Pathways Controlling Folliculogenesis</p> <p>Session Chair: Wipawee “Joy” Winuthayanon</p>
1:30 pm 	<p>S11.1</p> <p>INVITED SPEAKER:</p> <p><i>(Pre-Recorded)</i> Christopher A. Price, PhD, University of Montreal, Canada</p> <p>Fibroblast Growth Factor-18 and Fertility in Ruminants</p>

<p>2:00 pm</p> 	<p>S11.2</p> <p>INVITED SPEAKER:</p> <p>Holly A. LaVoie, PhD, University of South Carolina, USA</p> <p>Transcriptional Targets During Follicular Differentiation in the Pig: A Comparative Approach</p>
<p>2:30 pm</p>	<p>S11.3</p> <p>ORAL PRESENTATION</p> <p>Hyaluronan Synthesis is Required for Preantral Follicle Growth in the Mouse</p> <p>Farners Amargant I Riera, Department of Obstetrics and Gynecology, Feinberg School of Medicine, Northwestern University, USA</p>
<p>2:45 pm</p>	<p>S11.4</p> <p>ORAL PRESENTATION</p> <p>Androgen Receptor, NR5A1 and NR2F2 Interactions in Regulation of Ovarian Theca Cell Functions: Steroidogenesis, Expression of VCAM1 and Features of Polycystic Ovary Syndrome</p> <p>Nicholes Candelaria, Baylor College of Medicine, USA</p>
<p>FOCUS SESSION 12: Testis Development and Function</p> <p>St. Louis Union Station Hotel: Grand AB</p> <p>Session Chair: Sue Hammoud</p>	
<p>1:30 pm</p> 	<p>S12.1</p> <p>INVITED SPEAKER:</p> <p><i>(Pre-Recorded)</i></p> <p>Guy Tanentzapf, PhD, The University of British Columbia, Canada</p> <p>Elucidating how the Soma Controls the Developmental Program of Spermatogenesis</p>
<p>2:00 pm</p> 	<p>S12.2</p> <p>INVITED SPEAKER:</p> <p>Chen Chen, PhD, MS, Michigan State University, USA</p> <p>Pachytene piRNA Biogenesis in Mice</p>

<p>2:30 pm</p>	<p>S12.3</p> <p>ORAL PRESENTATION</p> <p>ADAD2, a Testis-Specific RNA Binding Protein, Interacts With RNF17 and may Influence piRNAs in the Male Germ Cell</p> <p>Lauren Chukrallah, Rutgers University, USA</p>
<p>2:45 pm</p>	<p>S12.4</p> <p>ORAL PRESENTATION</p> <p>Patterning The Antero-Posterior and Dorso-Ventral Axes of the Female Reproductive Tract is Dependent on Amhr2+ Mesenchyme in Mice</p> <p>Shuai Jia, School of Veterinary Medicine, UW – Madison, USA</p>
<p>FOCUS SESSION 13: SRI-SSR Symposium: Maternal Effects on Reproductive Efficiency</p> <p>St. Louis Union Station Hotel: Grand C</p> <p>Session Chair: Ewelina Bolcun-Filas</p>	
<p>1:30 pm</p> 	<p>S13.1</p> <p>INVITED SPEAKER:</p> <p>SRI Exchange Lecturer: Elizabeth Bonney, MD, MPH, University of Vermont, USA</p> <p>Maternal CD8 T-Cells: Unique Phenotype and Function</p>
<p>2:00 pm</p>	<p>S13.2</p> <p>ORAL PRESENTATION</p> <p>CCAAT/Enhancer Binding Proteins Alpha and Beta are Required for Preovulatory Vascular Remodeling Processes That are Crucial for Ovulation</p> <p>Yi Ren, Department of Animal Science, Cornell University, USA</p>
<p>2:15 pm</p>	<p>S13.3</p> <p>ORAL PRESENTATION</p> <p>Intra-Ovarian Factors Contributes to Inflammation and Follicle Arrest in the High A4 Cow Ovarian Microenvironment</p> <p>Brooke Bell, Department of Animal Science, University of Nebraska – Lincoln, USA</p>

2:30 pm

S13.4

ORAL PRESENTATION

Ovarian Inflammation Increases Oocyte Maternal mRNAs During Maturation and Alters Expression of Cumulus Regulatory Genes Resulting in Reduced Developmental Competence

Alison Ermisch, University of Nebraska – Lincoln, USA

S13.5

ORAL PRESENTATION

Hyperphagia-Induced Obesity Reduces the Ovarian Reserve and Alters the Proteome but does not Impact Circulating Prolactin Level

Crystal Roach, Iowa State University, USA

ON DEMAND ONLY

S13.6

ORAL PRESENTATION *(Available on Demand Only)*

A Homozygous Missense Variant in a Large Subunit Protein of the Mitochondrial Ribosome, MRPL50, Causes Syndromic Premature Ovarian Insufficiency

Shabnam Bakhshalizadeh, University of Melbourne, Australia

ON DEMAND ONLY

S13.7

ORAL PRESENTATION *(Available on Demand Only)*

Inhibin Inactivation in Female Mice Leads to Elevated Follicle Stimulating Hormone Levels, Ovarian Stimulation and Reproductive Failure

Kelly Walton, Monash University, Australia

FOCUS SESSION 14: Cell Fate and Embryo Quality in Early Development

St. Louis Union Station Hotel: **Regency C**

Session Chair:

Sathish Nataranjan

1:30 pm



S14.1


INVITED SPEAKER:

(Pre-Recorded)

Chii Jou Chan, PhD, European Molecular Biology Laboratory, Germany

Mechanochemical Feedback Control in Early Mammalian Development

2:00 pm	<p>S14.2</p> <p>INVITED SPEAKER:</p> <p>SRF Exchange Lecturer: Jane Fenelon, PhD, University of Melbourne, USA</p> <p>Putting Pregnancy on Pause: How Important is the Polyamine Pathway?</p>
2:30 pm	<p>S14.3</p> <p>ORAL PRESENTATION</p> <p>Two Distinct Syncytiotrophoblast Types are Revealed by Single Nucleus RNA Sequence (snRNAseq) Analysis of Trophoblast Derived From Primed-Type Human Pluripotent Stem Cell</p> <p>Teka Khan, University of Missouri, University of Missouri, USA</p>
2:45 pm	<p>S14.4</p> <p>ORAL PRESENTATION</p> <p>The Role of NEAT1 and Paraspeckles in Human Placental Syncytiotrophoblast</p> <p>Gargi Jaju, Western University, Canada</p>
<p>FOCUS SESSION 15: Trainee Research Award: Pre-Doctoral Platform Competition</p> <p>St. Louis Union Station Hotel: GRAND DEF</p> <p>Session Chair: Melissa Pepling</p> <p><i>(The SSR Pre-Doctoral Platform Awards are supported by Dr. T. Rajendra Kumar through the Makowski Family Endowment at the University of Colorado Anschutz Medical Campus)</i></p>	
1:30 pm	<p>S15.1</p> <p>Analysis of Fibroblast and Myofibroblast Marker Expression in the Human Ovarian Cortex Across Age</p> <p>Hannah Anvari, Northwestern University, USA</p>
1:45 pm	<p>S15.2</p> <p>GCM1 is a Critical Regulator of Human Extravillous Trophoblast Development and Function</p> <p>Mariyan Jeyarajah, Western University, USA</p>

2:00 pm	<p>S15.3</p> <p>Endometriosis Leads to Altered Glial Morphology and Activation in the Brains of Mice in a Mouse Model of Endometriosis</p> <p>Shah Tauseef Bashir, University of Illinois at Urbana – Champaign, USA</p>
2:15 pm	<p>S15.4</p> <p>Sire Influences on Trophectoderm Development in Cattle</p> <p>Jason Rizo, University of Missouri, Columbia</p>
2:30 pm	<p>S15.5</p> <p>The Consequences of Prolonged M-Phases in Mammalian Oocytes and Embryos</p> <p>Adélaïde Allais, Université de Montréal, Canada</p>
2:45 pm	<p>S15.6</p> <p>Signaling Mechanisms for Actions of DKK1 on Cell Numbers in the Preimplantation Bovine Embryo</p> <p>Thiago Amaral, University of Florida, USA</p>
3:00 pm – 3:30 pm	BREAK
3:30 pm – 5:45 pm	<p>PLENARY SESSION II</p> <p>St. Louis Union Station Hotel: Grand DEF</p> <p>PRESIDENT SYMPOSIUM II LECTURE <i>(Live Stream)</i></p> <p>Robin Lovell-Badge, The Francis Crick Institute, UK</p> <p>Chromatin Landscapes and Sex Determination, and the Storm of Genome Edited Babies</p>
	<p>SSR RESEARCH AWARD</p> <p>Jeremy Wang, MD, PhD, Professor, University of Pennsylvania School of Veterinary Medicine, USA</p>
	<p>SSR JANSEN DISTINGUISHED LEADERSHIP AND SERVICE AWARD</p> <p><i>(Pre-Recorded)</i></p> <p>Bernard Robaire, PhD, Professor, McGill University, Canada</p>
	GATES FOUNDATION POSTER AWARD
	LALOR FOUNDATION MERIT AWARDS



STATE OF THE ART I LECTURE

Giuliano Testa, MD, FACS, MBA, Baylor University Medical Center at Dallas, USA

Liza Johannesson, MD, PhD, Baylor University Medical Center at Dallas, USA

Uterus Transplantation as a Solution to Absolute Uterine Infertility

Saturday, December 18

7:00 am – 8:00 am

WinRS BREAKFAST/SUBCOMMITTEE MEETING

St. Louis Union Station Hotel: **NY/Illinois**

8:00 am – 10:00 am

POSTER SESSION C

St. Louis Union Station Hotel: **Midway**

8:00 am – 10:00 am

TRAINEE CAREER CENTER

St. Louis Union Station Hotel: **Midway 11**

10:00 am – 10:15 am

BREAK

10:30 am – 12:00 pm

AM FOCUS SESSIONS

FOCUS SESSION 16: The Virendra B. Mahesh Neuroendocrine Session

St. Louis Union Station Hotel: **Regency A**

Session Chair:

Djurdjica Coss

10:30 am





S16.1

INVITED SPEAKER:




SRB Exchange Lecturer:




Michael Lehman, PhD, University of Mississippi Medical Center, USA


KNDy Cells and Beyond: New Insights Into the Brain's Control of Reproduction


11:00 am	S16.2
	<p>INVITED SPEAKER:</p> <p><i>(Pre-Recorded)</i></p> <p>Jennifer F. Thorson, PhD, Montana State University, USA</p> <p>Hypothalamic Perception of Energetic Status and Drivers of Reproduction: Neuronal and Non-Neuronal Plasticity in the Arcuate Nucleus of the Adult Ewe</p>
11:30 am	S16.3
	<p>ORAL PRESENTATION</p> <p>Premature Reproductive Senescence Due to Fragile X Gene Mutation</p> <p>Pedro Villa, University of California, Riverside, USA</p>
11:45 am	S16.4
	<p>ORAL PRESENTATION</p> <p>GnRH-II and its Receptor Regulate Hormone Secretory Profiles During the Estrous Cycle of Pubertal Gilts</p> <p>Caitlin Ross, University of Nebraska – Lincoln, Department of Animal Science, USA</p>
FOCUS SESSION 17: Translational Medicine in Action	
<p>St. Louis Union Station Hotel: Grand AB</p> <p>Session Chair: Rachel West</p>	
10:30 am	S17.1
	<p>INVITED SPEAKER:</p> <p>ASRM Exchange Lecturer:</p> <p><i>(Pre-Recorded)</i></p> <p>Nannette F. Santoro, PhD, University of Colorado Anschutz Medical Campus, USA</p> <p>The Reprometabolic Syndrome: How Obesity Impairs Fertility</p>



<p>11:00 am</p> 	<p>S17.2</p> <p>INVITED SPEAKER:</p> <p><i>(Pre-Recorded)</i></p> <p>Graca Almeida-Porada, MD, PhD, Wake Forest School of Medicine</p> <p>Sheep as a Large Animal Model for Human Disease and Regenerative Medicine</p>
<p>11:30 am</p>	<p>S17.3</p> <p>ORAL PRESENTATION</p> <p>Upregulation of Ovarian Immune Response Pathways after Testosterone Cessation in a Transgender Mouse Model</p> <p>Hadrian Kinnear, University of Michigan, Program in Cellular and Molecular Biology, Medical Scientist Training Program, USA</p>
<p>11:45 am</p>	<p>S17.3</p> <p>ORAL PRESENTATION</p> <p>Single Cell Analysis of Endometriosis Reveals a Coordinated Transcriptional Program Driving Immunotolerance and Angiogenesis Across Eutopic and Ectopic Tissues</p> <p>Yuliana Tan, The Jackson Laboratory for Genomic Medicine, USA</p>
<p>FOCUS SESSION 18: MCI Session: Novel Methods of Contraception</p> <p>St. Louis Union Station Hotel: Grand C</p> <p>Session Chair:</p> <p>Wipawee “Joy” Winuthayanon</p>	
<p>10:30 am</p> 	<p>S18.1</p> <p>INVITED SPEAKER:</p> <p><i>(Pre-Recorded)</i></p> <p>Stephanie Page, MD, PhD, University of Washington, USA</p> <p>The Male Pill: Game Changer or Pipe Dream?</p>





<p>11:00 am</p> 	<p>S18.2</p> <p>INVITED SPEAKER:</p> <p>Polina Lishko, PhD, University of California, Berkley, USA</p> <p>Mitochondrial Uncouplers and Protonophores: A Pathway Towards Non-Hormonal Contraception</p>
<p>11:30 am</p>	<p>S18.3</p> <p>ORAL PRESENTATION</p> <p>From Cancer to Contraceptive: Repurposing PSA Inhibitors as a Novel Non-Hormonal Contraceptive Target</p> <p>Jeffery Erickson, Washington State University, USA</p>
<p>11:45 am</p>	<p>S18.4</p> <p>ORAL PRESENTATION</p> <p>A High-Throughput Platform for Screening Nonhormonal Female Contraceptives</p> <p>Yuping Huang, Department of Physiology and Neurobiology, University of Connecticut, USA</p>
<p>10:00 am – 12:00 pm</p> <p><i>NOTE: This is the only session beginning at 10:00 am</i></p>	<p>AM FOCUS SESSION 19: Agricultural Applications Symposia I: Novel Reproductive Biology Investigations in Domestic Livestock</p> <p>St. Louis Union Station Hotel: Regency C</p> <p>Session Chair: Benjamin Beaton</p>
<p>10:00 am</p> 	<p>S19.1</p> <p>INVITED SPEAKER:</p> <p>Anna Carolina Denicol, PhD, DVM, University of California – Davis, USA</p> <p>New Roles of FSH in Development of Ovarian Preantral Follicles</p>
<p>10:30 am</p> 	<p>S19.2</p> <p>INVITED SPEAKER:</p> <p>Dawit Tesfaye, Associate Professor, Colorado State University, USA</p> <p>Deciphering the miRNA Cargo of Extracellular Vesicles in Bovine Follicular Fluid: Implication for Development of Noninvasive Biomarkers</p>

<p>11:00 am</p> 	<p>S19.3</p> <p>INVITED SPEAKER:</p> <p>Sophia Ortega, Assistant Professor, University of Missouri, USA</p> <p>Beyond Fertilization: Sire Effects on Early Development of the Bovine</p>
<p>11:30 am</p> 	<p>S19.4</p> <p>INVITED SPEAKER:</p> <p>David Miller, Professor, University of Illinois, USA</p> <p>Sperm Storage and Release in the Oviduct: Time Release Fertile Sperm?</p>
<p>FOCUS SESSION 20: Reproductive Cancers</p> <p>St. Louis Union Station Hotel: Regency B</p> <p>Session Chair: So-Youn Kim</p>	
<p>10:30 am</p> 	<p>S20.1</p> <p>INVITED SPEAKER:</p> <p>Jennifer K. Richer, PhD, University of Colorado, USA</p> <p>Breast Cancer Co-Opts a Placental-Like Program of Immune Suppression</p>
<p>11:00 am</p>	<p>S20.2</p> <p>ORAL PRESENTATION</p> <p>Impact of Chemotherapy Prior to Ovarian Tissue Cryopreservation on Primordial Follicles in Pre-Pubertal and Young Adult Patients</p> <p>Melody Devos, Research Laboratory on Human Reproduction, Université Libre de Bruxelles (ULB), Belgium</p>
<p>11:15 am</p>	<p>S20.3</p> <p>ORAL PRESENTATION</p> <p>The Underlying Mechanism of Cyclophosphamide-Induced Oocyte Depletion in the Ovary</p> <p>Yi Luan, University of Nebraska Medical Center, USA</p>

<p>11:30 am</p>	<p>S20.4</p> <p>ORAL PRESENTATION</p> <p>Understanding the Influence of Obesity on the Endometrium Using Human Primary Endometrial Organoids</p> <p>Alina Murphy, Northwestern University, USA</p>
<p>11:45 am</p>	<p>S20.5</p> <p>ORAL PRESENTATION</p> <p>Investigating the Role of PAX8 in Modulating the Tumor Microenvironment of High-Grade Serous Ovarian Cancer</p> <p>Amrita Salvi, University of Illinois, Chicago, USA</p>
<p>ON DEMAND ONLY</p>	<p>S20.6</p> <p>ORAL PRESENTATION <i>(Available on Demand Only)</i></p> <p>APOBEC Mutation Signature Associated with Black but not White Endometrial Cancer Patients</p> <p>Grace Foley, Northwestern University</p>
<p>12:00 pm – 1:15 pm</p>	<p>TRAINEE MENTOR LUNCH</p> <p>St. Louis Union Station Hotel: NY/Illinois</p>
<p>1:15 pm – 1:30 pm</p>	<p>BREAK</p>
<p>1:30 pm – 3:00 pm</p>	<p>PM FOCUS SESSIONS</p> <p>FOCUS SESSION 21: Growing Tissues and Organs In Vitro</p> <p>St. Louis Union Station Hotel: Regency A</p> <p>Session Chair: Julie Kim</p>
<p>1:30 pm</p> 	<p>S21.1</p> <p>INVITED SPEAKER:</p> <p>Shuo Xiao, PhD, MS, University of South Carolina, USA</p> <p>In Vitro Ovarian Tissue Culture for Female Reproductive Toxicity Screening</p>

<p>2:00 pm</p>	<p>S21.2</p> <p>ORAL PRESENTATION</p> <p>Evaluation of a 3D-Culture System of Bovine Oviductal Epithelial Cells Based on the Morphology Of Cysts</p> <p>Yosuke Sugino, Okayama University, Okayama, Japan</p>
<p>2:15 pm</p>	<p>S21.3</p> <p>ORAL PRESENTATION</p> <p>Development of a Novel Murine Extrafollicular Organoid Model to Study the Ovarian Stroma</p> <p>Madison Gowett, Northwestern University, USA</p>
<p>2:30 pm</p>	<p>S21.4</p> <p>ORAL PRESENTATION</p> <p>Three-Dimensional Hydrogels for Modeling the Endometrium and Trophoblast Motility</p> <p>Samantha Zambuto, University of Illinois Urbana – Champaign, USA</p>
<p>2:45 pm</p>	<p>S21.5</p> <p>ORAL PRESENTATION</p> <p>Three-Dimensional Biofabrication of Self-Supporting Perfused Tissues of Endometriosis and Endometriosis-Associated Ovarian Cancers</p> <p>Yuliya Klymenko, Indiana University School of Medicine, USA</p>
<p>FOCUS SESSION 22: The John J. Eppig Session: Components of Oocyte Quality</p> <p>St. Louis Union Station Hotel: Grand AB</p> <p>Session Chair: Francesca Duncan</p>	
<p>1:30 pm</p> 	<p>S22.1</p> <p>INVITED SPEAKER:</p> <p>FASEB Exchange Lecturer: Karen A. Schindler, PhD, Rutgers University, USA</p> <p>Understanding the Genetic Contributions to Making a Healthy Egg</p>

<p>2:00 pm</p> 	<p>S22.2</p> <p>INVITED SPEAKER:</p> <p>Ye Yuan, PhD, Colorado Center for Reproductive Medicine, USA</p> <p>Oocyte In Vitro Maturation, From Bench to Bedside</p>
<p>2:30 pm</p>	<p>S22.3</p> <p>ORAL PRESENTATION</p> <p>Aurora Kinase B negatively Regulates Aurora Kinase a to Control Maternal mRNA Translation in Mouse Oocytes</p> <p>Mansour Aboelenain, Department of Genetics, Rutgers University, USA</p>
<p>2:45 pm</p>	<p>S22.4</p> <p>ORAL PRESENTATION</p> <p>Oscillations in PP1 Activity are Essential for Accurate Progression Through Murine Oocyte Meiosis</p> <p>Nicole Camlin, Department of Biological Sciences, Purdue University, USA</p>
<p>1:30 pm – 3:00 pm</p> <p>PM FOCUS SESSION 23: Agricultural Applications Symposia II: Novel Reproductive Biology Investigations in Domestic Livestock</p> <p>St. Louis Union Station Hotel: Grand C</p> <p>Session Chair: Ahmed Balboula</p>	
<p>1:30 pm</p> 	<p>S23.1</p> <p>INVITED SPEAKER:</p> <p>Angela Pannier, Professor, University of Nebraska – Lincoln, USA</p> <p>In Vitro Culture of Porcine Embryos Within an Alginate Hydrogel Matrix</p>

<p>2:00 pm</p> 	<p>S23.2</p> <p>INVITED SPEAKER:</p> <p>Mario Binelli, PhD, Assistant Professor, University of Florida, USA</p> <p>Early Embryo-Endometrium Dialogues in Cattle</p>
<p>2:30 pm</p> 	<p>S23.3</p> <p>INVITED SPEAKER:</p> <p>Irina Poljaeva, Department of Animal, Utah State University, USA</p> <p>Small Ruminant Models for Agricultural and Biomedical Applications</p>
<p>FOCUS SESSION 24: Endometrial Physiology and Maternal Recognition of Pregnancy</p> <p>St. Louis Union Station Hotel: Regency C</p> <p>Session Chair: Rachel Wilson</p>	
<p>1:30 pm</p> 	<p>S24.1</p> <p>INVITED SPEAKER:</p> <p>SRF Exchange Lecturer: <i>(Pre-Recorded)</i></p> <p>Douglas A. Gibson, PhD, University of Edinburgh</p> <p>Mechanisms of Endometrial Repair and Regeneration</p>
<p>2:00 pm</p> 	<p>S24.2</p> <p>INVITED SPEAKER:</p> <p><i>(Pre-Recorded)</i></p> <p>Susanne E. Ulbrich, PhD, ETH Zurich, Germany</p> <p>Embryonic Diapause: Pluripotent Stem Cells Placed on Hold</p>
<p>2:30 pm</p>	<p>S24.3</p> <p>ORAL PRESENTATION</p> <p>Uterine Endometrium Regeneration and the Role of IL-22</p> <p>Umida Ganieva, Rosalind Franklin University of Medicine and Science, USA</p>

2:45 pm

S24.4

ORAL PRESENTATION

Functional Roles of Adrenomedullin in Peri-Implantation Conceptus Development in Pigs

Bangmin Liu, Department of Animal Science, North Carolina State University, USA

FOCUS SESSION 25: Environmental Endocrine Disruptors: From the Brain to the Gonad

St. Louis Union Station Hotel: **Regency B**

Session Chair:

Aileen Keating

1:30 pm



S25.1

INVITED SPEAKER:

(Pre-Recorded)

Almudena Viega-Lopez, BS, DVM, PhD, Michigan State University, USA

Emerging Bisphenols and Placental Trophoblast Dysfunction

2:00 pm

S25.2

ORAL PRESENTATION

Tributyltin and High-Refined Carbohydrate Diet Lead to Metabolic and Reproductive Abnormalities, Exacerbating Premature Ovary Failure Features in the Female Rats

Jones Graceli, Federal University of Espirito Santo, Brazil



2:15 pm

S25.3

ORAL PRESENTATION

Early Postnatal Exposure to Di(2-Ethylhexyl) Phthalate Causes Sex-Specific Disruption of Gonadal Development in Pigs

Genoa Warner, University of Illinois at Urbana – Champaign, USA

2:30 pm	<p>S25.4</p> <p>ORAL PRESENTATION</p> <p>Impaired Decidualisation in Obese Mice is Associated With Epigenetically Mediated Changes in Leptin Signalling</p> <p>Edyta Walewska, Institute of Animal Reproduction and Food Research of PAS, Olsztyn, Poland</p>
2:45 pm	<p>S25.5</p> <p>ORAL PRESENTATION</p> <p>In Utero TCDD Exposure Promotes an Endometriosis-Like Inflammatory Environment in the Peritoneal Cavity and Uteri of Adult Mice</p> <p>Victoria Stephens, Vanderbilt University, USA</p>
3:00 pm – 3:30 pm	<p>BREAK</p> <p>St. Louis Union Station Hotel: Midway</p>
3:30 pm – 6:15 pm	<p>PLENARY SESSION III</p> <p>St. Louis Union Station Hotel: Grand DEF</p> <p>Plenary Session III: State of the Art II Lecture</p> <p><i>(Live Stream)</i></p> <p>Nicolas Rivron, Institute of Molecular Biotechnology, Austrian Academy of Science</p> <p>Blastoids: Modelling the Mouse Conceptus and In Utero Implantation Using Stem Cells</p>
	
	<p>SSR BEST INTERNATIONAL ABSTRACTS</p>
	<p>USDA NIFA AFRI MERIT AWARDS</p>
	<p>PRESIDENT SYMPOSIUM III LECTURE</p> <p><i>(Live Stream)</i></p> <p>Evelyn Telfer, University of Edinburgh</p> <p>New Developments in Human in Vitro Folliculogenesis</p>
	<p>TRAINEE TRAVEL AWARDS</p>
	<p>SSR TRAINEE RESEARCH AWARDS</p>

7:00 pm – 10:00 pm

CLOSING RECEPTION

Midway East & St. Louis Aquarium at Union Station

Join us for an exciting SSR Closing Reception at the St. Louis Aquarium, which is located within the hotel complex! Enjoy good food, drinks, and entertainment. Put on your dancing shoes and let the good times roll!



