Form **990-PF**

Department of the Treasury Internal Revenue Service

004-

Return of Private Foundation

or Section 4947(a)(1) Trust Treated as Private Foundation Do not enter social security numbers on this form as it may be made public.
 Go to www.irs.gov/Form990PF for instructions and the latest information.

. . . .

OMB No. 1545-0052 l Open to Public Inspection

| For | calen | idar year 2017 or tax year beginning | | , and ending | | |
|--|----------|---|---|------------------------------|---|--|
| Name of foundation | | | | | A Employer identification | n number |
| | | ert W. Woodruff Foundat | 58-1695425 | 5 | | |
| | | nd street (or P.O. box number if mail is not delivered to street | address) | Room/suite | B Telephone number | |
| | | Peachtree Street, NE | | 3540 | 4045226755 | |
| | | own, state or province, country, and ZIP or foreign p anta, GA 30303–1799 | ostal code | | C If exemption application is p | bending, check here |
| | | all that apply: | Initial return of a fo | ormer public charity | D 1. Foreign organizations | s. check here |
| | | Final return | Amended return | | | |
| | | Address change | Name change | | Foreign organizations me check here and attach co | eeting the 85% test, |
| H (| heck | type of organization: X Section 501(c)(3) ex | empt private foundation | | E If private foundation sta | tus was terminated |
| |] Se | ction 4947(a)(1) nonexempt charitable trust | Other taxable private founda | ation | under section 507(b)(1) | |
| | | rket value of all assets at end of year J Accounti | ng method: X Cash | Accrual | F If the foundation is in a | 60-month termination |
| | | | her (specify) | | under section 507(b)(1) |)(B), check here … |
| | | 3, 318, 522, 850 (Part I, colun | | s.) | | - ()) |
| Pa | nrt I | Analysis of Revenue and Expenses (The total of amounts in columns (b), (c), and (d) may not necessarily equal the amounts in column (a).) | (a) Revenue and expenses per books | (b) Net investment income | (c) Adjusted net income | (d) Disbursements for charitable purposes (cash basis only) |
| | 1 | Contributions, gifts, grants, etc., received | | | N/A | |
| | 2 | Check X if the foundation is not required to attach Sch. B | | | | |
| | 3 | Interest on savings and temporary cash investments | 661,336. | | | Statement 1 |
| | 4 | Dividends and interest from securities | 99,237,160. | 99,237,160. | | Statement 2 |
| | 5a | Gross rents | | | | |
| | | Net rental income or (loss) | | | | |
| Ð | 6a | Net gain or (loss) from sale of assets not on line 10 | 59,835,190. | | | |
| enu | b | Gross sales price for all assets on line 6a | | | | |
| Revenue | | Capital gain net income (from Part IV, line 2) | | 59,835,190. | | |
| | 8 | Net short-term capital gain | | | | |
| | 9 | Income modifications Gross sales less returns | | | | |
| | | Gross sales less returns and allowances | | | | |
| | | Less: Cost of goods sold | | | | |
| | | Gross profit or (loss) Other income | 1. | 0. | | Statement 3 |
| | 12 | Total. Add lines 1 through 11 | 159,733,687. | | | |
| | 13 | Compensation of officers, directors, trustees, etc. | 448,337. | 113,828. | | 334,509. |
| | | Other employee salaries and wages | 347,124. | 25,483. | | 321,641. |
| | | Pension plans, employee benefits | 190,889. | 16,723. | | 174,166. |
| ses | | Legal fees Stmt 4 | 1,031. | 73. | | 958. |
| nəc | b | Accounting fees Stmt 5 | 32,100. | 2,247. | | 29,853. |
| Ă | C | Other professional fees Stmt 6 | 250,273. | 239,176. | | 11,097. |
| tive | 17 | Interest | | | | |
| itra: | | Taxes Stmt 7 | 1,560,000. | 0. | | 0. |
| inis | 19 | Depreciation and depletion | 21,891. | 1,532. | | 07 726 |
| dm | 20 | Occupancy | 105,092. 21,307. | 7,356. 1,172. | | 97,736. 20,134. |
| A bi | 21 | Travel, conferences, and meetings | 2,057. | 144. | | 1,913. |
| gan | 22 | Printing and publications | 93,177. | 4,629. | | 88,548. |
| Operating and Administrative Expenses | | Other expenses Stmt 8 Total operating and administrative | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | Ŧ,049• | | 00,540. |
| era | [| expenses. Add lines 13 through 23 | 3,073,278. | 412,363. | | 1,080,555. |
| ő | 25 | Contributions, gifts, grants paid | 149,765,015. | ,000 | | 149,765,015. |
| | | Total expenses and disbursements. | , ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | | | , . , |
| | | | 152,838,293. | 412,363. | | 150,845,570. |
| | 27 | Subtract line 26 from line 12: | | | | |
| | | Excess of revenue over expenses and disbursements | 6,895,394. | | | |
| | b | Net investment income (if negative, enter -0-) | | 159,321,323. | | |
| | C C | Adjusted net income (if negative, enter -0-) | | | N/A | |

723501 01-03-18 LHA For Paperwork Reduction Act Notice, see instructions.

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| For | m 99 | 1695425 Page 2 | | | |
|---|-------|--|-------------------|-------------------------|-----------------------|
| Part II Balance Sheets Attached schedules and amounts in the description column should be for end-of-year amounts only. | | | Beginning of year | End o | f year |
| Ρ | art | column should be for end-of-year amounts only. | (a) Book Value | (b) Book Value | (c) Fair Market Value |
| | 1 | Cash - non-interest-bearing | 10,363. | 5,492. | 5,492. |
| | | Savings and temporary cash investments | 36,001,804. | 64,506,993. | 64,573,520. |
| | | Accounts receivable | | | |
| | ľ | Less: allowance for doubtful accounts | | | |
| | | Pledges receivable | | | |
| | 4 | | | | |
| | _ | Less: allowance for doubtful accounts | | | |
| | 5 | Grants receivable | | | |
| | 6 | Receivables due from officers, directors, trustees, and other | | | |
| | | disqualified persons | | | |
| | 7 | Other notes and loans receivable | | | |
| | | Less: allowance for doubtful accounts | | | |
| ş | 8 | Inventories for sale or use | | | |
| Assets | 9 | Prepaid expenses and deferred charges | | | |
| Ä | | Investments - U.S. and state government obligations | | | |
| | b | Investments - corporate stock Stmt 9 | 420,486,370. | 487,102,346. | 3223366200. |
| | c | Investments - corporate bonds | | | |
| | 11 | Investments - land, buildings, and equipment: basis | | | |
| | | Less: accumulated depreciation | | | |
| | 12 | Investments - mortgage loans | | | |
| | | | | | |
| | 14 | Investments - other | | | |
| | 14 | Land, buildings, and equipment: basis \blacktriangleright 22, 042, 895. | 21 121 252 | 21 102 162 | 30,288,483. |
| | | Less: accumulated depreciation | 176,273. | 21,402,462. 199,589. | |
| | | Other assets (describe Statement 10) | 1/0,2/3. | 199,509. | 289,155. |
| | 16 | Total assets (to be completed by all filers - see the | 470 000 1 00 | | 221050050 |
| | | instructions. Also, see page 1, item I) | 4/8,099,163. | 573,216,882. | 3318522850. |
| | | Accounts payable and accrued expenses | | | |
| | | Grants payable | | | |
| es | 19 | Deferred revenue | | | |
| Liabilities | 20 | Loans from officers, directors, trustees, and other disqualified persons | | | |
| iab | 21 | Mortgages and other notes payable | | | |
| | | Other liabilities (describe \blacktriangleright 457 (b) Plan) | 12,113. | 16,838. | |
| | | | | | |
| | 23 | Total liabilities (add lines 17 through 22) | 12,113. | 16,838. | |
| _ | | Foundations that follow SFAS 117, check here 🛛 🕨 🗴 | | | |
| | | and complete lines 24 through 26, and lines 30 and 31. | | | |
| sec | 24 | Unrestricted | 478,087,050. | 573,200,044. | |
| anc | | Temporarily restricted | | | |
| Net Assets or Fund Balances | | Permanently restricted | | | |
| pc | | Foundations that do not follow SFAS 117, check here | | | |
| Бu | | and complete lines 27 through 31. | | | |
| P | 27 | Capital stock, trust principal, or current funds | | | |
| ets | | Paid-in or capital surplus, or land, bldg., and equipment fund | | | |
| SS | | | | | |
| ∋t ⊿ | | Retained earnings, accumulated income, endowment, or other funds | 478,087,050. | 573,200,044. | |
| ž | 30 | Total net assets or fund balances | 4/0,00/,000. | 575,200,044. | |
| | | | 470 000 162 | E72 216 002 | |
| | 31 | Total liabilities and net assets/fund balances | 478,099,163. | 573,216,882. | |
| Ρ | art | III Analysis of Changes in Net Assets or Fund B | alances | | |
| 1 | Total | net assets or fund balances at beginning of year - Part II, column (a), line | 20 | ĺ | |
| | | | | 1 | 478,087,050. |
| | | t agree with end-of-year figure reported on prior year's return) | | | |
| | | amount from Part I, line 27a | | 6,895,394. | |
| | | r increases not included in line 2 (itemize) Gain on sto | 3 | 88,217,600. | |
| | | ines 1, 2, and 3 | | 573,200,044. | |
| | | eases not included in line 2 (itemize) | | 5 | 0. |
| 6 | Fotal | net assets or fund balances at end of year (line 4 minus line 5) - Part II, co | | 573,200,044. | |

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| | | W. Woodruff | | | ıc. | | 5 | 8-169 | 5425 | Page 3 |
|--|-------------|--|--|--------------------------------------|--------------|------------------|-----------------------|------------------------------|-------------------------------|------------------|
| | | osses for Tax on I s) of property sold (for exa | | | (b) H | ow acquired | (c) Date | acquired | (d) Dat | te sold |
| 2-story brick warehouse; or common stock, 200 shs. MLC Co.) | | | | | | | | day, yr.) | (mó., d | ay, yr.) |
| 1a publicly trade | d se | curities | | | | | Vari | ous | Vari | ous |
| <u>b</u> | | | | | | | | | | |
| d | | | | | | | | | | |
| e | | | | | | | | | | |
| (e) Gross sales price | (f) | Depreciation allowed (or allowable) | | st or other basis expense of sale | | I | | Gain or (loss s (f) minus | | |
| a 278,299,208. | | | 21 | 8,464,01 | .8. | | | | 9,835 | ,190. |
| b | | | | | | | | | | <u>.</u> |
| C | | | | | | | | | | |
| d | | | | | | | | | | |
| e | | | | | | | | | | |
| Complete only for assets showin | g gain in | column (h) and owned by | the foundation | n on 12/31/69. | | | | Col. (h) gain | | |
| (i) FMV as of 12/31/69 | | (j) Adjusted basis as of 12/31/69 | | cess of col. (i) col. (j), if any | | CC | l. (K), but Losses | not less tha (from col. (| h)) | |
| a | | | | | | | | 5 | 9,835 | ,190. |
| b | | | | | | | | | | |
| C | | | | | | | | | | |
| <u>d</u> | | | | | | | | | | |
| e | | | | | _ | | | | | |
| 2 Capital gain net income or (net ca | pital loss |) { If gain, also enter -(| er in Part I, line)- in Part I, line | 7 7 | . } | 2 | | 5 | 9,835 | ,190. |
| 3 Net short-term capital gain or (los | s) as def | ned in sections 1222(5) a | nd (6): | | | | | | | |
| If gain, also enter in Part I, line 8, | | | | | | | | N/A | | |
| If (loss), enter -0- in Part I, line 8 Part V Qualification U | nder S | Section 4940(e) fo | r Reducer | Tax on Net | · Jnva | 3 Stment In | come | N/A | | |
| (For optional use by domestic private | | | | | | | oome | | | |
| | ισαπααι | | +J+U(a) lax 01 | | icome. |) | | | | |
| If section 4940(d)(2) applies, leave the | nis part bl | ank. | | | | | | | | |
| Was the foundation liable for the sect If "Yes," the foundation doesn't qualif | | | | | riod? | | | | Yes | X No |
| 1 Enter the appropriate amount in e | - | , , | | | entries. | | | | | |
| (a) | | (b) | | | (c) | | | | (d) | |
| Base periód years Calendar year (or tax year beginnir | na in) | Adjusted qualifying di | stributions | Net value of no | onchari | table-use asset | s | Distrit (col. (b) div | oùtión ratio rided by col. | (c)) |
| 2016 | .9, | 141,81 | 16,187. | 2,9 | 91. | 214,07 | 6. | (0011 (0) 011 | | 47411 |
| 2015 | | | 10,072. | | | 458,83 | | | | 48954 |
| 2014 | | | 76,318. | | | ,029,55 | | | .0 | 41963 |
| 2013 | | 155,87 | 79,876. | 2,9 | 21, | 104,55 | 6. | | | 53363 |
| 2012 | | 133,50 |)1,145. | 2,8 | 312, | 014,07 | 4. | | .0 | 47475 |
| | | | | | | | | | | |
| 2 Total of line 1, column (d) | | | | | | | 2 | | • 2 | 39166 |
| 3 Average distribution ratio for the st the foundation has been in exister | | | | | | | 3 | | .0 | 47833 |
| | | | | | | | | 2 00 | | |
| 4 Enter the net value of noncharitab | le-use as | sets for 2017 from Part X, | , line 5 | | | | 4 | | 9,151 | |
| 5 Multiply line 4 by line 3 | | | | | | | 5 | 14 | 7,763 | <u>,399.</u> |
| 6 Enter 1% of net investment incom | ne (1% of | Part I, line 27b) | | | | | 6 | | 1,593 | <u>,213.</u> |
| 7 Add lines 5 and 6 | | | | | | | 7 | 14 | 9,356 | ,612. |
| 8 Enter qualifying distributions from | n Part XII, | line 4 | | | | | 8 | 15 | 0,845 | <u>,57</u> 0. |
| If line 8 is equal to or greater than See the Part VI instructions. | | | | | | | | | | |
| 723521 01-03-18 | | | | | | | | | orm 990- | PF (2017) |

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Form **990-PF** (2017)

| Form 990-PF (2017) Robert W. Woodruff Found Part VI Excise Tax Based on Investment Income (Sec | | | 95425 | | Page 4 |
|--|--|--------------|----------------|------|--------------|
| 1a Exempt operating foundations described in section 4940(d)(2), check here ► | | | | | 113) |
| Date of ruling or determination letter: (attach copy o | | | | | |
| b Domestic foundations that meet the section 4940(e) requirements in Part V, ch | | 1 | 1,59 | 3,2 | 13. |
| of Part I, line 27b | | | | | |
| c All other domestic foundations enter 2% of line 27b. Exempt foreign organizati | ons, enter 4% of Part I, line 12, col. (b). $ floor$ | | | | |
| 2 Tax under section 511 (domestic section 4947(a)(1) trusts and taxable founda | tions only; others, enter -0-) | 2 | | | 0. |
| 3 Add lines 1 and 2 | | 3 | 1,59 | 3,2 | :13. |
| 4 Subtitle A (income) tax (domestic section 4947(a)(1) trusts and taxable foundated as a section 4947(a)(1) trusts as a section 4947(a)(1) tr | tions only; others, enter -0-) | 4 | | | 0. |
| 5 Tax based on investment income. Subtract line 4 from line 3. If zero or less, e | nter -0- | 5 | 1,59 | 3,2 | :13. |
| 6 Credits/Payments: | | | | | |
| a 2017 estimated tax payments and 2016 overpayment credited to 2017 | | | | | |
| b Exempt foreign organizations - tax withheld at source | | 0. | | | |
| c Tax paid with application for extension of time to file (Form 8868) | | 0. | | | |
| d Backup withholding erroneously withheld | | 0. | | | |
| 7 Total credits and payments. Add lines 6a through 6d | | | 1,59 | 9,4 | |
| 8 Enter any penalty for underpayment of estimated tax. Check here X if Form | | | | | 0. |
| 9 Tax due. If the total of lines 5 and 8 is more than line 7, enter amount owed \dots | | | | ~ 1 | |
| 10 Overpayment. If line 7 is more than the total of lines 5 and 8, enter the amoun | | | | 6,1 | .88. |
| 11 Enter the amount of line 10 to be: Credited to 2018 estimated tax | 6 , 188 • Refunde | ed 🕨 🛛 11 | | | 0. |
| Part VII-A Statements Regarding Activities | | | | Vee | |
| 1a During the tax year, did the foundation attempt to influence any national, state, | | | | res | No |
| any political campaign? | | | <u>1a</u> | | X X |
| b Did it spend more than \$100 during the year (either directly or indirectly) for po | | e definition | 1b | | |
| If the answer is "Yes" to 1a or 1b , attach a detailed description of the activities | and copies of any materials published or | | | | |
| distributed by the foundation in connection with the activities. | | | | | v |
| c Did the foundation file Form 1120-POL for this year? | | | 1c | | X |
| d Enter the amount (if any) of tax on political expenditures (section 4955) impos | | 0 | | | |
| (1) On the foundation. \blacktriangleright \$ 0. (2) On foundation | | 0. | | | |
| e Enter the reimbursement (if any) paid by the foundation during the year for pol managers. ► \$ 0. | nical experionure lax imposed on loundation | I | | | |
| managers. ▶ \$ 0 . 2 Has the foundation engaged in any activities that have not previously been repo | orted to the IDCO | | 2 | | x |
| If "Yes," attach a detailed description of the activities. | | | 2 | | |
| 3 Has the foundation made any changes, not previously reported to the IRS, in it | a governing instrument, articles of incorner | tion or | | | |
| bylaws, or other similar instruments? If "Yes," attach a conformed copy of the | | | 3 | | x |
| 4a Did the foundation have unrelated business gross income of \$1,000 or more d | | | | | X |
| b If "Yes," has it filed a tax return on Form 990-T for this year? | | | | | |
| 5 Was there a liquidation, termination, dissolution, or substantial contraction dur | | | | | x |
| If "Yes," attach the statement required by General Instruction T. | | | | | <u> </u> |
| 6 Are the requirements of section 508(e) (relating to sections 4941 through 494) | 5) satisfied either | | | | |
| • By language in the governing instrument, or | , | | | | |
| • By state legislation that effectively amends the governing instrument so that | no mandatory directions that conflict with th | e state law | | | |
| remain in the governing instrument? | - | | 6 | X | |
| 7 Did the foundation have at least \$5,000 in assets at any time during the year? I | f "Yes." complete Part II, col. (c), and Part X | J | 7 | X | |
| , , , , , , , , , , , , , , , , , , , | | | | | |
| 8a Enter the states to which the foundation reports or with which it is registered. S | ee instructions. | | | | |
| GA | | | _ | | |
| b If the answer is "Yes" to line 7, has the foundation furnished a copy of Form 99 | D-PF to the Attorney General (or designate) | | | | |
| of each state as required by General Instruction G? If "No," attach explanatio | | | 8b | X | |
| 9 Is the foundation claiming status as a private operating foundation within the n | | | | | |
| year 2017 or the tax year beginning in 2017? See the instructions for Part XIV. | If "Yes," complete Part XIV | | 9 | | Х |
| 10 Did any persons become substantial contributors during the tax year? If "Yes," a | | | 10 | | X |
| | | | Form 99 | 0-PF | (2017) |

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4 11100503 352174 0060 2017.03000 Robert W. Woodruff Foundati 0060___1