SCHEDULE | SATURDAY | CONTINUED



FLASH TALKS

The 2021 Flash Talks will be pre-recorded and available to view online beginning December 5.

Please visit the annual meeting website (<https://ssrannualmeeting.secure-platform.com/a/organizations/main/home>) to view the Flash Talks

FT1: Investigating the Role of Notch Signaling in Endometrial Mesenchymal Stem-Like Cells

Sisi Zhang, Department of Obstetrics and Gynecology, The University of Hong Kong, China

FT2: Steroidogenic Factor 1 Plays An Essential Role In The Hypothalamic-Pituitary-Ovarian Axis Of Adult Female Mice

Olivia Smith, Université de Montréal, Canada

FT3: Human Trophoblast Exhibit Divergent Susceptibilities to Dengue and Zika Virus Infections

Megan Sheridan, University of Missouri, USA

FT4: Role of Aryl Hydrocarbon Receptor Nuclear Translocator in Placental Development

Vinay Shukla, University of Kansas Medical Center, USA

FT5: Spontaneous Calcium Signaling in Mouse Testis is Modulated by Age, Cell Type, and Endocrinal State

Justine Fiscoeder, RWTH Aachen University, Germany

FT6: Effects of Prenatal and Lactational Exposure to Iodoacetic Acid on the F1 Generation of Mice

Andressa Varella Gonsioroski, University of Illinois at Urbana – Champaign, USA

FT7: Mouse Ovarian Follicles From Encapsulated In Vitro Follicle Growth (eIVFG) Preserve Molecular Signatures of Mammalian Ovulation

Jiyang Zhang, Northwestern University, USA

FT8: Natural Killer Cells Mediate Vascular Remodeling Through Ephrin-B2

Katharine Wolf, Rosalind Franklin University of Medicine and Science, USA

FT9: Loss of TUBB Is Not “Beta” for the Equine Pregnancy

Charlotte Shilton, Royal Veterinary College

FT10: Characterization of Spermatogonia and Sertoli Cells from Juvenile Mice using Single-Channel Electrophysiology

Lina Kenzler, Department of Chemosensation, RWTH Aachen University, Germany

FT11: Ovine Utero-Placental Tissues Metabolize Creatine During Pregnancy to Support Conceptus Development

Nirvay Sah, Department of Animal Science, Texas A & M University, USA

FT12: Deletion of Negative Elongating Factor B in Sertoli Cells Leads to Disruption of Sperm Annulus and Infertility

Helena Zomer, University of Illinois at Urbana-Champaign, USA

FT13: Obesity Alters the Ovarian DNA Repair Protein Response to DMBA Exposure

Jaspreet Rishi, Iowa State University, USA

FT14: Autophagy Promotes DNA Damage Repair Machinery in Mouse Oocytes

FEI SUN, University of Missouri, USA

FT15: 3D Organoids Generated from Human Trophoblast Stem Cells Model Early Placental Development and Susceptibility to Emerging Viral Infections

Rowan Karvas, Washington University in St. Louis, USA

FT16: Parental Conflicting Role Mediates Regulation of the Chromatin Structure in the Mouse Zygote

Masatoshi Ooga, University of Yamanashi, Japan

FT17: DMRT1 Plays a Potential Role in Fetal Germ Cell Development in Rabbit Ovary

Namya Mellouk, UVSQ, INRAE, BREED, France

FT18: Diet-Induced Obesity Alters the Ovarian Response to a Genotoxicant Exposure

Kelsey Timme, Iowa State University, USA

FT20: Glycoprotein Hormone Subunit Alpha 2 (GPHA2): A Pituitary Stem Cell-Expressed Hormone Regulated by Notch Signaling

Xiyu Ge, University of Illinois at Urbana-Champaign, USA

FT21: Perfluorooctanoic Acid (PFOA) Exposure Promotes Follicle Growth via the Hippo Pathway

Kendra Clark, University of Nebraska Medical Center, USA

FT22: A Mouse Model to Investigate the Reproductive Consequences of Testosterone Administration After Suppressing Puberty in Transgender Boys

Cynthia Dela Cruz, University of Michigan, USA

FT24: Investigating the Secretory Phase Changes and Decidual Hormone Response of Human Endometrial Epithelial Organoids

Harriet Fitzgerald, University of Missouri, USA

FT25: Obesity Alters the Estrogen-Induced Luteinizing Hormone Surge in Ovariectomized Ewes

Trent Bronnenberg, University of Wyoming, USA

FT26: Steroidogenic Factor 1 (SF-1; Nr5a1) Regulates Primordial Follicle Assembly and Activation

Camilla Hughes, Université de Montréal, Canada

FT27: Modeling Trophoblast Development in Trisomy 21 Using Patient-Specific Human Trophoblast Stem Cell Lines (Human TSCs)

Abhik Saha, University of Kansas Medical Center, USA

FT28: Evaluating the Impact of the Hexosamine Biosynthesis Pathway and O-GlcNAcylation on Glucose Metabolism in Bovine Granulosa Cells

Abigail Maucieri, University of Vermont, USA

FT29: Persistent Layers Differ From Non-Persistent Layers in Bodyweight and at the Ovarian Level

Laurie Francoeur, Cornell University, USA

FT30: Regulation of Cellular Communication Network Factor 1 by Ras Homolog Family Member A in Bovine Luteal Cells

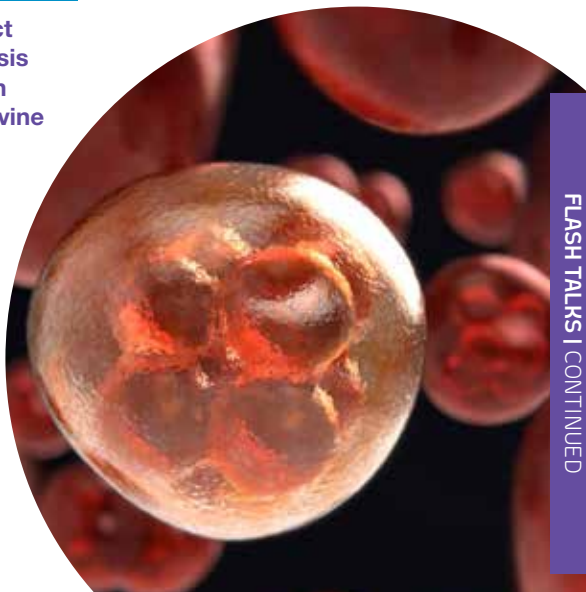
Michael Goulet, University of New Hampshire, USA

FT31: Loss of ERVW-1 Leads to Increased ERVFRD-1 and Interferon Receptor Expression in Human Trophoblast Stem Cells

Rachel West, Colorado Center for Reproductive Medicine, USA

FT32: Distinct Classes of Lagging Chromosome Underpin Age-Related Oocyte Aneuploidy in Mouse

Aleksandar I. Mihajlović, Jenna Haverfield, Greg FitzHarris, Université de Montréal, Canada



FLASH TALKS | CONTINUED

FT33: Mechanisms of Imidacloprid Toxicity and Detoxification in Neonatal Ovaries and Antral Follicles in Culture

Vasiliki Mourikes, University of Illinois at Urbana Champaign, USA

FT34: Species Specificity of PEG3 and TAF7L Involvement in Invasive Trophoblast Cell Development and Hemochorial Placentation

Ayelen Moreno, Institute for Reproduction and Perinatal Research, Department of Pathology & Laboratory Medicine, University of Kansas Medical Center, USA

FT35: A Novel Endometriotic Organoid Model for Studying Cell Interactions and the Microenvironment During Endometriotic Lesion Development

Yong Song, Michigan State University, USA

FT36: MicroRNA-143 Inhibits Invasion and Migration by Targeting MMP-2 and MMP-9 in Trophoblast Cells

Kanika Aggarwal, All India Institute of Medical Sciences, New Delhi, India

FT37: Evaluation of Meiotic Reversibility in Spermatogenesis as a Novel Target for Male Contraception

Leah Simon, Cornell University, USA

FT38: Detection of Ovarian Cancer Chemoresistance Using a Novel Nanophotonic Switch Sensor and Artificial Intelligence

Meshach Asare-Werehene, Ottawa Hospital Research Institute, Canada

FT39: Macrophages Enhance Ectopic Stromal Cell Invasion in a Novel Organoid Model of Endometriosis

Gregory Burns, Michigan State University, USA

FT40: Investigation of Bovine Chromosome Architecture and Its Involvement in Large Offspring Syndrome

Yahan Li, University of Missouri, USA

FT41: Influence of Pre-Ovulatory Follicle Size on the Follicular Fluid Metabolome in Lactating Beef Cows

Casey C. Read, UTK, United States

FT42: Microbiome of Diseased Versus Healthy Bovine Uterus in Response to Antibiotic Treatment Postpartum

Matthew Lucy, University of Missouri, USA

FT43: Endometrial Cyclin A2 Deficiency is Associated with Female Infertility and Recapitulated in a Conditional Uterine Ccna2 Knockout Mouse Model

Fatimah Aljbran, University of Kansas Medical Center, USA

FT44: CHTF18 Mediates Meiotic Cohesion in Females

Rebecca Holton, Drexel University College of Medicine Department of Biochemistry and Molecular Biology, USA

FT45: Acute Metabolomic and Transcriptomic Changes During Luteolysis: Identification of New Players in Luteal Maintenance

Emilia Przygrodzka, University of Nebraska Medical Center, USA

FT46: Discovery and Characterization of a Novel Inhibin B Co-Receptor

Emilie Brule, McGill University, Canada

FT47: miR-125b is a Negative Regulator of Extracellular Vesicles Biogenesis and Distribution at the Embryo-Maternal Interface

Maria Guzewska, Institute of Animal Reproduction and Food Research Polish Academy of Sciences, Poland

FT48: Lineage Tracing the First Meiotic Entrants in Mouse Ovaries

Gul Soygur, University of California, San Francisco, USA

FT49: Ovarian Gene Expression, Oocyte and Embryo Quality in Mice Expressing Re-Routed FSH

Suzanna Kafer, University of Colorado Anschutz Medical Campus, USA

FT50: Central Nucleus Positioning in Murine Oocytes is Achieved by F-actin and Maintained by Microtubules to Avoid Erroneous Chromosome Segregation

Jessica Kincade, University of Missouri – Columbia, USA

FT51: Reductions in Hematocrit and Hemoglobin Concentrations in Non-Cycling Heifers may Contribute to Delayed Pubertal Attainment

Jessica Keane, University of Nebraska – Lincoln, USA

FT52: Functional Characterization of TMEM249 in Assembly and Transport of the CatSper Channel Complex

Xiaofang Huang, Yale University, USA

FT53: Circulating AMH, Antral Follicle Count, and Ovulation Rate After Unilateral Ovariectomy in Cattle: Influence of the Bovine Fecundity Allele Trio

Alvaro Garcia-Guerra, The Ohio State University, USA

FT54: The Mammalian Reproductive Genetics Database, Version 2 (MRGDv2)

Thomas Garcia, Baylor College of Medicine, USA

FT55: Regulatory Roles of Zinc Fluxes in Early Murine Ovarian Follicle Development

Yu-Ying Chen, Department of OB/GYN, Northwestern University, USA



SSR 55th ANNUAL MEETING

Reproduction: Odyssey of Discovery

JULY 26–29, 2022

Spokane Convention Center | Spokane, WA

KEYNOTE & SPECIAL SYMPOSIA SPEAKERS:



OPENING PLENARY SPEAKER

Kelle Moley, MD

Deputy Director of Reproductive Health Technologies, Global Health Division, Bill and Melinda Gates Foundation



KEYNOTE LECTURE

Trevor K. Archer, PhD

Chief, Epigenetics and Stem Cell Biology Laboratory, NIH/NIEHS

Diversity Matters: Impact of Genetic Heterogeneity on Induced Pluripotency



KEYNOTE LECTURE

Jan Brosens, MD, PhD, FRCOG

Chair of Obstetrics and Gynecology, University of Warwick

Recurrent Pregnancy Loss: From Assumptions to a Novel Endometrial Disorder



KEYNOTE LECTURE

Yvonne T. Maddox, PhD

Former Vice President for Research, Uniformed Services University of the Health Sciences/DOD

Health Disparities and Reproductive Sciences



STATE OF THE ART LECTURE

Rong Fan, PhD

Department of Biomedical Engineering, Yale University

Space Adventure: The Next Wave of Biology Revolution Fueled by Spatial Omics Technologies



PRESIDENTS DISTINGUISHED SPEAKER

Linda G. Griffith, PhD

Professor of Biological and Mechanical Engineering and MacVicar Fellow, Massachusetts Institute of Technology

Deconstructing and Reconstructing the Patient, with Systems Biology and Organs-on-Chips

2021 SSR ANNUAL MEETING POSTERS

Please use the author index or meeting app to find corresponding poster presentations.

All Annual Meeting Posters will be available in the online poster gallery on the Annual Meeting Website
<https://ssrannualmeeting.secure-platform.com/a/organizations/main/home>

Posters with a  indicates the poster is also a Trainee Research Award Poster Finalist.

Posters with a  indicates the poster is also presented as a Flash Talk.

Poster Session A

THURSDAY, DECEMBER 16
8:00 am – 10:00 am

COMPARATIVE BIOLOGY/ EVOLUTION/EXOTIC SPECIES

P1 Toll-Like Receptors 7 and 8 and Their Potential for Sex-Sorting Rhinoceros Sperm

Louisa A. Rispoli, Terri L. Roth

CONTRACEPTION

P4 Animal Sterilization by a Precision Estrogen Delivery Via Bio-Degradable Microsphere

Chan Jin Park, Po-Ching Lin, Sherry Zhou, Rex Hess, CheMyong J. Ko

P7 The Development of a High-Throughput Mouse Follicle Ovulation Screening for Discovering Novel Non-Hormonal Contraceptives

Shuo Xiao, Pawat Pattarawat, Yingzheng Wang, Brittany A. Goods, Jiyang Zhang, Daniela D. Russo, Riley Drake, Yuping Huang, Jianjin Sun, Mary B. Zelinski, Alex K. Shalek

P10 Mouse Ovarian Follicles From Encapsulated In Vitro Follicle Growth (eIVFG) Preserve Molecular Signatures of Mammalian Ovulation

Jiyang Zhang, Brittany Goods, Pawat Pattarawat, Yingzheng Wang, Tessa Haining, Riley Drake, Alex Shalek, Francesca Duncan, Teresa Woodruff, Shuo Xiao

P12 Evaluation of Meiotic Reversibility in Spermatogenesis as a Novel Target for Male Contraception

Leah E. Simon, Jelena Lujic, Adriana K. Alexander, Tegan S. Horan, Maria de las Mercedes Carro, Amanda E. Touey, Catalina Zaloj, Paula E. Cohen

DEVELOPMENTAL ORIGINS OF HEALTH AND DISEASE (DOHAD)/ PRENATAL PROGRAMMING/ MATERNAL HEALTH

P13 Seasonal Dependent Changes in Placental Nutrient Transporter Expression in Nutrient Restricted or Melatonin Supplemented Dams

Rebecca M. Swanson, Zully E. Contreras-Correa, Heath King, Darcie R. Sidelinger, Derris Devost-Burnett, Caleb O. Lemley

P16 Biological Sex Dimorphism in Hepatic Response to In Utero Dimethylbenz[a]anthracene Exposure

Imaobong Inyang, Hunter E. White, Kelsey Timme, Aileen F. Keating

P19 Transgenic Conversion of Omega-6 to Omega-3 Fatty Acids Enhances Fetal Growth Through Morphological Placental Adaptations

Arin K. Oestreich, Kristin L. Lenz, Jordan M. Terschluse, Farshid Guilak

  **P21 Investigation of Bovine Chromosome Architecture and its Involvement in Large Offspring Syndrome**


Yahan Li, Max R. Highsmith, Frimpong Boadu, Jianlin Cheng, Rocío M. Rivera

P28 Di(2-ethylhexyl) Phthalate and Mono-2-ethylhexyl Phthalate Induce Aryl Hydrocarbon Receptor Activation in the Mouse Ovary

Alison Neff, Zane Inman, Andressa Gonsioroski, Mary Laws, Vasiliki Mourikes, Jodi A. Flaws

P31 Urinary Paraben Concentrations and Reproductive Health Outcomes in Midlife Women

Ayelet Ziv-Gal, Diana C. Pacyga, Li Zhong, Rita S. Strakovsky

 **P34 Diet-Induced Obesity Alters the Ovarian Response to a Genotoxicant Exposure**

Kelsey Timme, Hunter E. White, Aileen F. Keating

**EDUCATION/SCIENCE
COMMUNICATION/RESEARCH
RESOURCES**

P22 Mastering Reproduction: Master of Science Programs in Reproductive Science and Medicine

Lauren M. Ataman-Millhouse, Rebecca Willingham, Mao Soulakis, Giulia Vigone, Joaquin Gadea, Teresa K. Woodruff, Francesca E. Duncan

**ENDOCRINE DISRUPTING
CHEMICALS (EDC)/TOXICOLOGY**

P25 Altered Function/Expression of Maternal Serotonin Transporter Decreases Fetal And Neonatal Viability in Mice

Rafael R. Domingues, Meghan K. Connelly, Milo C. Wiltbank, Laura L. Hernandez

**ENDOCRINOLOGY: REPRODUCTIVE
NEUROENDOCRINE**

P37 SLICK1 Mutation of the Prolactin Receptor is Associated With Altered Phosphorylated STAT3 Protein in Hair Follicles of Holstein Heifers

Montana D. Altman, Alice T. Mathews, Russell C. Hovey, Allie T. Carmickle, Anna C. Denicol

P40 The Role of Leptin in Gonadotrope Network Coordination

Ashley K. Herdman, Alex Lagasse, Kenzie MacNicol, Anessa Haney, James Hyde, Ulrich Boehm, Melanie MacNicol, Angus MacNicol, Ashley Herdman, Angela K. Odle

ENDOCRINOLOGY: STEROID HORMONES AND THEIR RECEPTORS

P46 Zip9 Mediates an Androgen-Induced Apoptotic Pathway in Zebrafish Granulosa/Theca Cells in Vitro and Apoptosis of Post-Ovulatory Follicles in Vivo

Aubrey Converse, Heather Genuise, Rebecca Butler, Teresa Bennett, Peter Thomas

P49 Reductions in Hematocrit and Hemoglobin Concentrations in Non-Cycling Heifers May Contribute to Delayed Pubertal Attainment

Jessica A. Keane, Alexandria P. Snider, Miguel A. Fudolig, Kerri A. Bochantin, Courtney M. Sutton, Jeff W. Bergman, Scott G. Kurz, Kathryn J. Hanford, Jennifer R. Wood, Andrea S. Cupp

ENVIRONMENTAL IMPACTS ON REPRODUCTION

P52 Impact of Chronic Pre-Conceptional Glyphosate Exposure on Maternal and Female Offspring Hepatic and Ovarian Proteome

Gulnara Novbatova, Kelsey Timme, Aileen F. Keating

P55 The TAp63-Dependent and -Independent DNA Damage Response in Meiotically Arrested Oocytes

Monique Mills, Chihiro Emori, Zachery Boucher, Ewelina Bolcun-Filas

P58 Induced Endometritis Perturbs the Expression of Interferon Tau and Cell Cycle Markers in the Bovine Conceptus Long After the Resolution of Infection

Zachary K. Seekford, Mackenzie J. Dickson, John J. Bromfield

EPIGENETIC REGULATION OF GENE EXPRESSION

P61 Effects of Decitabine Exposure on DNA Methylation Within Mouse Female Reproductive Tissues

Mathia L. Colwell, Nicole Wanner, Chris Faulk, Laura J. Mauro

P67 TET3 CXXC Domain is Critical for Post-Fertilization Demethylation and Expression of Pluripotency Genes in Pig Embryos

Kyungjun Uh, Kiho Lee

FERTILIZATION/EGG ACTIVATION

P70 Identification of Novel Mitophagy Determinants in the Mammalian Cell Free System for the Study of Mitochondrial Inheritance

Alexis R. Jones, Dalen Zuidema, Won-Hee Song, Peter Sutovsky

IMPLANTATION

P79 Effects of Non-Steroidal Anti-Inflammatory Drugs on Uterine Gland and Blood Vessel Structure and Function During Early Pregnancy

Noura Massri, Savannah Wright, Sameed Khan, Ripal Arora

P82 Effects of Insulin on Insulin Receptor and IGF1 Receptor Pathways in GMMc Cells

Aracely Wungwattana, Beau Griffith, Ayokunle Hodonu

MEIOSIS

P88 Decipher Meiotic Chromosome Structure by Micromanipulation

Ning Liu, Ronald Biggs, Huanyu Qiao, Yiheng Peng, John Marko

P91 Autophagy Promotes DNA Damage Repair Machinery in Mouse Oocytes

Fei Sun, Ahmed Z. Balboula

P94 Lineage Tracing the First Meiotic Entrants in Mouse Ovaries

Bikem Soygur, Diana J. Laird

OOGENESIS AND OOCYTE MATURATION

P97 Acetyl Coenzyme a Carboxylase, the Rate Limiting Enzyme of De Novo Lipogenesis, Presence in the Bovine Ovary

Lauren M. Mayo, Olga U. Bolden-Tiller, Gemechu G. Wirtu

P103 Nemp1 is Required for Mammalian Fertility and Forms Large Clusters at the Nuclear Envelope

Abira Ganguly, Yonit Tsatskis, Chloe Potter, Colleen Mackenzie, Bilal Hakim, Won Ha, Didier Hodzic, Andrea Jurisicova, Helen McNeill

P106 Unique Midbody Structure in Mouse Oocytes is Associated With Asymmetric Cytokinesis

Gyu Ik Jung, Karen Schindler

P109 Transcriptome Profiles of In Vivo Matured Bovine Cumulus-Oocyte Complexes Reveal Unique Gene Expression Between the Oocyte and Cumulus Cells

Emma A. Hessock, Michael F. Smith, Thomas W. Geary, Ky G. Pohler, Jonathan A. Green, Susanta K. Behura, Allyson E. Stokes, Sarah E. Moorey

P112 Equine Preantral Follicle Population and Ovarian Plasticity

Kendall A. Hyde, Francisco LN Aguiar, Benner G. Alves, Kele A. Alves, Gustavo D A Gastal, Melba O. Gastal, Eduardo L. Gastal

P115 Acetylation Patterns of Histone H3K9 in Aged Pig Oocytes

Kimberly N. Sprungl, Haley A. Arena, Skyla B. Reynolds, Brian D. Whitaker

P118 Cu Supplementation or Chelation During In Vitro Maturation Affects Developmental Competence of Porcine Oocytes

Hyerin Choi, Sang-Hwan Hyun

P121 Investigation of Autophagy During Primordial Follicle Formation

Jessica O'Connell, Christopher Bushnell, Melissa Peplig

P124 Allelic Diversity Influences Meiotic Events and Oocyte Elimination Mechanisms That Shape the Ovarian Reserve in Mice

Ruby Boateng, Nathaniel Boëchat, Ewelina Bolcun-Filas

P127 Inappropriate Activation of Protein Phosphatase 1 (PP1) During Exit From Prophase I Arrest in Mouse Oocytes Adversely Affects Meiotic Progression and Oocyte Viability

Ilakkiya Venkatachalam, Nicole J. Camlin, Janice P. Evans

OVARIAN DYSFUNCTION

P133 Generating and Characterizing Ovarian Hormone-Producing Cells to Develop a Cell-Based Hormone Replacement Therapy

Hana Kubo, Grace B. Schwartz,
Monica M. Laronda

OVARY: CORPUS LUTEUM

P136 Characterization of Uterine Artery Vascular Perfusion After Induced Pregnancy Loss in Cattle

Benjamin J. Duran, Fabio LV. Pinaffi,
Jessica Cristina Lemos Motta,
Cameron Hayden, Alexandria E. Crist,
Caleb Rykaczewski, Shaun Wellert,
Eber Rojas-Canadas, Martin L.
Mussard, Alvaro Garcia-Guerra

P139 Regulation of Cellular Communication Network Factor 1 by Ras Homolog Family Member A in Bovine Luteal Cells

Michael R. Goulet, Donnelly
Hutchings, Dean Elder, Paul Tsang

OVARY: FOLLICULOGENESIS

P145 Postpartum Condition is Associated to Larger Dominant Follicle Diameters and Lower Systemic Gonadotropins in Mares

Marilia Pastorello, Melba O. Gastal,
Daniel B. Godoi, Eduardo L. Gastal

P151 Evaluating the Impact of the Hexosamine Biosynthesis Pathway and O-GlcNacylation on Glucose Metabolism in Bovine Granulosa Cells

Abigail M. Maucieri, David H. Townson

P154 Regulatory Roles of Zinc Fluxes in Early Murine Ovarian Follicle Development

Yu-Ying Chen, Thomas O'Halloran,
Teresa K. Woodruff

P157 Influence of Pre-Ovulatory Follicle Size on the Follicular Fluid Metabolome in Lactating Beef Cows

Casey C. Read, Lannett Edwards,
Neal Schrick, Justin D. Rhinehart,
Rebecca R. Payton, Shawn R.
Campagna, Hector F. Castro, Jessica
L. Klabnik, Sarah E. Moorey

PARTURITION/MYOMETRIUM

P160 Matrix Metalloproteinase 9 Inhibition Reduces Calcium and Contractile Responses to Oxytocin in Human Uterine Smooth Muscle Cells

Craig Ulrich, Adrian Pena,
Heather Burkin

PLACENTAL DEVELOPMENT & FUNCTION

P163 Phenotypic Characterization of Placental and Embryonic Defects Resulting From Maternal Loss of Nlrp2

Momal Sharif, Ignatia B.
Van den Veyver

P166 Characterization of the Transcriptome of the Equine Chorioallantois in Spontaneous Term Labor

Hossam El-Sheikh Ali, Harutaka
Murase, Kirsten Scoggin, Pouya Dini,
Barry Ball

P169 Effects of Maternal Nutrient Restriction and Melatonin Supplementation on Bovine Placental Taste Receptors

Riley D. Messman, Zully Contreras-Correa, Rebecca Swanson, Heath King, Darcie Sidelinger, Derris Devost-Burnett, Caleb Lemley

P172 AKT1-FOXO4 Axis Regulates Hemochorial Placentation

Keisuke Kozai, Ayelen Moreno-Irusta, Khursheed Iqbal, Mae-Lan Winchester, Michael J. Soares

P175 Characterization of Angiogenic and Tissue Remodeling Factors in Placental Development in a Rat Model of Preeclampsia

Kathryn A. Trotter, Madison Minette, Andjela Dragojevic, Monica Elabed, Anne Lenzo, Nana Sarpong, Sheila Egan, Sergio Cardona-Gonzalez, Pamela Monahan

⚡ P178 Role of Aryl Hydrocarbon Receptor Nuclear Translocator in Placental Development

Vinay Shukla, Khursheed Iqbal, Masanaga Muto, Michael J. Soares

⚡ P184 Species Specificity of PEG3 and TAF7L Involvement in Invasive Trophoblast Cell Development and Hemochorial Placentation

Ayelen Moreno Irusta, Khursheed Iqbal, Esteban M. Dominguez, Keisuke Kozai, Michael J. Soares

PREIMPLANTATION EMBRYO DEVELOPMENT

P190 Progesterone Receptor is Required in the Oviduct Epithelium for Normal Preimplantation Embryo Development and Transport

Emily A. Harris-McGlade, Kalli K. Stephens, San-Pin Wu, Francesco DeMayo, Wipawee Winuthayanon

P193 Interleukin-7 Treatment During In Vitro Culture Reduces Apoptosis of Porcine Embryos by Regulating MCL1 and BAX Expression

Dongjin Oh, Sang-Hwan Hyun

P196 Characterization of the Estrogen Receptor Alpha and the Role of Estrogen on Mouse Blastocyst Development

Deirdre M. Logsdon, Ashlyn M. Churchwell, William B. Schoolcraft, Rebecca L. Krisher, Ye Yuan

REPRODUCTIVE AGING

P199 Lifetime Changes of the Oocyte Pool

Yoon Min Cho, Chanjin Park, Ji-Eun Oh, Jianan Feng, Huanyu Qiao, CheMyong Ko

P202 Human Follicular Fluid Induces Dose-Dependent but Not Age-Dependent Spindle and Chromosome Defects in a Heterologous In Vitro Maturation Assay

Shweta S. Dipali, Chanakarn Suebthawinkul, Joanna E. Burdette, Mary Ellen Pavone, Francesca E. Duncan

P205 Poor Ovarian Response: Aberrant Expression of Genes Related to Mitochondrial Dysfunction and Lipid Metabolism in Women of Advanced Reproductive Age

Michele R. Plewes, Jitu George, Guojuan Li, Melissa A. Mathes, Stephanie LF Gustin, James A. Dias, John S. Davis

REPRODUCTIVE CANCERS

P211 MiR-10a Targets Chemoresistance Genes in Ovarian Clear Cell Carcinoma

Kaitlyn E. Collins, Xiyin Wang, Kenneth P. Nephew, Chad J. Creighton, Shannon M. Hawkins

REPRODUCTIVE TECHNOLOGIES/ ART/SCNT

P214 Clickable Cholesterol Analogue Performs Similarly to BODIPY Labeled Cholesterol Analogue During Porcine Sperm Capacitation

Jennifer R. Hughes, Tristan Wegner, Tiffany Paulisch, Frank Glorius, David J. Miller

P217 Use of a Lateral Flow PAG assay for Determination of Pregnancy Status and Clearance of PAGs in Beef Cattle

Adelaide C. Kline, Julie A. Walker, Taylor N. Andrews, Saulo Menegatti Zoca, Kaitlin M. Epperson, Lacey K. Quail, Jaclyn N. Ketchum, Jerica JJ Rich, Jim R. Rhoades, George A. Perry

P220 Quality Assessment of Mammalian Oocytes and Embryos using Noninvasive, Subcellular Imaging in Optical Coherence Microscopy

Monika Fluks, Aleksandra Sobkowiak, Marcin Szpila, Szymon Tamborski, Maciej Szkulmowski, Anna Ajduk

P223 Dominant Follicle Removal Prior to Superovulation in Ewes During a Long Daylength Period

Taylor Mittleider, Colton Holcomb, Dalena Hobbs, Dustin Davis, Lynda Miller, John Gibbons

P226 The Dual Role of Reactive Oxygen Species in the Biology of Human Sperm. Applications in Male Infertility

María del Pilar Irigoyen, Adriana Cassina, Rossana Sapiro

REPRODUCTIVE TRACT: FEMALE

P229 Increased Concentration of Progesterone Prior to Luteolysis Affects Uterine Programming During the Subsequent Luteal Phase in Beef Cattle

Felipe ACC. Silva, Thiago Martins, Mariana Sponchiado, Ky G. Pohler, Francisco Penagaricano, Mario Binelli

P232 Preovulatory Estradiol Concentrations Influence Oviductal Gene Expression

Lacey K. Quail, Robert A. Cushman, Brittney N. Keel, Anthony K. McNeel, Michael G. Gonda, George A. Perry

P235 Flavonoid Baicalein Acts as a Progesterone Receptor Antagonist In Vivo

Kailiang Li, Djeneba Diakite, Daniel D. Lantvit, Joanna E. Burdette

P238 Decidualization- and Antigestagen-Mediated Effects on Membrane and Nuclear Progesterone Receptors in The Dog: An In Vitro Study

Ali Kazemian, Miguel Tavares Pereira, Mariusz P. Kowalewski

P241 Understand the Female Reproductive Tract Patterning by the Analysis of Region-Specific and Cell-Type-Specific Gene Expression

Fei Zhao, Shuai Jia

P244 Phthalate Metabolites Act Through PPAR Nuclear Receptors in the Mouse Ovary

Daryl D. Meling, Kathy M. De La Torre, Ashley R K Deviney, Alison M. Neff, Mary J. Laws, Jodi A. Flaws

P247 Conditional Knockout of ADAR Causes Uterine Atrophy and Infertility in Mice

Anamika Ratri, Ingrid Gomez, V. Praveen Chakavarthi, Lane K. Christenson

P250 Unravelling Embryo-Maternal Communication and Interaction in the Bovine Reproductive Tract

Heather Steele, Alison Munro, Neil Carragher, Sven Reese, Sabine Koelle

REPRODUCTIVE TRACT: MALE

P256 The Effects of Nutrition and Adipose Levels on the Cytokines in Seminal Plasma of Beef Cattle

Taylor D. Harrison, Elizabeth M. Chaney, Kiernan J. Brandt, Taylor B. Ault-Seay, Rebecca R. Peyton, Liesel G. Schneider, Lew G. Strickland, F. Neal Schrick, Kyle J. McLean

SEX DETERMINATION AND DIFFERENTIATION

P259 Characterization of Toll-like Receptors 7 and 8 for the Sex Sorting of X and Y-Bearing Sperm in Domestic Cats (*Felis Silvestris Catus*)

Kendra C. Esparza-Harris, William F. Swanson, Louisa A. Rispoli

P467 Two Paths Diverged in the Fetal Mouse Ovary, Sorry I Could not Travel Both

Saniya Rattan, Chang Liu, Karina Rodriguez, Humphrey H-C. Yao

SPERMATOGENESIS

P262 Ablation of Dnaja4 Leads to Reduced Male Fertility in Mice

Sheng Chen, Zhuqing Wang, Yue Wang, Wei Yan

P265 Role of LINC Complex During Spermatogenesis Studied by Novel 3D In Situ Volume Imaging in Prm2 Deficient Mice

Ondrej Sanovec, Lukas Ded, Hubert Schorle, Klaus Steger, Katerina Komrskova

P268 Mitochondrial Regulation During Spermatogonial Differentiation

Yuan Wang

P271 Preliminary Proteomic Analysis of Sperm and Seminal Plasma From Bulls With a High Percentage of Midpiece Sperm Abnormalities

Edgar Andres Diaz-Miranda, Arabela Guedes de Azevedo Viana, Nara Clara Lazaroni e Merchid, Alexandre Augusto de Assis Dutra, André Teixeira da Silva Ferreira, Jonas Enrique Perales Aguilar, Simone Eliza Facioni Guimarães, Mariana Machado-Neves, José Domingos Guimarães

P274 RHOX8 Regulated Genes Are Revealed in the Mouse Testis by RNA-Seq and ChIP-Seq Analysis

Yeongseok Oh, Nikola Sekulovski, James MacLean

P277 FAM209 Associates With DPY19L2 and is Required for Sperm Acrosome Biogenesis and Fertility in Mice

Julio M. Castaneda, Keisuke Shimada, Yuhkoh Satouh, Zhifeng Yu, Masahito Ikawa, Martin M. Matzuk

P280 Spontaneous Calcium Signaling in Mouse Testis is Modulated by Age, Cell Type, and Endocrinal State

Justine Fiscoeder, Naofumi Uesaka, David Fleck, Martin Strauch, Christopher Wiesbrock, Jennifer Spehr, Dorit Merhof, Marc Spehr

STEM CELLS AND IPS CELLS

P283 Effects of VTCN1, an Immune Checkpoint Regulator, on Trophoblast Migration

Emily E. Lager, Jie Zhou, Sehee Choi, Yuchen Tian, Laura C. Schulz, Toshihiko Ezashi, Danny J. Schust

TESTIS

P286 Modulators of Steroidogenesis Within Leydig Cells of the Neonatal Boar

Amy T. Desaulniers, Amber M. Petty, Kyle W. Lovercamp

P289 Germ-Cell-Specific Deletion of MLLT10 in Mice Severely Destabilizes DOT1L but Mildly Impairs Spermatogenesis

Huijuan Lin, Mengcheng Luo, Jeremy Wang

TROPHOBLAST DIFFERENTIATION AND FUNCTION

P292 Investigating the Effects of Actc1 on Cell Fusion During Early Placental Development

Juliann Leak, Rowan M. Karvas, Jessica Milano-Foster, Danny Schust, R. Michael Roberts, Toshihiko Ezashi, Laura Schulz

P295 Modeling Trophoblast Development in Trisomy 21 Using Patient-Specific Human Trophoblast Stem Cell Lines (Human TSCs)

Abhik Saha, Avishek Ganguly, Soma Ray, Angela Martin, Charles Gibbs, Soumen Paul

P298 Human Trophoblast Exhibit Divergent Susceptibilities to Dengue and Zika Virus Infections

Megan A. Sheridan, Yuchen Tian, R. Michael Roberts, Alexander We Franz, Danny J. Schust

UTERINE BIOLOGY: ENDOMETRIUM, FIBROIDS

P301 Estradiol May Stimulate Glycogen Synthesis in the Bovine Uterine Epithelium via Insulin-Like Growth Factor-1

Alexis Gonzalez, Malia D. Berg, Matthew Dean

P304 Molecular and Cellular Analysis of Stress-Induced Cellular Senescence and Potential Senolytic Therapy in an Ex Vivo Leiomyoma Model

Yinuo Li, Ross McNally, Jian-Jun Wei, Julie Kim

P307 A Reappraisal of Mesenchymal-Epithelial Transition in Endometrial Epithelialization

Madelyn Spooner, Karl Kerns, Michal Zigo, Peter Sutovsky, Amanda Patterson

P310 The Role of Homeodomain Transcription Factors in Mammalian Decidualization

Meade Haller, Yan Yin, Liang Ma

P313 Effect of Galectin-1 on Bovine Endometrial Epithelial and Fibroblast Cell Transcriptomes in 3D Cell Culture

Daniel J. Mathew, Heather L. Chaney, Lindsay F. Grose, Gilles Charpigny, Susanta K. Behura, Martin Sheldon, James G. Cronin, Thomas E. Spencer, Patrick Lonergan

P319 Macrophages Enhance Ectopic Stromal Cell Invasion in a Novel Organoid Model of Endometriosis

Gregory W. Burns, Yong Song, Niraj R. Joshi, Ripla Arora, Asgerally T. Fazleabas

Poster Session B

Friday, December 17
8:00 am – 10:00 am

COMPARATIVE BIOLOGY/ EVOLUTION/EXOTIC SPECIES

P2 The New Rangifer Tarandus 60K SNP Chip, a Game Changer for Caribou/Reindeer Conservation

Mallorie Trottier-Lavoie, Alexandra Carrier, William Poisson, Julien Prunier, Isabelle Gilbert, Gabriela Mastromonaco, Joëlle Taillon, Vicky Albert, Vincent Bourret, Steeve D. Côté, Claude Robert

CONTRACEPTION

P5 Investigating PRSS37 Protein-Protein Interactions in the Male Reproductive Tract using BiolD2 Transgenic Mice

Courtney M. Sutton, Sureshbabu Nagarajan, Kaori Nozawa, Masahito Ikawa, Thomas X. Garcia, Martin M. Matzuk

P8 Translocation of Copper Intrauterine Contraceptive Device Via Right Fallopian Tube

Frederick Eruo, Kirk Dettloff

P11 The Mammalian Reproductive Genetics Database, Version 2 (MRGDv2)

Thomas X. Garcia, Vivek Ramanathan, Ricardo Deras, Enjolina Iqbal, Xingquan Lu, Uma Ramamurthy

DEVELOPMENTAL ORIGINS OF HEALTH AND DISEASE (DOHAD)/ PRENATAL PROGRAMMING/ MATERNAL HEALTH

P14 The Impact of Paternal Diet on Late Gestation Fetal Growth, Placental Gene Expression and Maternal Metabolic Health During Gestation

Afsaneh Khoshkerdar, Hannah Morgan, Adam Watkins

P17 Differences in Global Proteomic Profile of Mouse Blastocyst Conceived by IVF or Natural Conception

Seok Hee Lee, Paolo F. Rinaudo, David J. Morales, Alex R. Campos

ENDOCRINE DISRUPTING CHEMICALS (EDC)/TOXICOLOGY

P23 Epidemiologically Relevant Phthalate Metabolite Mixtures Impact Sex Steroid Hormone Synthesis and Gene Expression in Mouse Granulosa Cells

Mary J. Laws, Stav Kramer, Kristine Roos, Agne Velthut-Meikas, Richelle D. Björvang, Pauliina Damdimopoulou, Jodi A. Flaws

P26 Plant-Derived Phytoestrogen Coumestrol Inhibits Trophoblast Cell Migration, Promotes Oxidative Stress, and Causes Reduced Fetal and Placental Weights

Margeaux W. Marbrey, Elizabeth S. Douglas, Emma R. Goodwin, Kathleen M. Caron

P29 Exposure to Phthalates During Early Pregnancy Affects Decidualization and Placentation in Mice

Arpita S. Bhurke, Juanmahel Davila, Jodi A. Flaws, Indrani C. Bagchi, Millan K. Bagchi

P32 Prenatal Exposure to a Mixture of Phthalates Alters Biomarkers of Ovarian Aging in a Multigenerational and Transgenerational Manner

Ramses E. Santacruz-Marquez, Emily Brehm, Jodi A. Flaws

P35 Perfluorooctanoic Acid (PFOA) Exposure Promotes Follicle Growth Via the Hippo Pathway

Kendra L. Clark, John S. Davis

ENDOCRINOLOGY: REPRODUCTIVE NEUROENDOCRINE

P41 Glycoprotein Hormone Subunit Alpha 2 (GPHA2): A Pituitary Stem Cell-Expressed Hormone Regulated by Notch Signaling

Xiyu Ge, Karen Weis, Lori Raetzman

ENDOCRINOLOGY: STEROID HORMONES AND THEIR RECEPTORS

P47 Progesterone Stimulates Glycogen Breakdown in Bovine Uterine Epithelial Cells Via Membrane Receptors

Malia D. Berg, Ziting Chen, Matthew Dean

ENVIRONMENTAL IMPACTS ON REPRODUCTION

  **P50** Obesity Alters the Ovarian DNA Repair Protein Response to DMBA Exposure


Jaspreet K. Rishi, Hunter E. White, Kelsey Timme

P53 Perfluorononanoic Acid Impedes Mouse Oocyte Maturation by Inducing Mitochondrial Dysfunction and Oxidative Stress

Ning Liu, Xiaofei Jiao, Yiding Xu, Huanyu Qiao

P56 Environmentally-Relevant Exposure to Harmful Algal Bloom Toxin Microcystin-LR Compromises Ovarian Follicle Maturation and Ovulation in Mice

Yingzheng Wang, Pawat Pattarawat, Bowen Tang, Jiyang Zhang, Brandon Low, Ji-Yong Julie. Kim, Saurabh Chatterjee, Qiang Zhang, Geoffrey I. Scott, Shuo Xiao

 **P59** Hyperphagia-Induced Obesity Reduces the Ovarian Reserve and Alters the Proteome but does not Impact Circulating Prolactin Level

Kendra L. Clark, Aileen F. Keating

EPIGENETIC REGULATION OF GENE EXPRESSION

P62 Centromeric Nucleosome are not Maintained Epigenetically During Gametogenesis and Early Embryogenesis

Gabriel Manske, Kelsey Jorgensen, Saikat Chakraborty, Sue Hammoud

P65 Peptidylarginine Deiminase 2 Represses Expression of the DGRC8 Microprocessor Complex Subunit Affecting miRNA Biogenesis in Gonadotrope Cells

Brett A. Ralston, Lamia Khan, Stanley B. Devore, Trent A. Bronnenberg, Paul R. Thompson, Amy M. Navratil, Brian D. Cherrington

P68 Roles of TEX15 in Silencing of Transposable Elements and Spermatogenesis

Fang Yang, Yemin Lan, Nicolae A. Leu, Marisa Bartolomei, Peijing J. Wang

FERTILIZATION/EGG ACTIVATION

P71 Oocyte Cholesterol Excess and Infertility: Intracellular Localization of Cholesterol Deposits in Eggs From SR-B1 and ABCA1 KO Mice

Andreina Arias, Fujiko Saavedra, Eugenia Morselli, Dolores Busso

GENE EDITING/CRISPR

P77 Establishing an Optimal Eif2s3y Delivery Method to Mouse iPSC

Hayden R. Holmlund, Yasuhiro Yamauchi, Genevieve Blanchet, Pooja Khurana, Hiroshi Ohta, Yukihiko Yabuta, Mitinori Saitou, Monika Ward

IMPLANTATION

P80 Epithelial-Specific Deletion of SMAD1/5 in the Mouse Endometrium Disrupts Early Pregnancy

Dominique Cope, Suni Tang, Yasmin M. Vasquez, Diana Monsivais

P83 Transcriptomic Analysis of the Pre-implantation Mouse Uterus With Epithelial-specific ARID1A loss Provides New Insight into ARID1A Function in the Endometrial Epithelium

Ryan M. Marquardt, Jake J. Reske, Ronald L. Chandler, Tae Hoon Kim, Jae-Wook Jeong

MEIOSIS

P89 Dynein Regulates Cytoplasmic Microtubule Organizing Centers and Spindle Positioning During Oocyte Meiosis

Daniela Londoño Vasquez, Ahmed Z. Balboula

P92 DMRT1 Plays a Potential Role in Fetal Germ Cell Development in Rabbit Ovary

Namya Mellouk, Emilie Dujardin, Geneviève Jolivet, Aurélie Dewaele, Eric Pailhoux, Maëlle Pannetier

P95 Central Nucleus Positioning in Murine Oocytes is Achieved by F-actin and Maintained by Microtubules to Avoid Erroneous Chromosome Segregation

Jessica N. Kincade, Avery Hlavacek, Ahmed Z. Balboula, Rocio M. Rivera

OOGENESIS AND OOCYTE MATURATION

P98 Morphokinetic Parameters of Meiotic Maturation and Cumulus Expansion are Similar Between Euploid and Aneuploid Eggs From Reproductively Young Mice

Chanakarn Suebthawinkul, Elnur Babayev, Luhan T. Zhou, Hoi Chang Lee, Francesca E. Duncan

P104 Pre-ovulatory Follicular Fluid and Serum Metabolome Profiles in Beef Cows With Thin, Moderate, and Obese Body Condition

Emma J. Horn, Casey C. Read, Lannett J. Edwards, Neal F. Schrick, Justin D. Rhinehart, Rebecca R. Payton, Shawn R. Campagna, Hector F. Castro, Jessica L. Klabnik, Sarah E. Moorey

P107 Evaluation of Mitochondrial DNA Copy Number in Immature and Mature Bovine Oocytes From Ovaries in Different Physiological Stages

Kelsey N. Lockhart, Samuel Gebremedhn, Evangeline M. Natera, Bethany P. Krueger, Sandeep Rajput, Rebecca L. Krisher, Marcello Rubessa

P113 Equine Ovarian Tissue Xenografting in Mice: Impacts of Cooling, Vitrification, and VEGF Exposure

Kendall A. Hyde, Samara S. Souza, Francisco L N Aguiar, Benner G. Alves, Kele A. Alves, Fabiana A S. Brandão, Danielle C C Brito, Ramon S. Raposo, Melba O. Gastal, Ana P.R. Rodrigues, José R. Figueiredo, Dárcio Teixeira, Eduardo L. Gastal

P116 Effects of Quisqualic Acid and L- α -amino Butyrate Supplementation During Porcine Oocyte Maturation on Glutathione and Glutathione Peroxidase

Skyla B. Reynolds, Kimberly N. Sprungl, Haley A. Arena, Brian D. Whitaker

P119 Novel Binding Partners of NEMP1 and Their Function in the Nuclear Envelope of Mouse Oocytes

Bilal A. Hakim, Didier Hodzic, Chloe Potter, Helen McNeill

P122 Effects of Stage of the Estrous Cycle and Superovulation on DNA Methylation in Mouse Oocytes and Granulosa Cells

Chris Kim, Md Almamun, Rocío Melissa Rivera

P125 Building a Nonhuman Primate Model for Fetal Ovarian Development

Sissy E. Wamaitha, Fei-man Hsu, Amander T. Clark

P128 Bovine Tissue Expression Profiles for Five Oocyte-Specific Long Non-Coding RNAs

Jaelyn Z. Current, Heather L. Chaney, Mingxiang Zhang, Jianbo Yao

OVARIAN DYSFUNCTION

P131 Gonadotropin Dysregulation In Vitro Mimics Hyperandrogenism Within Polycystic Ovarian Syndrome

Asia N. Ingram, Hannes Campo, Emma Gargus, Sarah Wagner, Julie Kim, Shuo Xiao

P134 The Potential Role of Runx1 in Ovarian Cancer and Pathologies

Kamiya A. Bridges, Barbara Nicol, Humphrey Yao

OVARY: CORPUS LUTEUM

P137 Cortisol as a Critical Mediator of Ovulation and Corpus Luteum Formation

Hayce Jeon, Yohan Choi, Mats Brännström, James W. Akin, Thomas E. Curry, Misung Jo

OVARY: FOLLICULOGENESIS

P140 Improving Mouse Ovarian Follicles into Antral Stage Applying Wharton's Jelly Hydrogel after In Vitro Culture and Transplantation

Elnaz Zand, Elyas Rajabloo, Rouhollah Fathi, Vahid Akbarinejad, Christiani Andrade. Amorim, Mojtaba Rezazadeh Valojerdi

P143 Anti-Müllerian Hormone (AMH) as a Potential Therapeutic Option for Female Fertility

Aritro Sen, Niharika Sinha, Binbin Huang, Jianrong Wang

P146 Involvement of Fragile-X-Related Proteins in the Formation of the Network of Cumulus Cell-Oocyte Transzonal Projections

Mathilde Marchais, Isabelle Gilbert, Eolo-Ami-Karen Nenonene, Alexandre Bastien, Edouard W. Khandjian, Robert Viger, Claude Robert

P149 PI3K Signaling Promotes Cyst Breakdown, Primordial Follicle Formation, and Meiotic Progression in the Mouse Ovary

Joshua Burton, Amanda Luke, Maggie McCoy, Xiaoyi Wang, Melissa Pepling

⚡ P152 Persistent Layers Differ From Non-Persistent Layers in Bodyweight and at the Ovarian Level

Laurie Francoeur, Deena M. Scoville, Jaclyn G. Ahern, Patricia A. Johnson

PARTURITION/MYOMETRIUM

P158 A Novel Sodium Signaling Complex Regulates Uterine Activity

Juan J. Ferreira, Chinwendu Amazu, Lindsey Kent, Lis C. Puga-Molina, Xiaofeng Ma, Sarah K. England, Celia M. Santi

PLACENTAL DEVELOPMENT & FUNCTION

P161 The Effect of Myostatin on the Uterine Environment

Ruth Opoku, Jenna DeCata, Charlotte Phillips, Laura Schulz

P164 Maternal Nutrient Restriction and Melatonin Supplementation Alter Bovine Placental Vascularity and Clock Gene Expression

Zully E. Contreras-Correa, Rebecca Swanson, Taylor Cochran, Kaitlyn Wood, Hayden Duncan, Abbie Metcalfe, Caleb O. Lemley

P167 Building a Framework for Understanding Extravillous Trophoblast Cell Lineage Development in Human Placentation

Kaela M. Varberg, Boryana Koseva, Khursheed Iqbal, Jinchu Vijay, Rebecca Biswell, Margaret Gibson, Warren A. Cheung, Joseph M. Varberg, Hiroaki Okae, Takahiro Arima, Michael J. Soares, Elin Grundberg

P170 Effects of Bovine Pregnancy –Associated Glycoproteins on Chemokine and Related Gene Transcripts in Bovine Endometrial Explants

Benjamin M. Nelson, Amanda L. Schmelzle, Ky G. Pohler, Michael F. Smith, Jonathan A. Green

P173 Role of ALKBH1 in Regulating Hemochorial Placental Development

Khursheed Iqbal, Ayelen Moreno-Irusta, Brandon Nixon, Keisuke Kozai, Michael Soares

P176 Androgen Receptor Signaling in Placenta

Gerrit J. Bouma, Agata M. Parsons, Jeremy D. Cantlon, Fiona K. Hollinshead, Quinton A. Winger, Jason E. Bruemmer