Form 990-PF (2017) Robert W. Woodruff Foundation, Inc. Part VII-A | Statements Regarding Activities (continued)

| | | | Yes | No |
|----|--|------|-----|----|
| 11 | At any time during the year, did the foundation, directly or indirectly, own a controlled entity within the meaning of | 11 | | х |
| 12 | section 512(b)(13)? If "Yes," attach schedule. See instructions | - 11 | | 23 |
| 12 | Kill/as instructions Constructions Constructions | 12 | x | |
| 13 | Did the foundation comply with the public inspection requirements for its annual returns and exemption application? | 13 | X | |
| | Website address www.woodruff.org | | | |
| 14 | The books are in care of \blacktriangleright Erik S. Johnson, Secretary Telephone no. \blacktriangleright 404-52 | 2-6 | 755 | |
| | Located at > 191 Peachtree Street NE, Suite 3540, Atlanta, GA ZIP+4 > 30 | | | 99 |
| 15 | Section 4947(a)(1) nonexempt charitable trusts filing Form 990-PF in lieu of Form 1041 - check here | | ► | |
| | and enter the amount of tax-exempt interest received or accrued during the year 15 | | /A | |
| 16 | At any time during calendar year 2017, did the foundation have an interest in or a signature or other authority over a bank, | | Yes | No |
| | securities, or other financial account in a foreign country? | 16 | | Х |
| | See the instructions for exceptions and filing requirements for FinCEN Form 114. If "Yes," enter the name of the | | | |
| | foreign country 🕨 | | | |
| Pa | rt VII-B Statements Regarding Activities for Which Form 4720 May Be Required | | | |
| | File Form 4720 if any item is checked in the "Yes" column, unless an exception applies. | | Yes | No |
| 18 | During the year, did the foundation (either directly or indirectly): | | | |
| | (1) Engage in the sale or exchange, or leasing of property with a disqualified person? Yes 🗴 No | | | |
| | (2) Borrow money from, lend money to, or otherwise extend credit to (or accept it from) | | | |
| | a disqualified person? Yes 🔀 No | | | |
| | (3) Furnish goods, services, or facilities to (or accept them from) a disqualified person? Yes 🔀 No | | | |
| | (4) Pay compensation to, or pay or reimburse the expenses of, a disqualified person? | | | |
| | (5) Transfer any income or assets to a disqualified person (or make any of either available | | | |
| | for the benefit or use of a disqualified person)? Yes 🗴 No | | | |
| | (6) Agree to pay money or property to a government official? (Exception. Check "No" | | | |
| | if the foundation agreed to make a grant to or to employ the official for a period after | | | |
| | termination of government service, if terminating within 90 days.) Yes 🗴 No | | | |
| t | If any answer is "Yes" to 1a(1)-(6), did any of the acts fail to qualify under the exceptions described in Regulations | | | |
| | section 53.4941(d)-3 or in a current notice regarding disaster assistance? See instructions | 1b | | X |
| | Organizations relying on a current notice regarding disaster assistance, check here | | | |
| C | Did the foundation engage in a prior year in any of the acts described in 1a, other than excepted acts, that were not corrected | | | v |
| • | before the first day of the tax year beginning in 2017? | 1c | | Х |
| 2 | Taxes on failure to distribute income (section 4942) (does not apply for years the foundation was a private operating foundation | | | |
| | defined in section $4942(j)(3)$ or $4942(j)(5)$: | | | |
| č | At the end of tax year 2017, did the foundation have any undistributed income (lines 6d and 6e, Part XIII) for tax year(s) beginning before 2017? Yes X No | | | |
| | | | | |
| | If "Yes," list the years,,, _, | | | |
| | valuation of assets) to the year's undistributed income? (If applying section 4942(a)(2) to all years listed, answer "No" and attach | | | |
| | λ | 2b | | |
| | statement - see instructions.) IN / A If the provisions of section 4942(a)(2) are being applied to any of the years listed in 2a, list the years here. | | | |
| | | | | |
| 32 | Did the foundation hold more than a 2% direct or indirect interest in any business enterprise at any time | | | |
| | during the year? | | | |
| ł | If "Yes," did it have excess business holdings in 2017 as a result of (1) any purchase by the foundation or disqualified persons after | | | |
| | May 26, 1969; (2) the lapse of the 5-year period (or longer period approved by the Commissioner under section 4943(c)(7)) to dispose | | | |
| | of holdings acquired by gift or bequest; or (3) the lapse of the 10-, 15-, or 20-year first phase holding period? (Use Schedule C, | | | |
| | Form 4720, to determine if the foundation had excess business holdings in 2017.) N/A | 3b | | |
| 4a | Did the foundation invest during the year any amount in a manner that would jeopardize its charitable purposes? | 4a | | Х |
| | Did the foundation make any investment in a prior year (but after December 31, 1969) that could jeopardize its charitable purpose that | | | |
| | had not been removed from jeopardy before the first day of the tax year beginning in 2017? | 4b | | Х |
| | | 0.00 | | |

Form **990-PF** (2017)

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| orm 990-PF (20 ⁻ | 17) Robert | W. Wood | lruff Four | ndation, | Inc. | 58-169 |
|-----------------------------|-----------------------------|-------------------|----------------|-------------|----------|----------------------|
| Part VII-B | Statements Rega | arding Activ | ities for Whic | h Form 4720 |) May Be | Required (continued) |
| 5a During the v | ear, did the foundation pay | v or incur anv am | ount to: | | | |

| 5a During the year, did the foundation pay or incur any amount to: | ١ | Yes | No |
|--|----|-----|----|
| (1) Carry on propaganda, or otherwise attempt to influence legislation (section 4945(e))? Yes 🗴 No | | | |
| (2) Influence the outcome of any specific public election (see section 4955); or to carry on, directly or indirectly, | | | |
| any voter registration drive? Yes 🔀 No | | | |
| (3) Provide a grant to an individual for travel, study, or other similar purposes? Yes 🚺 No | | | |
| (4) Provide a grant to an organization other than a charitable, etc., organization described in section | | | |
| 4945(d)(4)(A)? See instructions X Yes No | | | |
| (5) Provide for any purpose other than religious, charitable, scientific, literary, or educational purposes, or for | | | |
| the prevention of cruelty to children or animals? Yes 🗴 No | | | |
| b If any answer is "Yes" to 5a(1)-(5), did any of the transactions fail to qualify under the exceptions described in Regulations | | | |
| section 53.4945 or in a current notice regarding disaster assistance? See instructions | 5b | | Х |
| Organizations relying on a current notice regarding disaster assistance, check here | | | |
| c If the answer is "Yes" to question 5a(4), does the foundation claim exemption from the tax because it maintained | | | |
| expenditure responsibility for the grant? No | | | |
| If "Yes," attach the statement required by Regulations section 53.4945-5(d). | | | |
| 6a Did the foundation, during the year, receive any funds, directly or indirectly, to pay premiums on | | | |
| a personal benefit contract? Yes 🔀 No | | | |
| b Did the foundation, during the year, pay premiums, directly or indirectly, on a personal benefit contract? | 6b | | Х |
| If "Yes" to 6b, file Form 8870. | | | |
| 7a At any time during the tax year, was the foundation a party to a prohibited tax shelter transaction? Yes 🗴 No | | | |
| b If "Yes," did the foundation receive any proceeds or have any net income attributable to the transaction? N/A | 7b | | |

Part VIII Information About Officers, Directors, Trustees, Foundation Managers, Highly Paid Employees, and Contractors

1 List all officers, directors, trustees, and foundation managers and their compensation.

| (a) Name and address | (b) Title, and average hours per week devoted to position | (c) Compensation (If not paid, enter -0-) | (d) Contributions to employee benefit plans and deferred compensation | (e) Expense account, other allowances |
|---|--|---|--|---|
| TRUSTEES-see attached detail listing | TRUSTEES | | | |
| | 9.00 | 135,000. | 7,290. | 0. |
| OFFICERS-see attached detail listing | OFFICERS | | | |
| | 34.00 | 313,337. | 71,062. | 1,470. |
| | | | | |
| | | | | |
| | - | | | |
| | { | | | |
| 2 Compensation of five highest-paid employees (other than those inc | cluded on line 1). If none, | enter "NONE." | | |
| (a) Name and address of each employee paid more than \$50,000 | (b) Title, and average hours per week devoted to position | (c) Compensation | (d) Contributions to employee benefit plans and deferred compensation | (e) Expense account, other allowances |
| Elizabeth Smith - 191 Peachtree St | Grants Progra | m Directo | r | |
| NE, #3540, Atlanta, GA 30303 | 17.00 | 63,976. | 14,343. | 610. |
| Sarah Tablan - 191 Peachtree St NE, | Controller | | | |
| #3540, Atlanta, GA 30303 | 17.00 | 46,346. | | 614. |
| Carrie Conway - 191 Peachtree St NE, | Senior Progra | | | |
| #3540, Atlanta, GA 30303 | 17.00 | 44,929. | 16,529. | 614. |
| Martha Morton- retired 6/30/2017 - | Controller | | | |
| 191 Peachtree St NE, #3540, Atlanta, | 17.00 | 44,529. | 8,898. | 850. |
| | - | | | |
| | | 1 | | |
| Total number of other employees paid over \$50,000 | | | 🕨 | 0 |

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| Form 990-PF (2017) Robert W. Woodruff Foundation, | [nc. | 58-1 | 695425 Page 7 |
|---|------------------------------|---------------|---------------------------|
| Part VIII Information About Officers, Directors, Trustees, Founda Paid Employees, and Contractors (continued) | ation Managers, H | ighly | |
| 3 Five highest-paid independent contractors for professional services. If none, enter | er "NONE." | | |
| (a) Name and address of each person paid more than \$50,000 | (b) Type o | of service | (c) Compensation |
| T. ROWE PRICE ASSOCIATES | | | |
| P.O. BOX 64043, BALTIMORE, MD 21264 | INVESTMENT | MANAGE | R 388,969. |
| SUNTRUST BANK | | | |
| 303 PEACHTREE ST, ATLANTA, GA 30308 | INVESTMENT | ADVISO | R 238,340. |
| PARAMETRIC | | | |
| P.O. BOX 398212, SAN FRANCISCO, CA 94139 | INVESTMENT | MANAGE | R 192,886. |
| GANNETT WELSH & KOTLER, LLC - 222 BERKELEY | | | |
| STREET, 15TH FLOOR, BOSTON, MA 02116 | INVESTMENT | MANAGE | R 72,489. |
| | | | |
| | | | ▶ 0 |
| Total number of others receiving over \$50,000 for professional services | | | |
| | tical information auch as th | | |
| List the foundation's four largest direct charitable activities during the tax year. Include relevant statis number of organizations and other beneficiaries served, conferences convened, research papers pro | | le | Expenses |
| 1 N/A | | | |
| · · | | | |
| | | | |
| 2 | | | |
| | | | |
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| 3 | | | |
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| | | | |
| 4 | | | |
| | | | |
| Part IX-B Summary of Program-Related Investments | | | |
| Describe the two largest program-related investments made by the foundation during the tax year on | lines 1 and 2 | | Amount |
| 1 N/A | | | Amount |
| | | | |
| | | | |
| 2 | | | |
| | | | |
| | | | |
| All other program-related investments. See instructions. | | | |
| 3 | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| Total. Add lines 1 through 3 | | > [| 0. |
| | | | Form 990-PF (2017) |

11100503 352174 0060

723561 01-03-18

| Pa | Art X Minimum Investment Return (All domestic foundations | must cor | nplete th | nis part. Foreign fou | ndatio | ns, see instructions.) |
|----|---|---------------|-------------|-----------------------|----------|----------------------------|
| 1 | Fair market value of assets not used (or held for use) directly in carrying out charitat | ole, etc., p | urposes: | | | |
| a | Average monthly fair market value of securities | | | | 1a | 3,083,361,860. |
| b | Average of monthly cash balances | | | | 1b | 52,544,186. |
| | Fair market value of all other assets | | | | 1c | 288,701. |
| d | Total (add lines 1a, b, and c) | | | | 1d | 3,136,194,747. |
| е | Reduction claimed for blockage or other factors reported on lines 1a and | | | | | |
| | 1c (attach detailed explanation) | 1e | 9 | 2,359,474. | | |
| 2 | Acquisition indebtedness applicable to line 1 assets | | | | 2 | 0. |
| 3 | Subtract line 2 from line 1d | | | | 3 | 3,136,194,747. |
| 4 | Cash deemed held for charitable activities. Enter 1 1/2% of line 3 (for greater amoun | it, see inst | ructions) | | 4 | 47,042,921. |
| 5 | Net value of noncharitable-use assets. Subtract line 4 from line 3. Enter here and c | on Part V, | line 4 | | 5 | 3,089,151,826. |
| 6 | Minimum investment return. Enter 5% of line 5 | | | | 6 | 154,457,591. |
| P | art XI Distributable Amount (see instructions) (Section 4942(j)(3) a | | private op | erating foundations a | nd certa | ain |
| | foreign organizations, check here 🕨 📃 and do not complete this part | t.) | | | | |
| 1 | Minimum investment return from Part X, line 6 | | | | 1 | 154,457,591. |
| | Tax on investment income for 2017 from Part VI, line 5 | | | 1,593,213. | | |
| | Income tax for 2017. (This does not include the tax from Part VI.) | | | | | |
| C | Add lines 2a and 2b | | | | 2c | 1,593,213. |
| 3 | Distributable amount before adjustments. Subtract line 2c from line 1 | | | | 3 | 152,864,378. |
| 4 | Recoveries of amounts treated as qualifying distributions | | | | 4 | 0. |
| 5 | Add lines 3 and 4 | | | | 5 | 152,864,378. |
| 6 | Deduction from distributable amount (see instructions) | | | | 6 | 0. |
| 7 | Distributable amount as adjusted. Subtract line 6 from line 5. Enter here and on Par | t XIII, line | 1 | | 7 | 152,864,378. |
| P | art XII Qualifying Distributions (see instructions) | | | | | |
| | | | | | | i |
| 1 | Amounts paid (including administrative expenses) to accomplish charitable, etc., pu | | | | | |
| | Expenses, contributions, gifts, etc total from Part I, column (d), line 26 | | | | 1a | 150,845,570. |
| | Program-related investments - total from Part IX-B | | | | 1b | 0. |
| | Amounts paid to acquire assets used (or held for use) directly in carrying out charita | able, etc., j | purposes | | 2 | |
| 3 | Amounts set aside for specific charitable projects that satisfy the: | | | | | |
| | Suitability test (prior IRS approval required) | | | | 3a | |
| | Cash distribution test (attach the required schedule) | | | | 3b | |
| 4 | Qualifying distributions. Add lines 1a through 3b. Enter here and on Part V, line 8; a | | III, line 4 | | 4 | 150,845,570. |
| 5 | Foundations that qualify under section 4940(e) for the reduced rate of tax on net inv | | | | | 1 502 212 |
| 6 | income. Enter 1% of Part I, line 27b | | | | 5 6 | 1,593,213. 149,252,357. |
| 6 | Adjusted qualifying distributions. Subtract line 5 from line 4 | | | | | |
| | Note: The amount on line 6 will be used in Part V, column (b), in subsequent years 4940(e) reduction of tax in those years. | when calc | uiating W | | quaimes | S IOF THE SECTOR |
| | דטדטנטן וטעעטווטוו טו ומא ווו וווטפט צבמוס. | | | | | |

Form **990-PF** (2017)

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Part XIII Undistributed Income (see instructions)

| · · · · · · · · · · · · · · · · · · · | | | | |
|--|----------------------|-----------------------------------|----------------------|---------------------------|
| | (a) Corpus | (b) Years prior to 2016 | (c) 2016 | (d) 2017 |
| 1 Distributable amount for 2017 from Part XI, | Gorpuo | | 2010 | 152,864,378. |
| line 7 | | | | 152,004,570. |
| 2 Undistributed income, if any, as of the end of 2017: | | | 143,081,706. | |
| a Enter amount for 2016 only | | | 145,001,700. | |
| b Total for prior years: | | 0. | | |
| 3 Excess distributions carryover, if any, to 2017: | | • | | |
| | | | | |
| 1.5 0040 | | | | |
| - Fuerra 0044 | | | | |
| 1E | | | | |
| • Errom 0010 | | | | |
| f Total of lines 3a through e | 0. | | | |
| 4 Qualifying distributions for 2017 from | •• | | | |
| Part XII, line 4: ►\$150,845,570. | | | | |
| a Applied to 2016, but not more than line 2a \therefore | | | 143,081,706. | |
| b Applied to undistributed income of prior | | | 110,001,1000 | |
| years (Election required - see instructions) | | 0. | | |
| c Treated as distributions out of corpus | | | | |
| (Election required - see instructions) | 0. | | | |
| d Applied to 2017 distributable amount | ••• | | | 7,763,864. |
| e Remaining amount distributed out of corpus | 0. | | | ., |
| 5 Excess distributions carryover applied to 2017 | 0. | | | 0. |
| (If an amount appears in column (d), the same amount must be shown in column (a).) | | | | |
| 6 Enter the net total of each column as indicated below: | _ | | | |
| a Corpus. Add lines 3f, 4c, and 4e. Subtract line 5 | 0. | | | |
| b Prior years' undistributed income. Subtract | | • | | |
| line 4b from line 2b | | 0. | | |
| c Enter the amount of prior years' undistributed income for which a notice of deficiency has been issued, or on which the section 4942(a) tax has been previously assessed | | 0. | | |
| d Subtract line 6c from line 6b. Taxable | | ••• | | |
| amount - see instructions | | 0. | | |
| e Undistributed income for 2016. Subtract line | | | | |
| 4a from line 2a. Taxable amount - see instr. | | | 0. | |
| f Undistributed income for 2017. Subtract | | | | |
| lines 4d and 5 from line 1. This amount must | | | | |
| be distributed in 2018 | | | | 145,100,514. |
| 7 Amounts treated as distributions out of | | | | |
| corpus to satisfy requirements imposed by | | | | |
| section 170(b)(1)(F) or 4942(g)(3) (Election | | | | |
| may be required - see instructions) | 0. | | | |
| 8 Excess distributions carryover from 2012 | | | | |
| not applied on line 5 or line 7 | 0. | | | |
| 9 Excess distributions carryover to 2018. | | | | |
| Subtract lines 7 and 8 from line 6a | 0. | | | |
| 10 Analysis of line 9: | | | | |
| a Excess from 2013 | | | | |
| b Excess from 2014 | | | | |
| c Excess from 2015 | | | | |
| d Excess from 2016 | | | | |
| e Excess from 2017 | | | | |
| 723581 01-03-18 | | | | Form 990-PF (2017) |

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| | W. Woodruff | | • | 58-16 | 95425 Page 10 |
|--|------------------------------|---------------------------|-------------------|--------------------|---------------|
| Part XIV Private Operating F | oundations (see ins | structions and Part VII | -A, question 9) | N/A | |
| 1 a If the foundation has received a ruling of | or determination letter that | it is a private operating | | | |
| foundation, and the ruling is effective fo | or 2017, enter the date of t | he ruling | ► | | |
| b Check box to indicate whether the foun | dation is a private operatir | ig foundation described i | n section | 4942(j)(3) or 🛄 49 | 42(j)(5) |
| 2 a Enter the lesser of the adjusted net | Tax year | | Prior 3 years | | |
| income from Part I or the minimum | (a) 2017 | (b) 2016 | (c) 2015 | (d) 2014 | (e) Total |
| investment return from Part X for | | | | | |
| each year listed | | | | | |
| b 85% of line 2a | | | | | |
| c Qualifying distributions from Part XII, | | | | | |
| line 4 for each year listed | | | | | |
| d Amounts included in line 2c not | | | | | |
| used directly for active conduct of | | | | | |
| exempt activities | | | | | |
| e Qualifying distributions made directly | | | | | |
| for active conduct of exempt activities. | | | | | |
| Subtract line 2d from line 2c | | | | | |
| 3 Complete 3a, b, or c for the alternative test relied upon: | | | | | |
| a "Assets" alternative test - enter: | | | | | |
| (1) Value of all assets | | | | | |
| (2) Value of assets qualifying under section 4942(j)(3)(B)(i) | | | | | |
| b "Endowment" alternative test - enter | | | | | |
| 2/3 of minimum investment return | | | | | |
| shown in Part X, line 6 for each year listed | | | | | |
| c "Support" alternative test - enter: | | | | | |
| (1) Total support other than gross | | | | | |
| investment income (interest, | | | | | |
| dividends, rents, payments on securities loans (section | | | | | |
| 512(a)(5)), or royalties) | | | | | |
| (2) Support from general public | | | | | |
| and 5 or more exempt organizations as provided in | | | | | |
| section 4942(j)(3)(B)(iii) | | | | | |
| (3) Largest amount of support from | | | | | |
| an exempt organization | | | | | |
| (4) Gross investment income | | | | | |
| Part XV Supplementary Info | | | if the foundation | had \$5,000 or mo | ore in assets |
| at any time during | the year-see instr | uctions.) | | | |

1 Information Regarding Foundation Managers:

a List any managers of the foundation who have contributed more than 2% of the total contributions received by the foundation before the close of any tax year (but only if they have contributed more than \$5,000). (See section 507(d)(2).)