⚡ P179 Natural Killer Cells Mediate Vascular Remodeling Through Ephrin-B2

Katharine Wolf, Emily Crawford, Nora Wartan, Umida Ganieva, Sylvia Schneiderman, Valerie Rhiel, Mahmood Bilal, Svetlana Dambaeva, Kenneth Beaman

⚡ P182 Ovine Utero-Placental Tissues Metabolize Creatine During Pregnancy to Support Conceptus Development

Nirvay Sah, Claire Stenhouse, Katherine M. Halloran, Robyn M. Moses, Heewon Seo, Gregory A. Johnson, Guoyao Wu, Fuller W. Bazer

⚡🌐 P185 Loss of ERVW-1 Leads to Increased ERVFRD-1 and Interferon Receptor Expression in Human Trophoblast Stem Cells

Rachel C. West, Toshihiko Ezashi, William B. Schoolcraft, Ye Yuan

PREIMPLANTATION EMBRYO DEVELOPMENT

P191 Uterine Glycogen Metabolism During the Preimplantation Period in Mice

Ziting Chen, Cassandra Sandoval, Matthew Dean

P197 The Effect of Endometrial Cell Conditioned Media on In Vitro Cultured Bovine Embryo Development

Mary A. Oliver, Katheryn D. Peterson, Sadikshya Bhandari, Rebecca R. Payton, Liesel G. Schneider, J. Lannett. Edwards, Daniel J. Mathew

REPRODUCTIVE AGING

P200 Mechanisms of Inflammaging in the Human Ovary: Expression of Tryptophan/Kynurenine Pathway Metabolites

Kelsey Andersen, Jeffery A. Goldstein, Emily S. Miller, Francesca E. Duncan

P203 Maternal and Paternal Age Contributions to Reproductive Function and Longevity

Julia L. Balough, Cosmo C. Hahn, Camille Mulcahy, Guillermina M. Luque, Mariano G. Buffone, Jodi A. Flaws, Francesca E. Duncan

P206 Transcriptomic Analyses Reveal Age-Related Alterations in Uterine Decidua During Artificially Induced Decidualization

Magdalena J. Cummings, Hongyao Yu, Guang Hu, Myriam Hemberger, Xiaoqiu Wang

REPRODUCTIVE CANCERS

P209 Induction of Differential Cell Death by Eupenifeldin in High-Grade Serous Ovaria Cancer Cell Lines

Amanda C. Maldonado, Zeinab Y. Al Subeh, Cedric J. Pearce, Nicholas H. Oberlies, Joanna E. Burdette

P212 Calotropis Procera Extract (CPE) Inhibits Prostate Cancer by Modulating Levels of Reactive Oxygen Species

Palak Singh, Bodhana Dhole, Deepak Pandey, Surabhi Gupta, Pradeep K. Chaturvedi

REPRODUCTIVE TECHNOLOGIES/ ART/SCNT

P215 Size-Dependent Zona Pellucida Permeability in Mice, Bovine, Rabbits and Humans

Javier Guerrero-Sánchez, Ismael Lamas-Toranzo, Leopoldo González-Brusi, Alba Pérez-Gómez, Ana Querejeta-Fernández, Yolanda Cabello, José Antonio Horcajadas, Pablo Bermejo-Álvarez

P218 Mouse Strain and Sperm Preparation Method Influence Full-Term Development of Mice Produced by Intracytoplasmic Sperm Injection With Cauda and Caput Epididymal Sperm

Naoki Hirose, Yasuhiro Yamauchi, Donald Evenson, Monika Ward

P221 Development of a New Method for Pig Karyotyping

William Poisson, Alexandre Bastien, Isabelle Gilbert, Alexandra Carrier, Julien Prunier, Claude Robert

P224 Effects of ARTs on Mitochondria and Genomic Imprinting in Preimplantation Embryos

Mellissa RW Mann, Audrey J. Kindsfather, Carlee R. White

REPRODUCTIVE TRACT: FEMALE

P227 Endothelial Cell-Derived TGFB1 Triggers Pre-granulosa Cells to Differentiate Granulosa Cells in the Perinatal Ovary

Ji Eun Oh, Chanjin Park, Po-Ching Lin, CheMyong Jay. Ko

P230 Intrauterine Infusion of Seminal Plasma Modulates the Endometrial Transcriptome of the Cow

Gabriela A. Macay, Jason A. Rizo, G. Cliff Lamb, Pedro LP. Fontes, John J. Bromfiel

P236 Interrogation of Endometrial Gland Development and Steroid Hormone Signaling in Mouse Endometrial Organoids

Pramod Dhakal, Thomas E. Spencer

P242 The RNA-Binding Protein hnRNP I/PTBP1 Regulates Embryo Transport and Uterine Receptivity During Early Pregnancy in the Mouse

Athilakshmi Kannan, Wenyan Mei, Milan K. Bagchi, Indrani C. Bagchi

P245 Prevalence and Risk Factors of Genital Warts among HIV Infected Women Versus HIV Negative Women in the Centre Region of Cameroon

Martin Kuete, Daina Charnelle Fougang, Carrel Raspail Founou, Serap Tekbaş, Christiane Hilary Ngueye Sipeuwou, Luria Founou, Leonnelle Alexandra Messop Tchakounteu, Metiedje Sado Carine Rolande, Salomé Djatsa Nzemgue, Sonia Spence Goetchop Takoutsing, France Arlette Kengne Tezong

P248 Siglecs in the Porcine Oviduct and Sialylated Ligands on Sperm: Potential Role in Sperm Reservoir Formation

Leonardo M. Molina, Lauren E. Pepi, Asif Shadjahan, Parastoo Azadi, David J. Miller



P251 A Mouse Model to Investigate the Reproductive Consequences of Testosterone Administration After Suppressing Puberty in Transgender Boys

Cynthia Dela Cruz, Hadrian M. Kinnear, Prianka H. Hashim, Faith L. Chang, Likitha Nimmagadda, Vasantha Padmanabhan, Ariella Shikanov, Molly B. Moravek

REPRODUCTIVE TRACT: MALE

P254 Wnt9b Plays a Key Role in Male Reproductive Tract Development in Mice

McKenna Crossen, Fei Zhao, Shuai Jia

P257 Metabolic Status, Kinetics and Residual Cytoplasm During Sperm Maturation in Bulls

Joao Diego de Agostini Losano, Bárbara do Carmo Simões da Silva, Roberta Ferreira Leite, Daniel de Souza. Ramos Angrimani, Camilla Mota Mendes, Kátia Gomes, Mayra Elena Ortiz D'Avila Assumpção, Marcilio Nichi

SEX DETERMINATION AND DIFFERENTIATION

P260 Two Paths Diverged in the Fetal Mouse Ovary, Sorry I Could not Travel Both

Saniya Rattan, Chang Liu, Karina Rodriguez, Humphrey H-C Yao

SPERMATOGENESIS

P263 MEIG1/PACRG Associated and Independent Functions of Axonemal Dynein Light Intermediate Polypeptide 1 (DNALI1) in Mammalian Spermatogenesis

Yi Tian Yap, Wei Li, Qian Huang, Qi Zhou, James G. Granneman, Pierre F. Ray, David Williams, Rex A. Hess, Aminata Toure, Zhibing Zhang

P266 WNK1 Drives Spermatogenic Meiosis and is Critical for Male Fertility

Ru Pin Alicia Chi, Xiaojiang Xu, Jian-Liang Li, Xin Xu, Guang Hu, Cynthia Willson, Oleksandr Kirsanov, Christopher Geyer, San-pin Wu, Chou-long Huang, Francesco DeMayo

P269 C2cd6-Encoded CatSper Targets Sperm Calcium Channel to Ca²⁺ Signaling Domains in the Flagellar Membrane



Jae Yeon Hwang, Huafeng Wang, Yonggang Lu, Masahito Ikawa, Jean-Ju Chung

P272 Role of mRNA 3' End Additions and PolyA Tail Length in Spermatid Differentiation


Marine Baptissart, Marcos Morgan

P275 External Metabolites Drive Sperm Hyperactive Motility Through Redox Potential

Ben J. Hale, Cameron A. Schmidt, P. Darrell Neuffer, Chris B. Geyer

  **P279 Deletion of Negative Elongating Factor B in Sertoli Cells Leads to Disruption of Sperm Annulus and Infertility**

Helena D. Zomer, Rex A. Ress, Prabhakara P. Reddi

 **P281 Characterization of Spermatogonia and Sertoli Cells From Juvenile Mice using Single-Channel Electrophysiology**

Lina Kenzler, Marc Spehr

TESTIS

P290 The Solute Carrier Family 7 Member 11 (SLC7A11) is Expressed in Mouse Sertoli Cells and Regulated by LH/Androgen

Zhenghui Liu, T. Rajendra Kumar

TROPHOBLAST DIFFERENTIATION AND FUNCTION

P293 Leukemia Inhibitory Factor Receptor Signaling in Pregnancy and Placentation

Brandon Nixon, Khursheed Iqbal, Ayelen Moreno-Irusta, Regan Scott, Michael Soares

P296 MicroRNA-143 Inhibits Invasion and Migration by Targeting MMP-2 and MMP-9 in Trophoblast Cells

Kanika Aggarwal, Jaganmoy Choudhury, Pradeep K. Chaturvedi, Surabhi Gupta

UTERINE BIOLOGY: ENDOMETRIUM, FIBROIDS

P299 Investigation of Hormonal Stimulation of Mesenchymal Epithelial Transition in the Endometrium

Zahra G. Kiesler, Amanda L. Patterson

P302 Are Progesterone and Estrogen Concentrations Correlated to Uterine Epithelial Sodium Channel (ENaC) Presence in the Mare Endometrium?

Ashlyn Ruen, Michelle DeBoer, Casie Bass

P305 Extracellular Vesicles Secreted by Uterine Decidual Cells Carry Critical Information for Establishment of Pregnancy

Qiuyan Ma, Jacob R. Beal, Arpita S. Bhurke, Athilakshmi Kannan, Jie Yu, Robert N. Taylor, Indrani C. Bagchi, Milan K. Bagchi

P308 Gut Microbiota-Derived Short-Chain Fatty Acids Protect Against the Progression of Endometriosis

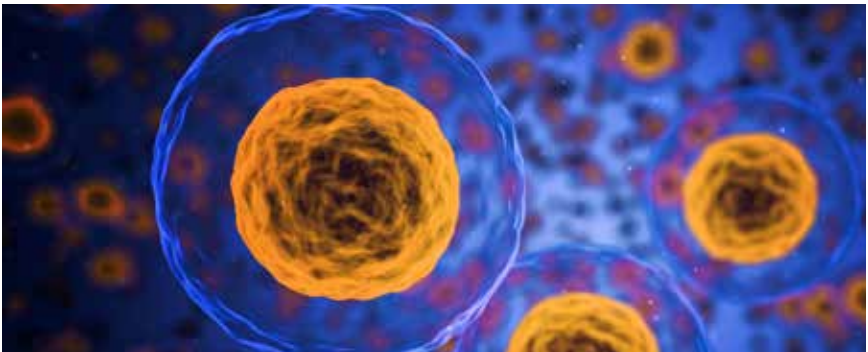
Sangappa B. Chadchan, Pooja Popli, Chandrasekhar R. Ambati, Eric Tycksen, Sang J. Han, Serdar E. Bulun, Nagireddy Putluri, Scott W. Biest, Ramakrishna Kommagani

P311 Impact of Uterine Disease on the Reestablishment of the Luminal and Glandular Epithelium in the Early Postpartum Bovine Uterus

Isabella Sellmer-Ramos, Joao G. N. Moraes, Monica O. Caldeira, Scott E. Poock, Thomas E. Spencer, Matthew C. Lucy

P314 Lipidomic Profiling of Endometrial Fluid in Pigs During Peri-Implantation Period of Pregnancy

Bangmin Liu, Likun Duan, Xiaojing Liu, Xiaoqiu Wang



Poster Session C

Saturday, December 18

8:00 am – 10:00 am

CONTRACEPTION

P3 Transcriptomic Profiling of the Spatial Determinants of Follicle Rupture During In Vitro Ovulation

Emily Zaniker, Jiyang Zhang, Riley Drake, Alex K. Shalek, Teresa K. Woodruff, Shuo Xiao, Britt A. Goods, Francesca E. Duncan

P6 Investigation of the Roles of the CUB Domains of OVCH2 in Male Fertility

Katarzyna Kent, Kaori Nozawa, Masahito Ikawa, Thomas X. Garcia, Martin M. Matzuk

P9 Failed Tubal Ligation, An Undesired But Not A Rare Outcome

Frederick Eruo, Whitnee Essenmacher

DEVELOPMENTAL ORIGINS OF HEALTH AND DISEASE (DOHAD)/ PRENATAL PROGRAMMING/ MATERNAL HEALTH

P15 Physiological and Metabolic Alteration in IVF Compared to In Vivo-Derived Mouse Blastocysts

Seok Hee Lee, Paolo F. Rinaudo

ENDOCRINE DISRUPTING CHEMICALS (EDC)/TOXICOLOGY

P27 A Tiered Ovarian Toxicity Screening Identifies Ovarian Toxic Effects of Perfluorononanoic Acid (PFNA) on Gonadotropin-Dependent Folliculogenesis and Ovulation

Pawat Pattarawat, Yingzheng Wang, Bowen Tang, Jiyang Zhang, Eunhong Kim, Eugene Yang, Qiang Zhang, Ji-Yong Julie Kim, Shuo Xiao

P30 Ovulatory Angiogenic Factors are Disrupted by Exposure to an Environmentally Relevant Phthalate Mixture in Mouse Antral Follicles In Vitro

Katie L. Land, Frances G. Miller, Patrick R. Hannon

P33 Fluoxetine (Prozac) Treatment During Late Gestation Shortens Gestation, Causes Intrauterine Growth Restriction and Neonatal Morbidity in a Sheep Model

Rafael Domingues, Adam Beard, Alysia Vang, Kayla Olbrot, Olivia Spaight, Christina Riehle, Waneska Frizzarini, Thiago Cunha, Hannah Fricke, Meghan Connelly, Milo Wiltbank, Laura Hernandez

P36 Mechanisms of Imidacloprid Toxicity and Detoxification in Neonatal Ovaries and Antral Follicles in Culture

Vasiliki E. Mourikes, Mary J. Laws, Jodi A. Flaws

ENDOCRINOLOGY: REPRODUCTIVE NEUROENDOCRINE

P39 ATF3 Regulates FSH Synthesis In Vitro but not In Vivo

Carlos Al Alonso, Chirine Toufaily,
Ying Wang, Xiang Zhou, German
Nudelman, Frederique Ruf-Zamojski,
Ulric Boehm, Stuart C. Sealfon,
Daniel J. Bernard

⚡ P42 Obesity Alters the Estrogen- Induced Luteinizing Hormone Surge in Ovariectomized Ewes

Trent A. Bronnenberg, Kelly Kirkley,
Christianne Magee, Dilyra A.
Murtazina, Whit C. Stewart, Jeremy
D. Cantlon, Amy M. Navratil, Colin M.
Clay, Brian D. Cherrington

ENDOCRINOLOGY: STEROID HORMONES AND THEIR RECEPTORS

⚡🌐 P45 Steroidogenic Factor 1 Plays an Essential Role in the Hypothalamic-Pituitary-Ovarian Axis of Adult Female Mice

Olivia E. Smith, Vickie Roussel, Fanny
Morin, Luisina Ongaro, Xiang Zhou,
Micka C. Bertucci, Daniel J. Bernard,
Bruce D. Murphy

P48 Changes in LH/FSH Pulse Profiles in High and Low Progesterone During Estradiol Increase Associated With Transition to Dominant Follicle Selection

Victor E. Gomez-León, O.J. Ginther,
Rafael R. Domingues, Leticia P.
Sanglard, Milo C. Wiltbank

ENVIRONMENTAL IMPACTS ON REPRODUCTION

P51 Subacute Exposure to an Environmentally Relevant Dose of Di-(2-Ethylhexyl) Phthalate During Gestation Alters the Cecal Microbiome, but Not Pregnancy Outcomes in Mice

Karen Chiu, Shah Tauseef Bashir,
Liyang Gao, Jessica Gutierrez,
Maria C. de Godoy, Jenny Drnevich,
Christopher J. Fields, Isaac Cann,
Jodi A. Flaws, Romana A. Nowak

P54 Herbicide Atrazine Disturbs Steroidogenesis in Leydig Cell In Vitro Models

Haily Patel, John K. Buolamwini,
Svetlana Dambaeva, Kenneth D.
Beaman, Pengli Bu

P57 The Effects of Melatonin on Ovine Estrus Cyclicity During Long Daylength Periods

Colton Holcomb, Dalena Hobbs,
Dustin Davis, John Gibbons

⚡ P60 Effects of Prenatal and Lactational Exposure to Iodoacetic Acid on the F1 Generation of Mice

Andressa Gonsioroski, Liying Gao,
Michael Plewa, Jodi A. Flaws

EPIGENETIC REGULATION OF GENE EXPRESSION

P63 Epigenetic Regulation of Gonadotropin Hormone Beta Subunit Gene Expression

Rebecca E. Ruggiero, Djurdjica Coss

FERTILIZATION/EGG ACTIVATION

P72 Superovulation does not Alter Calcium Oscillations following Fertilization

Virginia Savy, Paula Stein, Min Shi, Carmen J. Williams

GENE EDITING/CRISPR

P78 Interleukin-6 Signaling via IL6R is Crucial for Bovine Blastocyst Formation

Benjamin B. Goheen, Elizabeth A. Jannaman, Sandeep K. Rajput, William B. Schoolcraft, Ye Yuan

IMPLANTATION

P81 Effects of Prolactin on Glycogen Metabolism in Mink Uterine Cells

Beau Griffith, Aracely Wungwattana

P84 Uterine-Specific Ablation of Sirtuin 1 Causes Subfertility and Accelerates Reproductive Aging

Magdalena J. Cummings, Hongyao Yu, Guang Hu, Xiaoling Li, Myriam Hemberger, Xiaoqiu Wang

MEIOSIS

P87 Single-Cell RNA-seq Analysis Reveals Mechanisms of Meiotic Checkpoints

Yiheng Peng, Huanyu Qiao

P90 Deletion of Orc4 During Oogenesis Significantly Reduces Polar Body Extrusion and Inhibits Zygotic DNA Synthesis

Hieu Nguyen, Hongwen Wu, Anna Ung, Yukiko Yamazaki, Benjamin Fogelgren, William Steven Ward

P93 Distinct Classes of Lagging Chromosome Underpin Age-Related Oocyte Aneuploidy in Mouse

Aleksandar I. Mihajlović, Jenna Haverfield, Greg FitzHarris

P96 CHTF18 Mediates Meiotic Cohesion in Females

Rebecca A. Holton, Karen M. Berkowitz

OOGENESIS AND OOCYTE MATURATION

P99 Exocyst Complex Signaling is Required for Folliculogenesis

Hongwen Wu, Hieu Nguyen, Yukiko Yamazaki, Benjamin Fogelgren, William Steven Ward

P102 Nemp1: A Nuclear Envelope Protein Specifically Required for Female Fertility

Didier Hodzic, Abira Ganguly, Bilal Hakim, Chloe Potter, Won Ha, Andrea Jurisicova, Helen McNeill

P105 Age-Dependent Integrity of the Meiotic Spindle Assembly Checkpoint in Females Requires Aurora Kinases

B. Cecilia S. Blengini, Alexandra L. Nguyen, Mansour Aboelenain, Karen Schindler

P108 Protective Effects of Trehalose on the Cumulus-Oocyte Complex During Desiccation in the Domestic Cat Model

Kadeem A. Richardson, Pierre P. Comizzoli

P111 Understanding How TAF4b Contributes to Oocyte Quality Control During Establishment of the Ovarian Reserve

Kimberly Abt, Megan Gura, Sona Relovska, Kimberly Seymour, Richard Freiman

P114 Genetically Diverse Mice as a Robust Model System to Reveal Genetic Regulation of the Ovarian Reserve

Ewelina Bolcun-Filas, Ruby Boateng, Nathaniel Boëchat, Rose Besen-McNally, Zachary Boucher

P120 Differences in the Responsiveness of Maturing Bovine Oocytes to an Acute Heat Stress Depending on Month of the Year

Rebecca R. Payton, Arnold M. Saxton, J. Lannett Edwards

P126 The Expression of Agouti-Signaling Protein During Folliculogenesis and Oocyte Maturation in Cattle

Heather L. Chaney, Brady M. Nicewarner, Jaelynn Z. Current, Mingxiang Zhang, Jianbo Yao

P129 Optimization of Culture Conditions for Extended Prophase I Arrest and Subsequent Meiotic Maturation for Oocytes From CF-1 Mice

Mackenzie L. Cunningham, Janice P. Evans

OVARY: CORPUS LUTEUM

P138 Neuregulin-1 a Pro-Survival Factor in Luteal Cell

Saswati Banerjee, Winston E. Thompson, Indrajit Chowdhury

OVARY: FOLLICULOGENESIS

P141 LH Stimulation of Meiotic Resumption in Ovarian Follicles by Protein Kinase A and a PPP-Family Phosphatase


Jeremy R. Egbert, Ivan Silbern, Katie M. Lowther, Tracy F. Uliasz, Siu-Pok Yee, Henning Urlaub, Laurinda A. Jaffe

P144 Reproductive Patterns and Follicular Waves in Postpartum Lactating Mares



Eduardo L. Gastal, Marilia Pastorello, Daniel B. Godoi, Melba O. Gastal

P147 Doppler Ultrasonography Characterizes Hemodynamics and Blood Vessel Properties in Preovulatory Ovaries of Mice


Samantha R. Greenspun, Hanxue Zhang, Rebecca M. Williams, Yi A. Ren

 **P150 Circulating AMH, Antral Follicle Count, and Ovulation Rate After Unilateral Ovariectomy in Cattle: Influence of the Bovine Fecundity Allele Trio**

Alvaro Garcia-Guerra, Lauryn Cooper, Brian W. Kirkpatrick, Milo C. Wiltbank

  **P153 Steroidogenic Factor 1 (SF-1; Nr5a1) Regulates Primordial Follicle Assembly and Activation**

Camilla H K Hughes, Olivia E. Smith, Mylène Brunelle, Nicolas Gévry, Bruce D. Murphy

 **P156 Ovarian Gene Expression, Oocyte and Embryo Quality in Mice Expressing Re-Routed FSH**

Suzanna C. Kafer, Francesca Duncan, T. Rajendra Kumar

PARTURITION/MYOMETRIUM

P159 NALCN and Accessory Gene Expression in Human and Mouse Myometrium

Lindsey N. Kent, Juan J. Ferreira, Mashal Naqvi, Sophia G. Weil, Celia M. Santi, Sarah K. England

PLACENTAL DEVELOPMENT & FUNCTION

P162 Hippo Signalling Component WWTR1 Controls Human Trophoblast Progenitor Self-Renewal and Fine Tunes Their Differentiation Program

Namrata Roy, Abhik Saha, Soma Ray, Ananya Ghosh, Soumen Paul

P168 Palmitoleate Protects Against Zika Virus-Induced Endoplasmic Reticulum (ER) Stress and Apoptosis in Trophoblasts

Philma Glora Muthuraj

P171 Androgen Receptor—A Potential Novel Player in Placental Mitochondria Function

Agata M. Parsons¹, Adam J. Chicco, Gerrit J. Bouma

P177 Conceptus Development and Transcriptome Differences Between Parthenogenetic and Control Bovine Embryos

Ky Pohler, Gessica F. Johannsen, Sophia Ortega, Gabriela Melo, Claire Timlin, Victor Mercadante, Kiho Lee, Heewon Seo

P180 Loss of TUBB is not “Beta” for the Equine Pregnancy

Charlotte A. Shilton, Anne Kahler, Brian W. Davis, Daniel Hampshire, D Claire Wathes, Terje Raudsepp, Amanda M. de Mestre

P183 3D Organoids Generated From Human Trophoblast Stem Cells Model Early Placental Development and Susceptibility to Emerging Viral Infections

Rowan M. Karvas, Sonam Verma, Devesha Kulkarni, Deepak Kumar, Chen Dong, Brian Chew, Eshan Sane, Adrianus CM Boon, Sabine Dietmann, Indira U. Mysorekar, Thorold W. Theunissen

PREIMPLANTATION EMBRYO DEVELOPMENT

P186 The Effects of Propylparaben on Mouse Preimplantation Embryo Development

Nastasia Lai, Romana A. Nowak

P189 Optimised CO₂-Containing Medium for In Vitro Culture and Transportation of Mouse Preimplantation Embryos Without CO₂ Incubator

Yasuyuki Kikuchi, Sayaka Wakayama, Daiyu Ito, Masatoshi Ooga, Teruhiko Wakayama

P192 Cell Size and Polarisation Determine Cytokinesis Furrow Ingression Dynamics in Mouse Embryos

Lia Paim, Greg FitzHarris

P195 Effects of Human Recombinant Granulocyte Colony-Stimulating Factor Supplementation on Viability of Porcine Embryonic Development According to the Number of Cumulus Layers

Sang-Hwan Hyun, Lian Cai

REPRODUCTIVE AGING

P201 Investigating Aging-Related Changes of Innate Immune Cell Populations in Ovarian Tissue using Single-Cell RNA Sequencing

Zijing Zhang, Lu Huang, Lynae Brayboy, Michael Birrer

P204 The Combination of Advanced Paternal and Maternal Age Compromises Breeding Performance in Male Mouse Offspring

Cosmo C. Hahn, Julia L. Balough, Jodi A. Flaws, Guillermina M. Luque, Mariano G. Buffone, Francesca E. Duncan

REPRODUCTIVE CANCERS

P207 Investigating the Role of Soluble Metabolites in Primary Metastasis of High Grade Serous Ovarian Cancer

Tova M. Bergsten, Hannah Lusk, Jacob Porter, Laura Sanchez, Joanna E. Burdette

P213 Detection of Ovarian Cancer Chemoresistance Using a Novel Nanophotonic Switch Sensor and Artificial Intelligence

Meshach Asare-Werehene, Rob Hunter, Aseel Mandour, Hanan Anis, Benjamin Tsang

REPRODUCTIVE TECHNOLOGIES/ART/SCNT

P216 Bull Field Fertility Differences can be Estimated With In Vitro Sperm Capacitation and Flow Cytometry

Saulo Menegatti Zoca, Thomas W. Geary, Abigail L. Zezeski, Karl C. Kerns, Joseph C. Dalton, Bo R. Harstine, Matthew D. Utt, Robert A. Cushman, Julie A. Walker, George A. Perry

P219 Desiccation of Oocyte's Germinal Vesicles in Sheep and Non-Human Primates for Female Fertility Preservation

Daniela Regina Chavez, Pierre Comizzoli

P222 Characterization of Bovine Sperm Swimming Behavior Under Different Flow Rates of Viscoelastic Fluid to Induce Upstream Swimming

Shiva Phuyal, Chih Kuan Tung

P225 Development of Chimeric Embryos Produced by the Aggregation of Blastomeres Derived From Parthenogenetic Activation and Somatic Cell Nuclear Transfer in Pigs

Joohyeong Lee, Eunsong Lee, Sang-Hwan Hyun

REPRODUCTIVE TRACT: FEMALE

P231 Uterine Lumen Fluid is Metabolically Semi-Autonomous

Constantine A. Simintiras, Jessica N. Drum, Hongyu Liu, Katy S. Stoecklein, Sofia Ortega, Thomas E. Spencer

P234 Health Events During the First Year of Life can Alter the Uterine Environment and Ovarian Reserve in Cycling Heifers

Alexandria P. Snider, William T. Oliver, Matthew S. Crouse, Robert /;A. Cushman

P237 Influence of Progesterone and Estradiol Concentrations on Uterine PH and Microbiota in Beef Cattle

Rebecca K. Poole, Autumn Pickett, Ramiro V. Oliveira Filho, Gabriela D. de Melo, Reinaldo F. Cooke, Ky G. Pohler

P240 Regulatory Mechanisms of Spontaneous Oviductal Contraction During the Estrous Cycle in Cattle

Sayaka Kubota, Koji Kimura

P243 Cyclical Uterine Indian Hedgehog Signaling Regulates Adult Tissue Morphogenesis

Elle C. Roberson, Harrison Mark, Anushka N. Godambe, Ngan Kim Tran, John B. Wallingford

P246 Use of Immobilized Oviduct Glycans to Bind Sperm to Coverslips

Larissa J. Volz, Sandra Soto-Heras, David J. Miller

P249 Microbiome of Diseased Versus Healthy Bovine Uterus in Response to Antibiotic Treatment Postpartum

Matthew C. Lucy, Joao G N Moraes, Tamara Gull, Aaron C. Ericsson, Monica O. Caldeira, Scott E. Poock, Thomas E. Spencer

P252 Endometrial Cyclin A2 Deficiency is Associated With Female Infertility and Recapitulated in a Conditional Uterine CCNA2 Knockout Mouse Model

Fatimah Aljubran, Amanda Graham, Warren B. Nothnick

REPRODUCTIVE TRACT: MALE

P255 The Sodium-Glucose Cotransporter Isoform 1 (SGLT-1) is Important for Sperm Energetics and Motility

September Numata, Jeffrey McDermott, Gladis Sanchez, Amrita Mitra, Gustavo Blanco

SPERMATOGENESIS

P261 Sperm Chromatin Structure and Reproductive Fitness are Altered by Substitution of a Single Amino Acid in Mouse Protamine 1

Lindsay Moritz, Samantha B. Schon, Mashiya Rabbani, Yi Sheng, Ritvija Agrawal, Caleb Sultan, Kelsey Jorgensen, Yueh-Chiang Hu, Jayakrishnan Nandakumar, Kyle Orwig, Sy Redding, Saher Sue Hammoud

P264 CFAP61 is Required for Sperm Flagellum Formation and Male Fertility in Human and Mouse

Siyu Liu, Jintao Zhang, Zine Eddine Kherraf, Shuya Sun, Xin Zhang, Caroline Cazin, Charles Coutton, Raoudha Zouari, Shuqin Zhao, Fan Hu, Selima Fourati Ben Mustapha, Christophe Arnoult, Pierre F. Ray, Mingxi Liu

P267 Transcriptional Abundance of SPAM1/PH-20, CD44, C1QBP/HABP1 and HMMR Gene is Related to Nili-Ravi Buffalo Bull Fertility

John J. Parrish, Muhammad Amjad Awan, Shamim Akhter, Javeria Arshad

P273 Transcriptional Repression Pathway Governing Mammalian Meiotic Initiation

Xiaoyu Zhang, Sumedha Gunewardena, Ning Wang

P276 Retinoic Acid is Dispensable for Initiation and Progression Through Meiosis

Oleksandr Kirsanov, Taylor Johnson, Guang Hu, Karen Schindler, Chris Geyer

STEM CELLS AND IPS CELLS

P282 Single Cell Transcriptomic Analysis in a Human Model of Amniogenesis

Chari L. Cortez, Nikola Sekulovski, Sicong Wang, Michael J. Czerwinski, Amber E. Carleton, Jenna C. Wettstein, Jason R. Spence, Chien-Wei Lin, Deborah L. Gumucio, Kenichiro Taniguchi

TESTIS

P285 Dual ablation of Rhox5 and Rhox8 Compromises the Progression of Spermatogenesis in Mice

Maho Kasu, Yeongseok Oh, Constance J. Bottoms, Kanako Hayashi, James A. MacLean

P288 ADAD1 is a Testis-Specific RNA Binding Protein Required for Normal Translation of Specific Spermiogenesis Genes

Aditi Badrinath, Dana Reid, Christopher Eddy, Ashley Yang, Gabrielle Vittor, Elizabeth M. Snyder

TROPHOBLAST DIFFERENTIATION AND FUNCTION

P294 CDKN1C Contributes to the Regulation of Invasive Trophoblast Cells and Hemochorial Placentation

Regan L. Scott, Khursheed Iqbal, Kaela M. Varberg, Marija Kuna, Keisuke Kozai, Michael J. Soares

UTERINE BIOLOGY: ENDOMETRIUM, FIBROIDS

P303 Cytoskeletal Regulation of Notch and Hippo Signaling During Endometrial Stromal Cell Decidualization

Genna E. Moldovan, Asgerally Fazleabas

P306 Follicle-Stimulating Hormone Receptor is not Required for Mouse Uterine Development and Function

Mark A. Larsen, T. Rajendra Kumar

P309 RNA Epitranscriptomics and Associated Modifiers are not Altered in Uterine Fibroids

Jitu W. George, John S. Davis, Vargheese M. Chennathukuzhi, Thomas J. Begley, Qishan Lin

P312 Transcriptome Profile of Diseased Versus Healthy Bovine Endometrium in Response to Antibiotic Treatment Postpartum

Monica O. Caldeira, Joao G N Moraes, Scott E. Pooch, Thomas E. Spencer, Matthew C. Lucy

P315 Epithelial Sodium Channel (ENaC): A Missing Piece of the Equine Maternal Recognition of Pregnancy (MRP) Puzzle?

Casie S. Bass, Ashlyn Ruen,
Michelle L. DeBoer

⚡ P318 Investigating the Secretory Phase Changes and Decidual Hormone Response of Human Endometrial Epithelial Organoids

Harriet C. Fitzgerald, Andrew M. Kelleher, Danny J. Schust, Thomas E. Spencer

⚡🌐 P317 A Novel Endometriotic Organoid Model for Studying Cell Interactions and the Microenvironment During Endometriotic Lesion Development

Yong Song, Gregory W. Burns, Niraj R. Joshi, Ripa Arora, Julie J. Kim, Asgerally T. Fazleabas

REPRODUCTIVE CANCERS

P320 Glucose Metabolism in an Ishikawa Endometrial Cancer Cell Model Affected by E2 and Insulin

Jennifer R. Chase, Katelyn Heckathorn, Gabrielle Quick, Kelli Lawrence, Madison Howard, Sarah Reineke

REPRODUCTIVE TRACT: FEMALE

P321 Alert or Absent: How Attentive is the Oviduct?

Ryan Finnerty, Wipawee Winuthayanon

VIRTUAL POSTERS

**COMPARATIVE BIOLOGY/
EVOLUTION/EXOTIC SPECIES**

P443

Deleterious Impact of Most Used Pesticides in Cameroon on Archachatina Marginata, an African Giant Snails

Annick Enangue Njembele, Sylvie Ntyam Epouse Ondo, Kingsley Etchu

CONTRACEPTION

P369 Development of a Screening System for Contraceptive Candidates Using Cryopreserved Embryos of Mice

Hirofumi Nishizono

P438 Male Contraception is Coming: Who Do Men Want as Their Healthcare Providers?

Tamar L. Jacobsohn, Diana L. Blithe, Brian T. Nguyen, Stephanie T. Page, Arthi Thirumalai

**DEVELOPMENTAL ORIGINS OF HEALTH AND DISEASE (DOHAD)/
PRENATAL PROGRAMMING/
MATERNAL HEALTH**

P342 Maternal Lifestyle May Interfere With Prostaglandins Biosynthesis in the Human Fetal Adrenal

Laetitia L. Lecante, Panagiotis Filis, Zoe C. Johnston, Michelle Bellingham, Paul Fowler

P385 Direct Proteomic Mapping Pregnancy-Dependent Protein Sulfhydrylation in Human Uterine Artery

Jin Bai, Fenglong Jiao, Lan Huang, Dongbao Chen

P401 Effects of Lactation Undernutrition on Female Mice Sexual Maturity and Gene Expression in Hypothalamus During Peripubertal and Postpubertal Periods

Dominika Kawka, Julia Jaroslawska, Monika Kaczmarek

ENDOCRINE DISRUPTING CHEMICALS (EDC)/TOXICOLOGY

P346 Zearalenone Alters Ovarian Chemical Metabolism Protein Abundance in Prepubertal Gilts Differentially During Thermal Neutral and Heat Stress Conditions

Maria E. Gonzalez-Alvarez, Crystal M. Roach, Edith J. Mayorga, Jason W. Ross, Lance H. Baumgard, Aileen F. Keating

P357 Tributyltin-Induced Abnormal Adipose Tissue Transplantation Impairs the Reproductive Tract Features in Female Rats

Charles da Costa, Jordana Zanol, Oscar Niño, Edgar Wan Der Maas, Leandro Freitas-Lima, Jones Graceli

P375 Screening the Reproductive Toxicity of Emerging Bisphenols, Plasticizers and Flame-Retardants Using Organ Culture of the Rat Fetal Testis

Geraldine Delbes, Sarah Tardif, Natasha Letourneau, Arlette Rwigemera, Bernard Robaire

P440 Deleterious Effects of Pesticides Exposure on Archachatina Marginata, an African Giant Snail in Agricultural Sites Along the Cameroon Coastal Area

Annick Enangue Njembele, Maeva Seppo Njembele, Emmanuel Dicka kwambe, Sylvie Ntyam épouse Ondo, Kingsley Etchu

ENDOCRINOLOGY: REPRODUCTIVE NEUROENDOCRINE

P371 Establishment of an Immortalized KISS1-Expressing Cell Line Derived From Goat Preoptic Area

Yukina Oshimo, Arisa Munetomo, Fumie Magata, Yuta Suetomi, Shuhei Sonoda, Yukari Takeuchi, Hiroko Tsukamura, Satoshi Ohkura, Fuko Matsuda

P386 ZEB1 Inhibits Lhb Transcription by Blocking the Stimulatory Actions of GnRH and EGR1

Hailey Schultz, Carlos Al Alonso, Daniel J. Bernard

P420 Discovery and Characterization of a Novel Inhibin B Co-Receptor

Emilie Brûlé, Ying Wang, Yining Li, Yeu-Farn Lin, Xiang Zhou, Luisina Ongaro, Carlos Alonso, Chang H. Byeon, Cynthia S. Hinck, John P. Russell, Mitra Cowan, Ulrich Boehm, Frederique Ruf-Zamojski, Michel Zamojski, Cynthia L. Andoniadou, Stuart C. Sealfon, Kelly L. Walton, Craig A. Harrison, Andrew P. Hinck, Daniel J. Bernard

P454 Steroidogenic Factor 1 Regulates Transcription Of A Novel Inhibin B Co-Receptor In Pituitary Gonadotrope Cells

Yeu-Farn (Claire) Lin, Gauthier Schang, Hailey Schultz, Ulrich Boehm, Daniel Bernard

ENDOCRINOLOGY: STEROID HORMONES AND THEIR RECEPTORS

P399 Role of Androgen in Group B Streptococcus Induced Innate Immune Response and Subsequent Neurobehavioral Impairments

Seline Y. Vancolen, Taghreed Ayash, Marie-Julie Allard, Bernard Robaire, Guillaume Sébire

ENVIRONMENTAL IMPACTS ON REPRODUCTION

P337 Dietary Macronutrient Balance Significantly Impacts Male Reproductive Physiology

Taylor Pini, Helma Niranjani, Romain Barrès, Stephen Simpson, Angela Crean

EPIGENETIC REGULATION OF GENE EXPRESSION

⚡ P349 Parental Conflicting Role Mediates Regulation of the Chromatin Structure in the Mouse Zygote

Masatoshi Ooga, Rei Inoue, Sayaka Wakayama, Satoshi Kamimura, Teruhiko Wakayama

P363 An Integrative Analysis of the Uterine Corpus Endometrial Carcinoma (UCEC) TCGA Based on Race Using Computational Epigenetics and Transcriptomics Approaches

Huma Asif

P374 Temporal Control of Transcription During Prophase I of Male Meiosis in Mouse

Adriana K. Alexander, Paula E. Cohen, Charles Danko

P424 Estrogen and Progesterone Receptors Influence Chromatin Accessibility and Gene Expression Changes in the Mouse Uterus Across the Estrous Cycle

Wendy N. Jefferson, Elizabeth Padilla-Banks, Tianyuan Wang, Carmen J. Williams

P445 Functional Mutations in DNA Methyltransferase 3A (DNMT3A) Lead to Altered Gene Expression in Induced-Pluripotent Stem Cells That is Intensified During Neural Specification

Karine Doiron, Alexandra Langford-Avelar, Serge McGraw

FERTILIZATION/EGG ACTIVATION

P333 Important Role of ROMO1 on Mitochondrial Quality During Porcine Embryo Development

Dongjie Zhou, Xiang-Shun Cui

P351 TMEM95-Interacting Protein OLFRL1 is Dispensable for Mouse Fertilization

Leopoldo González-Brusi, Julieta G. Hamze, Ismael Lamas-Toranzo, María Jiménez-Movilla, Pablo Bermejo-Álvarez

P365 The PRAMEY Protein in Sperm Function During In Vitro Fertilization (IVF)

Chandler H. Kern, Wansheng Liu

P429 Role of Altered Transcripts in Delayed Ovulation and Infertility in Granulosa Specific ADAR1 Knockout Mice

Praveen Chakravarthi Veeraraghavulu, Rikki N. Nelson, Xiaoman Hong, Lane K. Christenson

P444 Effects of Sperm Single Layer Centrifugation in Percoll Plus and Low Spermatozoa Number per Straw on Conception Rate after Timed Artificial Insemination in Nellore Cows

Alicio Martins Jr, Tairini E. Cruz, Fernanda N. Marqui, Regina G. Abrahão, Fernando F. Polizel, Tatiana E. Berton, Rafaela S. Cardoso

P466 Role of Galectin-3-Binding Protein in Spermatozoa During Fertilization in the Domestic Cat Model

Tricia Rowilson, Pierre Comizzoli

IMPLANTATION

P366 Characterization of Long Non-Coding RNA (lncRNA) Profiles of the Ovine Conceptuses and Endometria During the Early Implantation Period

Yuta Matsuno, Kazuhiko Imakawa

P377 SIRT1 Plays an Important Role in Implantation and Decidualization During Mouse Early Pregnancy

Yeon Jeong Hwang, Gi-Jun Sung, Ryan Marquardt, Tae Hoon Kim, Yong-Pil Cheon, Jae-Wook Jeong

P382 The Complement System: Expression in the Endometrium During the Estrous Cycle and Pregnancy and Regulation by Interferon- γ in Endometrial Tissues in Pigs

Soohyung Lee, Inkyu Yoo, Yugyeong Cheon, Hakhyun Ka

P408 Porcine Conceptus IFNG is Post-Transcriptionally Regulated and Released From the Trophectoderm via Extracellular Vesicles to Recruit Metabolically Activated T cells

Bryan A. McLendon, Heewon Seo, Avery C. Kramer, Robert C. Burghardt, Guoyao Wu, Fuller W. Bazer, Gregory A. Johnson

P413 An Investigation in the Role of Maternal Neutrophils in LPS-Induced Early Pregnancy Defects in the Mouse

Sourav Panja, John T. Benjamin, Bibhash C. Paria

P415 Irx3 Promotes Gap Junction Communication Between Uterine Stromal Cells to Regulate Vascularization and Promote Successful Embryo Implantation

Ryan M. Brown, Linda Wang, Anqi Fu, Athilakshmi Kannan, Michael Mussar, Indrani Bagchi, Joan Jorgensen

MEIOSIS

P348 PBDE47 Exposure Affects the Meiotic Maturation of Mouse Oocytes Through Oxidative Stress and Apoptosis

Minghong Sun, Shaochen Sun, Xiangshun Cui

P360 PRC1 is Essential for Anaphase Spindle Midzone Assembly and Cytokinesis in Mouse Oocyte Meiosis

Xiaohan Li, Shaochen Sun, Xiangshun Cui

P453 Single-cell RNA Sequencing Reveals the Cell Atlas of Fetal Rabbit Ovarian Development

Namya Mellouk, Béatrice Mandon-Pépin, Aurélie Dewaele, Luc Jouneau, Anne Aubert-Frambourg, Emilie Dujardin, Geneviève Jolivet, Eric Pailhoux, Maëlle Pannetier,

P353 Glutathione Deficiency Decreases Mouse Oocyte Lipid Droplet Stores and Increases Oxidative Stress, Reducing Oocyte Competence

Kelli F. Malott, Samantha Reshel, Laura Ortiz, Jinhwan Lim, Ulrike Luderer

P358 Introduction of siRNA into Mouse GV-stage Oocytes by Electroporation

Takuto Yamamoto, Shinnosuke Honda, Issei Ideguchi, Shuntaro Ikeda, Naojiro Minami

P379 Stem Cell Factor (SCF)/C-Kit Signaling During In Vitro Maturation Affects Meiotic and Developmental Competence of Porcine Oocytes

Eunhye Kim, Sang-Hwan Hyun

P380 Dynamics of Mitochondrial DNA Copy Number During In Vitro Bovine Oocyte Maturation

Samuel Gebremedhn, Evangeline Natera, Kelsey Lockhart, Bethany Krueger, Sandeep Rajput, Rebecca Krisher, Marcello Rubessa

P381 ALK5-SMAD2/3 Signaling in Granulosa Cells is Required for the Acquisition of the Oocyte Developmental Competence

Yuki Akimoto, Wataru Fujii, Kunihiko Naito, Koji Sugiura

OOGENESIS AND OOCYTE MATURATION

P330 Effect of Fibroblast Growth Factor Signaling on Cumulus Expansion in Mice in Vitro

Takuya Kanke, Wataru Fujii, Kunihiko Naito, Koji Sugiura

P340 Neurotrophin-4 Improves Porcine Oocyte Maturation In Vitro and Subsequent Embryonic Development After Parthenogenetic Activation

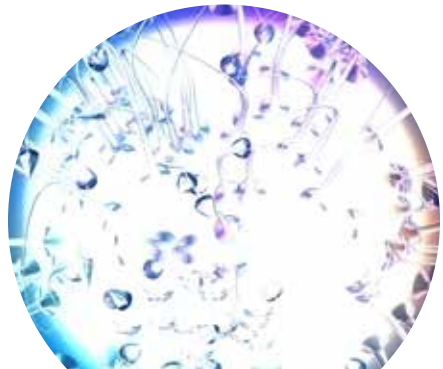
Mirae Kim, Sang-Hwan Hyun

P341 Effect of High Temperature on Oocyte Meiosis and Subsequent Embryonic Development in Pigs

Song-Hee Lee, Xiang-Shun Cui

P347 Toxic Effects of Citrinin on Porcine Oocytes Maturation

Jie Jiang, Hyung Kim, Shun Cui



P393 Glycine Transporter GLYT1 is Regulated by Active Suppression in Mouse Cumulus-Oocyte Complexes and is Required for Early Embryo Survival Under Osmotic Stress In Vitro

Allison K. Tscherner, Jay M. Baltz

P423 NOD/ShiLtJ Strain: A Mouse Model to Investigate the Regulation of Fetal Oocyte Attrition

Rose Besen-Mcnally, Nathaniel Boéchat, Ruby Boateng, Ewelina Bolcun-Filas

P432 Early Depletion of Ovarian Reserve and DNA Damage Contribute to Infertility of Nemp1 Deficient Female Mice

Kyungwon Ha, Helen McNeill, Andrea Jurisicova

P455 Dynamic Distribution of Nuclear Speckles During Oocyte Development and Maturation in the Domestic Cat

Pei-Chih Lee, Hannah Sylvester, Pierre Comizzoli

OVARIAN DYSFUNCTION

P329 The Genetic Basis of Premature Ovarian Insufficiency in Perrault Syndrome

Elena J. Tucker, Shabnam Bakhshalizadeh, Katrina M. Bell, Gorjana Robevska, Jocelyn van den Bergen, Sylvie Jaillard, Daniella Hock, Erica Davis, Farid Ullah, Katie Ayers, Rajini Sreenivasan, Gary Hime, David Stroud, David R. Thorburn, John Chirstodoulou, Philippe Touraine, Andrew H. Sinclair

P402 High A4 Females are Present in Other Herds and have Naturally Occurring Androgen Excess Similar to Women Diagnosed With Polycystic Ovary Syndrome

Mohamed A. Abedal-Majed, Shelby A. Springman, Hanan Jafar, Brooke Bell, Scott Kurz, Kyle Wilson, Andrea Cupp


P418 The Role of MDR-1 and Sirtuins in Maintaining Oocyte Quality and Mitochondrial Physiology

Dalileh Nabi, Lynae Brayboy

P436 Checkpoint Inhibitor Immunotherapy Diminishes Oocyte Number and Quality: Consequences for Fertility of Female Cancer Survivors

Lauren R. Alesi, Amy L. Winship, Sneha Sant, Jessica M. Stringer, Teharn Hegarty, Meaghan J. Griffiths, Karla J. Hutt, Sherene Loi

OVARY: CORPUS LUTEUM

 **P417** Acute Metabolomic and Transcriptomic Changes During Luteolysis: Identification of New Players in Luteal Maintenance

Emilia Przygodzka, Jitu W. George, Scott Benson, Michele R. Plewes, Corrine F. Monaco, Jessica Keane, Renee McFee, Yashpal S. Chhonker, Daryl J. Murry, Jennifer S. Wood, Andrea Cupp, John S. Davis

OVARY: FOLLICULOGENESIS

P323 Effects of PD-1 Blockade on Ovarian Follicles in a Prepubertal Female Mouse Model

Pauline C. Xu, Yi Luan, Seok-Yeong Yu, Jing Xu, Donald W. Coulter, So-Youn Kim

P326 Expression and Characterization of Fmr1 Splice Variants During Folliculogenesis in the Rat

Ianina C. Ferder, Lucía D. Espeche, Carlos D. Bruque, Marta Tesone, Liliana Dain

⚡ P328 Short Photoperiod Exposure Reduces Intra-Ovarian mRNA Expression of Hypoxia Related Genes

Simon A. Chau, Kelly A. Young

P331 The Role of Janus Kinase 3 (JAK3) in Bovine Ovarian Granulosa Cells

Amir Zareifard, Kalidou Ndiaye

P334 The Requirement of Ubiquitin C-Terminal Hydrolase L1 (UCHL1) in Mouse Ovarian Development and Fertility

Morgan Woodman, Meghan Ozcan, Kathryn J. Grive

P352 PPAR-Gamma Modulator Induces AMH Expression and Activation of Autophagy in Primordial Follicle of Mouse Neonatal Ovary

Ji Young Hwang, Sook Young Yoon, Jung Ah Yoon, Miseon Park, Jin Hee Eum, Woo Sik Lee

P354 Effects of Maternal Docetaxel Therapy on the Ovarian Reserve and Fertility Potential

Julienne Chaquor, Morgan Woodman, Meghan Ozcan, Kathryn J. Grive

P359 The Up-Regulation of ACE2, a Receptor for SARS-COV-2, in Preovulatory Follicles of the Human Ovary

Misung Jo, Yohan Choi, Shawn Park, Hayce Jeon, Mats Brannstrom, James Akin, Curry Thomas

P398 Photostimulated Ovarian Recrudescence Differentially Regulates Metabolically-Related Gene Expression in Siberian Hamster Ovaries

Anastasiia Reipolska, Kelly Young, Josephine La

P403 Pharmacokinetic and Pharmacodynamic In Vivo Model of IGF-1 in Dairy Cows and its Effect on Estradiol and Progesterone Production

Malgorzata J. McEvoy, Marion McAfee, Kieran Hughes, Katarzyna K. Piotrowska-Tomala, Agnieszka W. Jonczyk, Pawel Kordowitzki, Karolina Lukasik, Leo Creedon, Dariusz J. Skarzynski

P409 Slit/Robo Signaling Antagonizes LH Action in Ovarian Granulosa Cells in Mice

Florine Grudet, Philippe Godin, Emmanuelle Martinot, Michael Bérubé, Derek Boerboom

P421 SFRP4 Inhibits Gonadotropin Action in Granulosa Cells via a GSK3 β /CTNNB1-Dependent Mechanism

Michael Bérubé, Atefeh Abedini, Gustavo Zamberlam, Derek Boerboom

P430 Dietary Coconut Oil Mitigates Hyperandrogenemia in Obese Female Pigs Via Suppression of Adrenal and Ovarian Androgen Steroidogenesis