None

b List any managers of the foundation who own 10% or more of the stock of a corporation (or an equally large portion of the ownership of a partnership or other entity) of which the foundation has a 10% or greater interest.

None

2 Information Regarding Contribution, Grant, Gift, Loan, Scholarship, etc., Programs:

Check here \blacktriangleright if the foundation only makes contributions to preselected charitable organizations and does not accept unsolicited requests for funds. If the foundation makes gifts, grants, etc., to individuals or organizations under other conditions, complete items 2a, b, c, and d.

a The name, address, and telephone number or email address of the person to whom applications should be addressed:

See attached schedule

b The form in which applications should be submitted and information and materials they should include:

See attached schedule

c Any submission deadlines:

See attached schedule

d Any restrictions or limitations on awards, such as by geographical areas, charitable fields, kinds of institutions, or other factors: See attached schedule

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Form 990-PF (2017)

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| 3 Grants and Contributions Paid During the N | ear or Approved for Future | Payment | | |
|--|--|------------------------|----------------------------------|--------------|
| Recipient | If recipient is an individual, show any relationship to any foundation manager or substantial contributor | Foundation | Purpose of grant or contribution | Amount |
| Name and address (home or business) | any foundation manager or substantial contributor | status of recipient | contribution | Amount |
| a Paid during the year | | | | |
| | | | | |
| | | | | |
| | | | | |
| See attached schedule | | | | |
| | | | | 149,765,015. |
| | | | | |
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| | | | | |
| Total | | I | ► 3a | 149,765,015. |
| b Approved for future payment | | | | |
| | | | | |
| | | | | |
| | | | | |
| See attached schedule | | | | |
| | | | | 379,955,000. |
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| | | | | |
| Total | | • | ► 3b | 379,955,000. |

Form 990-PF (2017)

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Part XVI-A Analysis of Income-Producing Activities

| Enter gross amounts unless otherwise indicated. | Unrelated | l business income | | ded by section 512, 513, or 514 | (e) |
|---|-------------------------|--------------------------|---------------|---------------------------------|-------------------|
| | (a) Business | (b) | (C) Exclu- | (d) | Related or exempt |
| 1 Program service revenue: | code | Amount | sion code | Amount | function income |
| a | | | | | |
| b | | | | | |
| c | | | | | |
| d | | | | | |
| e | | | | | |
| f | | | | | |
| g Fees and contracts from government agencies | | | | | |
| 2 Membership dues and assessments | | | | | |
| 3 Interest on savings and temporary cash | | | 1 4 | | |
| investments | | | 14 14 | | |
| 4 Dividends and interest from securities | | | 14 | 99,237,160. | |
| 5 Net rental income or (loss) from real estate: | | | | | |
| a Debt-financed property | | | | | |
| b Not debt-financed property | | | | | |
| 6 Net rental income or (loss) from personal | | | | | |
| property 7 Other investment income | | | | | |
| 7 Other investment income8 Gain or (loss) from sales of assets other | | | | | |
| than inventory | | | 18 | 59,835,190. | |
| 9 Net income or (loss) from special events | | | | 55,055,1500 | |
| 10 Gross profit or (loss) from sales of inventory | | | | | |
| 11 Other revenue: | | | | | |
| a Ichauway, Inc. rent | | | 16 | 1. | |
| b | | | | | |
| с | | | | | |
| d | | | | | |
| e | | | | | |
| 12 Subtotal. Add columns (b), (d), and (e) | | 0. | | 159,733,687. | 0. |
| 13 Total. Add line 12, columns (b), (d), and (e) | | | | | 159,733,687. |
| (See worksheet in line 13 instructions to verify calculatio | ons.) | | | | |
| Part XVI-B Relationship of Activit | ies to the Acco | mplishment of Ex | emp | t Purposes | |
| Line No. Explain below how each activity for whic | h incomo is reported in | column (a) of Part XV/LA | contrik | uted importantly to the accor | nnlichmont of |
| the foundation's exempt purposes (othe | | | CONTINU | | |
| · · · · · · · · · · · · · · · · · · · | <u> </u> | , | | | |
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| Part XVII | - | | sfers to a | nd Transactions a | nd Relations | hips With Noncha | ritable | ÷ | | |
|----------------|---------------------------------|---------------------------|--------------------|------------------------------------|-----------------------|-----------------------------------|---------------------------------|---|------|--|
| 1 Did the or | Exempt Organ | | of the followin | | | tion 501(a) | | Yes | No | |
| | | | | g with any other organizations? | in described in sec | tion 50 I(C) | | res | NO | |
| | | | | g to political organizations? | | | 3.34 | | | |
| | from the reporting found | | | - | | | 1-(1) | 10000 | v | |
| | | | | | | | | | X | |
| | | | | | | | 1a(2) | | | |
| b Other tran | | | | | | | | | 37 | |
| (1) Sales | of assets to a noncharita | ble exempt organizat | 1100 | | | | 1b(1) | | X | |
| (2) Purcl | hases of assets from a no | ncharitable exempt o | organization | | | | 1b(2) 1b(3) | | X | |
| | | | | | | | | | | |
| | | | | | | | | + + | X | |
| (5) Loan | s or loan guarantees | | | | | | 1b(5) | + | X | |
| | | | | ins | | | | | X | |
| | | | | ployees | | | | | X | |
| | | | - | dule. Column (b) should alv | | | | sets, | | |
| | | | | ed less than fair market valu | ie in any transactio | n or sharing arrangement, s | show in | | | |
| | d) the value of the goods, | | | | | | | | | |
| (a)Line no. | (b) Amount involved | (c) Name of | | e exempt organization | (d) Descriptio | n of transfers, transactions, and | sharing ar | rangeme | Ints | |
| | | | N/A | | | | | | | |
| | | | | | | | | | | |
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| | · · · · · · · · · · · · · · · · | | | | - | | | | | |
| 2a Is the four | ndation directly or indirec | tly affiliated with, or i | related to, one | or more tax-exempt organi | zations described | | | | | |
| | | | | | | | Yes | X | No | |
| | omplete the following sch | | | | | | | | | |
| | (a) Name of org | | | (b) Type of organization | | (c) Description of relations | hip | | | |
| | N/A | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | · | | | | |
| Under | penalties of periury. I declare | that I have examined thi | s return, includir | g accompanying schedules and | statements, and to th | e best of my knowledge | | | | |
| | | | | n taxpayer) is based on all inform | | er has any knowledge. ret sh | urn with th own below Yes | repar ? See in: | er | |
| Siar | nature of officer or trustee | | | Date | Title | [| | | | |
| | Print/Type preparer's na | | Preparer's s | | Date | Check if PTIN | | | | |
| | | | | | | self- employed | | | | |
| Paid | | | | | | | | | | |
| Preparer | Eirm's name | | J | | I | Firm's EIN | | | | |
| Use Only | Firm's name 🕨 | | | | | | | | | |
| 550 Only | Firm's address | | | | | | | | | |
| | , sin a guuicaa 📂 | | | | | Phone no | | | | |
| | 1 | | | | | Phone no. | | | | |

Forn ion, Inc.

Form 990-PF (2017)

723622 01-03-18

| Form | 2220 |
|---------|------|
| 1 01111 | LLLU |

Underpayment of Estimated Tax by Corporations

OMB No. 1545-0123

2d

3

4

1,593,213.

946,387.

946,387.

| Department of the Treasury Internal Revenue Service |
|--|
| Name |

d Total. Add lines 2a through 2c

| Department of the Treasury Internal Revenue Service | Go to www | ► Attach to the corporation's tax re .irs.gov/Form2220 for instructions and | - | rm 990-PF tion. | | 2017 |
|--|--|---|----------------------|--------------------|---|------------|
| Name Robert | | Employer identification number 58–1695425 | | | | |
| bill the corporation. He | wever, the corporation may st | Form 2220 (see Part II below for exi ill use Form 2220 to figure the pena e tax return, but do not attach Forn | lty. If so, enter th | 0 | | |
| Part I Requir | ed Annual Payment | | | | - | - |
| 1 Total tax (see instruc | tions) | | | | 1 | 1,593,213. |
| - | npany tax (Schedule PH (Form 112 cluded on line 1 under section 460 | | 2a | | | |

2b

2c

| 5 | 5 Required annual payment. Enter the smaller of line 3 or line 4. If the corporation is required to skip line 4, | | | | | | |
|------------------------------|--|----|--|--|--|--|--|
| enter the amount from line 3 | | | | | | | |
| F | Part II Reasons for Filing - Check the boxes below that apply. If any boxes are checked, the corporation must file Form 22 | 20 | | | | | |

or the tax year was for less than 12 months, skip this line and enter the amount from line 3 on line 5

even if it doesn't owe a penalty. See instructions.

6 The corporation is using the adjusted seasonal installment method.

X The corporation is using the annualized income installment method. 7

Χ The corporation is a "large corporation" figuring its first required installment based on the prior year's tax. 8

contracts or section 167(g) for depreciation under the income forecast method

c Credit for federal tax paid on fuels (see instructions)

3 Subtract line 2d from line 1. If the result is less than \$500, do not complete or file this form. The corporation

doesn't owe the penalty

4 Enter the tax shown on the corporation's 2016 income tax return. See instructions. Caution: If the tax is zero

Part III Figuring the Underpayment

| | | | (a) | (b) | (C) | (d) | | | | |
|----|--|----|----------|----------|----------|------------|--|--|--|--|
| 9 | Installment due dates. Enter in columns (a) through (d) the 15th day of the 4th (Form 990-PF filers: Use 5th month), 6th, 9th, and 12th months of the corporation's tax year | 9 | 05/15/17 | 06/15/17 | 09/15/17 | 12/15/17 | | | | |
| 10 | Required installments. If the box on line 6 and/or line 7 above is checked, enter the amounts from Sch A, line 38. If the box on line 8 (but not 6 or 7) is checked, see instructions | | | | | | | | | |
| | for the amounts to enter. If none of these boxes are checked, enter 25% (0.25) of line 5 above in each column | 10 | 27,558. | 40,650. | 390,108. | 939,979. | | | | |
| | Estimated tax paid or credited for each period. For column (a) only, enter the amount from line 11 on line 15. See instructions | 11 | 59,401. | 80,000. | 780,000. | 650,000. | | | | |
| | Complete lines 12 through 18 of one column before going to the next column. | | | | | | | | | |
| 10 | | 10 | | 31,843. | 71,193. | 461,085. | | | | |
| | Enter amount, if any, from line 18 of the preceding column | 12 | | 111,843. | | 1,111,085. | | | | |
| | Add lines 11 and 12 | 13 | | 111,043. | 051,195. | 1,111,005. | | | | |
| | Add amounts on lines 16 and 17 of the preceding column | 14 | E0 401 | 111 0/2 | 051 102 | 1 111 005 | | | | |
| | Subtract line 14 from line 13. If zero or less, enter -0- | 15 | 59,401. | 111,843. | 001,193. | 1,111,085. | | | | |
| 16 | If the amount on line 15 is zero, subtract line 13 from line 14. Otherwise, enter -0- | 16 | | 0. | 0. | | | | | |
| 17 | Underpayment. If line 15 is less than or equal to line 10, | | | | | | | | | |
| | subtract line 15 from line 10. Then go to line 12 of the next | | | | | | | | | |
| | column. Otherwise, go to line 18 | 17 | | | | | | | | |
| 18 | Overpayment. If line 10 is less than line 15, subtract line 10 | | | | | | | | | |
| | from line 15. Then go to line 12 of the next column | 18 | 31,843. | | 461,085. | | | | | |
| Go | Go to Part IV on page 2 to figure the penalty. Do not go to Part IV if there are no entries on line 17 - no penalty is owed. | | | | | | | | | |

For Paperwork Reduction Act Notice, see separate instructions. LHA

Form 2220 (2017)

Part IV Figuring the Penalty

| | | | (a) | (b) | (C) | | (d) |
|----|---|----|-----|-----|-----|----|------|
| 19 | Enter the date of payment or the 15th day of the 4th month after the close of the tax year, whichever is earlier. (C Corporations with tax years ending June 30 and S corporations: Use 3rd month instead of 4th month. Form 990-PF and Form 990-T filers: Use 5th month instead of 4th month.) See instructions | 19 | | | | | |
| 20 | Number of days from due date of installment on line 9 to the date shown on line 19 | 20 | | | | | |
| 21 | Number of days on line 20 after 4/15/2017 and before 7/1/2017 | 21 | | | | | |
| 22 | Underpayment on line 17 x Number of days on line 21 x 4% (0.04) | 22 | \$ | \$ | \$ | | \$ |
| 23 | Number of days on line 20 after 06/30/2017 and before 10/1/2017 | 23 | | | | | |
| 24 | Underpayment on line 17 x Number of days on line 23 x 4% (0.04) | 24 | \$ | \$ | \$ | | \$ |
| 25 | Number of days on line 20 after 9/30/2017 and before 1/1/2018 | 25 | | | | | |
| 26 | Underpayment on line 17 x Number of days on line 25 x 4% (0.04) \dots 365 | 26 | \$ | \$ | \$ | | \$ |
| 27 | Number of days on line 20 after 12/31/2017 and before 4/1/2018 | 27 | | | | | |
| 28 | Underpayment on line 17 x Number of days on line 27 x 4% (0.04) | 28 | \$ | \$ | \$ | | \$ |
| 29 | Number of days on line 20 after 3/31/2018 and before 7/1/2018 | 29 | | | | | |
| 30 | Underpayment on line 17 x Number of days on line 29 x *% | 30 | \$ | \$ | \$ | | \$ |
| 31 | Number of days on line 20 after 6/30/2018 and before 10/1/2018 | 31 | | | | | |
| 32 | Underpayment on line 17 x Number of days on line 31 x *% | 32 | \$ | \$ | \$ | | \$ |
| 33 | Number of days on line 20 after 9/30/2018 and before 1/1/2019 | 33 | | | | | |
| 34 | Underpayment on line 17 x Number of days on line 33 x *% | 34 | \$ | \$ | \$ | | \$ |
| 35 | Number of days on line 20 after 12/31/2018 and before 3/16/2019 | 35 | | | | | |
| 36 | Underpayment on line 17 x Number of days on line 35 x *% | 36 | | \$ | \$ | | \$ |
| 37 | Add lines 22, 24, 26, 28, 30, 32, 34, and 36 | 37 | \$ | \$ | \$ | | \$ |
| 38 | Penalty. Add columns (a) through (d) of line 37. Enter the to or the comparable line for other income tax returns | | | - | | 38 | \$ 0 |

These rates are published quarterly in an IRS News Release and in a revenue ruling in the Internal Revenue Bulletin. To obtain this information on the Internet, access the IRS website at **www.irs.gov**. You can also call 1-800-829-4933 to get interest rate information.

Form 2220 (2017)

712802 02-07-18

Robert W. Woodruff Foundation, Inc. Form 990-PF

Form 2220 (2017)

Schedule A Adjusted Seasonal Installment Method and Annualized Income Installment Method

See instructions.

Form 1120S filers: For lines 1, 2, 3, and 21, below, "taxable income" refers to excess net passive income or the amount on which tax is imposed under section 1374(a), whichever applies.

Part I **Adjusted Seasonal Installment Method**

Caution: Use this method only if the base period percentage for any 6 consecutive months is at least 70%. See instructions.

| | | (a) | (b) | (C) | (d) |
|---|----------|----------------|----------------|----------------|-------------------------|
| 1 Enter taxable income for the following periods. | | First 3 months | First 5 months | First 8 months | First 11 months |
| a Tax year beginning in 2014 | 1a | | | | |
| b Tax year beginning in 2015 | 1b | | | | |
| | | | | | |
| c Tax year beginning in 2016 | 1c | | | | |
| 2 Enter taxable income for each period for the tax year beginning in | | | | | |
| 2017. See the instructions for the treatment of extraordinary items | 2 | | | | |
| 3 Enter taxable income for the following periods. | | First 4 months | First 6 months | First 9 months | Entire year |
| | | | | | |
| a Tax year beginning in 2014 | 3a | | | | |
| | | | | | |
| b Tax year beginning in 2015 | 3b | | | | |
| | | | | | |
| c Tax year beginning in 2016 | 3c | | | | |
| 4 Divide the amount in each column on line 1a by the | | | | | |
| amount in column (d) on line 3a | 4 | | | | |
| 5 Divide the amount in each column on line 1b by the | | | | | |
| amount in column (d) on line 3b | 5 | | | | |
| 6 Divide the amount in each column on line 1c by the | | | | | |
| amount in column (d) on line 3c | 6 | | | | |
| 7 Add lines Athensed C | _ | | | | |
| 7 Add lines 4 through 6 | 7 | | | | |
| Divide line 7 by 2.0 | 8 | | | | |
| 8 Divide line 7 by 3.0 | о 9а | | | | |
| 9a Divide line 2 by line 8 | 9a 9b | | | | |
| | 90 90 | | | | |
| c Add lines 9a and 9b10 Figure the tax on the amt on ln 9c using the instr for Form | 30 | | | | |
| 1120, Sch J, line 2 or comparable line of corp's return | 10 | | | | |
| 11a Divide the amount in columns (a) through (c) on line 3a | 10 | | | | |
| by the amount in column (d) on line 3a | 11a | | | | |
| b Divide the amount in columns (a) through (c) on line 3b | | | | | - |
| by the amount in column (d) on line 3b | 11b | | | | |
| c Divide the amount in columns (a) through (c) on line 3c | | | | | |
| by the amount in column (d) on line 3c | 11c | | | | |
| 12 Add lines 11a though 11c | 12 | | | | |
| 13 Divide line 12 by 3.0 | 13 | | | | |
| 14 Multiply the amount in columns (a) through (c) of line 10 | | | | | |
| by columns (a) through (c) of line 13. In column (d), enter | | | | | |
| the amount from line 10, column (d) | 14 | | | | |
| 15 Enter any alternative minimum tax for each payment | | | | | |
| period. See instructions | 15 | | | | |
| | | | | | |
| 16 Enter any other taxes for each payment period. See instr. | 16 | | | | |
| 17 Add lines 14 through 16 | 17 | | | | |
| 18 For each period, enter the same type of credits as allowed on Form 2220, lines 1 and 2a. See instructions | 10 | | | | |
| on Form 2220, lines 1 and 2c. See instructions | 18 | | | | |
| zero or less, enter -0- | 19 | | | | |
| 2010 01 1000, 011101 -0- | 19 | | | 1 | Eorm 2220 (2017) |