Payal A. Shah, Kadden H. Kothmann, Cassandra Skenandore, Luke Browning, Camille Goblet, Laura Chau, Matthew Grizzaffi, Annie E. Newell-Fugate

P434 TGF β Receptors Localized At Sites Of Intercellular Membrane Contact May Mediate Gdf9 Signalling From Oocyte To Granulosa Cells

Wusu Wang, Qin Yang, Hugh J. Clarke

P435 The TGF β but not Epidermal Growth Factor Signaling Pathway is Required to Sustain Extracellular Matrix-Linked Gene Expression During Cumulus Expansion

Karen F. Carvalho, Hugh J. Clarke

PARTURITION/MYOMETRIUM

P370 Differences in Hormone Levels Around Parturition in Hanwoo (*Bos Taurus Coreanae*) Following Artificial Insemination and Embryo Transfer

Jisu Kim, Junkoo Yi, Soo-Young Yum, Daehyun Kim, Sera Han, Jaejung Ha, Daejin Jung, Goo Jang, Wonyou Lee, Joonho Moon

P446 Assessing the Clinical Usefulness of Novel Tocolytics in Pregnant Human Myometrium

Md Hossain, Jorge M. Tolosa, Roger C. Young, Roger Smith, Jonathan Paul

PLACENTAL DEVELOPMENT & FUNCTION

P324 Sex Differences in Protein Coding RNA Expression in First and Third Trimester Human Placenta

Amy E. Flowers, Tania L. Gonzalez, Yizhou Wang, Ekaterina L. Clark, Chintda Santiskulvong, Nikhil V. Joshi, Rae A. Buttle, Erica Sauro, Rosemarie DiPentino, Jessica L. Chan, John Williams III, Margareta D. Pisarska

P336 Exogenous Progesterone in Early Pregnancy has Programming Effects on Phosphate, Calcium, and Vitamin D Signaling in the Ovine Endometrium and Placenta in Late Pregnancy

Claire Stenhouse, Katherine M. Halloran, Emily C. Hoskins, Robyn M. Moses, Heewon Seo, Kathrin A. Dunlap, M Satterfield, Guoyao Wu, Gregory A. Johnson, Dana Gaddy, Larry J. Suva, Fuller W. Bazer

P373 Changes in the Utero-Placental Immune Milieu During Normal and Antigestagen-Induced Luteolysis in the Dog

Miguel Tavares Pereira, Renata Nowaczyk, Selim Aslan, Serhan Ay, Mariusz Kowalewski

P392 Sub-Optimal Paternal Diet Alters the Sex-Specific Placental Transcriptome in Mice

Hannah L. Morgan, Nadine Holmes, Fei Sang, Victoria Wright, Adam Watkins

P397 Myostatin Increases Human Trophoblast Cell Invasion by Upregulating SERPINE2 Through a SMAD2/3 Signalling Pathway

Faten Ahmed, Christian Klausen, Hua Zhu, Peter Leung

P405 Linking Obesity in Pregnancy With Preeclampsia-Like Placental Features and Inflammatory Biomarkers

Pascale Charette, Shannon A. Bainbridge, Brian J. Cox

P407 Porcine Conceptuses Utilize the Pentose Phosphate Pathway to Support Development During the Peri-Implantation Period of Pregnancy

Avery C. Kramer, Heewon Seo, Bryan A. McLendon, Robert C. Burghardt, Guoyao Wu, Fuller W. Bazer, Gregory A. Johnson

P416 Human Placenta mRNA Transcriptome Changes Drastically From First to Third Trimester in a Matched Cohort

Tania L. Gonzalez, Sahar Wertheimer, Yizhou Wang, Amy E. Flowers, Chintda Santiskulvong, Nikhil V. Joshi, Rae A. Buttle, Erica Sauro, Ekaterina L. Clark, Jessica L. Chan, Rosemarie DiPentino, John Williams III, Margareta D. Pisarska

PREIMPLANTATION EMBRYO DEVELOPMENT

P332 Preovulatory Estradiol Elicits an Effect on Pregnancy Maintenance in Beef Cows

Jaclyn N. Ketchum, George A. Perry, Kaitlin M. Epperson, Lacey K. Quail, Makayla A. Ogg, Abigail L. Zezeski, Jerica J.J. Rich, Saulo Menegatti Zoca, Adalaide C. Kline, Taylor N. Andrews, M. Sofia Ortega, Michael F. Smith, Thomas W. Geary

P338 Functional Analysis of Myc Family Genes in Early Mouse Embryos

Hana Sato, Takuto Yamamoto, Shuntaro Ikeda, Naojiro Minami

P356 The Role of Intercellular Bridges in Preimplantation Embryo Development

Filip Vasilev, Gaudeline Rémillard-Labrosse, Greg FitzHarris

P388 Fructose Metabolism by the Sheep Conceptus During the Peri-Implantation Period of Pregnancy

Robyn M. Moses, Claire Stenhouse, Katherine M. Halloran, Nirvay Sah, Avery Kramer, Bryan McLendon, Heewon Seo, Gregory A. Johnson, Guoyao Wu, Fuller W. Bazer

P394 High-Resolution Ribosome Profiling Reveals Translational Selectivity During Bovine Preimplantation Embryo Development

Linkai Zhu, Rajan Iyyappan, Qi Chen, Andrej Susor, Tong Zhou, Zongliang Jiang

P441 Characterization of Transcriptional Activity During ZGA in Mammalian SCNT Embryos

Mingtian Deng, Feng Wang

REPRODUCTIVE AGING

P322 Deregulation of Mitochondrial Activity and Redox Status in Oocytes From Aged Mouse Females: Is it Maternal or Postovulatory Ageing to Blame?

Anna Ajduk, Katarzyna Czajkowska

P343 Intracellular Calcium Dynamics in Metaphase II Frozen Mouse Oocytes

Omar Ammar

P344 The Clock is Ticking on Oocyte Aging and Epigenetic

Pe'era Wasserzug Pash, Rachel Rothman, Eli Reich, Oshrat Schonberger, Yifat Weiss, Naama Srebnik, Yaara Cohen Hadad, Amir Weintraub, Ido Ben-Ami, Hananel Holtzer, Michael Klutstein

P350 Senescent Cells Accumulate in Ovarian Stromal Region of Aged Mice

Natsumi Maruyama, Isuzu Fukunaga, Tomoaki Kogo, Wataru Fujii, Kunihiiko Naito, Koji Sugiura

P396 PEDF as a Possible Marker for Early Onset of Reproductive Aging

Luba Nemerovsky, Hadas Bar-Joseph, Anat Eldar-Boock, Ido Ben-Ami, Ruth Shalgi

REPRODUCTIVE CANCERS

P395 Potential Anti-Cancer Effect of Chandrabhabati, an Ayurvedic Medicine, on Prostate Cancer

Pradeep K. Chaturvedi, Palak Singh, Bodhana Dhole, Deepak Pandey, Surabhi Gupta

P411 Metabolic Changes of Granulosa Cell Tumors in PIK3CA* Mice

Seok-Yeong Yu, Yi Luan, Pauline Xu, So-Youn Kim

REPRODUCTIVE TECHNOLOGIES/ART/SCNT

P376 Excessive FSH Doses During Ovarian Stimulation Exacerbate Heterogeneity of Ovulatory Follicles Induce Premature Luteinization

Zaramasina L. Clark, Kaitlin R. Karl, Meghan L. Ruebel, Keith E. Latham, James J. Ireland

P390 Induction of Estrus by Administering Inhibin Antiserum Along With eCG in Anestrus Labrador Retrievers

Mei Tsuchida, Daichi Sakurai, Nako Komura, Naomi Nakagata, Hiroshi Suzuki

P400 Effect of Culture Medium on Male Advantage for Mouse Embryos Exhibiting Early Cleavage

Hiroyuki Watanabe, Haruka Kobayashi, Risa Onodera, Hiroshi Suzuki

P426 Excessive FSH Doses During Ovarian Stimulation Exacerbate Heterogeneity and Induce Premature Luteinization of Ovulatory-Size Follicles

Zaramasina L. Clark, Kaitlin R. Karl, Meghan L. Ruebel, Keith E. Latham, James J. Ireland

REPRODUCTIVE TRACT: FEMALE

P335 Health Events During the First Year of Life can Alter the Uterine Environment and Ovarian Reserve in Cycling Heifers

Alexandria P. Snider, William T. Oliver, Matthew S. Crouse, Robert A. Cushman

P355 Steroid Receptor Coactivator 3 is required to Prevent Early Pregnancy Loss in the Mouse

Vineet K. Maurya, Lan Hai, Maria M. Szwarc, William E. Gibbons, Francesco J. DeMayo, John P. Lydon

P367 Pharmacokinetic Comparison of Three Testosterone Administration Methods in Female Mice

Prianka H. Hashim, Hadrian M. Kinnear, Cynthia Dela Cruz, Vasanth Padmanabhan, Ariella Shikanov, Molly Moravsek

P368 Effect of Tokishakuyakusan on Bovine Oviductal Contraction and Relaxation

Sayaka Kubota, Yuki Yamamoto, Koji Kimura

P383 Innate Lymphoid Cell Frequency in the Female Reproductive System Fluctuates During the Estrus Cycle

Sara Asif, Barbara Vanderhyden, Michele Ardolino

P410 Progesterone Regulates the Biosynthesis and Interconversion of Polyamines in the Sheep Endometrium During Pregnancy

Katherine M. Halloran, Emily C. Hoskins, Claire Stenhouse, Robyn M. Moses, Heewon Seo, Bryan A. McLendon, Kathrin A. Dunlap, Michael C. Satterfield, Gregory A. Johnson, Guoyao Wu, Fuller W. Bazer

P419 Heparin and Progesterone Exert Synergistic Effect to Improve the In-Vitro Fertilization Rate of Bovine Sperm Bound to Oviduct Cell Aggregates From Isthmus

Karima M. Ghonemy

P427 Characterization of Adult Uterine Cells Using Single Cell RNA-Seq Reveals a Complete Lack of Normal Glandular Epithelium in Mice Exposed Neonatally to Diethylstilbestrol

Elizabeth Padilla-Banks, Wendy N. Jefferson, Alisa Suen-Wallach, Brian Papas, Xin Xu, Carmen Williams

P439 Reproductive Morphology of Fraser's Dolphin (*Lagenodelphis hosei*)

Kimberly B. Benjamin, Michael C. Velarde, Joseph S. Masangkay, Lemnuel V. Aragonés

P448 Spatiotemporal Endometrial Transcriptome Analysis Revealed the Luminal Epithelium as Key Player During Initial Maternal Recognition of Pregnancy in the Mare

Alba Rudolf Vegas, Giorgia Podico, Igor F. Canisso, Heinrich Bollwein, Carmen Almiñana, Stefan Bauersachs

P450 Defective Bone Morphogenetic Protein (BMP) Signaling Impairs Decidualization in Women With Endometriosis

Suni Tang, Peixin Jiang, Joie Guner, William Gibbons, Xiaoming Guan, Ramya P. Masand, Diana Monsivais

P452 Anatomical and Cellular Heterogeneity in the Mouse Oviduct— Its Potential Roles in Reproduction and Preimplantation Development

Keerthana Harwalkar, Matthew J. Ford, Katie Teng, Nobuko Yamanaka, Brenna Yang, Ingo Burtscher, Heiko Lickert, Yojiro Yamanaka

REPRODUCTIVE TRACT: MALE

P387 Epididymal Basal Cells Express the Adult Stem Cell Marker LGR5

Laurie Pinel, Daniel Cyr

P389 A Dynamic Basal Complex Modulates Mammalian Sperm Movement

Sushil Khanal, Miguel Leung, Abigail Royfman, Emily Lili. Fishman, Barbara Saltzman, Hermes Bloomfield-Gadêlha, Tzviya Zeev-Ben-Mordehai, Tomer Avidor-Reiss

P425 Immune Cell Profile in the Epididymis of Leptin and Leptin-Receptor Knockout Mice

Christopher A. Pearl, Hilary Skalski, Kristin Renkema

P433 Autoimmune Regulator (Aire) Expression in Male and Female Reproductive Tracts

Kathryn S. Brittain, Soo Ahn, Margaret G. Petroff

P437 Deciphering the Sperm Capacitation Dynamic by Mathematical Modeling

Bertrand de Prelle, David Gall, Pascale Lybaert

SEX DETERMINATION AND DIFFERENTIATION

P467 Two Paths Diverged in the Fetal Mouse Ovary, Sorry I Could Not Travel Both

Saniya Rattan, Chang Liu, Karina Rodriguez, Humphrey H-C. Yao

SPERMATOGENESIS

P361 LRRC23 is a Conserved Component of the Radial Spoke That is Necessary for Sperm Motility and Male Fertility in Mice

Xin Zhang, Jiang Sun, Yonggang Lu, Jintao Zhang, Keisuke Shimada, Taichi Noda, Shuqin Zhao, Takayuki Koyano, Makoto Matsuyama, Shushu Zhou, Jiayan Wu, Masahito Ikawa, Mingxi Liu

P364 Knockout of PRAMEL1 Impairs Germ Cell Development During Spermatogenesis in Mice Through the Retinoic Acid (RA) Signaling Pathway

Mingyao Yang, Wenzhi Ma, Jon Oatley, Wansheng Liu

P391 In Vivo Activation of Sperm Chromatin Fragmentation (SCF) to Loop-Sized Fragments of 25 to 50 kb

Jordi Ribas-Maynou, Hieu Nguyen, W. Steven Ward

P406 Studying the Dynamic of DNA Methylation in Rat Male Germ Cells During Gametogenesis by Methyl-Seq Capture

Rhizlane El Omri-Charai, Isabelle Gilbert, Mariana Gabriela Ghinet, Rebecka Desmarais, Julien Prunier, Claude Robert, Guylain Boissonneault, Geraldine Delbes

P414 Understanding Novel Roles of Argonaute Proteins in Spermatogenesis and Early Embryonic Development

Amanda E. Touey, Maria de la Mercedes Carro, Jen K. Grenier, Andrew Grimson, Paula Cohen

P442 Characterization of Estrogen Production and Function in Adult Rabbit Testes

Aurélie Dewaele, Emilie Dujardin, Hélène Jammes, Frank Giton, Béatrice Mandon-Pepin, Eli Sellem, Marjolaine Andre, Audrey Albina, Eric Pailhoux, Geneviève Jolivet, Maëlle Pannetier

P447 Histone γ -H2AX in Human Sperm Might be Involved in Recurrent Pregnancy Loss

Ariadna Delgado-Bermúdez, Maria Hernández-Melià, Jordi Ribas-Maynou, Marc Yeste

STEM CELLS AND IPS CELLS

P325 Investigating the Role of Notch Signaling in Endometrial Mesenchymal Stem-Like Cells

Sisi Zhang, Rachel Chan, Ernest Ng, William Yeung

P345 Analysis of Differential Epigenetic Reprogramming Potential Among Pluripotent, Germ and Somatic Cell Types

Yu-Huey Lin, John R. McCarrey

P384 Transcriptional Regulation by TAF4b From Pluripotency to Germ Cell Differentiation

Sona Relovska, Megan A. Gura, Kimberly M. Abt, Kimberly A. Seymour, Richard N. Freiman

TESTIS

P378 Paternal Diet Influences Alterations in Testicular Histology and Total Gene Expression Patterns in a Mouse Model

Nader Eid, Rachel Jimminson, Hannah L. Morgan, Marcos Castellanos Uribe, Iqbal Khan, Adam Watkins

P412 Deficiency of Tumor Progressor Locus 2 Leads to Enlarged Testes in Mice

Jonathan M. Hancock, Yuehuan Li, Denise Fahey, Krishna Latha, Wendy Watford, Xiaoqin Ye

⚡ P431 Functional Characterization of TMEM249 in Assembly and Transport of the CatSper Channel Complex

Xiaofang Huang, Haruhiko Miyata, Giulia Mori, Huafeng Wang, Ikawa Masahito, Riccardo Percudani, Jean-Ju Chung

P449 Exposure to Corn-Cob Bedding During Pubertal Development has Long-Term Deleterious Effects on Murine Testis Function

Morgan L. Burns, Amber M. Petty, Lauryn K. Clifton, Kyle W. Lovercamp, Amy T. Desaulniers

P451 Cryopreservation of Testicular Tissue as a Tool to Preserve the Reproductive Potential of Prepubertal Lambs

Rensson Céliz Ygnacio, Marco Novaes, Anna Ferreira, Lucy Ñaupas, Francisco Gomes, Ana Rodrigues

TROPHOBLAST DIFFERENTIATION AND FUNCTION

⚡ P422 miR-125b is a Negative Regulator of Extracellular Vesicles Biogenesis and Distribution at the Embryo-Maternal Interface

Maria Guzewska, Elzbieta Karnas, Ewa Zuba-Surma, Monika Kaczmarek

UTERINE BIOLOGY: ENDOMETRIUM, FIBROIDS

P327 Cannabinoid Receptors in the Endometrium of Rhesus Macaques With Endometriosis

Fangzhou Luo, Ov Slayden

P339 The Purinergic System Molecules Are Expressed and Regulated at the Maternal-Conceptus Interface in Pigs

Yugyeong Cheon, Inkyu Yoo, Soohyung Lee, Hakhyun Ka

P362 Effects of influenza A infection on uterine function

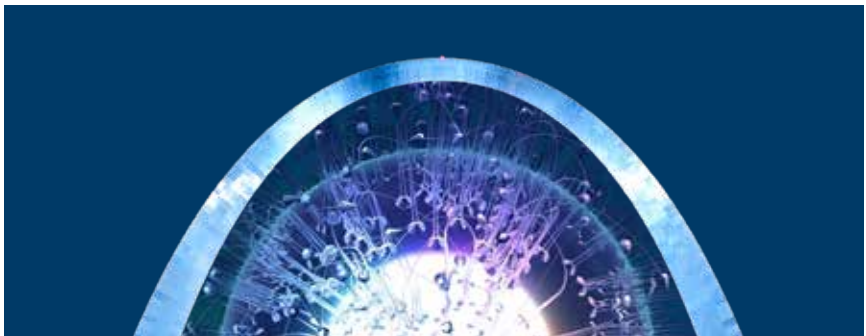
Yuehuan Li, Jonathan Hancock, Krishna Latha, Denise Fahey, Wendy Watford, Xiaoqin Ye

P372 CD40L-CD40 Signaling in Porcine Endometrial Endothelial Cells: Implication for Modulation of Maternal Immune Responses During Early Pregnancy in Pigs

Inkyu Yoo, Soohyung Lee, Yugyeong Cheon, Tae Sub Park, Hakhyun Ka

P404 Alternative Therapies for Endometriosis Pain: A Cross-Sectional Canadian Survey

Mahsa Gholf, Emma Adamson-De Luca, Lauren G. Foster, Nicholas A. Leyland, Philippa Bridge-Cook, Mathew Leonardi, Jocelyn M. Wessels



AUTHOR INDEX

Since the creation of this list, some of the authors listed below may have, regrettably, withdrawn their abstracts from the meeting. Also, authors who were not entered correctly in the submission system may not appear; *please see the complete author list in the meeting app.*

A

- Abedal-Majed, MA**, S13.3, P402
- Abedini, A**, P421
- Aboelenain, M**, S22.3, P105
- Abrahão, RG**, P444
- Abt, K**, P111
- Abt, KM**, P384
- Acoury, GJ**, S12.3
- Adamson-De Luca, E**, P404
- Aggarwal, K**, FT36, P296
- Agrawal, R**, P261
- Aguiar, FL**, P112, P113
- Aguiar, JE**, P271
- Ahern, JG**, FT29, P152
- Ahmed, FA**, P397
- Ahn, SH**, P433
- Ajduk, A**, P322, P220
- Akbarinejad, V**, P140
- Akhter, S**, P267
- Akimoto, Y**, P381
- Akin, JW**, S5.3, P137, P359
- Al Subeh**, ZY, P209
- Al-Alem, L**, S5.4
- Albert, V**, P2
- Albina, A**, P442
- Alesi, LR**, P436
- Alexander, AK**, P374, FT37, P12
- Aljubran, F**, FT43, P252
- Allais, A**, S15.5
- Allard, M**, P399
- Almamun, M**, P122
- Almiñana, C**, P448
- Alonso, CA**, P39, P386, FT46, P420
- Altman, MD**, P37
- Alves, BG**, P112, P113
- Alves, KA**, P112, P113
- Amaral, TF**, S15.6
- Amargant, F**, S11.3
- Amazu, C**, P158
- Ambati, CR**, P308
- Ameli, S**, S2.4, S25.5
- Ammar, OF**, P343
- Amme, J**, S4.5
- Amorim, CA**, P140
- Anamthathmakula, P**, S18.3
- Anbarci, DN**, PC5
- Anckaert, E**, S20.2
- Andersen, K**, P200
- Andoniadou, CL**, FT46, P420
- Andre, M**, P442
- André, M**, S8.6
- Andrews, TN**, S5.2, P217
- Anis, H**, FT38, P213
- Anvari, H**, S15.1
- Aragones, LV**, P439
- Ardolino, M**, P383
- Arena, HA**, P115, P116
- Arias, A**, P71
- Arnoult, C**, P264
- Arora, R**, FT35, P317, FT39, P319, P79, S7.1
- Arshad, J**, P267
- Asare-Werehene, M**, FT38, P213
- Ashley, RL**, S4.4
- Asif, D**, S20.6
- Asif, H**, P363
- Asif, S**, P383
- Aslan, S**, S5.6, P373
- Ataman-Millhouse, LM**, P22
- Aubert-Frambourg, A**, P453
- Ault-Seay, TB**, P256
- Avidor-Reiss, T**, P389
- Awan, MA**, P267
- Ay, S**, P373
- Ayash, T**, P399
- Azadi, P**, P248

B

- Babayev, E**, P98, S6.5
- Bacon, SJ**, S4.3
- Badrinath, A**, S12.3, P288

Bagchi, I, P415
Bagchi, IC, P242, P305, P29
Bagchi, MK, P242, P305, P29
Bai, J, P385
Bainbridge, RE, S9.1
Bainbridge, SA, P405
Bakhshalizadeh, S, P329, S13.5
Balboula, AZ, FT14, P91, FT50, P95
Ball, B, P166
Balough, JL, P203, P204
Baltz, JM, P393
Banerjee, S, S5.5
Baptissart, M, P272
Barakat, R, S25.3
Bar-Joseph, H, P326
Barrès, R, P337
Bartolomei, M, P68
Bashir, S, P316, P51
Bass, C, P302
Bass, CS, P315
Bastien, A, P221, P146
Bates, K, S4.5
Bauersachs, S, P448
Baumgard, LH, P346
Bazer, FW, FT11, P182, P336, P407, P408, P410
Beal, JR, P305
Beaman, K, S24.3, FT8, P179
Beaman, KD, P54
Beard, A, P33
Bega, A, S2.5
Begley, TJ, P309
Behringer, RR, PC5
Behura, SK, P109, P313
Bell, B, P402
Bell, BE, S13.3
Bell, K, S13.5
Bell, KM, P329
Bellingham, M, P342
Ben-Ami, I, P344, P326
Benjamin, JT, P413
Benjamin, KB, P439
Bennett, T, P46, S7.5
BENSON, S, FT45, P417
Berg, MD, P301, P47
Bergman, JW, FT51, P49
Bergsten, TM, P207
Berkowitz, KM, FT44, P96
Bermejo-Álvarez, P, S8.3, P351, P215
Bernard, DJ, FT2, P45, P454, P39, P386, FT46, P420, S13.6
Berton, TE, P444
Bertucci, MC, FT2, P45
Bérubé, M, P409, P421
Besen-Mcnally, R, P423, P114
Bhandari, S, P197
Bhattad, GJ, S15.2
Bhurke, AS, P305, P29
Bidne, KL, S13.4
Biest, SW, P308
Biggs, R, P88
Bilal, M, FT8, P179
Binelli, M, P229
Birrer, M, P201
Biswell, R, P167
Bivens, NJ, S14.3
Björvang, RD, P23
Blanchet, G, P77
Blanco, G, P255
Blengini, CS, P105
Blithe, DL, P438
Bloomfield-Gadélha, H, P389
Boadu, F, FT40, P21
Boateng, R, P114, P423, P124
Bochantin, KA, S13.4, FT51, P49
Boëchat, N, P114, P423, P124
Boehm, U, P454, P39, P40, FT46, P420
Boerboom, D, S7.3, P409, P421
Bohren, KM, S3.3
Boissonneault, G, P406
Bolcun-Filas, E, P55, P423, P124
Bolcun-Filas, E, P114
Bolden-Tiller, OU, P97
Bollwein, H, P448
Bomba-Warczak, E, S6.5
Bonney, E, S13.1
Boon, AC, P183
Bottoms, CJ, P285
Boucher, Z, P114, P55
Bouma, GJ, P171, P176
Bourret, V, P2
Bozal, SB, S17.4
Brandão, FA, P113

Brandt, KJ, P256
Brannstrom, M, P359
Brännström, M, P137
Brayboy, L, P201, P418
Brehm, E, P32
Bridge-Cook, P, P404
Bridges, KA, P134
Brito, DC, P113
Brittain, KS, P433
Bromfield, JJ, P230, P58
Bronnenberg, TA, P65, FT25, P42
Brown, RM, P415
Browning, L, P430
Bruemmer, JE, P176
Brûlé, E, FT46, P420
Brunelle, M, FT26, P153
Bruner-Tran, KL, S2.4, S25.5
Brunette, MA, S17.3
Bruque, CD, P326
Bu, P, P54
Bucket, W, S15.5
Buffone, MG, P203, P204
Bulun, SE, P308
Bunce, C, PC5
Buolamwini, JK, P54
Burdette, JE, P235, P202, P207, P209, S20.5
Burdick Sanchez, NC, S5.2
Burghardt, RC, P407, P408
Burkin, H, P160
Burns, GW, FT35, P317, FT39, P319
Burns, ML, P449
Burton, J, P149
Burtscher, I, P452
Bushnell, C, P121
Busso, D, P71
Butler, R, P46
Buttle, RA, P324, P416
Byeon, CH, FT46, P420

C

Cabello, Y, P215
Cai, L, P195
Caldeira, MO, P311, FT42, P249, P312
Camlin, NJ, S22.4, P127
Campagna, SR, P104, FT41, P157
Campo, H, S20.4, S6.4, P131
Campos, AR, P17
Candelaria, NR, S11.4
Canisso, IF, P448
Cann, I, P51
Canon, E, S8.6
Cantlon, JD, FT25, P42, P176
Capel, B, PC5
Cardona-Gonzalez, S, P175
Cardoso, RC, S2.2
Cardoso, RS, P444
Carine Rolande, M, P245
Carleton, AE, P282, S10.4
Carlson, AE, S9.1
Carmickle, AT, P37
Caron, KM, P26
Carragher, N, P250
Carrier, A, P221, P2
Carro, M, P414
Carroll, JA, S5.2
Carvalho, KF, P435
Casagrande, F, S13.5
Cassina, A, P226
Castaneda, JM, P277
Castellanos Uribe, M, P378
Castro, HF, P104, FT41, P157
Cazin, C, P264
Cederberg, RA, S16.4, S1.3
Céliz Ygnacio, RH, P451
Cerri, R, S2.5
Chadchan, SB, P308, S10.5
Chakraborty, S, P62
Chakravarthi, V, P247
Chan, HY, S9.2
Chan, KL, S13.6
Chan, R, FT1, P325
Chandler, RL, P83
Chaney, EM, P256
Chaney, HL, P313, P126, P128
Chang, FL, S17.3, FT22, P251
Chaquor, J, P354
Charette, P, P405
Charpigny, G, P313
Chase, JR, P320

Chatterjee, S, P56
Chaturvedi, PK, FT36, P296, P395, P212
Chau, L, P430
Chau, SA, FT15, P328
Chavez, DR, P219
Chen, C, S12.2
Chen, D, P385
Chen, PR, S8.5
Chen, Q, P394
Chen, S, P262, PC2
Chen, Y, FT55, P154
Chen, Z, P191, P47
Cheng, J, FT40, P21
Chennathukuzhi, VM, P309
Cheon, Y, P339, P372, P377, P382
Cherrington, BD, P65, FT25, P42
Cheung, WA, P167
Chew, B, P183
Chhonker, YS, FT45, P417
Chi, R, P266
Chicco, AJ, P171
Chin, PY, S9.2
Chirstodoulou, J, P329
Chiu, K, P51
Cho, Ey, S18.2
Cho, Y, P199
Choat, FH, S16.4
Choi, H, P118
Choi, S, P283
Choi, Y, S5.3, P137, P359
Choudhury, J, FT36, P296
Chowdhury, I, S5.5
Christenson, LK, P247, P429
Chukrallah, LG, S12.3
Chung, J, S15.5, P269, FT52, P431,
Churchwell, AM, P196
Clancy, KB, S21.4
Clark, AT, P125
Clark, EL, P324, P416
Clark, K, S15.3
Clark, KL, FT19, P59, FT21, P35
Clark, ZL, P426
Clarke, HJ, P434, P435
Clay, CM, FT25, P42
Clifton, LK, P449
Cochran, T, P164
Cohen Hadad, Y, P344
Cohen, PE, P374, FT37, P12, P414
Collins, KE, P211
Cologna, SM, S20.5
Colwell, ML, P61
Comizzoli, P, P455, P219, P466
Comizzoli, PP, P108
Connelly, MK, P25
Conrad, DF, S3.6
Contreras-Correa, Z, P169
Contreras-Correa, ZE, P164, P13
Converse, A, P46, S7.5
Cooke, PS, S7.4
Cooke, RF, P237
Cooper, L, FT53, P150
Cope, D, P80
Cortez, CL, P282
Coss*, D, S16.3
Coss, D, P63
Coulter, DW, P323
Courtois, ET, S17.4
Coutton, C, P264
Cowan, M, FT46, P420
Cox, BJ, P405
Crawford, E, FT8, P179
Crean, A, P337
Creedon, L, P403
Creighton, CJ, P211
Crist, AE, P136
Cronin, JG, P313
Crossen, M, P254
Crouse, MS, P335
Cruz, TE, P444
Cuellar, C, S15.6
Cui, SX, P347
Cui, X, P333, P341, P348, P360
Cummings, MJ, S24.4, P84, P206
Cunha, T, P33
Cunningham, ML, P129
CUPP, A, FT45, P417
Cupp, AS, P402
Current, JZ, P126, P128
Curry Jr., TE, S5.4
Curry, TE, S5.3, P137
Cushman, RA, P216, P232, P335
Cyr, D, P387

Czajkowska, K, P322

Czerwinski, MJ, P282

D

da Costa, C, S25.2

da Costa, CS, P357

Da Silva, I, S1.5

Dain, L, P326

Dalton, JC, P216

Dambaeva, S, S24.3,
FT8, P179, P54

Damdimopoulou, P,
P23

Danko, C, P374

Davila, J, P29

Davis, BW, FT9, P180

Davis, D, P223, P57

Davis, E, P329

Davis, JS, FT21, P35,
S13.3, P205, P309

Davis, JS, FT45, P417

de Agostini Losano, JD,
P257

de Godoy, MC, P51

De La Torre, KM, S25.3,
P244

de las Mercedes Carro,
M, FT37, P12

de Melo, GD, P237

de Mestre, AM, FT9,
P180

de Prelle, B, P437

Dean, M, P301, P191,
P47

DeBoer, M, P302

DeBoer, ML, P315

DeCata, J, P161

Ded, L, P265

Deis, R, S6.2

Dela Cruz, C, S17.3,
FT22, P251, P367

Delebes, G, P406

Delgado-Bermudez, A,
S1.6

Delgado-Bermúdez, A,
P447

DeMayo, F, P190, P266

DeMayo, FJ, P355, PC3

Demeestere, I, S20.2

Deng, M, P441

Denicol, AC, P37

Deras, R, FT54, P11

Desaulniers, AT, P286,
S1.3, P449

Desmarais, R, P406

Dettloff, K, P8

Deviney, AR, P244

Devlin, DJ, S3.3

Devore, SB, P65

Devos, M, S20.2

Devost-Burnett, D,
P13, P169

Dewaele, A, S8.6, FT17,
P92, P453, P442

Dhakal, P, P236, PC6

Dhole, B, P395, P212

Diakite, D, P235

Dias, JA, P205

Diaz Vidal, P, S20.2

Diaz-Miranda, EA,
P271

Dicka Kwambe, EE,
P440

Dickson, MJ, P58

Dietmann, S, P183

Dini, P, P166

Dipali, SS, S21.3, P202

DiPentino, R, P324,
P416

Djatsa Nzemgue, S,
P245

Doiron, K, P445

Dolmans, M, S20.2

Domingues, R, P33

Domingues, RR, P25,
P48

Dominguez, EM, S4.2,
FT34, P184

Dong, C, P183

Dong, J, S7.5

Donovan, S, S25.3

Douglas, ES, P26

Dragojevic, A, P175

Drake, R, FT7, P10, P7,
P3

Drnevich, J, P51

Drum, JN, P231

Duan, L, P314

Dujardin, E, S8.6, FT17,
P92, P453

Dujardin, E, P442

Duncan, F, FT7, P10,
FT49, P156

Duncan, FE, S21.3,
S11.3, S6.3, P22, P202,
P203, P204, S6.4, P3,
P98, P200

Duncan, H, P164

Duncan, MC, S10.4

Duncan, FE, S15.1

Dunlap, KA, P336, P410

Duran, BJ, P136

Dutra, AA, P271

Dveksler, G, S21.4

E

Eckelkamp, P, S6.3
Eddy, C, P288
Edwards, J, P120
Edwards, JL, P197
Edwards, L, FT41, P157
Edwards, LJ, P104
Egan, S, P175
Egbert, JR, P141
Eid, N, P378
Eitan, H, S6.2
El Omri-Charai, R, P406
Elabed, M, P175
Elangovan, VR, S17.3
Eldar-Boock, A, P326
Elder, D, FT30, P139
Elkouby, YM, S6.2
El-Sheikh Ali, H, P166
Elsken, D, S1.3
Elsken, DH, S16.4
Emerson, RE, S21.5
Emery, O, PC3
Emori, C, P55
Emura, R, S6.6
Enangue Njembele, AN, P440, P443
England, SK, P158, P159, S4.5
Epperson, KM, P332, S5.2, P217
Erickson, JA, S18.3
Ericsson, AC, FT42, P249
Ermisch, AF, S13.4
Eruo, F, P8, P9
Ervin, JM, S4.4

Esparza-Harris, KC, P259
Espeche, LD, P326
Essenmacher, W, P9
Etchu, KA, P440
Etchu, Ka, P443
Ethell, IM, S16.3
Eudy, J, S8.2
Eum, J, P352
Evans, JP, S22.4, P127, P129
Evenson, D, P218
Ezashi, T, S14.3, P283, FT31, P185, P292

F

Fahey, D, P362, P412
Fathi, R, P140
Faulk, C, P61
Fazleabas, A, P303
Fazleabas, AT, FT35, P317, FT39, P319
Feferkorn, I, S15.5
Fenelon, JC, S14.2
Feng, J, P199
Ferder, IC, P326
Ferreira Leite, R, P257
Ferreira, AC, P451
Ferreira, AT, P271
Ferreira, JJ, P158, P159
Fields, CJ, P51
Figueiredo, JR, P113
Filis, P, P342
Finnerty, R, P321
Fischoeder, J, FT5, P280
Fishman, EL, P389
Fitzgerald, HC, FT24, P318
FitzHarris, G, P356, P192, S15.5, FT32, P93
Flaws, JA, P51, FT6, P60, P23, P28, P29, P244, P203, FT33, P36, P204, P32
Fleck, D, FT5, P280
Flowers, AE, P324, P416
Fluks, M, P220
Flynn, WF, S17.4
Fogelgren, B, P90, P99
Foley, G, S20.6
Fontes, PL, P230
Ford, MJ, P452
Foster, LG, P404
Fougang, D, P245
Founou, C, P245
Founou, L, P245
Fowler, PA, P342
Francoeur, L, FT29, P152
Franco-Johannsen, G, S2.5
Franz, AW, FT3, P298
Freiman, R, P111
Freiman, RN, P384
Freitas-Lima, L, S25.2
Freitas-Lima, LC, P357
Frias, AE, PC1
Fricke, H, P33
Frizzarini, W, P33
Fu, A, P415
Fu, J, S10.1
Fudolig, MA, FT51, P49
Fujihara, Y, S3.3

Fujii, W, P330, P350, P381

Fukunaga, I, P350

Fullston, T, S9.2

G

Gaddy, JA, S25.5

Gadea, J, P22

Gadu, B, S8.2

Gall, D, P437

Galvão, A, S25.4

Gambonini, F, S1.5

Ganguly, A, P102, P103, FT27, P295

Ganieva, U, S24.3, FT8, P179

Gao, L, P51, FT6, P60

Garcia, P, S5.4

Garcia, TX, P5, P6, S3.3, FT54, P11

Garcia-Guerra, A, FT53, P150

Gargus, E, P131

Garza, V, S2.2

Gastal, EL, P144, P145, P112, P113

Gastal, GD, P112

Gastal, MO, P144, P145, P112, P113

Ge, X, FT20, P41

Geary, TW, P216, P332, P109

Gebremedhn, S, P107, P380

Genuise, H, P46

George, J, P205

George, JW, P309, FT45, P417

Gévry, N, FT26, P153, S7.3

Geyer, C, P266, P276

Geyer, CB, P275

Ghinat, M, P406

Gholiof, M, P404

Ghonemy, KM, P419

Ghosh, A, P162

Gibbons, J, P223, P57

Gibbons, WE, P355, P450

Gibbs, C, FT27, P295

Gibson, M, P167

Gilbert, I, P221, P146, P406, P2

Gingerich, C, S15.6

Ginther, O, P48

GITON, F, P442

Glorius, F, P214

Goblet, C, P430

Godambe, AN, P243

Godin, P, S7.3, P409

Godoi, DB, P144, P145

Goheen, BB, P78

Goldstein, JA, P200

Gomes, FD, P451

Gomes, K, P257

Gomez, I, P247

Gomez-León, VE, P48

Gonda, MG, P232

Goney, MP, S13.6

Gonsioroski, A, FT6, P60, P28

Gonzalez, A, P301

Gonzalez, TL, P324, P416

Gonzalez-Alvarez, ME, P346

González-Brusi, L, S8.3, P351, P215

Goodchild, GM, S13.6

Goods, B, FT7, P10

Goods, BA, P7, P3

Goodwin, ER, P26

Goulet, MR, FT30, P139

Gowett, MQ, S21.3

Graceli, J, S25.2

Graceli, JB, P357

Graham, A, FT43, P252

Granneman, JG, P263

Green, JA, P170, P109

Greenspun, SR, S13.2, P147

Grenier, JK, P414

Griffith, B, P81, P82

Griffiths, MJ, P436

Grimson, A, P414

Grive, KJ, P334, P354

Grizzaffi, M, P430

Grose, LF, P313

Grudet, F, P409

Grundberg, E, P167

Guan, X, P450

Guerrero-Sánchez, J, P215

Guilak, F, P19

Guimarães, JD, P271

Guimarães, SE, P271

Gull, T, FT42, P249

Gumucio, DL, P282, S10.4

Guner, J, P450

Gunewardena, S, P273

Gupta, S, FT36, P296,
P395, P212

Gura, M, P111

Gura, MA, P384

Gustin, SL, P205

Gutierrez, J, P51

Guzewska, MM, FT47,
P422

Gyngard, F, S6.5

H

Ha, J, P370

Ha, K, P432

Ha, W, P102, P103

Hadden, K, S18.2

Hahn, CC, P203, P204

Hai, L, P355

Haining, T, FT7, P10

Hakim, B, P102, P103

Hakim, BA, P119

Hale, BJ, P275

Haller, M, P310, P468

Halloran, KM, FT11,
P182, P336, P388, P410

Hamilton, LE, S1.4

Hammoud, S, P261,
P62

Hampshire, D, FT9,
P180

Hamze, JG, P351

Han, S, P370

Han, SJ, P308

Hancock, JM, P362,
P412

Haney, A, P40

Hanford, KJ, FT51, P49

Hannon, PR, S5.4, P30

Hansen, PJ, S15.6

Hardy, L, S20.5

Harley, BA, S21.4

Harris-McGlade, EA,
P190

Harrison, CA, FT46,
P420, S13.6

Harrison, TD, P256

Harstine, BR, P216

Hart, M, S13.3

Harwalkar, K, P452

Hashim, P, FT22, P251

Hashim, PH, S17.3,
P367

Haverfield, J, FT32, P93

Hawkins, SM, P211,
S21.5

Hayashi, K, P285

Hayden, C, P136

Heath, KN, S20.5

Heckathorn, K, P320

Hegarty, T, P436

Hemberger, M, P84,
P206

Herdman, A, P40

Hernandez, L, P33

Hernandez, LL, P25

Hernàndez-Melià, M,
P447

Herrera Birrueta, G,
PC6

Herzog, ED, S4.5

Hess, R, P4

Hess, RA, P263

Hessock, EA, P109

Highsmith, MR, FT40,
P21

Hime, G, P329

Hime, GR, S13.5

Hinck, AP, FT46, P420

Hinck, CS, FT46, P420

Hirose, N, P218

Hlavacek, A, FT50, P95

Hobbs, D, P223, P57

Hock, D, P329

Hock, DH, S13.5

Hodonu, A, P82

Hodzic, D, P102, P103,
P119

Holcomb, C, P223, P57

Hollinshead, FK, P176

Holmes, N, P392

Holmlund, HR, P77

Holton, RA, FT44, P96

Honda, S, P358

Hong, X, P429

Horan, TS, FT37, P12

Horcajadas, J, P215

Horn, EJ, P104

Hornick, JE, S15.1

Hoskins, EC, P336,
P410

Hossain, MR, P446

Hou, W, S4.1

Hovey, RC, P37

Howard, M, P320

Hsu, F, P125

Hu, G, P266, P84, P206,
P276

Hu, Y, P261

Huang, B, P143, S7.1

Huang, L, P201, P385

Huang, Q, P263

Huang, X, FT52, P431

Huang, Y, S18.2, P7
Hughes, CH, FT26, P153
Hughes, JR, P214
Hughes, K, P403
Hunter, R, FT38, P213
Hutchings, D, FT30, P139
Hutt, KJ, S13.6, P436
Hwang, J, P352, P269
Hwang, Y, P377
Hyde, J, P40
Hyde, KA, P112, P113
Hyun, S, P340, P379, P193, P118, P225, P195

I
Ideguchi, I, P358
Ikawa, M, P361, P5, P269, P6, S3.3, P277
Ikeda, S, P338, P358
Imakawa, K, P366
Ingram, AN, P131
Inman, Z, S25.3, P28
Inoue, R, FT16, P349
Inyang, I, P16
Iqbal, E, FT54, P11
Iqbal, K, P167, FT4, P178, S4.2, FT34, P184, S8.4, PC6, P172, P173, P293, P294
Ireland, JJ, P426
Irigoyen, M, P226
Ito, D, S6.6, P189
Iyyappan, R, P394

J
Jacobsohn, TL, P438
Jafar, H, P402
Jaffe, LA, P141
Jaillard, S, P329
Jain, I, S21.4
Jaju Bhattad, G, S14.4
Jammes, H, P442
Jang, G, P370
Jannaman, EA, P78
Jaroslawska, J, P401
Jeensuk, S, S15.6
Jefferson, WN, P424, P427
Jeon, H, P137, P359
Jeong, J, P83, P377
Jerome-Majewska, LA, S4.1
Jeyarajah, M, S14.4
Jeyarajah, MJ, S15.2
Jia, S, S12.2, P241, S3.2, P254
Jiang, JW, P347
Jiang, K, S3.4
Jiang, P, P450
Jiang, Z, P394
Jiao, F, P385
Jiao, X, P53
Jimenez, P, S10.5
Jiménez-Movilla, M, P351
Jimminson, R, P378
Jo, M, S5.3, P137, P359, S5.4
Johannsen, GF, P177
Johnson, GA, FT11,

P182, P336, P388, P407, P408, P410
Johnson, PA, FT29, P152
Johnson, T, P276
Johnston, ZC, P342
Jolivet, G, S8.6, FT17, P92, P453
Jonczyk, AW, P403
Jones, A, S17.3
Jones, AR, P70
Jorgensen, JS, P415, S3.4
Jorgensen, K, P261, P62
Joshi, NR, FT35, P317, FT39, P319
Joshi, NV, P324, P416
Jouneau, L, P453
Jovine, L, S1.4
Judycka, S, S2.3
Jung, D, P370
Jung, G, P106
Juriscova, A, P102, P103, P432

K
Ka, H, P339, P372, P382
Kaczmarek, M, P401
Kaczmarek, MM, S2.3, FT47, P422, S5.1
Kafer, SC, FT49, P156
Kahler, A, FT9, P180
Kamalanathan, S, S13.5
Kamimura, S, FT16, P349

Kanke, T, P330
Kannan, A, P242, P305, P415
Karl, KR, P426
Karnas, E, FT47, P422
Karvas, RM, P183, P292
Kasu, M, P285
Kawka, D, P401
Kazemian, A, P238, S5.6
KEANE, J, FT45, P417
Keane, JA, FT51, P49
Keating, AF, P52, P346, FT18, P34, FT19, P59, P16
Keel, BN, P232, S1.3
Kelleher, AM, FT24, P318
Kelly, A, S14.2
Kelly, E, S15.1
Kelsey, G, S25.4
Kengne Tezong, F, P245
Kent, K, P6, S3.3
Kent, L, P158
Kent, LN, P159
Kenzler, L, FT10, P281
Kern, CH, P365

Kerns, K, S9.4, S1.2, S1.4, P307
Kerns, KC, P216
Ketchum, JN, P332, P217
Khan, I, P378
Khan, L, P65
Khan, S, P79

Khan, T, S14.3
Khanal, S, P389
Khandjian, E, P146
Kherraf, ZE, P264
Khoshkerdar, A, P14
Khurana, P, P77
Kiesler, ZG, P299
Kikuchi, Y, P189
Kim, C, P122
Kim, D, P370, S20.6
Kim, E, P27, P379
Kim, HN, P347
Kim, J, P304, P370, S1.4, S20.4, S6.4, P131
Kim, J, FT35, P317
Kim, JJ, P27, P56
Kim, M, P340
Kim, S, P323, S20.3, P411
Kim, T, P83, P377
Kimura, K, S21.2, P368, P240
Kincade, JN, FT50, P95
Kindsfather, AJ, P224
King, H, P13, P169
Kinnear, HM, S17.3, FT22, P251, P367
Kirkley, K, FT25, P42

Kirkpatrick, BW, FT53, P150
Kirsanov, O, P266, P276
Klabnik, JL, P104, FT41, P157
Klausen, C, P397

Kline, AC, P332, S5.2, P217
Klutstein, M, P344
Klymenko, Y, S21.5
Ko, C, P199
Ko, CJ, S25.3, P227, P4
Kobayashi, H, P400
Koelle, S, PC4, P250
Kogo, T, P350
Kommagani, R, P308, S10.5
Komondor, KM, S9.1
Komrskova, K, P265
Komura, N, P390
Kordowitzki, P, P403
Koseva, B, P167
Kothandapani, A, S3.4
Kothmann, KH, P430
Kowalewski, MP, P238, S5.6, P373
Koyano, T, P361
Kozai, K, FT34, P184, S8.4, P172, P173, P294
Kramer, AC, P388, P407, P408
Kramer, S, P23
Krisher, RL, P107, P380, P196
Krueger, B, P380
Krueger, BP, P107
Kubo, H, P133
Kubota, S, P368, P240
Kuete, M, P245
Kulkarni, D, P183
Kumar, D, P183
Kumar, T, P306, P290, S8.2, FT49, P156

Kumar, V, S6.2

Kuna, M, S8.4, PC6,
P294

Kurz, SG, S16.4, S13.3,
P402, FT51, P49

L

La, J, P398

Lagasse, A, P40

Lager, EE, P283

Lai, E, PC2

Lai, N, P186

Lainez, NM, S16.3

Laird, DJ, FT48, P94

Lamas-Toranzo, I,
P351, P215

Lamb, G, P230

Lan, Y, P68

Land, KL, P30

Langford-Avelar, A,
P445

Lantvit, DD, P235

Lanz, RB, S13.2

Larina, I, PC4

Larina, IV, S9.3

Larmore, M, S11.3

Laronda, MM, P133

Larsen, MA, P306

Latha, K, P362, P412

Latham, KE, P426

LaVoie, HA, S11.2

Lawrence, CR, P316

Lawrence, K, P320

Laws, M, P28

Laws, MJ, P23, P244,
FT33, P36

Leak, J, P292

Lecante, LL, P342

Lee, E, P225

Lee, H, S6.3, S6.4, P98

Lee, HC, S6.5

Lee, J, P225

Lee, K, P67, S8.5, P177

Lee, P, P455

Lee, S, P339, P341,
P372, P15, P382

Lee, S, P17

Lee, W, P352, P370

Lee, Y, S25.3

Lemley, C, P169

Lemley, CO, P164, P13

Lemos Motta, J, P136

Lents, CA, S16.4, S1.3

Lenz, KL, P19

Lenzo, A, P175

Leonardi, M, P404

Letourneau, N, P375

Leu, NA, P68

Leung, MR, P389

Leung, P, P397

Levy, K, S6.2

Leyland, NA, P404

Li, G, P205

Li, J, P266

Li, K, P235

Li, R, PC3

Li, W, P263

Li, X, P84

LI, X, P360

Li, Y, P304, P362, P412,
FT40, P21, FT46, P420

Lickert, H, P452

Lim, J, P353

Lima, A, S3.6

Lin, C, P282, S10.2

Lin, H, P289

Lin, P, P227, P4

Lin, Q, P309

Lin, Y, P345, P454,
FT46, P420

Lindholm-Perry, AK,
S1.3

Lindner, JR, PC1

Liu, B, S24.4, P314

Liu, C, P467

Liu, H, P231

Liu, M, P361, P264

Liu, N, P88, P53

Liu, S, P264

Liu, W, P364, P365

Liu, X, P314

Liu, Z, S10.3, P290

Llavanera, M, S1.6

Lo, JO, PC1

Lockhart, K, P380

Lockhart, KN, P107

Logsdon, DM, P196

Loi, S, P436

Londoño Vasquez, D,
P89

Lonergan, P, P313

López-Sebastián, A,
S8.3

Lovercamp, KW, P286,
P449

Low, B, P56

Lowther, KM, P141

Lu, X, FT54, P11

Lu, Y, P361, P269

Luan, Y, P323, S20.3,
P411

Luciano, AA, S17.4

Luciano, DE, S17.4

Lucy, MC, P311, FT42,
P249, P312

Luderer, U, P353

Lujic, J, FT37, P12

Lukasik, K, P403

Luke, A, P149

Luo, D, S17.4

Luo, F, P327

Luo, M, P289

Lupovitch, Y, S6.3

Luque, GM, P203, P204

Lusk, H, P207

Lybaert, P, P437

Lydon, JP, P355

M

Ma, L, P310, P468

Ma, Q, P305

Ma, W, P364

Ma, X, P158

Maas, RL, S6.5

Macay, GA, P230

Machado-Neves, M,
P271

Mackenzie, C, P103

MacLean, J, P274

MacLean, JA, P285

MacNicol, A, P40

MacNicol, K, P40

MacNicol, M, P40

Magata, F, P371

Magee, C, FT25, P42

Maia, TS, S2.2

Maldonado, AC, P209

Malott, KF, P353

Mandon-Pepin, B,
P442, S8.6, P453

Mandour, A, FT38, P213

Mann, MR, P224

Manske, G, P62

Marbrey, MW, P26

Marchais, M, P146

Mark, H, P243

Marko, J, P88

Marquardt, RM, P83,
P377

Marqui, FN, P444

Martin, A, FT27, P295

Martin, C, S10.5

Martin-Fairey, C, S4.5

Martinot, E, P409

Martins, Jr, A, P444

Martins, T, P229

Maruyama, N, P350

Masahito, I, FT52, P431

Masand, RP, P450

Masangkay, JS, P439

Massri, N, P79

Mastromonaco, G, P2

Mateo-Otero, Y, S1.6

Mathes, MA, P205

Mathew, DJ, P313,
P197

Mathews, AT, P37

Matsuda, F, P371

Matsuno, Y, P366

Matsuyama, M, P361

Matzuk, MM, P5, P6,

P277

Maucieri, AM, FT28,
P151

Mauro, LJ, P61

Maurya, VK, P355,
S10.5

Maus, M, S1.2

Mayo, LM, P97

Mayorga, EJ, P346

McAfee, M, P403

McAllister, JM, S11.4

McCarrey, JR, PC2,
P345

McCarthy, R, S4.5

McCoy, M, P149

McDermott, J, P255

McDonald, R, S8.2

McEvoy, MJ, P403

McFee, R, FT45, P417

McFee, RM, S13.3

McGraw, S, P445

McKey, J, PC5

McLean, KJ, P256

McLendon, BA, P388,
P407, P408, P410

McNally, R, P304

McNeel, AK, P232

McNeill, H, P102,
P103, P119, P432

McPherson, NO, S9.2

McSwiggin, H, PC2

Mei, W, P242

Meling, DD, P244

Mellouk, N, S8.6, FT17,
P92, P453

Melo, G, P177

Melo, GD, S2.5

Menegatti Zoca, S, P216, P332, S5.2, P217
Mercadante, V, P177
Merchid, NC, P271
Merhof, D, FT5, P280
Messman, RD, P169
Messop Tchakounteu, L, P245
Metcalfe, A, P164
Mihajlović, AI, FT32, P93
Milano-Foster, J, P292
Miller, DJ, P246, P248, P214, S23.1
Miller, ES, P200
Miller, FG, P30
Miller, L, P223
Mills, GA, S16.4
Mills, M, P55
Minami, N, P338, P358
Minette, M, P175
Miranda-Alves, L, S25.2
Mitra, A, P255
Mittleider, T, P223
Miyata, H, FT52, P431
Moldenhauer, LM, S9.2
Moldovan, GE, P303
Molina, LM, P248
Monaco, CF, FT45, P417
Monaco, M, S25.3
Monahan, P, P175
Monarch, K, S8.5
Monsivais, D, P80, P450
Moorey, SE, P109, FT41, P157
Moraes, JG, P311, FT42, P249, P312
Morales, DJ, P17
Moravek, MB, S17.3, FT22, P251, P367
Moreno Irusta, A, FT34, P184
Moreno, A, S4.2
Moreno-Irusta, A, S8.4, P172, P173, P293
Morgan, H, P14
Morgan, HL, P378, P392
Morgan, M, P272
Mori, G, FT52, P431
Morin, F, FT2, P45
Morin, M, S7.3
Moritz, L, P261
Morselli, E, P71
Moses, RM, FT11, P182, P336, P388, P410
Mota Mendes, C, P257
Mourikes, V, P28
Mourikes, VE, FT33, P36
Mulcahy, C, P203
Munetomo, A, P371
Munro, A, P250
Murase, H, P166
Murphy, AR, S20.4
Murphy, BD, FT2, P45, FT26, P153, S14.2
Murry, DJ, FT45, P417
Murtazina, DA, FT25, P42
Mussar, M, P415
Mussard, ML, P136
Mustapha, SF, P264