712821 02-07-18

11100503 352174 0060

16 2017.03000 Robert W. Woodruff Foundati 0060___1

Form **2220** (2017)

Page 4

Part II Annualized Income Installment Method

* *

| | | (a) | (b) | (C) | (d) |
|--|-----|-------------|-------------|-------------|-------------|
| | | First 2 | First 3 | First 6 | First 9 |
| 20 Annualization periods (see instructions) | 20 | months | months | months | months |
| 1 Enter taxable income for each annualization period. See | | | | | monute |
| instructions for the treatment of extraordinary items | 21 | 1,837,215. | 3,410,376. | 30,554,381. | 104872376 |
| 2 Annualization amounts (see instructions) | 22 | 6.000000 | 4.000000 | 2.000000 | 1.33333 |
| 3a Annualized taxable income. Multiply line 21 by line 22 | 23a | 11,023,290. | 13,641,504. | 61,108,762. | 139829485 |
| b Extraordinary items (see instructions) | 23b | | | | |
| c Add lines 23a and 23b | 23c | 11,023,290. | 13,641,504. | 61,108,762. | 139829485 |
| 4 Figure the tax on the amount on line 23c using the | | | | | |
| instructions for Form 1120, Schedule J, line 2, | | | | | |
| or comparable line of corporation's return | 24 | 110,233. | 136,415. | 611,088. | 1,398,295 |
| 5 Enter any alternative minimum tax for each payment | | | | | |
| period (see instructions) | 25 | | | | |
| Contar any other taxes for each normant period. See instr | 26 | | | | |
| 6 Enter any other taxes for each payment period. See instr. | 20 | | | | |
| 7 Total tax. Add lines 24 through 26 | 27 | 110,233. | 136,415. | 611.088. | 1,398,295 |
| B For each period, enter the same type of credits as allowed | | | | 011,0000 | |
| on Form 2220, lines 1 and 2c. See instructions | 28 | | | | |
| 9 Total tax after credits. Subtract line 28 from line 27. If | | | | | |
| zero or less, enter -0- | 29 | 110,233. | 136,415. | 611,088. | 1,398,295 |
| | | | | | |
| D Applicable percentage | 30 | 25% | 50% | 75% | 100% |
| 1 Multiply line 29 by line 30 | 31 | 27,558. | 68,208. | 458,316. | 1,398,295 |
| Part III Required Installments | | | | | |
| Note: Complete lines 32 through 38 of one column | | 1st | 2nd | 3rd | 4th |
| before completing the next column. | | installment | installment | installment | installment |
| 2 If only Part I or Part II is completed, enter the amount in | | | | | |
| each column from line 19 or line 31. If both parts are | | | | | |
| completed, enter the smaller of the amounts in each | | | 60 000 | 450 010 | 1 200 201 |
| column from line 19 or line 31 | 32 | 27,558. | 68,208. | 458,316. | 1,398,295 |
| 3 Add the amounts in all preceding columns of line 38. See instructions | 33 | | 27,558. | 68,208. | 458,310 |
| Adjusted seasonal or annualized income installments. | | | ., | , | |
| Subtract line 33 from line 32. If zero or less, enter -0- | 34 | 27,558. | 40,650. | 390,108. | 939,979 |
| 5 Enter 25% (0.25) of line 5 on page 1 of Form 2220 in | | - | | | |
| each column. Note: "Large corporations," see the | | | | | |
| instructions for line 10 for the amounts to enter | 35 | 236,597. | 560,010. | 398,303. | 398,304 |

36 Subtract line 38 of the preceding column from line 37 of the preceding column

37 Add lines 35 and 36
38 Required installments. Enter the smaller of line 34 or line 37 here and on page 1 of Form 2220, line 10. See instructions

939,979. Form 2220 (2017)

736,594.

1,134,898.

** Annualized Income Installment Method Using Standard Option

236,597.

27,558.

36

37

38

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11100503 352174 0060

17 2017.03000 Robert W. Woodruff Foundati 0060___1

209,039.

40,650.

728,399.

390,108.

769,049. 1,126,702.

| SourceAmountDividendsPer Booksment IncomeNet IncomDividends99,237,160.0.99,237,160.99,237,160.99,237,160.To Part I, line 499,237,160.0.99,237,160.99,237,160.Form 990-PFOther IncomeStatementDescription(a)(b)(c)Ichauway, Inc. rent1.0.Total to Form 990-PF, Part I, line 111.0.Form 990-PFLegal FeesStatementStatement(a)(b)Call(b)(c)Call(c) <th>Form 990-PF Intere</th> <th>est on Savii</th> <th>ngs and Te</th> <th>empora</th> <th>ry Cash</th> <th>Investments</th> <th>Statement 1</th> | Form 990-PF Intere | est on Savii | ngs and Te | empora | ry Cash | Investments | Statement 1 |
|--|---------------------|--------------|----------------|----------|----------|-------------|--------------|
| Total to Part I, line 3 661,336. 661,336. Form 990-PF Dividends and Interest from Securities Statement Source Amount Gross Gains Revenue Net Invest- Adjusted Dividends 99,237,160. 0. 99,237,160. 99,237,160. Per Books Ment Income Net Invest- Adjusted To Part I, line 4 99,237,160. 0. 99,237,160. 99,237,160. Per Books Per Books Met Invest- Adjusted Form 990-PF Other Income Statement Statement Adjusted Net Invest- Adjusted Per Books Ment Income Statement Net Invest- Adjusted Net Income Description Per Books Ment Income Net Income Net Income Ichauway, Inc. rent 1. 0. 0. Per Books Net Income Form 990-PF Legal Fees Statement Net Income Net Income Form 990-PF Legal Fees Statement Net Income (a) (b) (c) (d) Adjusted (a) (b) < | Source | | Rev | Revenue | | Investment | Adjusted |
| Form 990-PF Dividends and Interest from Securities Statement Source Amount Gross Gains Revenue Net Invest- Adjusted Dividends 99,237,160. 0. 99,237,160. 99,237,160. Net Income Net Income To Part I, line 4 99,237,160. 0. 99,237,160. 99,237,160. 99,237,160. Form 990-PF Other Income Statement Capital (a) (b) (c) Form 990-PF Other Income Statement Capital (a) (b) (c) Form 990-PF Other Income Statement Capital (a) (b) (c) Revenue Net Invest- Adjusted Per Books ment Income Net Income Ichauway, Inc. rent 1. 0. 0. Total to Form 990-PF, Part I, line 11 1. 0. 0. Form 990-PF Legal Fees Statement (a) (b) (c) (d) Expenses Net Invest- Adjusted Charitabi | Cash equivalents | | (| 561,33 | 6. | 661,336. | |
| SourceGross AmountCapital Gains Dividends(a) Per Books(b) Met Invest- ment Income(c) Adjusted Net IncomeDividends99,237,160.0.99,237,160.99,237,160.(c) 99,237,160.To Part I, line 499,237,160.0.99,237,160.99,237,160.(c) 99,237,160.Form 990-PFOther IncomeStatementDescription(a) Per Books(b) ment Income(c) Adjusted Met Invest- Met IncomeDescription1.0.Ichauway, Inc. rent1.0.Total to Form 990-PF, Part I, line 111.0.Form 990-PFLegal FeesStatement(a) Expenses(b) Adjusted Charitabi(c) (d) | Total to Part I, 1: | ine 3 | | 661,336. | | 661,336. | |
| SourceGross AmountGains DividendsRevenue Per BooksNet Invest- ment IncomeAdjusted Net IncomeDividends99,237,160.0.99,237,160.99,237,160 | Form 990-PF | Dividends | s and Inte | erest | from Sec | urities | Statement 2 |
| To Part I, line 4 99,237,160. 0. 99,237,160. 99,237,160. Form 990-PF Other Income Statement (a) (b) (c) Revenue Net Invest- Adjusted Ichauway, Inc. rent 1. 0. Total to Form 990-PF, Part I, line 11 1. 0. Form 990-PF Legal Fees Statement (a) (b) (c) Adjusted (c) (c) Itotal to Form 990-PF, Part I, line 11 1. 0. Form 990-PF Legal Fees Statement (a) (b) (c) (d) Expenses Net Invest- Adjusted | Source | | Gains | 5 | Revenue | Net Inve | st- Adjusted |
| Form 990-PFOther IncomeStatementDescription(a) Revenue Per Books(b) Met Invest- ment Income(c) Adjusted Net IncomeIchauway, Inc. rent1.0.Total to Form 990-PF, Part I, line 111.0.Form 990-PFLegal FeesStatement(a) Expenses(b) Net Invest- Adjusted(d) Charitability | Dividends | 99,237,160 | • | 0.9 | 9,237,16 | 0. 99,237,1 | 60 . |
| (a)(b)(c)DescriptionPer BooksNet Invest- ment IncomeAdjusted Net IncomeIchauway, Inc. rent1.0.Total to Form 990-PF, Part I, line 111.0.Form 990-PFLegal FeesStatement(a)(b)(c)(d)ExpensesNet Invest-AdjustedCharitabilityAdjustedCharitability | To Part I, line 4 | 99,237,160 | | 0.9 | 9,237,16 | 0. 99,237,1 | 60 . |
| DescriptionRevenue Per BooksNet Invest- ment IncomeAdjusted Net IncomeIchauway, Inc. rent1.0.Total to Form 990-PF, Part I, line 111.0.Form 990-PFLegal FeesStatement(a) Expenses(a)(b) Net Invest-(c) Adjusted(d) Charitability(c) | Form 990-PF | | Other | Incom | ne | | Statement 3 |
| Total to Form 990-PF, Part I, line 11 1. 0. Form 990-PF Legal Fees Statement (a) (b) (c) (d) Expenses Net Invest- Adjusted Charitabi | Description | | | Rev | venue | Net Invest | - Adjusted |
| Form 990-PF Legal Fees Statement (a) (b) (c) (d) Expenses Net Invest- Adjusted Charitab | Ichauway, Inc. ren | t | - | | 1. | | 0. |
| (a) (b) (c) (d) Expenses Net Invest- Adjusted Charitab | Total to Form 990-1 | PF, Part I, | - line 11 = | | 1. | | 0. |
| Expenses Net Invest- Adjusted Charitab | Form 990-PF | | Lega | al Fee | s | | Statement 4 |
| | Description | | Expenses | | Invest- | Adjuste | d Charitable |
| Legal fees 1,031. 73. 958 | Legal fees | | 1,033 | 1. | 73 | • | 958. |
| To Fm 990-PF, Pg 1, ln 16a 1,031. 73. 958 | To Fm 990-PF, Pg 1 | , ln 16a — | 1,032 | 1. | 73 | • | 958. |

Robert W. Woodruff Foundation, Inc.

58-1695425

| Form 990-PF | Accounti | Accounting Fees | | |
|---|--|---|-------------------------------|--|
| Description | (a) Expenses Per Books | (b) Net Invest- ment Income | (c) Adjusted Net Income | (d) Charitable Purposes |
| Audit fees | 32,100. | 2,247. | | 29,853. |
| - To Form 990-PF, Pg 1, ln 16b = | 32,100. | 2,247. | | 29,853. |
| Form 990-PF (| Other Profes | sional Fees | S | tatement 6 |
| Description | (a) Expenses Per Books | (b) Net Invest- ment Income | (c) Adjusted Net Income | (d) Charitable Purposes |
| Investment fees Benefit Consultants | 238,340. 11,933. | 238,340. 836. | | 0. 11,097. |
| To Form 990-PF, Pg 1, ln 16c = | 250,273. | 239,176. | | 11,097. |
| Form 990-PF | Tax | es | St | tatement 7 |
| Description | (a) Expenses Per Books | (b) Net Invest- ment Income | (c) Adjusted Net Income | (d) Charitable Purposes |
| Excise Tax | 1,560,000. | 0. | | 0. |
| - To Form 990-PF, Pg 1, ln 18 = | 1,560,000. | 0. | | 0. |
| Form 990-PF | Other E | xpenses | St | tatement 8 |
| Description ———————————————————————————————————— | (a) Expenses Per Books 28,894. 12,923. 2,323. | (b) Net Invest- ment Income 2,023. 905. 163. 718. | (c) Adjusted Net Income | (d) Charitable Purposes 26,871. 12,019. 2,160. 36,600. |

| Robert W. Woodruff Foundation, | 1110. | | | 58-1695 | 425 |
|-----------------------------------|---------------------------------------|----------------------------|--------------------------|----------------------------------|-----------------|
| Telephone Miscellaneous | 3,960. 2,416. | 27 169 | | 3,62,2 | |
| To Form 990-PF, Pg 1, ln 23 | 93,177. | 4,629 | 9. | 88,548 | |
| Form 990-PF (| Corporate St | tock | | Statement | 9 |
| Description | | 1 | Book Value | Fair Marke Value | t |
| various - see attached detail | | | 487,102,346. | 3,223,366,200. | |
| Total to Form 990-PF, Part II, 1: | ine 10b | | 487,102,346. | 3,223,366,2 | 00. |
| Form 990-PF | | <u>.</u> | | | |
| | Other Asse | ets | | Statement | 10 |
| Description | Other Asse Beginning Yr Book Va | g of Er | nd of Year Book Value | Statement Fair Marke Value | |
| | Beginning Yr Book Va 168 | g of Er | | Fair Marke | t 48. |
| Description 457(b) Plan | Beginning Yr Book Va 168 7 | g of En alue 1 .485. | Book Value 192,382. | Fair Marke Value 281,9 | t 48. 07. |

Explanation

The Foundation paid \$50,000,000 to the Community Foundation for Greater Atlanta (CFGA) to benefit Grady Health System (Grady), a nonprofit safety-net hospital operating in Atlanta. The funds are intended to be used for Grady's construction of an advanced surgical center and renovation of its Ponce Clinic serving patients with HIV/AIDS. This payment is treated as a qualifying distribution.

The Woodruff Foundation made a \$200 million commitment to Grady in 2008 and partnered with CFGA, at the request of Grady's board, to establish a donor advised fund for Grady's benefit. The Foundation's 2017 grant was paid to the same donor advised fund according to Grady's request. At the time of the Foundation's commitment, Grady was still developing final plans for the capital projects. Grady expects to fully spend the Foundation's grant by 2021. Although the Foundation is an advisor, CFGA has ultimate authority over the disbursement of funds.

ROBERT W. WOODRUFF FOUNDATION, INC. - #58-1695425

Form 990-PF, Year 2017, Part I, Line 19a and Part II, Line 14

| Asset Description | In service | Life | Cost | Depreciation Expense | Accumulated Depreciation | Net Book Value |
|---|------------|----------|---------|-------------------------|-----------------------------|-------------------|
| Asset Class- 5-Year Property (Computers) | | | | | | |
| AV Equipment | 7/1/11 | 5 | 6,096 | 0 | 6,096 | 0 |
| AV for sitting room | 3/1/12 | 5 | 1,410 | 47 | 1,410 | 0 |
| AV for sitting room | 3/1/12 | 5 | 482 | 17 | 482 | 0 |
| Class totals | | | 7,988 | 64 | 7,988 | 0 |
| Asset Class- 7-Year Property (Furniture, | | | | | | |
| Telephones, Copiers) | | | | | | |
| Board Table | 7/1/11 | 7 | 13,554 | 1,936 | 12,585 | 969 |
| Card Access | 7/1/11 | 7 | 1,705 | 244 | 1,585 | 120 |
| Card Access | 7/1/11 | 7 | 756 | 108 | 702 | 54 |
| Chairs | 7/1/11 | 7 | 18,907 | 2,701 | 17,556 | 1,351 |
| Credenza | 7/1/11 | 7 | 514 | 73 | 476 | 38 |
| Desk Chairs | 7/1/11 | 7 | 2,112 | 302 | 1,962 | 150 |
| Desks and Credenzas | 7/1/11 | 7 | 40,533 | 5,790 | 37,637 | 2,896 |
| File Cabinets | 7/1/11 | 7 | 12,563 | 1,795 | 11,667 | 896 |
| File Cabinets | 7/1/11 | 7 | 73 | 10 | 67 | 6 |
| Furniture Installation | 7/1/11 | 7 | 162 | 23 | 150 | 12 |
| Furniture Installation | 7/1/11 | 7 | 73 | 10 | 67 | 6 |
| Furniture Installation | 7/1/11 | 7 | 876 | 125 | 813 | 63 |
| Furniture Installation | 7/1/11 | 7 | 4,095 | 585 | 3,803 | 292 |
| Guest Chairs | 7/1/11 | 7 | 1,868 | 267 | 1,735 | 133 |
| Rug | 7/1/11 | 7 | 3,654 | 522 | 3,393 | 261 |
| Rugs | 7/1/11 | 7 | 6,080 | 869 | 5,647 | 433 |
| Sitting Room Table | 7/1/11 | 7 | 812 | 116 | 754 | 58 |
| Breakroom tables | 10/1/11 | 7 | 511 | 73 | 456 | 55 |
| Drapery | 10/1/11 | 7 | 2,008 | 287 | 1,793 | 215 |
| Rug | 10/1/11 | 7 | 1,751 | 250 | 1,563 | 188 |
| Art- Photography | 10/1/11 | 7 | 2,122 | 303 | 1,894 | 228 |
| Art- Photography | 10/1/11 | 7 | 593 | 85 | 530 | 63 |
| Credenza and Installation | 11/1/11 | 7 | 1,108 | 158 | 975 | 133 |
| President's Desk | 12/1/11 | 7 | 3,242 | 463 | 2,817 | 425 |
| Leather Chair | 3/1/12 | 7 | 711 | 102 | 594 | 117 |
| Sitting room artwork | 4/1/12 | 7 | 2,737 | 391 | 2,248 | 489 |
| Art- Photography | 8/1/12 | 7 | 1,399 | 200 | 1,083 | 316 |
| Class totals | | | 124,516 | 17,788 | 114,552 | 9,964 |
| | | | | | | |
| Asset Class- 15-Year Leasehold Improvements | 7/4/44 | 15 | 45 000 | 2.002 | 40.000 | 26.027 |
| Leasehold Improvements | 7/1/11 | 15 | 45,930 | 3,062 | 19,903 | 26,027 |
| Construction Admin | 7/1/11 | 15 | 879 | 59 | 382 | 497 |
| Media and display casework | 3/1/12 | 15 | 5,974 | 398 | 2,322 | 3,652 |
| Media and display casework | 3/1/12 | 15 15 | 6,171 | 411 | 2,399 | 3,772 |
| Electrical for sitting rm | 3/1/12 | | 986 | 66 44 | 384 | 602 |
| Film to offices | 6/1/12 | 15 | 662 | 44 | 245 | 417 |
| Class totals | | | 60,602 | 4,040 | 25,635 | 34,967 |

Ichauway, Baker County, Georgia - depreciation was taken for 10 years on assets used directly in carrying out charitable purposes.

| Land | 21,357,531 | | 0 | 21,357,531 | |
|--------------|------------|--------|---------|------------|--|
| Buildings | 492,259 | | 492,259 | 0 | |
| Class totals | 21,849,790 | 0 | 492,259 | 21,357,531 | |
| | | | | | |
| GRAND TOTAL | 22,042,895 | 21,891 | 640,433 | 21,402,462 | |

ROBERT W. WOODRUFF FOUNDATION, INC. - #58-1695425 Form 990-PF, Year 2017, Part I, Line 25 and Part XV, Line 3a

GRANTS PAID IN 2017

| Recipient | Foundation Status | Purpose of Grant | Amount |
|--|----------------------|---|------------|
| ARTS & CULTURE Atlanta Botanical Garden 1345 Piedmont Avenue, NE Atlanta, GA 30309 | PC | Third installment of \$15 million grant toward a \$50 million campaign to implement the Garden's new master plan, including \$5 million for development of the Glade Garden, \$5 million for renovation of the Gardenhouse and \$5 million for completion of the campaign. | 5,000,000 |
| Coastal Georgia Historical Society P.O. Box 21136 St. Simons, GA 31522 | PC | Development of the World War II Home Front Museum at the Historic Coast Guard Station on St. Simon's Island. | 350,000 |
| Jekyll Island Foundation 100 James Road Jekyll Island, GA 31527 | PC | Renovation of the Jekyll Island Museum. | 750,000 |
| Atlanta Fulton County Zoo 800 Cherokee Avenue, SE Atlanta, GA 30315-1440 | PC | Campaign to expand the Zoo by five acres, renovate the former Cyclorama building, and create a new elephant habitat. | 17,500,000 |
| | | TOTAL ARTS & CULTURE | 23,600,000 |
| COMMUNITY DEVELOPMENT Atlanta Police Foundation 191 Peachtree Street, NE, Suite 191 Atlanta, GA 30303 | PC | \$12 million campaign to support a comprehensive public safety strategy to reduce crime. | 500,000 |
| Foundation Center 32 Old Slip, 24th Floor New York, NY 10005 | PC | Two-year program support of the Foundation Center Atlanta. | 275,000 |
| Georgia Center for Nonprofits 100 Peachtree Street, Suite 1500 Atlanta, GA 30303 | PC | Program support and support of capacity-building effort. | 300,000 |
| Greater Atlanta Chamber Foundation 191 Peachtree Street, NE, Suite 3400 Atlanta, GA 30303 | PC | Continued support of the ChooseATL campaign. | 1,500,000 |
| | | TOTAL COMMUNITY DEVELOPMENT | 2,575,000 |
| EDUCATION Georgia Council on Economic Education P.O. Box 1619 Atlanta, GA 30301-1619 | РС | Support of programs to strengthen K-12 economics education in Georgia. | 200,000 |
| Georgia Partnership for Excellence in Education 270 Peachtree Street, Suite 2200 Atlanta, GA 30303 | PC | Continuation of the Woodrow Wilson Georgia Teaching Fellowship to recruit and prepare highly-qualified STEM teachers for public middle and high schools. | 2,000,000 |
| Mercer University 1501 Mercer University Drive Macon, GA 31207 | PC | Construction of a new undergraduate science building. | 5,000,000 |
| University of Georgia Foundation 220 South Jackson Street Administration Building Athens, GA 30602-1661 | PC | Support of the Georgia College Advising Corps to increase college access at seven underserved high schools in Georgia. | 250,000 |
| | | TOTAL EDUCATION | 7,450,000 |
| ENVIRONMENT Ichauway, Incorporated 3988 Jones Center Drive Newton, GA 39870 | POF | 2017 capital and operating needs. | 8,975,000 |
| Park Pride 233 Peachtree St., NE, Suite 1600 Atlanta, GA 30303 | PC | Support of the Legacy Grants Program to provide matching grants for community park improvement projects. | 1,750,000 |

ROBERT W. WOODRUFF FOUNDATION, INC. - #58-1695425

Form 990-PF, Year 2017, Part I, Line 25 and Part XV, Line 3a GRANTS PAID IN 2017

| Recipient | Foundation Status | Purpose of Grant | Amount |
|--|----------------------|---|-------------|
| The Conservation Fund 100 Peachtree Street, NW, Suite 2160 Atlanta, GA 30303 | PC | Acquisition of the Sansavilla property located in the Altamaha River conservation corridor. | 5,000,000 |
| Trust for Public Land 600 W. Peachtree St., NW, Suite 1840 Atlanta, GA 30308 | PC | Construction of Alderman Cook Park as part of the revitalization of Atlanta's Westside. | 5,000,000 |
| | | TOTAL ENVIRONMENT | 20,725,000 |
| HEALTH Community Foundation for Greater Atlanta 191 Peachtree Street, NE, Suite 1000 Atlanta, GA 30303 | PC | Support of Grady Memorial Hospital's \$164.7 million campaign to build a Center for Advanced Surgical Services and to expand and renovate the Ponce Center for treatment of HIV/AIDS. | 50,000,000 |
| George West Mental Health Foundation 1961 North Druid Hills Road, NE Atlanta, GA 30329 | PC | Development of a campus for an adolescent treatment program for teens with mental illness. | 4,000,000 |
| Georgia Meth Project 3715 Northside Parkway, Suite 1-230 Atlanta, GA 30327 | PC | Campaign to educate youth about the risks of prescription drug abuse. | 250,000 |
| Georgia State University Research Foundation P.O. Box 3999 Atlanta, GA 30302-3999 | PC | Support over three years for the Georgia Health Policy Center's effort to educate and inform state legislators regarding healthcare policy. | 165,000 |
| Robert W. Woodruff Health Sciences Center Fund, Inc. 191 Peachtree Street NE, Suite 3540 Atlanta, GA 30303 | SO II | Development of Emory University's Winship Tower Midtown and Health Sciences Research Building II. | 40,000,015 |
| | | TOTAL HEALTH | 94,415,015 |
| HUMAN SERVICES Special Olympics Georgia 6046 Financial Drive Norcross, GA 30071 | PC | \$5.5 million campaign to construct a new building to provide athletic training and administrative space. | 1,000,000 |
| | | TOTAL GRANTS | 149,765,015 |
| Foundation status of recipient: | PC POF SO II | Public charity described in 509(a)(1) or (2) Private operating foundation (section 4942(j)(3)) other than an EOF Type II supporting organization (sections 509(a)(3) and 509(a)(3)(B)(ii)) other than an SO-DP | |

| SECURITY NAME | QUANTITY | COST | MARKET |
|-------------------------------------|----------|---------|-----------|
| 1 800 FLOWERS COM INC | 1,730 | 16,728 | 18,511 |
| 1ST SOURCE CORP | 771 | 27,914 | 38,126 |
| 2U INC | 1,769 | 62,554 | 114,118 |
| 3M CO | 4,407 | 708,396 | 1,037,276 |
| 58.COM INC SPONSORED | 295 | 19,765 | 21,113 |
| A.P. MOLLER-MAERSK UNSPONSORED | 1,227 | 11,655 | 10,663 |
| AAR CORP | 1,130 | 36,122 | 44,398 |
| AARONS INC | 2,335 | 60,159 | 93,050 |
| ABB LTD SPONSORED | 2,255 | 55,412 | 60,479 |
| ABBOTT LABS | 12,936 | 566,000 | 738,258 |
| ABBVIE INC | 11,764 | 664,134 | 1,137,696 |
| ABERCROMBIE & FITCH CO-CL A | 2,553 | 45,115 | 44,499 |
| ABM INDUSTRIES INC | 2,066 | 66,574 | 77,930 |
| ACADIA HEALTHCARE | 16,798 | 764,343 | 548,119 |
| ACCENTURE PLC CL A | 4,605 | 509,593 | 704,979 |
| ACCOR SA SPONSORED | 2,096 | 20,492 | 21,777 |
| ACETO CORP | 1,131 | 12,756 | 11,683 |
| ACS ACTIVIDADES DE CONS UNSPONSORED | 4,015 | 29,656 | 31,277 |
| ACTIVISION BLIZZARD, INC | 5,457 | 246,841 | 345,537 |
| ACUITY BRANDS INC | 304 | 74,541 | 53,504 |
| ADDUS HOMECARE CORP | 279 | 9,667 | 9,709 |
| ADECCO GROUP AG UNSPONSORED | 555 | 21,532 | 21,273 |
| ADIDAS AG SPONSORED | 500 | 57,537 | 49,910 |
| ADOBE SYS INC | 3,567 | 324,610 | 625,081 |
| ADTALEM GLOBAL EDUCATION INC | 2,331 | 59,980 | 98,019 |
| ADTRAN INC | 1,794 | 39,387 | 34,714 |
| ADVANCED AUTO PARTS | 534 | 104,340 | 53,234 |
| ADVANCED ENERGY INDS INC | 1,500 | 72,034 | 101,220 |
| ADVANCED MICRO DEVICES INC | 5,817 | 78,503 | 59,799 |
| ADVANCED SEMICONDUCTOR SPONSORED | 9,893 | 60,896 | 64,107 |
| ADVANSIX INC | 1,142 | 50,310 | 48,044 |
| AEGION CORP | 1,382 | 26,452 | 35,144 |
| AEGON NV | 4,762 | 27,720 | 30,001 |
| AERCAP HOLDINGS NV | 602 | 30,277 | 31,671 |
| AES CORP | 4,773 | 50,546 | 51,692 |
| AETNA INC | 2,398 | 270,220 | 432,575 |
| AETNA INC | 1,712 | 211,425 | 308,828 |
| AFFILIATED MANAGERS GROUP INC | 404 | 69,700 | 82,921 |
| AFLAC INC | 2,857 | 182,641 | 250,787 |
| AG MORTGAGE INVESTMENT TRUST | 1,101 | 17,328 | 20,930 |
| AGEAS SPONSORED | 1,305 | 60,708 | 63,697 |
| AGILENT TECHNOLOGIES INC | 2,323 | 87,340 | 155,571 |
| AGNICO EAGLE MINES LTD | 442 | 20,752 | 20,412 |
| AGREE REALTY CORP | 943 | 45,374 | 48,508 |
| AGRIUM INC | 203 | 21,720 | 23,345 |
| AGROFRESH SOLUTIONS INC | 851 | 4,282 | 6,297 |
| AIA GROUP LTD SPONSORED | 5,607 | 172,812 | 191,956 |
| AIR LEASE CORP | 3,570 | 127,792 | 171,681 |
| AIR PRODUCTS & CHEMICALS INC | 1,575 | 206,003 | 258,426 |
| AIR TRANSPORT SERVICES GRP INC | 1,764 | 17,287 | 40,819 |
| | -,, | ,->, | |

| SECURITY NAME | QUANTITY | COST | MARKET |
|--|----------|-----------|-----------|
| AIRBUS SE UNSPONSORED | 2,802 | 62,448 | 69,434 |
| AIRCASTLE LTD | 2,069 | 46,131 | 48,394 |
| AKAMAI TECHNOLOGIES INC | 1,239 | 77,197 | 80,585 |
| AKBANK T.A.S SPONSORED | 4,991 | 28,379 | 25,754 |
| AKTIEBOLAGET ELECTROLUX SPONSORED | 433 | 30,491 | 27,993 |
| AKZO NOBEL NV SPONSORED | 1,427 | 44,362 | 41,583 |
| ALAMO GROUP INC | 366 | 23,812 | 41,310 |
| ALARM.COM HOLDINGS INC | 930 | 36,024 | 35,108 |
| ALASKA AIR GROUP INC | 893 | 58,563 | 65,644 |
| ALASKA AIR GROUP INC | 6,401 | 434,522 | 470,538 |
| ALBEMARLE CORP | 799 | 63,377 | 102,184 |
| ALEXANDRIA REAL ESTATE EQUITIES INC | 677 | 74,659 | 88,409 |
| ALEXION PHARMACEUTICALS INC | 1,613 | 271,789 | 192,899 |
| ALEXION PHARMACEUTICALS INC | 6,205 | 940,852 | 742,056 |
| ALFA LAVAL AB UNSPONSORED | 1,808 | 43,807 | 42,651 |
| ALIBABA GROUP HOLDING LTD SPONSORED | 11,900 | 1,299,896 | 2,051,917 |
| ALIBABA GROUP HOLDING LTD SPONSORED | 1,396 | 247,341 | 240,712 |
| ALIGN TECHNOLOGY INC | 521 | 75,686 | 115,761 |
| ALIGN TECHNOLOGY INC | 2,822 | 530,666 | 627,020 |
| ALKERMES PLC | 13,979 | 704,932 | 765,071 |
| ALLEGION PLC | 687 | 51,309 | 54,658 |
| ALLERGAN PLC | 2,416 | 699,310 | 395,209 |
| ALLIANCE DATA SYSTEMS CORP | 349 | 103,988 | 88,465 |
| ALLIANT CORP | 1,670 | 67,468 | 71,159 |
| ALLIANZ SE SPONSORED | 6,355 | 140,101 | 145,943 |
| ALLSTATE CORP | 2,612 | 162,467 | 273,503 |
| ALMOST FAMILY INC | 442 | 18,948 | 24,465 |
| ALNYLAM PHARMACEUTICALS INC | 4,886 | 418,712 | 620,766 |
| ALPHA & OMEGA SEMICONDUCTOR | 708 | 6,549 | 11,583 |
| ALPHABET INC CL A | 2,179 | 1,634,750 | 2,295,359 |
| ALPHABET INC CL A | 3,570 | 2,723,338 | 3,760,638 |
| ALPHABET INC CL C | 2,207 | 1,617,644 | 2,309,405 |
| ALPHABET INC CL C | 1,990 | 1,482,812 | 2,082,336 |
| ALTRIA GROUP INC | 14,194 | 876,660 | 1,013,594 |
| ALUMINA LTD SPONSORED | 2,797 | 19,374 | 21,005 |
| ALUMINUM CORP OF CHINA LTD SPONSORED | 896 | 20,705 | 16,065 |
| AMADEUS IT GROUP S.A. UNSPONSORED | 583 | 37,886 | 42,168 |
| AMAG PHARMACEUTICALS INC | 1,350 | 48,291 | 17,888 |
| AMAZON.COM INC | 2,938 | 1,936,945 | 3,435,903 |
| AMAZON.COM INC | 5,310 | 3,499,018 | 6,209,886 |
| AMBAC FINANCIAL GROUP INC | 2,038 | 33,758 | 32,567 |
| AMBEV SA SPONSORED | 3,884 | 26,337 | 25,091 |
| AMCOR LTD SPONSORED | 1,082 | 54,619 | 51,958 |
| AMEREN CORP | 1,754 | 76,492 | 103,468 |
| AMERICA MOVIL SAB DE CD SPONSORED | 1,405 | 25,966 | 24,096 |
| AMERICAN AIRLINES GROUP INC | 3,133 | 144,143 | 163,010 |
| AMERICAN AIRLINES GROUP INC | 23,750 | 1,065,235 | 1,235,713 |
| AMERICAN CAMPUS COMMUNITIES INC | 30,453 | 1,462,706 | 1,249,487 |
| AMERICAN CLAMPUS COMMONTHES INC AMERICAN ELEC PWR INC | 3,555 | 210,027 | 261,541 |
| AMERICAN ELEC PWR INC AMERICAN EQUITY INVT LIFE HL | 3,672 | 110,790 | 112,841 |
| | 5,072 | 110,790 | 112,041 |

| SECURITY NAME | QUANTITY | COST | MARKET |
|-------------------------------------|----------|-----------|-----------|
| AMERICAN EXPRESS CO | 5,303 | 393,125 | 526,641 |
| AMERICAN INTERNATIONAL GROUP | 6,530 | 413,021 | 389,057 |
| AMERICAN NATIONAL BANKSHARES | 403 | 15,867 | 15,435 |
| AMERICAN NATIONAL INSURANCE | 311 | 32,881 | 39,886 |
| AMERICAN PUBLIC EDUCATION INC | 843 | 22,068 | 21,117 |
| AMERICAN TOWER CORP | 3,102 | 318,067 | 442,562 |
| AMERICAN VANGUARD CORP | 1,200 | 20,452 | 23,580 |
| AMERICAN WATER WORKS CO INC | 1,289 | 87,536 | 117,931 |
| AMERICAN WATER WORKS CO INC | 4,644 | 387,390 | 424,880 |
| AMERICAN WOODMARK CORP | 531 | 39,120 | 69,163 |
| AMERICA'S CAR-MART INC | 266 | 9,252 | 11,877 |
| AMERIPRISE FINANCIAL INC. | 1,084 | 6,150 | 183,705 |
| AMERISOURCEBERGEN CORP | 1,172 | 113,903 | 107,613 |
| AMETEK INC | 1,668 | 90,742 | 120,880 |
| AMGEN INC | 5,396 | 874,237 | 938,364 |
| AMPHENOL CORP | 2,208 | 120,080 | 193,862 |
| ANADARKO PETROLEUM CORPORATION | 4,050 | 264,880 | 217,242 |
| ANALOG DEVICES INC | 2,658 | 177,978 | 236,642 |
| ANDEAVOR | 1,043 | 97,550 | 119,257 |
| ANDERSONS INC | 989 | 36,457 | 30,807 |
| ANGI HOMESERVICES INC CL A | 1,291 | 10,400 | 13,504 |
| ANGIODYNAMICS INC | 1,374 | 18,840 | 22,850 |
| ANGLO AMERICAN PLC SPONSORED | 2,733 | 25,900 | 28,287 |
| ANGLOGOLD ASHANTI LIMITED SPONSORED | 1,236 | 11,567 | 12,595 |
| ANHEUSER BUSCH INBEV SPONSORED | 932 | 109,165 | 103,974 |
| ANIXTER INTERNATIONAL INC | 1,086 | 95,612 | 82,536 |
| ANSYS INC | 613 | 74,638 | 90,473 |
| ANSYS INC | 5,839 | 718,572 | 861,778 |
| ANTHEM INC | 1,898 | 264,303 | 427,069 |
| ANTHEM INC | 4,680 | 891,406 | 1,053,047 |
| ANWORTH MTG ASSET CORP | 3,623 | 17,318 | 19,709 |
| AON PLC | 1,838 | 173,492 | 246,292 |
| APACHE CORP | 2,754 | 127,621 | 116,274 |
| APARTMENT INVT & MGMT CO CL A | 1,135 | 46,861 | 49,611 |
| APOLLO COMMERCIAL REAL ESTATE | 3,588 | 62,721 | 66,199 |
| APPFOLIO INC CL A | 363 | 17,853 | 15,065 |
| APPLE INC | 37,736 | 4,508,009 | 6,386,063 |
| APPLE INC | 18,000 | 2,360,977 | 3,046,140 |
| APPLIED MATERIALS INC | 7,709 | 153,291 | 394,084 |
| APPLIED OPTOELECTRONICS INC | 725 | 30,073 | 27,420 |
| APTARGROUP INC | 6,612 | 569,030 | 570,483 |
| APTIV PLC | 1,929 | 137,587 | 163,637 |
| ARBOR REALTY TRUST INC | 2,160 | 14,835 | 18,662 |
| ARCBEST CORP | 952 | 24,642 | 34,034 |
| ARCELORMITTAL SA SPONSORED | 843 | 22,583 | 27,237 |
| ARCHER DANIELS MIDLAND CO | 4,066 | 189,079 | 162,965 |
| ARCONIC INC | 3,654 | 76,887 | 99,572 |
| ARDMORE SHIPPING CORP | 1,090 | 15,652 | 8,720 |
| ARES COMMERCIAL REAL ESTATE CORP | 1,083 | 13,423 | 13,971 |
| ARKEMA SPONSORED | 254 | 30,380 | 30,988 |
| | | | |