Muthuraj, P, P168
Muto, M, FT4, P178, PC6
Mytllis, A, S6.2

N

Nabi, D, P418
Nagarajan, S, P5, S3.3
Naito, K, P330, P350, P381
Nakagata, N, P390
Nandakumar, J, P261
Naqvi, M, P159
Natera, E, P380
Natera, EM, P107
Nather, F, S6.2
Ñaupas, LV, P451
Navratil, AM, P65, FT25, P42
Nde, PN, S2.4
Ndiaye, K, P331
Neff, A, P28
Neff, AM, P244
Nelson, BM, P170
Nelson, RN, P429
Nemerovsky, L, P326
Nenonene, E, P146
Nephew, KP, P211, S21.5
Nett, T,
Neufer, PD, P275
Newell-Fugate, AE, P430
Ng, E, FT1, P325
Ngueye Sipeuwou, C, P245
Nguyen, AL, P105

Nguyen, BT, P438
Nguyen, H, P90, P99, P391
Nicewarner, BM, P126
Nichi, M, P257
Nicol, B, P134
Nimmagadda, L, S17.3, FT22, P251
Niño, O, S25.2
Niño, OM, P357
Niranjan, H, P337
Nishizono, H, P369
Nixon, B, P173, P293
Noda, T, P361
Nogueira, E, S1.4
Nothnick, WB, FT43, P252
Novaes, MA, P451
Novbatova, G, P52
Nowaczyk, R, P373
Nowak, RA, P186, P316
Nozawa, K, P5, P6, S3.3
Ntyam Épouse Ondo, SC, P440, SC, P443
Nudelman, G, P39
Numata, S, P255

O

O'Neil, MM, S2.2
O'Halloran, TV, S6.3
Oatley, J, P364
Oberlies, NH, P209
O'Connell, J, P121
Oestreich, AK, P19
Ogg, MA, P332
Oh, D, P193
Oh, J, P227, P199
Oh, Y, P274, P285
O'Halloran, T, FT55, P154
Ohkura, S, P371
Ohta, H, P77
Okae, H, P167
Olbrot, K, P33
Oli, N, S1.5
Oliveira Filho, R, S2.5
Oliveira Filho, RV, P237
Oliver, D, PC2
Oliver, MA, P197
Oliver, WT, P335
Ongaro, L, FT2, P45, FT46, P420
Onodera, R, P400
Ontiveros, AE, PC5
Ooga, M, FT16, P349, S6.6, P189
Opoku, R, P161
Ortega, MS, P332, S15.3
Ortega, S, P231, S2.5, P177
Ortiz D'Avila Assumpção, ME, P257
Ortiz, L, P353
Oshimo, Y, P371
Osteen, KG, S2.4, S25.5
Ott, T, S1.5
Ozcan, M, P334, P354

P

Pacyga, DC, P31
Padilla-Banks, E, P424, P427
Padmanabhan, V, FT22, P251, P367
Page, ST, P438
Pailhoux, E, S8.6, FT17, P92, P453, P442
Paim, L, P192
Pandey, D, P395, P212
Pang, Y, S7.5
Panja, S, P413
Pannetier, M, S8.6, FT17, P92, P453
Pannetier, M, P442
Pannier, AK, S23.2
Pansera, M, S15.5
Papas, B, P427
Paria, BC, P413
Park, C, P227, P199, P4
Park, M, P352
Park, S, P359
Park, T, P372
Parrish, JJ, P267
Parsons, AM, P176, P171
Pastorello, M, P144, P145
Pate, J, S1.5
Patel, H, P54
Pattarawat, P, FT7, P10, P27, S18.2, P56, P7
Patterson, A, P307
Patterson, AL, P299
Paudel, S, S24.4

Paul, J, P446
Paul, S, FT27, P295, P162
Paulisch, T, P214
Pavone, M, P202, S15.1
Payan-Carreira, R, S5.6
Payton, RR, P104, P120, FT41, P157, P197
Pearce, CJ, P209
Pearl, CA, P425
Pena, A, P160
Penagaricano, F, P229
Peng, Y, P87, P88
Pepi, LE, P248
Pepling, M, P121, P149
Peppas, Z, S13.6
Percudani, R, FT52, P431
Pérez-García, V, S25.4
Pérez-Gómez, A, S8.3, P215
Pergande, MR, S20.5
Perry, GA, P332, S5.2, P232
Peterson, KD, P197
Peterson, KJ, PC2
Petroff, MG, P433
Petty, AM, P286, P449
Peyton, RR, P256
Phillips, C, P161
Phuyal, S, P222
Pickett, A, P237
Pinaffi, FL, P136
Pinel, L, P387
Pini, T, P337
Pintescu, I, S21.4
Piotrowska-Tomala, KK, P403
Pisarska, MD, P324, P416
Plewa, M, FT6, P60
Plewes, MR, P205, FT45, P417
Podico, G, P448
Pohler, K, S2.5, P177
Pohler, KG, P229, P237, P170, P109
Poisson, W, P221, P2
Polizel, FF, P444
Pooock, SE, P311, FT42, P249, P312
Poole, R, S2.5
Poole, RK, P237
Popli, P, P308, S10.5
Porter, J, P207
Potter, C, P102, P103, P119
Price, CA, S11.1
Pritchard, MT, S21.3, S11.3, S15.1
Prunier, J, P221, P406, P2
Przygodzka, E, FT45, P417
Puga-Molina, LC, P158
Putluri, N, P308

Q

Qiao, H, P53, P87, P88, P199
Quail, LK, P332, S5.2, P217, P232
Querejeta-Fernández, A, P215

Quick, G, P320

R

Rabbani, M, P261
Raetzman, L, FT20, P41
Raj, K, P316
Rajabloo, E, P140
Rajput, S, P107, P380
Rajput, SK, P78
Ralston, BA, P65
Ramamurthy, U, FT54, P11
Ramanathan, V, FT54, P11
Ramos Angrimani, DD, P257
Ramos-Ibeas, P, S8.3
Raposo, RS, P113
Ratri, A, P247
Rattan, S, S25.3, P467
Rattila, S, S21.4
Raudsepp, T, FT9, P180
Ray, PF, P263, P264
Ray, S, FT27, P295, P162
Read, CC, P104, FT41, P157
Recuero, S, S1.6
Reddi, PP, FT12, P279
Redding, S, P261
Reese, E, S8.5
Reese, S, P250
Reich, E, P344
Reichler, I, S5.6
Reid, D, P288
Reineke, S, P320

Reipolska, A, P398
Relovska, S, P111, P384
Rémillard-Labrosse, G, P356, S15.5
Ren, YA, S13.2, P147
Renaud, S, S14.4
Renaud, SJ, S15.2
Renfree, MB, S14.2
Renkema, K, P425
Reshel, S, P353
Reske, JJ, P83
Ress, RA, FT12, P279
Reynolds, SB, P115, P116
Rezazadeh Valojerdi, M, P140
Rhiel, V, FT8, P179
Rhinehart, JD, P104, FT41, P157
Rhoades, JR, P217
Ribas-Maynou, J, S1.6, P391, P447
Rich, JJ, P332, S5.2, P217
Richards, JS, S11.4
Richardson, KA, P108
Riehle, C, P33
Rinaudo, PF, P15, P17
Rishi, JK, FT13, P50
Rispoli, LA, P1, P259
Rivera, R, FT50, P95
Rivera, RM, FT40, P21, P122
Rizo, JA, P230, S15.3
Roach, CM, P346, FT19, P59
Robaire, B, P375, P399
Roberson, EC, P243
Robert, C, P221, P146, P406, P2
Roberts, R, P292
Roberts, RM, S14.3, FT3, P298
Roberts, VH, PC1
Robertson, SA, S9.2
Robevska, G, P329, S13.5
Robson, P, S17.4, S10.3
Rodrigues, A, P451
Rodriguez, K, P467
Rojas-Canadas, E, P136
Roos, K, P23
Ross, CE, S16.4, S1.3
Ross, JW, P346
Roth, TL, P1
Rothman, R, P344
Rotshenker, K, S15.5
Roussel, V, FT2, P45
Rowlison, T, P466
Roy, N, P162
Roy, S, S7.1
Royfman, A, P389
Rubenstein, G, S17.3
Rubessa, M, P107, P380
Rudolf Vegas, A, P448
Ruebel, ML, P426
Ruen, A, P302, P315
Ruf-Zamojski, F, P39, FT46, P420
Ruggiero, RE, P63
Rumph, JT, S2.4, S25.5
Russo, DD, P7

Rwigemera, A, P375
Rykaczewski, C, P136

S

Saavedra, F, P71
Sah, N, FT11, P182, P388
Saha, A, FT27, P295, P162
Saitou, M, P77
Sakurai, D, P390
Saltzman, B, P389
Salvi, A, S20.5
Sanchez, G, P255
Sanchez, L, P207
Sanchez-Quijada, M, S1.6
Sandoval, K, P191
Sane, E, P183
Sang, F, P392
Sanglard, LP, P48
Sanovec, O, P265
Sant, S, P436
Santacruz-Marquez, RE, P32
Santi, CM, P158, P159
Santiskulvong, C, P324, P416
Santoro, N, S17.1
Sapiro, E, S4.5
Sapiro, R, P226
Sarpong, N, P175
Sato, H, P338
Satouh, Y, P277
Satterfield, MC, P336, P410
Sauro, E, P324, P416

Savas, JN, S6.5
Savy, V, P72
Saxton, AM, P120
Schang, G, P454
Scheffler, T, S15.6
Schindler, K, S22.3, P105, P106, P276,
Schjenken, JE, S9.2
Schmelzle, AL, P170
Schmidt, CA, P275
Schnabel, RD, S1.4
Schneider, LG, P256, P197
Schneiderman, S, S24.3, FT8, P179
Schon, SB, P261
Schonberger, O, P344
Schoolcraft, WB, FT31, P185, P196, P78
Schorle, H, P265
Schrick, FN, P256
Schrick, N, FT41, P157
Schrick, NF, P104
Schultz, H, P454, P386
Schulz, L, P292, P161
Schulz, LC, P283
Schust, D, P292
Schust, DJ, S14.3, FT3, P298, FT24, P318, P283
Schwartz, GB, P133
Scoggin, K, P166
Scott, GI, P56
Scott, R, P293
Scott, RL, S8.4, PC6, P294
Scoville, DM, FT29, P152
Scully, D, PC4
Sealfon, SC, P39, FT46, P420
Sébire, G, P399
Seekford, ZK, P58
Seetharam, AS, S14.3
Sekulovski, N, P282, S10.2, P274
Sellem, E, P442
Sellmer-Ramos, I, P311
Sen, A, P143, S7.1
Seo, H, FT11, P182, P336, P388, P407, P408, P410, P177
Seppo Njembele, MA, P440
Seymour, K, P111
Seymour, KA, P384
Shadjahan, A, P248
Shah, PA, P430
Shalek, A, FT7, P10
Shalek, AK, P7, P3
Shalgi, R, P326
Sharif, M, P163
Sharkey, DJ, S9.2
Shawahny, A, S6.2
Sheldon, M, P313
Sheng, Y, P261
Sheridan, MA, FT3, P298
 Shi, M, P72
Shikanov, A, S17.3, FT22, P251, P367
Shilton, CA, FT9, P180
Shimada, K, P361, P277
Shrestha, K, S5.4
Shukla, V, FT4, P178
Siddall, N, S13.5
Sidelinger, D, P169
Sidelinger, DR, P13
Silbern, I, P141
Silva, FA, P229
Simintiras, CA, P231
Simões da Silva, BD, P257
Simon, LE, FT37, P12
Simon, ME, S8.4
Simpson, S, P337
Sinclair, AH, P329, S13.5
Singh, P, P395, P212
Sinha, N, P143, S7.1
Sivajothi, S, S17.4
Skalski, H, P425
Skarzynski, DJ, P403
Skenandore, C, P430
Slayden, O, P327
Slayden, OD, PC1
Smith, LJ, S21.5
Smith, MF, P332, P170, P109
Smith, OE, FT2, P45, FT26, P153
Smith, R, P446
Snider, AP, P335, S13.3, FT51, P49
Snyder, EM, S12.3, P288
Soares, M, P173, P293
Soares, MJ, P167, FT4, P178, S4.2, FT34, P184, PC6, P172, P294
Sobkowiak, A, P220
Song, W, S3.5, P70
Song, Y, FT35, P317, FT39, P319

Sonoda, S, P371
Soto-Heras, S, P246
Soulakis, M, P22
Southekal, S, S8.2
Souza, SS, P113
Sowers, AE, S21.5
Soygur, B, FT48, P94
Spaight, O, P33
Speck, S, S4.5
Spehr, J, FT5, P280
Spehr, M, FT5, P280, FT10, P281
Spence, JR, P282
Spencer, TE, P231, P236, S15.3, FT24, P318, P311, FT42, P249, P312, P313
Sponchiado, M, P229
Spooner, M, P307
Springman, SA, S13.3, P402
Sprungl, KN, P115, P116
Srebnik, N, P344
Sreenivasan, R, P329, S13.5
Steele, H, P250
Steelman, AJ, P316
Steger, K, P265
Stein, P, P72
Steinhauser, M, S6.5
Stendahl, AM, S3.6
Stenhouse, C, FT11, P182, P336, P388, P410
Stephens, KK, P190
Stephens, VR, S2.4, S25.5
Stewart, WC, FT25, P42

Stocker, W, S13.6
Stoecklein, KS, P231
Stokes, AE, P109
Strakovsky, RS, P31
Strauch, M, FT5, P280
Strickland, LG, P256
Stringer, JM, S13.6, P436
Stroud, D, P329
Stroud, DA, S13.5
Suebthawinkul, C, P202, P98
Suen-Wallach, A, P427
Suetomi, Y, P371
Sugino, Y, S21.2
Sugiura, K, P330, P350, P381
Sultan, C, P261
Sun, F, FT14, P91
Sun, J, S18.2, P361, P7
Sun, M, P348
Sun, S, P264, P348, P360
Sung, G, P377
Susor, A, P394
Sutovsky, M, S1.4
Sutovsky, P, S9.4, S3.5, S1.4, P307, P70
Sutton, CM, P5, FT51, P49
Suva, LJ, P336
Suzuki, H, P390, P400
Swanson, R, P164, P169
Swanson, RM, P13
Swanson, WF, P259
Sylvester, H, P455

Szkulmowski, M, P220
Szpila, M, P220
Szwarc, MM, P355

T

Taillon, J, P2
Takeuchi, Y, P371
Tamborski, S, P220
Tan, Y, S17.4
Tang, B, P27, P56
Tang, S, P80, P450
Taniguchi, K, S10.2, S10.4
Tardif, S, P375
Tavares Pereira, M, P238, S5.6, P373
Taylor, RN, P305
Teixeira, Dí, P113
Tekbaş, S, P245
Teng, K, P452
Terschluse, JM, P19
Tesfaye, D, S19.2
Tesone, M, P326
Theunissen, TW, P183
Thirumalai, A, P438
Thomas, CE, P359
Thomas, P, P46, S7.5
Thompson, PR, P65
Thompson, WE, S5.5
Thorburn, DR, P329, S13.5
Thornburg, K,
Tian, Y, FT3, P298, P283
Timlin, C, P177
Timme, K, P52, FT13, P50, FT18, P34, P16

Tirpak, F, S1.4
Toledano-Díaz, A, S8.3
Tolosa, JM, P446
Touey, AE, FT37, P12, P414
Toufaily, C, P39
Touraine, P, P329
Toure, A, P263
Townson, DH, FT28, P151
Tran, NK, P243
Trigo, EM, S4.4
Trotter, KA, P175
Trottier-Lavoie, M, P2
Tsang, B, FT38, P213
Tsang, P, FT30, P139
Tsatskis, Y, P103
Tschermer, AK, P393
Tsoi, MF, S7.3
Tsuchida, M, P390
Tsukamura, H, P371
Tucker, EJ, P329, S13.5
Tung, CK, P222
Tuteja, G, S14.3, S8.4
Tycksen, E, P308

U

Uesaka, N, FT5, P280
Uh, K, P67, S8.5
Uliasz, TF, P141
Ullah, F, P329
Ulrich, C, P160
Umezu, K, S9.3
Underhill, GH, S21.4
Ung, A, P90

Urlaub, H, P141
Utt, MD, P216

V

van den Bergen, J, P329, S13.5
Van den Veyver, IB, P163
Vancolen, SY, P399
Vanderhyden, B, P383
Vang, A, P33
Varberg, JM, P167
Varberg, KM, P167, S8.4, P294
Vasconcelos, JL, S2.5
Vasilev, F, P356
Vasquez, YM, P80
Veeraraghavulu, P, P429
Veiga-Lopez, A, 25.1
Velarde, MC, P439
Velez, KM, S6.5
Velthut-Meikas, A, P23
Venkatachalam, I, P127
Verma, S, P183, S3.1
Viana, AG, P271
Viger, R, P146
Vigone, G, P22
Vijay, J, P167
Villa, PA, S16.3
Vittor, G, P288
Volkman, D, S1.4
Volz, LJ, P246
Vu, T, S8.4

W

Wagner, S, P131
Wakayama, S, FT16, P349, S6.6, P189
Wakayama, T, FT16, P349, S6.6, P189
Walewska, E, S25.4
Walker, JA, P216, P217
Walker, WH, S7.4
Wallingford, JB, P243
Walton, KL, FT46, P420, S13.6
Wamaitha, SE, P125
Wan Der Maas, EM, P357
Wang, F, P441
Wang, H, PC2, P269, FT52, P431
Wang, J, P143, S7.1, P289
Wang, L, P415
Wang, N, P273
Wang, PJ, P68
Wang, S, S9.3, PC2, P282, PC4, S10.4
Wang, T, PC3, P424
Wang, W, P434
Wang, X, S24.4, P84, P206, P149, P211, P314
Wang, Y, P324, FT7, P10, P262, PC2, P27, S18.2, P268, P39, P416, FT46, P420, P56, P7
Wang, Z, P262, PC2
Wanner, N, P61
Ward, M, P77, P218
Ward, W, P391
Ward, WS, P90, P99

Warner, GR, S25.3
Wartan, N, FT8, P179
Wasserzug Pash, P, P344
Watanabe, H, P400
Watford, W, P362, P412
Wathes, DC, FT9, P180
Watkins, AJ, P14, P378, P392
Wegner, T, P214
Wei, J, P304, S15.1
Weil, SG, P159
Weintraub, A, P344
Weis, K, FT20, P41
Weiss, Y, P344
Wellert, S, P136
Wertheimer, S, P416
Wessels, JM, P404
West, RC, FT31, P185
West, SM, S2.2
Wettstein, J, S10.2
Wettstein, JC, P282
Whitaker, BD, P115, P116
White, BR, S16.4, S1.3
White, CR, P224
White, FJ, S5.2
White, HE, FT13, P50, FT18, P34, P16
Wiesbrock, C, FT5, P280
Wijesena, HR, S1.3
Wilbourne, J, S3.2
Williams III, J, P324, P416
Williams, CJ, P72, P424, P427

Williams, D, P263
Williams, GL, S2.2
Williams, RB, S13.2
Williams, RM, P147
Willingham, R, P22
Willson, C, P266
Wilson, K, P402
Wilson, RC, PC1
Wiltbank, M, P33
Wiltbank, MC, P25, P48, FT53, P150
Winchester, M, P172
Winger, QA, P176
Winship, AL, S13.6, P436
Winuthayanon, W, S18.3, P190, P321
Wirtu, GG, P97
Witek, K, S25.4
Wolf, K, FT8, P179
Wood, JR, S13.4, S13.3, FT51, P49
Wood, K, P164
Woodman, M, P334, P354
Woodruff, T, FT7, P10, S18.2
Woodruff, TK, S6.3, P22, FT55, P154, P3
Wright, S, P79
Wright, V, P392
Wu, G, FT11, P182, P336, P388, P407, P408
Wu, H, P90, P99
Wu, J, P361
Wu, S, P190, PC3, P266
Wungwattana, A, P81, P82

X

Xia, T, S9.3
Xiao, S, P27, S18.2, S6.4, P7, P131, P3
Xiao, Y, S15.6
Xie, Y, PC2
Xu, J, P323
Xu, P, S20.3, P411
Xu, PC, P323
Xu, X, PC3, P266, P427
Xu, Y, P53

Y

Yabuta, Y, P77
Yamamoto, T, P338, P358
Yamamoto, Y, S21.2, P368
Yamanaka, N, P452
Yamanaka, Y, P452
Yamauchi, Y, P77, P218
Yamazaki, Y, P90, P99
Yan, W, P262, PC2
Yang, A, P288
Yang, B, P452
Yang, E, P27
Yang, F, P68
Yang, M, P364
Yang, Q, P434
Yang, R, S3.6
Yao, H, P134
Yao, HH, P467
Yao, J, P126, P128
Yap, Y, P263
Ye, X, P362, P412

Yee, S, P141
Yeste, M, S1.6, P447
Yeung, W, FT1, P325
Yi, J, P370
Yi, M, PC3
Yin, Y, P310, P468
Yoo, I, P339, P372, P382
Yoon, J, P352
Yoon, S, P352
Young, K, P398
Young, KA, FT15, P328
Young, RC, P446
Yu, H, P84, P206
Yu, J, P305
Yu, S, P323, S20.3, P411
Yu, Z, S3.3, P277
Yuan, Y, FT31, P185, P196, P78
Yum, S, P370

Z

Zaloj, C, FT37, P12
Zamberlam, G, P421
Zambuto, SG, S21.4
Zamojski, M, FT46, P420
Zand, E, P140
Zaniker, E, P3
Zanol, J, S25.2
Zanol, JF, P357
Zareifard, A, P331
Zeev-Ben-Mordehai, T, P389
Zezecki, AL, P216, P332
Zhang, H, S13.2, P147
Zhang, J, FT7, P10, P27, S18.2, P361, P264, S6.3, P56, P7, P3
Zhang, M, P126, P128
Zhang, Q, P27, P56
Zhang, S, FT1, P325
Zhang, X, P361, P264, P273
Zhang, Z, P201
Zhao, F, S12.2, P241, S3.2, P254
Zhao, S, P361, P264
Zheng, H, PC2
Zhong, L, P31
Zhou, D, P333
Zhou, J, S14.3, P283
Zhou, LT, P98
Zhou, T, S6.5
Zhou, Q, P263
Zhou, S, P4
Zhou, T, PC2, P394
Zhou, X, FT2, P45, P39, FT46, P420
Zhu, H, P397
Zhu, L, P394
Zhu, Y, S4.3
Zigo, M, S9.4, S3.5, S1.4, P307
Ziv-Gal, A, P31
Zochowska, A, S2.3
Zomer, HD, FT12, P279
Zouari, R, P264
Zuba-Surma, EK, FT47, P422
Zuidema, D, P70
Zuidema, DM, S3.5



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