| SECURITY NAME | QUANTITY | COST | MARKET |
|--------------------------------------|----------|---------|-----------|
| ARLINGTON ASSET INVESTMENT CORP | 975 | 12,451 | 11,486 |
| ARMOUR RESIDENTIAL REIT INC | 1,382 | 27,203 | 35,545 |
| ARMSTRONG FLOORING INC | 973 | 18,230 | 16,463 |
| ARTISAN PARTNERS | 13,806 | 431,977 | 545,337 |
| ASCENA RETAIL GROUP INC | 6,933 | 69,329 | 16,293 |
| ASHAI KASEI CORP UNSPONSORED | 1,971 | 49,241 | 50,970 |
| ASHFORD HOSPITALITY TRUST | 3,330 | 21,528 | 22,411 |
| ASHLAND GLOBAL HOLDINGS INC | 2,310 | 154,159 | 164,472 |
| ASML HOLDING NV | 1,900 | 186,420 | 330,258 |
| ASML HOLDING NV | 302 | 49,716 | 52,494 |
| ASPEN INSURANCE HOLDINGS LTD | 1,741 | 88,517 | 70,685 |
| ASPEN PHARMACARE HLDGS UNSPONSORED | 890 | 20,498 | 19,571 |
| ASSA ABLOY UNSPONSORED | 3,166 | 35,480 | 32,673 |
| ASSOC BRITISH FOODS LMTD UNSPONSORED | 1,020 | 44,992 | 38,990 |
| ASSOCIATED BANC CORP | 5,018 | 104,901 | 127,457 |
| ASSURANT INC | 390 | 31,750 | 39,328 |
| ASTELLAS PHARMA INC UNSPONSORED | 2,881 | 37,472 | 36,531 |
| ASTRAZENECA PLC SPONSORED | 3,085 | 101,083 | 107,050 |
| AT&T INC | 44,952 | 458,560 | 1,747,734 |
| ATLANTIA S.P.A UNSPONSORED | 3,333 | 53,790 | 52,561 |
| ATLAS AIR WORLDWIDE HLDGS INC | 991 | 45,686 | 58,122 |
| ATLAS COPCO AB SPONSORED | 911 | 37,409 | 39,260 |
| ATOS ORIGIN SA UNSPONSORED | 1,049 | 32,879 | 30,573 |
| AU OPTRONICS CORP SPONSORED | 13,627 | 56,729 | 56,688 |
| AUSTRALIA & NEW ZEALAND SPONSORED | 4,443 | 106,946 | 99,257 |
| AUTODESK INC | 1,584 | 118,510 | 166,051 |
| AUTOHOME INC SPONSORED | 463 | 28,681 | 29,942 |
| AUTOMATIC DATA PROCESSING INC | 3,212 | 281,648 | 376,414 |
| AUTOZONE INC | 203 | 158,304 | 144,408 |
| AV HOMES INC | 401 | 6,519 | 6,677 |
| AVALONBAY COMMUNITIES INC | 998 | 177,008 | 178,053 |
| AVERY DENNISON CORP | 639 | 53,167 | 73,396 |
| AVIVA PLC SPONSORED | 3,626 | 49,953 | 49,966 |
| AVNET INC | 4,481 | 181,911 | 177,537 |
| AVX CORP | 1,789 | 24,272 | 30,950 |
| AXA SPONSORED | 2,201 | 65,117 | 65,293 |
| AXOGEN INC | 1,163 | 13,216 | 32,913 |
| AXT INC | 1,226 | 7,063 | 10,666 |
| B. RILEY FINANCIAL INC | 586 | 9,698 | 10,607 |
| BAE SYSTEMS PLC SPONSORED | 1,091 | 37,330 | 34,017 |
| BAIDU INC SPONSORED | 290 | 68,849 | 67,921 |
| BAKER HUGHES, A GE CO | 3,094 | 163,298 | 97,894 |
| BALL CORP | 2,543 | 94,337 | 96,253 |
| BANC OF CALIFORNIA, INC | 1,595 | 29,451 | 32,937 |
| BANCO BILBAO VIZCAYA SPONSORED | 7,392 | 65,803 | 62,832 |
| BANCO BRADESCO SPONSORED | 3,527 | 40,167 | 36,116 |
| BANCO DE CHILE SPONSORED | 220 | 19,505 | 21,237 |
| BANCO DO BRASIL SPONSORED | 1,875 | 20,789 | 18,094 |
| BANCO SANTANDER BRASIL SPONSORED | 2,123 | 19,029 | 20,529 |
| BANCO SANTANDER CHILE SPONSORED | 664 | 19,738 | 20,763 |
| | | | |

| SECURITY NAME | QUANTITY | COST | MARKET |
|---|----------|-----------|------------|
| BANCO SANTANDER SA SPONSORED | 16,787 | 113,382 | 109,787 |
| BANCOLOMBIA S.A. SPONSORED | 401 | 18,470 | 15,904 |
| BANCORP INC | 2,098 | 17,786 | 20,728 |
| BANK MONTREAL QUEBEC | 748 | 55,846 | 59,855 |
| BANK OF AMERICA CORP | 71,815 | 1,122,840 | 2,119,979 |
| BANK OF CHINA LTD UNSPONSORED | 3,623 | 45,999 | 44,273 |
| BANK OF NEW YORK MELLON CORP | 7,468 | 318,991 | 402,226 |
| BANK OF NOVA SCOTIA HALIFAX | 1,201 | 75,854 | 77,501 |
| BANKFINANCIAL CORP | 926 | 12,650 | 14,205 |
| BANKUNITED INC | 20,701 | 702,602 | 842,945 |
| BARCLAYS PLC SPONSORED | 5,718 | 57,820 | 62,326 |
| BARD CR INC | 525 | 97,007 | 174,638 |
| BARNES & NOBLE EDUCATION INC | 1,494 | 19,839 | 12,311 |
| BARNES & NOBLE INC | 2,104 | 27,352 | 14,097 |
| BARNES GROUP INC | 480 | 34,523 | 30,370 |
| BARRICK GOLD CORP | 695 | 11,484 | 10,057 |
| BASF SE SPONSORED | 3,068 | 80,337 | 84,278 |
| BASSETT FURNITURE INDS INC | 398 | 12,724 | 14,965 |
| BAXTER INTL INC | 3,623 | 135,135 | 234,191 |
| BAYER AG SPONSORED | 3,739 | 122,887 | 116,246 |
| BAYERISCHE MOTOREN WERKE SPONSORED | 787 | 26,448 | 27,285 |
| BB&T CORPORATION | 5,841 | 218,983 | 290,415 |
| BEAZER HOMES USA INC | 1,237 | 14,884 | 23,763 |
| BECTON DICKINSON | 1,645 | 246,442 | 352,129 |
| BECTON DICKINSON | 7,941 | 1,487,813 | 1,699,850 |
| BEL FUSE INC CL B | 331 | 5,971 | 8,333 |
| BENCHMARK ELECTRONICS INC | 1,864 | 40,191 | 54,242 |
| BERKSHIRE HATHAWAY INC-CL B | 14,051 | 1,977,721 | 2,785,189 |
| BERKSHIRE HILLS BANCORP INC | 1,395 | 43,058 | 51,057 |
| BEST BUY COMPANY INC | 1,918 | 63,209 | 131,325 |
| BHP BILLITON LTD SPONSORED | 1,663 | 69,615 | 76,481 |
| BHP BILLITON PLC SPONSORED | 925 | 33,678 | 37,278 |
| BIDVEST GROUP LTD SPONSORED | 771 | 19,395 | 27,185 |
| BIG LOTS INC | 1,659 | 78,696 | 93,153 |
| BIGLARI HOLDINGS INC | 40 | 15,366 | 16,576 |
| BIOGEN INC | 1,528 | 411,344 | 486,775 |
| BIOGEN INC | 2,673 | 734,175 | 851,538 |
| BIOTELEMETRY INC | 1,217 | 20,130 | 36,388 |
| BJ'S RESTAURANTS | 15,811 | 473,919 | 575,520 |
| BLACKBAUD INC | 9,795 | 817,557 | 925,530 |
| BLACKBERRY LIMITED | 3,186 | 31,264 | 35,588 |
| BLACKROCK INC CL A | 896 | 311,577 | 460,284 |
| BLACKSTONE MTG TR INC | 3,133 | 88,662 | 100,820 |
| BLOCK H & R INC | 1,511 | 53,715 | 39,618 |
| BLUCORA INC | 1,686 | 25,391 | 37,261 |
| BLUE HILLS BANCORP INC | 1,053 | 14,958 | 21,165 |
| BMC STOCK HOLDINGS INC | 2,133 | 39,359 | 53,965 |
| BNP PARIBAS SPONSORED | 2,282 | 90,884 | 85,233 |
| BOEING CO | 4,100 | 616,119 | 1,209,131 |
| BOEING CO | 12,174 | 1,946,682 | 3,590,234 |
| | ,-, | -,,, | 2,22,0,201 |

| SECURITY NAME | QUANTITY | COST | MARKET |
|--|----------|-------------------|-------------------|
| BOINGO WIRELESS | 1,504 | 34,090 | 33,840 |
| BOISE CASCADE CO | 1,881 | 50,122 | 75,052 |
| BOOZ ALLEN HAMILTON HLDG | 29,288 | 1,074,219 | 1,116,751 |
| BORG WARNER AUTOMOTIVE INC | 1,434 | 61,513 | 73,263 |
| BOSTON PROPERTIES INC | 1,115 | 137,315 | 144,983 |
| BOSTON SCIENTIFIC CORP | 9,918 | 185,621 | 245,867 |
| BP PLC SPONSORED | 3,437 | 128,140 | 144,457 |
| BRAMBLES LTD SPONSORED | 2,911 | 43,888 | 46,052 |
| BRASKEM SA SPONSORED | 417 | 11,722 | 10,950 |
| BRENNTAG AG UNSPONSORED | 2,832 | 30,576 | 35,683 |
| BRF SA SPONSORED | 1,354 | 20,164 | 15,246 |
| BRIDGEPOINT EDUCATION INC | 762 | 7,366 | 6,325 |
| BRIDGESTONE CORPORATION UNSPONSORED | 2,274 | 51,522 | 52,848 |
| BRIGGS & STRATTON CORP | 1,605 | 34,656 | 40,719 |
| BRIGHTHOUSE FINANCIAL INC | 693 | 42,780 | 40,638 |
| BRINKS CO | 1,895 | 164,879 | 149,137 |
| BRISTOL MYERS SQUIBB CO | 12,172 | 116,203 | 745,900 |
| BRITISH AMERN TOB PLC SPONSORED | 2,557 | 158,479 | 171,293 |
| BROADCOM LTD | 3,016 | 418,271 | 774,810 |
| BROOKFIELD ASSET MANAGE-CL A | 1,662 | 67,394 | 72,363 |
| BROOKS AUTOMATION INC | 2,542 | 37,369 | 60,627 |
| BROWN FORMAN CORP CLASS B | 1,415 | 75,801 | 97,168 |
| BT GROUP PLC SPONSORED | 1,351 | 26,452 | 24,615 |
| BUILDERS FIRSTSOURCE | 3,665 | 44,366 | 79,860 |
| BUNZL PLC SPONSORED | 1,351 | 41,433 | 38,287 |
| BURBERRY GROUP PLC SPONSORED | 859 | 20,697 | 20,779 |
| BURLINGTON STORES INC | 10,343 | 922,460 | 1,272,499 |
| BYD CO LTD UNSPONSORED | 1,240 | 21,910 | 21,675 |
| CA INC | 2,284 | 67,784 | 76,012 |
| CABOT OIL & GAS CORP | 3,343 | 70,424 | 95,610 |
| CACI INTERNATIONAL INC CLASS A | 918 | 95,324 | 121,497 |
| CADENCE DESIGN SYSTEMS INC | 2,025 | 77,510 | 84,686 |
| CAE INC | 2,936 | 48,400 | 54,492 |
| CAESARS ENTERTAINMENT CORP. | 3,150 | 27,794 | 39,848 |
| CAI INTERNATIONAL INC | 571 | 21,225 | 16,171 |
| CALATLANTIC GROUP INC | 2,855 | 111,102 | 160,993 |
| CALAVO GROWERS INC | 190 | 9,843 | 16,036 |
| CALERES INC | 1,594 | 47,928 | 53,367 |
| CALIX INC | 2,449 | 15,609 | 14,572 |
| CALLAWAY GOLF CO | 3,840 | 43,084 | 53,491 |
| CALLON PETROLEUM CO | 72,175 | 815,960 | 876,926 |
| CAMDEN NATIONAL CORP | 526 | 19,507 | 22,160 |
| CAMECO CORP | 1,918 | 19,305 | 17,703 |
| CAMPBELL SOUP CO | 1,402 | 72,366 | 67,450 |
| CAMPING WORLD HOLDINGS INC | 829 | 36,774 | 37,081 |
| CANADIAN NATIONAL RAILWAY CO | 988 | 80,767 | 81,510 |
| CANADIAN NATIONAL KAILWAT CO CANADIAN NATURAL RESOURCES | 1,397 | 46,937 | 49,901 |
| CANADIAN NATUKAL RESOURCES | 224 | 36,484 | 40,938 |
| CANON INC SPONSORED | 3,180 | 30,484 108,362 | 40,938 118,932 |
| CAPELLA EDUCATION CO | 5,180 | | 40,093 |
| CAI ELLA EDUCATION CO | 510 | 32,683 | 40,093 |

| SECURITY NAME | QUANTITY | COST | MARKET |
|----------------------------------|----------|-----------|-----------|
| CAPGEMINI SE UNSPONSORED | 946 | 22,573 | 22,458 |
| CAPITAL ONE FINANCIAL CORP | 3,496 | 281,848 | 348,132 |
| CAPSTEAD MTG CORP | 3,487 | 32,805 | 30,163 |
| CARBONITE INC | 635 | 11,443 | 15,939 |
| CARDINAL HEALTH INC | 2,287 | 189,083 | 140,124 |
| CARDIOVASCULAR SYSTEM INC | 1,276 | 30,770 | 30,228 |
| CARE.COM INC | 688 | 6,199 | 12,412 |
| CAREER EDUCATION CORP | 2,929 | 21,903 | 35,382 |
| CARLSBERG A/S SPONSORED | 1,401 | 31,941 | 33,736 |
| CARMAX INC | 1,325 | 77,165 | 84,972 |
| CARNIVAL CORP | 2,948 | 157,794 | 195,659 |
| CARNIVAL PLC SPONSORED | 652 | 42,039 | 43,215 |
| CAROLINA FINANCIAL CORP | 455 | 16,445 | 16,903 |
| CARREFOUR SA SPONSORED | 7,879 | 31,102 | 34,195 |
| CARS.COM INC | 2,687 | 69,424 | 77,493 |
| CARTERS INC | 7,480 | 733,898 | 878,825 |
| CATALENT INC | 27,275 | 1,071,095 | 1,120,457 |
| CATERPILLAR INC | 4,434 | 336,711 | 698,710 |
| CAVCO INDUSTRIES INC | 317 | 49,021 | 48,374 |
| CAVCO INDUSTRIES INC | 6,284 | 879,151 | 958,938 |
| CBOE GLOBAL MARKETS INC | 815 | 64,637 | 101,541 |
| CBRE GROUP INC | 2,174 | 81,528 | 94,156 |
| CBS CORPORATION CLASS B | 2,632 | 120,605 | 155,288 |
| CDN IMPERIAL BK OF COMMERCE | 441 | 38,623 | 42,958 |
| CELGENE CORP | 5,870 | 730,033 | 612,593 |
| CEMEX SOUTH AMERICA SPONSORED | 2,364 | 22,107 | 17,730 |
| CENOVUS ENERGY INC | 2,211 | 22,227 | 20,186 |
| CENTENE CORP | 1,247 | 78,075 | 125,797 |
| CENTENE CORP | 2,449 | 195,196 | 247,055 |
| CENTERPOINT ENERGY INC | 3,116 | 57,645 | 88,370 |
| CENTERSTATE BANK CORP | 2,033 | 32,140 | 52,309 |
| CENTRAL GARDEN & PET CL A | 1,370 | 25,908 | 51,663 |
| CENTRAL GARDEN & PET CO | 388 | 13,138 | 15,101 |
| CENTRAL VALLEY COMMUNITY BANCORP | 372 | 7,911 | 7,507 |
| CENTRICA PLC SPONSORED | 2,097 | 21,531 | 15,581 |
| CENTURY COMMUNITIES INC | 815 | 19,276 | 25,347 |
| CENTURYLINK INC | 7,064 | 174,471 | 117,828 |
| CERNER CORP | 2,277 | 152,979 | 153,447 |
| CEVA INC | 809 | 23,961 | 37,335 |
| CF INDUSTRIES HOLDINGS INC | 1,686 | 87,431 | 71,722 |
| CGI GROUP INC | 226 | 11,710 | 12,279 |
| CH ROBINSON WORLDWIDE INC | 1,014 | 67,380 | 90,337 |
| CHARLES SCHWAB CORP | 8,615 | 265,847 | 442,553 |
| CHARLES SCHWAB CORP | 8,558 | 353,774 | 439,624 |
| CHART INDUSTRIES INC | 1,271 | 42,737 | 59,559 |
| CHARTER COMMUNICATIONS INC CL A | 1,454 | 410,479 | 488,486 |
| CHARTER FINANCIAL CORP | 806 | 12,178 | 14,137 |
| CHASE CORP | 239 | 18,020 | 28,800 |
| CHECK POINT SOFTWARE TECH LTD | 104 | 11,502 | 10,776 |
| CHEGG INC | 2,975 | 47,204 | 48,552 |
| | | | |

| SECURITY NAME | QUANTITY | COST | MARKET |
|--------------------------------------|------------|------------|---------------|
| CHEMED CORP | 597 | 96,712 | 145,083 |
| CHEMICAL FINL CORP | 2,670 | 116,993 | 142,765 |
| CHERRY HILL MORTGAGE INVT CORP | 439 | 8,363 | 7,898 |
| CHESAPEAKE ENERGY CORP | 9,857 | 57,114 | 39,034 |
| CHEVRON CORP | 13,881 | 1,275,684 | 1,737,762 |
| CHILDRENS PLACE | 661 | 68,969 | 96,076 |
| CHIMERA INVESTMENT CORP | 6,867 | 110,262 | 126,902 |
| CHINA CONSTR BK CORP UNSPONSORED | 5,888 | 101,529 | 108,634 |
| CHINA LIFE INSURANCE CO SPONSORED | 2,867 | 43,711 | 44,754 |
| CHINA MOBILE LIMITED SPONSORED | 1,466 | 75,220 | 74,092 |
| CHINA PETE & CHEM CORP SPONSORED | 455 | 34,561 | 33,383 |
| CHINA SOUTHERN AIRLINES CO SPONSORED | 472 | 17,898 | 24,459 |
| CHINA TELECOM CORP LTD SPONSORED | 395 | 19,790 | 18,751 |
| CHINA UNICOM HONG KONG LTD SPONSORED | 2,160 | 31,236 | 29,225 |
| CHIPOTLE MEXICAN GRILL INC | 181 | 117,687 | 52,314 |
| CHR HANSEN HOLDINGS SPONSORED | 686 | 30,449 | 32,379 |
| CHUBB LTD | 3,364 | 383,277 | 491,581 |
| CHUNGHWA TELECOM LTD SPONSORED | 2,818 | 96,450 | 99,870 |
| CHURCH & DWIGHT INC | 1,804 | 76,995 | 90,507 |
| CIA CERVECERIAS UNIDAS SPONSORED | 1,187 | 32,290 | 35,111 |
| CIA DE MINAS BUENAVENTUR SPONSORED | 901 | 11,518 | 12,686 |
| CIA PARANAENSE ENERGY SPONSORED | 1,264 | 11,866 | 9,644 |
| CIA SANEAMENTO BASICO DE SPONSORED | 1,850 | 19,706 | 19,333 |
| CIE FINANCIERE RICH UNSPONSORED | 6,650 | 59,024 | 59,917 |
| CIGNA CORP | 1,820 | 249,195 | 369,624 |
| CIGNA CORP | 10,507 | 1,718,385 | 2,133,867 |
| CIMAREX ENERGY CO | 689 | 80,590 | 84,065 |
| CINCINNATI FINL CORP | 1,079 | 66,402 | 80,893 |
| CINTAS CORP | 617 | 68,393 | 96,147 |
| CIRRUS LOGIC INC | 2,396 | 127,862 | 124,257 |
| CISCO SYSTEMS INC | 36,728 | 1,082,070 | 1,406,682 |
| CITI TRENDS INC | 478 | 12,705 | 12,648 |
| CITIGROUP INC | 19,358 | 1,046,298 | 1,440,429 |
| CITIZENS FINANCIAL GROUP INC | 3,619 | 76,940 | 151,926 |
| CITRIX SYSTEMS INC | 1,040 | 69,378 | 91,520 |
| CK HUTCHISON HOLDING UNSPONSORED | 8,073 | 103,941 | 101,357 |
| CLOROX COMPANY | 933 | 114,253 | 138,774 |
| CLOUD PEAK ENERGY | 2,999 | 16,205 | 13,346 |
| CME GROUP INC. | 2,457 | 236,054 | 358,845 |
| CMS ENERGY CORP | 2,038 | 72,958 | 96,397 |
| CNO FINANCIAL GROUP, INC | 6,544 | 134,193 | 161,571 |
| CNOOC LTD SPONSORED | 387 | 47,378 | 55,558 |
| CNX RESOURCES CORPORATION | 7,773 | 110,264 | 113,719 |
| COCA-COLA AMATIL LTDSPONSORED | 7,557 | 48,506 | 50,254 |
| COCA-COLA CO | 59,134,600 | 53,251,214 | 2,713,095,448 |
| COCA-COLA FEMSA SAB DE CV SPONSORED | 244 | 18,972 | 16,987 |
| COGNEX CORP | 20,994 | 1,190,937 | 1,283,993 |
| COGNIZANT TECHNOLOGY SOLUTIONS CORP | 4,269 | 290,922 | 303,184 |
| COHU INC | 1,050 | 25,810 | 23,048 |
| COLGATE PALMOLIVE CO | 6,367 | 436,787 | 480,390 |
| | • | - | |

| SECURITY NAME | QUANTITY | COST | MARKET |
|------------------------------------|----------|-----------|-----------|
| COLLECTORS UNIVERSE INC | 294 | 7,063 | 8,420 |
| COLOPLAST A/S UNSPONSORED | 2,357 | 19,038 | 18,609 |
| COLUMBUS MCKINNON CORP NY | 763 | 28,185 | 30,505 |
| COMCAST CORP-CL A | 34,526 | 1,080,839 | 1,382,766 |
| COMERICA INC | 1,272 | 59,372 | 110,422 |
| COMMERCEHUB INC SER A | 506 | 11,728 | 11,127 |
| COMMERCEHUB INC SER C | 1,005 | 22,174 | 20,693 |
| COMMERCIAL METALS CO | 4,230 | 63,631 | 90,184 |
| COMMERCIAL VEHICLE GROUP INC | 1,006 | 8,480 | 10,754 |
| COMMERZBANK AG SPONSORED | 2,546 | 33,317 | 38,012 |
| COMMONWEALTH BK SPONSORED | 2,133 | 130,802 | 133,387 |
| COMMVAULT SYSTEM | 1,588 | 93,000 | 83,370 |
| COMPAGNIE DE ST GOBAIN UNSPONSORED | 2,161 | 25,659 | 23,782 |
| COMPANHIA BRASILEIRA SPONSORED | 761 | 19,110 | 17,937 |
| COMPASS GROUP PLC SPONSORED | 2,418 | 53,576 | 53,087 |
| COMTECH TELECOMMUNICATIONS CORP | 884 | 18,929 | 19,554 |
| CONAGRA BRANDS INC | 3,005 | 93,027 | 113,198 |
| CONCHO RESOURCES | 1,075 | 119,104 | 161,487 |
| CONDUENT INC | 7,708 | 121,182 | 124,561 |
| CONNS INC | 1,013 | 27,969 | 36,012 |
| CONOCOPHILLIPS | 8,797 | 458,882 | 482,867 |
| CONSOL ENERGY INC | 971 | 22,546 | 38,364 |
| CONSOLIDATED EDISON INC | 2,239 | 151,755 | 190,203 |
| CONSTELLATION BRANDS INC | 1,243 | 173,538 | 284,113 |
| CONTINENTAL AG SPONSORED | 1,006 | 50,164 | 54,203 |
| CONTROL4 CORP | 728 | 20,704 | 21,665 |
| COOPER COS INC | 353 | 65,132 | 76,912 |
| CORCEPT THERAPEUTICS INC | 3,441 | 32,572 | 62,144 |
| CORENERGY INFRASTRUCTURE TRUST | 414 | 11,940 | 15,815 |
| CORESITE REALTY CORP | 7,851 | 883,471 | 894,229 |
| CORNING INC | 6,529 | 122,447 | 208,863 |
| CORVEL CORP | 458 | 22,349 | 24,228 |
| COSTAR GROUP INC | 4,682 | 1,319,407 | 1,390,320 |
| COSTCO WHOLESALE CORP | 3,170 | 502,568 | 590,000 |
| COTY INC | 3,409 | 80,521 | 67,805 |
| COUSINS PPTYS INC | 17,015 | 156,463 | 157,389 |
| COWEN INC CL A | 1,097 | 17,233 | 14,974 |
| CPFL ENERGIA SPONSORED | 680 | 11,790 | 7,820 |
| CRA INTERNATIONAL INC | 338 | 7,913 | 15,193 |
| CRAFT BREW ALLIANCE INC | 631 | 11,513 | 12,115 |
| CREDICORP LIMITED | 143 | 29,142 | 29,662 |
| CREDIT AGRICOLE S.A. UNSPONSORED | 3,924 | 35,171 | 32,236 |
| CREDIT SUISSE GROUP-SPONSORED | 2,666 | 41,714 | 47,588 |
| CRESCENT POINT ENERGY CORP | 2,601 | 20,012 | 19,820 |
| CRH PLC | 1,489 | 53,639 | 53,738 |
| CROWN CASTLE INTL CORP | 2,937 | 257,750 | 326,036 |
| CROWN CASTLE INTL CORP | 8,700 | 862,970 | 965,787 |
| CRYOLIFE INC | 1,274 | 18,999 | 24,397 |
| CSL LTD SPONSORED | 1,429 | 77,713 | 78,838 |
| CSRA INC | 1,432 | 41,554 | 42,845 |
| | 1,752 | 11,007 | 72,073 |

| SECURITY NAME | QUANTITY | COST | MARKET |
|--|-----------|------------|------------|
| CSS INDUSTRIES INC | 335 | 9,231 | 9,323 |
| CSX CORP | 6,602 | 179,749 | 363,176 |
| CTRIP.COM INTERNATIONAL LTD | 884 | 47,257 | 38,984 |
| CUMMINS INC | 1,139 | 117,679 | 201,193 |
| CUTERA INC | 525 | 20,584 | 23,809 |
| CVS HEALTH CORP | 7,348 | 754,372 | 532,730 |
| CYS INVESTMENTS INC | 6,172 | 47,453 | 49,561 |
| D R HORTON INC | 2,462 | 75,703 | 125,734 |
| DAI NIPPON PRINT SPONSORED | 3,328 | 40,320 | 37,007 |
| DAIICHI SANKYO CO SPONSORED | 1,380 | 31,614 | 36,079 |
| DAIKIN INDUSTRIES UNSPONSORED | 302 | 60,856 | 71,625 |
| DAIMLER AG UNSPONSORED | 736 | 58,402 | 62,291 |
| DAITO TRUST CONSTRUCTION SPONSORED | 2,166 | 97,830 | 111,094 |
| DAIWA HOUSE UNSPONSORED | 3,027 | 104,331 | 116,191 |
| DANA INC | 5,420 | 158,671 | 173,494 |
| DANAHER CORP | 4,419 | 320,614 | 410,172 |
| DANAHER CORP | 8,000 | 612,741 | 742,560 |
| DANONE SPONSORED | 3,741 | 59,534 | 62,737 |
| DANSKE BANK A/S SPONSORED | 1,291 | 25,501 | 25,239 |
| DARDEN RESTAURANTS INC | 906 | 55,664 | 86,994 |
| DARLING INGREDIENTS INC | 6,338 | 91,101 | 114,908 |
| DASSAULT SYS S A SPONSORED | 295 | 30,143 | 31,282 |
| DAVITA INC | 1,106 | 85,683 | 79,909 |
| DBS GROUP HLDGS LTD SPONSORED | 1,233 | 74,682 | 92,056 |
| DEAN FOODS CO | 3,872 | 66,551 | 44,760 |
| DECKERS OUTDOOR CORP | 1,202 | 79,451 | 96,461 |
| DEERE & CO | 2,312 | 197,279 | 361,851 |
| DELEK US HOLDINGS INC | 2,512 | 69,440 | 94,897 |
| DELTA AIR LINES INC | 4,815 | 242,448 | 269,640 |
| DENSO CORPORATION UNSPONSORED | 1,956 | 48,172 | 58,690 |
| DENTSPLY SIRONA INC | 1,659 | 98,766 | 109,212 |
| DEUTSCHE BANK AG | 2,426 | 39,850 | 46,167 |
| DEUTSCHE BOERSE AG UNSPONSORED | 5,202 | 58,710 | 60,005 |
| DEUTSCHE POST AG SPONSORED | 1,635 | 72,051 | 77,801 |
| DEUTSCHE TELEKOM AG SPONSORED | 1,785 | 33,370 | 31,525 |
| DEVON ENERGY CORPORATION | 3,800 | 124,894 | 157,320 |
| DFA U.S. LARGE CAP VALUE PORTFOLIO | 2,118,544 | 80,448,408 | 82,877,455 |
| DIAGEO PLC SPONSORED | 2,110,544 | 100,956 | 112,443 |
| DIGI INTL INC | 1,172 | 14,135 | 112,445 |
| DIGITAL REALTY TRUST INC | 1,172 | 152,702 | 168,458 |
| DILLARDS INC | 788 | 42,410 | 47,319 |
| DISCOVER FINL SVCS | 2,691 | 153,832 | 206,992 |
| DISCOVER FINE SVCS DISCOVERY COMMUNICATIONS CL A | 1,546 | 45,669 | 34,599 |
| DISCOVERY COMMUNICATIONS CL A DISCOVERY COMMUNICATIONS CL C | 1,340 | 40,677 | |
| DISCOVERT COMMONICATIONS CE C DISH NETWORK CORP CL A | | | 31,099 |
| | 1,646 | 102,145 | 78,597 |
| DISNEY WALT CO NEW | 11,058 | 1,231,664 | 1,188,846 |
| DMC GLOBAL INC | 593 | 11,944 | 14,855 |
| DNB ASA SPONSORED | 1,642 | 32,114 | 30,484 |
| DOLBY LABORATORIES INC | 2,195 | 111,077 | 136,090 |
| DOLLAR GENERAL CORP | 1,883 | 127,243 | 175,138 |

| SECURITY NAME | QUANTITY | COST | MARKET |
|------------------------------------|----------|-----------|-----------|
| DOLLAR GENERAL CORP | 15,600 | 1,169,548 | 1,450,956 |
| DOLLAR TREE INC | 1,712 | 110,210 | 183,715 |
| DOMINION ENERGY INC | 4,645 | 237,698 | 376,524 |
| DOMTAR CORPORATION | 2,692 | 109,037 | 133,308 |
| DORMAN PRODUCTS | 14,150 | 985,884 | 865,131 |
| DOVER CORP | 1,125 | 71,721 | 113,614 |
| DOWDUPONT INC | 17,143 | 916,289 | 1,220,924 |
| DR REDDYS LABS LTD SPONSORED | 1,651 | 58,799 | 62,012 |
| DRIL-QUIP INC | 6,453 | 281,262 | 307,808 |
| DSV AS UNSPONSORED | 1,178 | 44,025 | 46,496 |
| DTE ENERGY CO | 1,297 | 106,386 | 141,970 |
| DUCOMMUN INC | 533 | 18,476 | 15,164 |
| DUKE ENERGY CORP | 5,059 | 189,060 | 425,512 |
| DUKE REALTY CORPORATION | 2,571 | 71,310 | 69,957 |
| DXC TECHNOLOGY CO | 2,058 | 136,840 | 195,304 |
| DYNEGY INC | 4,931 | 45,691 | 58,432 |
| DYNEX CAP INC | 1,477 | 8,947 | 10,354 |
| E ON SE SPONSORED | 4,393 | 49,756 | 47,774 |
| E TRADE FINANCIAL CORP | 1,988 | 54,328 | 98,545 |
| EAGLE MATERIALS INC | 7,557 | 793,946 | 856,208 |
| EAST JAPAN RAILWAY CO UNSPONSORED | 3,730 | 56,378 | 60,687 |
| EASTERLY GOVERNMENT PROPERTIES | 40,069 | 810,115 | 855,072 |
| EASTMAN CHEMICAL CO | 1,047 | 76,696 | 96,994 |
| EATON CORP PLC | 3,215 | 166,355 | 254,017 |
| EBAY INC | 7,195 | 208,272 | 271,539 |
| ECHOSTAR HOLDING CORP | 1,801 | 98,836 | 107,880 |
| ECLIPSE RESOURCES CORP | 3,255 | 7,371 | 7,812 |
| ECOLAB INC | 1,883 | 225,566 | 252,661 |
| ECOPETROL SPONSORED | 1,243 | 11,823 | 18,185 |
| EDF UNSPONSORED | 4,793 | 11,711 | 11,671 |
| EDISON INTERNATIONAL | 2,355 | 143,789 | 148,930 |
| EDP-ENERGIAS DE PORTUGAL SPONSORED | 524 | 20,301 | 18,162 |
| EDWARDS LIFESCIENCES CORP | 1,526 | 118,183 | 171,995 |
| EISAI LTD SPONSORED | 619 | 32,245 | 35,370 |
| ELBIT SYSTEMS LTD | 237 | 33,850 | 31,590 |
| ELDORADO RESORTS INC | 1,730 | 25,253 | 57,350 |
| ELECTRO SCIENTIFIC INDS INC | 1,412 | 12,116 | 30,259 |
| ELECTRONIC ARTS INC | 2,232 | 178,715 | 234,494 |
| ELECTRONIC ARTS INC | 4,200 | 386,130 | 441,252 |
| ELLIS PERRY INTL INC | 468 | 10,826 | 11,719 |
| EMBRAER SA SPONSORED | 496 | 11,517 | 11,869 |
| EMCOR GROUP INC | 2,221 | 131,415 | 181,567 |
| EMERGENT BIOSOLUTIONS INC | 1,334 | 42,950 | 61,991 |
| EMERSON ELEC CO | 4,626 | 227,579 | 322,386 |
| ENAGAS UNSPONSORED | 2,737 | 39,459 | 39,139 |
| ENBRIDGE INC | 1,702 | 70,095 | 66,565 |
| ENCANA CORP | 1,951 | 21,685 | 26,007 |
| ENCORE CAPITAL GROUP INC | 888 | 41,434 | 37,385 |
| ENEL AMERICAS SA SPONSORED | 1,167 | 11,960 | 13,035 |
| ENEL CHILE SA SPONSORED | 2,018 | 11,967 | 11,462 |

| SECURITY NAME | QUANTITY | COST | MARKET |
|---------------------------------|-----------|-----------|-----------|
| ENEL GENERACION CHILE SPONSORED | 467 | 11,840 | 12,567 |
| ENEL SPA UNSPONSORED | 14,999 | 91,419 | 91,644 |
| ENGIE SPONSORED | 1,512 | 26,233 | 25,953 |
| ENGILITY HOLDINGS INC | 810 | 24,566 | 22,980 |
| ENI SPA SPONSORED | 1,319 | 43,209 | 43,778 |
| ENNIS INC. | 1,016 | 19,300 | 21,082 |
| ENOVA INTERNATIONAL INC | 1,263 | 18,830 | 19,198 |
| ENTERGY CORP | 1,298 | 88,109 | 105,644 |
| ENVISION HEALTHCARE CO | 873 | 59,154 | 30,171 |
| ENZO BIOCHEM INC | 1,678 | 10,463 | 13,676 |
| EOG RES INC | 4,174 | 365,778 | 450,416 |
| EPLUS INC | 498 | 27,574 | 37,450 |
| EQT CORPORATION | 1,745 | 109,915 | 99,325 |
| EQUIFAX INC | 870 | 92,902 | 102,590 |
| EQUINIX INC | 563 | 182,406 | 255,163 |
| EQUITY RESIDENTIAL PPTYS TR | 2,655 | 202,463 | 169,309 |
| ERA GROUP INC | 758 | 7,228 | 8,149 |
| ERICSSON SPONSORED | 3,989 | 22,283 | 26,647 |
| ERSTE GROUP BANK AG SPONSORED | 1,891 | 41,238 | 41,224 |
| ESSEX PROPERTY TRUST INC | 477 | 106,117 | 115,133 |
| ESSILOR INTL | 437 | 27,443 | 30,144 |
| ETHAN ALLEN INTERIORS INC | 960 | 27,106 | 27,456 |
| EVEREST RE GROUP LIMITED | 297 | 75,913 | 65,714 |
| EVERI HOLDINGS INC | 2,507 | 19,575 | 18,903 |
| EVERSOURCE ENERGY | 2,291 | 116,777 | 144,745 |
| EVOLENT HEALTH INC CL A | 2,296 | 41,290 | 28,241 |
| EXACTECH INC | 399 | 11,373 | 19,731 |
| EXELON CORP | 6,940 | 206,504 | 273,505 |
| EXPEDIA INC | 883 | 113,055 | 105,757 |
| EXPEDITORS INTL WASH INC | 1,306 | 63,083 | 84,485 |
| EXPERIAN GROUP LTD SPONSORED | 1,716 | 34,419 | 37,615 |
| EXPONENT INC | 17,864 | 1,300,074 | 1,270,130 |
| EXPRESS INC | 2,618 | 47,585 | 26,573 |
| EXPRESS SCRIPTS HLDG | 4,175 | 358,298 | 311,622 |
| EXTERRAN CORP | 1,195 | 36,385 | 37,571 |
| EXTRA SPACE STORAGE INC | 910 | 78,296 | 79,580 |
| EXTREME NETWORKS INC | 4,135 | 47,764 | 51,770 |
| EXXONMOBIL CORP | 30,948 | 811,783 | 2,588,491 |
| EZCORP INC CL A | 2,374 | 19,168 | 28,963 |
| F5 NETWORKS INC | 459 | 55,700 | 60,230 |
| FACEBOOK INC-A | 17,524 | 1,913,308 | 3,092,285 |
| FACEBOOK INC-A | 21,500 | 2,426,002 | 3,793,890 |
| FANUC CORP UNSPONSORED | 2,756 | 56,214 | 66,254 |
| FARMLAND PARTNERS INC | 1,083 | 10,731 | 9,400 |
| FAST RETAILING CO UNSPONSORED | 736 | 21,852 | 29,337 |
| FASTENAL CO | 2,082 | 81,343 | 113,865 |
| FB FINANCIAL CORP | 457 | 17,525 | 19,189 |
| FEDERAL AGRIC MTG CORP-CL C | 347 | 10,191 | 27,149 |
| FEDERAL REALTY INVESTMENT TRUST | 522 | 78,738 | 69,327 |
| FEDERATED MONEY MKT OBLIGS TR | 4,282,746 | 4,282,746 | 4,282,746 |

| SECURITY NAME | QUANTITY | COST | MARKET |
|--------------------------------------|----------|---------|---------|
| FEDEX CORPORATION | 1,784 | 277,378 | 445,179 |
| FERGUSON PLC SPONSORED | 5,233 | 33,313 | 37,521 |
| FERRARI NV | 383 | 43,147 | 40,154 |
| FERROVIAL SA UNSPONSORED | 1,428 | 31,136 | 32,330 |
| FIAT CHRYSLER AUTOMOBILES NV | 2,004 | 34,524 | 35,751 |
| FIBRIA CELULOSE SA SPONSORED | 884 | 11,689 | 12,995 |
| FIDELITY NATL INFORMATION SVCS | 2,403 | 176,872 | 226,098 |
| FIFTH THIRD BANCORP | 5,325 | 103,802 | 161,561 |
| FINISH LINE INC CL A | 1,432 | 26,692 | 20,807 |
| FIRST BANCORP N C | 927 | 20,718 | 32,732 |
| FIRST BANCORP PR | 6,809 | 31,543 | 34,726 |
| FIRST COMMUNITY BANCSHARES | 571 | 10,987 | 16,405 |
| FIRST COMWLTH FINL CORP | 1,001 | 10,952 | 14,334 |
| FIRST CONNECTICUT BANCORP INC | 727 | 17,240 | 19,011 |
| FIRST CTZNS BANCSHARES INC CL A | 327 | 83,956 | 131,781 |
| FIRST FINANCIAL CORP INDIANA | 539 | 25,529 | 24,444 |
| FIRST MERCHANTS CORP | 1,542 | 40,742 | 64,857 |
| FIRST MID-ILLINOIS BANCSHARES INC | 339 | 14,029 | 13,065 |
| FIRST NORTHWEST BANCORP | 489 | 6,636 | 7,971 |
| FIRSTENERGY CORP | 3,212 | 99,390 | 98,351 |
| FISERV INC | 1,521 | 146,894 | 199,449 |
| FIVE BELOW | 2,224 | 92,538 | 147,496 |
| FIVE BELOW | 13,096 | 656,068 | 868,527 |
| FIVE9 INC | 1,966 | 34,345 | 48,914 |
| FLAGSTAR BANCORP | 789 | 19,348 | 29,524 |
| FLEXSTEEL INDS | 247 | 10,485 | 11,555 |
| FLIR SYSTEMS INC | 981 | 25,526 | 45,734 |
| FLOWSERVE CORP | 918 | 41,044 | 38,675 |
| FLUOR CORP | 1,011 | 47,750 | 52,218 |
| FMC CORP | 970 | 43,664 | 91,820 |
| FNB CORPORATION | 1,524 | 17,404 | 21,062 |
| FOMENTO ECONOMICO MEXICANO SPONSORED | 236 | 22,902 | 22,160 |
| FONAR CORP | 232 | 7,658 | 5,649 |
| FOOT LOCKER INC | 949 | 60,508 | 44,489 |
| FORD MOTOR CO DEL | 28,271 | 415,546 | 353,105 |
| FORMFACTOR INC | 2,688 | 30,386 | 42,067 |
| FORTESCUE METALS GROUP SPONSORED | 2,283 | 19,511 | 17,431 |
| FORTIVE CORP | 2,205 | 111,580 | 159,532 |
| FORTIVE CORP | 5,950 | 287,393 | 430,483 |
| FORTUNE BRANDS HOME & SECURITY, INC | 1,113 | 63,274 | 76,174 |
| FOSSIL GROUP INC | 1,621 | 14,943 | 12,595 |
| FOSTER LB COMPANY | 361 | 9,434 | 9,801 |
| FOX FACTORY HOLDING CORP | 1,406 | 62,142 | 54,623 |
| FRANCO NEVADA CORP | 232 | 18,511 | 18,548 |
| FRANKLIN RESOURCES INC | 2,378 | 95,660 | 103,039 |
| FREDS INC | 1,368 | 18,460 | 5,540 |
| FREEPORT-MCMORAN INC | 9,726 | 115,805 | 184,405 |
| FREIGHTCAR AMERICAN | 466 | 8,855 | 7,959 |
| FRESENIUS MED CARE AG & CO SPONSORED | 715 | 35,011 | 37,573 |
| FRESENIUS SE & CO KGAA SPONSORED | 1,928 | 39,596 | 37,461 |
| | 1,720 | 57,570 | 57,401 |

| FRISTIPT INC 872 13,556 16,524 FUIC COMPANINES INC 629 7,319 4,523 FUIC INS PETROLUB SF ADR 3,607 52,969 47,721 FUIFILM HOLDINGS CORP UNSPONSORED 1,043 19,440 18,847 GALLACHER ARTHUK J & CO 1,302 69,601 82,232 GAP INC 1,587 43,135 54,053 GARDNER DENVER HOLDINGS INC 25,952 945,502 1,219,173 GARTINER INC CL A 655 71,205 80,663 GARTINER INC CL A 655 71,205 80,663 GARTINER INC CL A 13,262 1,647,118 1,633,215 GARTINE INC CL A 13,02 1,613 14,308 GENERAL DENDENDENDE 629 9,337 40,206 GEA GROUP DONSORDE 4317 24,450 247,299 <th>SECURITY NAME</th> <th>QUANTITY</th> <th>COST</th> <th>MARKET</th> | SECURITY NAME | QUANTITY | COST | MARKET |
|--|------------------------------|----------|-----------|---------------------------------------|
| FUCIS PETROLUB SE ADR 3.607 52,969 47,21 FUIFILM HOLDINGS CORP UNSPONSORED 1,704 67,134 69,779 GAS PLC UNSPONSORED 1,043 19,440 18,847 GALLAGHER ARTHUR J & CO 1,302 69,601 82,321 GAMESTOP CORP CL A 3,801 82,412 68,228 GAP INC 1,587 43,135 54,053 GARNINE INTD 802 28,182 47,775 GARTINE INC CL A 655 17,205 80,663 GARTINE INC CL A 13,262 16,47,118 16,332,155 GARTINE INC CL A 13,262 16,47,118 16,332,155 GARTINE INC CL A 13,262 16,47,118 16,332,155 GARTINE INC CL A 13,02 94,206 43,716 GEA GROUP AG SPONSORED 629 40,206 43,716 GEA GROUP AG SPONSORED 30,321 30,925 660,833 GENERAL COMMUNICATION INC 991 41,261 38,669 GENERAL COMMUNICATION INC 914 12,453 147,929 | | | | |
| FUIDELM HOLDINGS CORP UNSPONSORED 1,704 67,34 69,779 G4S PLC UNSPONSORED 1,043 19,440 18,847 GALLAGER ARTHUR J& CO 1,302 69,601 82,321 GAMESTOP CORP CLA 3,801 82,412 68,228 GARING TO 15,87 31,135 54,053 GARINNE TO 802 28,182 47,775 GARINE INC CLA 655 71,205 80,663 GARTINER INC CLA 13,262 1,647,118 1,633,215 GAS NATIRALS DG SA UNSPONSORED 6687 30,732 30,526 GEA GROUP AG SPONSORED 629 40,206 43,716 GEMALTO SPONSORED 6483 11,613 14,308 GENERAL COMMUNICATION INC 991 41,261 38,669 GENERAL COMMUNICATION INC 991 41,261 38,689 GENERAL COMMUNICATION INC 94,800 333,206 388,885 GENERAL MUSINC 4,171 24,2450 247,299 GENERAL MUSINC 9,6480 333,206 388,885 | | | | |
| G4S PLC UNSPONSORED 1,043 19,400 18,847 GALLAGHER ARTHUR J & CO 1,302 69,601 82,391 GAMESTOP COPP CL A 3,801 82,412 68,223 GAP INC 1,587 43,135 54,053 GARDNER DENVER HOLDINGS INC 35,932 945,502 1,219,173 GARTINE INC CL A 655 71,205 80,663 GARTINE INC CL A 13,262 1,647,118 1,633,215 GAS ANTURAL SDG SA UNSPONSORED 6,687 30,732 30,356 GELY AUTOMOBLE HLDGS UNSPONSORED 629 40,206 43,716 GENERAL AUTONOBLE HLDGS UNSPONSORED 6,316 15,394 20,628 GENERAL AUTONOBLE HLDGS UNSPONSORED 316 15,394 20,628 GENERAL COMMUNICATION INC 991 41,261 38,669 GENERAL COMMUNICATION INC 914 41,621 38,669 GENERAL COMMUNICATION INC 911 44,261 38,653 GENERAL COMMUNICATION INC 914 42,613 31,622 GENERAL COMMUNICATION INC 914< | | | | · · · · · · · · · · · · · · · · · · · |
| GALLAGHER ARTHUR J & CO 1,302 69.601 82.391 GAMESTOP COR LA 3,801 82.412 68.228 GAP INC 1,587 43.135 54.053 GARDNER DENVER HOLDINGS INC 35.932 945.502 1.219.173 GARNINE INC CL A 655 71.205 80.663 GARTINER INC CL A 13.262 1.647.118 1.633.215 GAS NATURAL SDG SA UNSPONSORED 6687 30.732 30.526 GEA GROUP AG SPONSORED 6687 30.732 30.526 GEMALTO SPONSORED 6483 11.613 14.308 GEMERS MARTITME INC 3.116 15.394 20.628 GENERAL DYNAMICATION INC 991 41.261 3.669 GENERAL DYNAMICS CORP 2.013 302.373 409.545 GENERAL MUSINC 4.171 242.450 247.299 GENERAL MUSINC 9.480 333.206 388.585 GENERAL MOTORS CO 9.488 34.18,51 1.549 GENERAL MOSINCRED 1.061 95.803 100.580 | | | | |
| GAMESTOF CORP CLA 3,801 82.41 68.228 GAP INC 1,587 43,135 54.053 GARDNER DENVER HOLDINGS INC 35.952 2945.502 1.219.173 GARNINE DENVER HOLDINGS INC 35.952 28.182 47.775 GARTINER INC CLA 655 71.205 80.663 GARTINER INC CLA 13.262 1.647.118 1.633.215 GAS NATURAL SDG SA UNSPONSORED 6625 29.337 31.289 GELA CROUP AG SPONSORED 612 29.337 30.266 GENERAL COMMUNICATION INC 991 41.261 38.669 GENERAL COMMUNICATION INC 991 41.261 38.669 GENERAL MUS INC 64.37 295.716 1.106.976 GENERAL MUS INC 940 332.06 388.585 GENERAL MUS INCORP 20.13 333.206 388.585 GENERAL MUS INCORP 1.061 95.03 100.006 GENERAL MUS INCORP 1.312 1.515 11.651 GENERAL MUS INCORP 1.322 1.313 1.516 < | | | | |
| GAP INC 1,587 43,135 54,053 GARDNER DENVER HOLDINGS INC 35,932 943,502 1,219,173 GARTIN LTD 802 28,182 47,775 GARTINER INC CL A 655 71,205 80,663 GARTINER INC CL A 13,262 1,647,118 1,633,215 GEA NATURAL SDG SA UNSPONSORED 6622 29,337 31,289 GELY AUTOMOBILE HLDGS UNSPONSORED 629 40,206 43,716 GENERAL COMMUNICATION INC 991 41,261 38,669 GENERAL MUSINC 41,71 242,450 247,299 GENERAL MUSINC 43,132 1,106,976 24,133 GENERAL MUSINC 9,480 333,206 388,855 GENERAL MUSINC 9,480 333,206 388,855 GENERAL MUSINC 4,527 13,008 10,054 <td></td> <td></td> <td></td> <td></td> | | | | |
| GARDNER DENVER HOLDINGS INC 35,932 945,502 1,219,173 GARMIN LTD 802 28,182 47,775 GARTINER INC CL A 13,262 1,647,118 1,633,215 GAS NATURAL SDG SA UNSPONSORED 6,687 30,732 30,526 GEA GROUP AG SPONSORED 6622 29,337 31,289 GEELY AUTOMOBILE HLDGS UNSPONSORED 629 40,206 43,716 GEMARLO VAG SPONSORED 483 11,613 14,308 GENER& MARITIME INC 3,116 15,394 20,628 GENERAL COMMUNICATION INC 991 41,261 38,669 GENERAL LELCTRIC CORP 2,013 302,373 409,545 GENERAL MLS INC 4,171 242,450 247,299 GENERAL MLS INC 4,171 242,450 247,29 | | | | |
| GARMIN LTD 802 28,182 47,775 GARTINER INC CL A 655 71,205 80,663 GARTINER INC CL A 15,262 1,647,118 1,63,215 GAR SNATURAL SDG SA UNSPONSORED 6687 30,732 30,526 GEA GROUP AG SPONSORED 6622 29,337 31,289 GEELY AUTOMOBILE HLDGS UNSPONSORED 6433 11,613 14,308 GENERA AUTON SPONSORED 483 11,613 14,308 GENERAL COMMUNICATION INC 991 41,261 38,669 GENERAL COMMUNICATION INC 991 41,261 38,669 GENERAL MLS INC 4,171 242,450 247,299 GENERAL MLS INC 4,171 242,450 247,299 GENERAL MLS INC 4,171 242,450 247,299 GENERAL MOTORS CO 9,480 333,206 388,585 GENERAL SPONSORED 1,061 95,803 100,806 GENERAL SPONSORED 1,061 95,803 100,806 GENERAL SPONSORED 1,061 95,803 100,806 </td <td></td> <td></td> <td></td> <td>,</td> | | | | , |
| GARTNER INC CL A 655 71,205 80,663 GARTNER INC CL A 13,262 1.647,118 1.633,215 GAS NATURAL SDG SA UNSPONSORED 6,667 30,732 30,256 GEA GROUP AG SPONSORED 652 29,337 31,289 GEELY AUTOMOBILE HLDGS UNSPONSORED 643 11,613 14,308 GENERS MARITIME INC 3,116 15,394 20,628 GENERAL COMMUNICATION INC 991 41,261 38,669 GENERAL DYNAMICS CORP 2,013 302,373 409,545 GENERAL MUS INC 4,171 242,450 247,299 GENERAL MOTORS CO 9,480 333,206 388,585 GENERAL MOTORS CO 9,480 333,206 388,585 GENERAL MOTORS CO 885 49,182 28,763 GENURAL MOTORS CO 1,061 95,803 10,0806 GENURAL MOTORS CO 1,061 95,803 10,605 GENDAL SA SPONSORED 1,061 95,803 10,605 GENDAL PARTS CO 1,061 95,804 14,561 | | | , | |
| GARTNER INC CL A 13,262 1,647,118 1,633,215 GAS NATURAL SDG SA UNSPONSORED 6,687 30,322 30,526 GEA GROUP AG SPONSORED 629 40,026 43,716 GEMALTO SPONSORED 629 40,026 43,716 GEMER MARTIME INC 3,116 15,394 20,028 GENERAL DYNAMICS CORP 2,013 302,373 409,545 GENERAL LECTRIC CORP 63,437 295,716 1,106,976 GENERAL LECTRIC CORP 63,437 295,716 1,106,976 GENERAL MLS INC 4,171 242,450 247,299 GENERAL MELCTRIC CORP 63,437 29,576 30,080 GENERAL MCORS CO 9,480 333,206 388,585 GENERAL MOTORS CO 9,480 333,206 388,585 GENERAL MOTORS CO 1,061 95,803 100,806 GERDAU SA SPONSORED 1,321 11,451 1,651 GENERAL MOTORS CO 9,003 31,331 GILDAN ACTIVEWEAR INC-CL A 970 29,903 31,331 GENDAUN | | | 28,182 | 47,775 |
| GAS NATURAL SDG SA UNSPONSORED 6,687 30,732 30,526 GEA GROUP AG SPONSORED 652 29,337 31,280 GEELY AUTOMOBULE HLDGS UNSPONSORED 629 40,206 43,3716 GEMALTO SPONSORED 483 11,613 14,308 GENERAL COMMUNICATION INC 991 41,261 38,869 GENERAL COMMUNICATION INC 991 41,261 38,869 GENERAL CLOCMUNICATION INC 991 41,261 38,869 GENERAL LECTRIC CORP 63,437 295,716 1,106,976 GENERAL MUS INC 4,171 24,2450 247,299 GENERAL MILS INC 4,171 24,2450 247,299 GENERAL MOTORS CO 9,480 333,206 388,585 GENUENE AN SPONSORED 1,061 95,803 100,806 GENUENE AN SPONSORED 1,061 95,803 100,806 GENDAU SA SPONSORED 1,006 19,061 14,561 GENDAU SA SPONSORED 1,006 19,061 14,561 GETINCE AB UNSPONSORED 1,002 80,933 | | | | |
| GEA GROUP AG SPONSORED 652 29,337 31,289 GEELY AUTOMOBILE HLDGS UNSPONSORED 629 40,206 43,716 GEMALTO SPONSORED 483 11,613 14,308 GENERS MARITIME INC 3,116 15,394 20,628 GENERAL COMMUNICATION INC 991 41,261 38,669 GENERAL LECTRIC CORP 2,013 302,373 409,545 GENERAL MLS INC 4,171 242,450 247,299 GENERAL MLS INC 4,171 242,450 247,299 GENERAL MLS INC 4,171 242,450 28,763 GENESCO INC 885 49,182 28,763 GENEAS ANS SPONSORED 1,861 95,803 100,806 GERDAU SA SPONSORED 3,132 11,515 11,651 GETINGE AB UNSPONSORED 1,006 19,061 14,561 GULA AN ACTIVEWEAR INC-CL A 970 29,093 31,331 GILEAD SCIENCES INC 9,722 1,041,810 696,484 GIVAUDAN SA UNSPONSORED 1,024 80,777 10,064 | GARTNER INC CL A | | 1,647,118 | 1,633,215 |
| GEELY AUTOMOBILE HILDGS UNSPONSORED 629 40,206 43,716 GEMALTO SPONSORED 483 11,613 14,308 GENER& MARITIME INC 3,116 15,394 20,628 GENERAL COMMUNICATION INC 991 41,261 38,669 GENERAL DYNAMICS CORP 2,013 302,373 409,545 GENERAL MUSINC CORP 63,437 295,716 1,106,976 GENERAL MIS INC 4,171 242,450 247,299 GENERAL MAIS INC 4,911 242,450 247,299 GENERAL MATORS CO 9,480 333,206 388,585 GENNAB A/S SPONSORED 187 21,483 15,499 GENUNE PARTS CO 1,061 95,803 100,806 GERDAU SA SPONSORED 1,006 19,061 14,561 GEOP INC 4,527 131,068 105,887 GILDAN ACTIVEWEAR INC-CL A 970 29,903 31,331 GILACIER BANCORP INC 1,084 46,790 50,902 GLACIER BANCORP INC 1,028 667,385 757,627 <td></td> <td>6,687</td> <td>30,732</td> <td>30,526</td> | | 6,687 | 30,732 | 30,526 |
| GEMALTO SPONSORED 483 1,613 14,308 GENERR MARITIME INC 3,116 15,394 20,628 GENERAL COMMUNICATION INC 991 41,261 38,669 GENERAL DYNAMICS CORP 2,013 302,373 409,545 GENERAL ELECTRIC CORP 63,437 295,716 1,106,976 GENERAL MLS INC 4,171 242,450 247,299 GENERAL MOTORS CO 9,480 333,206 388,585 GENERAL MOTORS CO 9,480 333,206 388,585 GENUNE PARTS CO 1,061 95,803 100,806 GERDAU SA SPONSORED 3,132 11,515 11,651 GETINGE AB UNSPONSORED 1,006 19,061 14,561 GILDAN ACTIVEWEAR INC-CL A 970 29,903 31,331 GILAD SCIENCES INC 9,722 1,041,810 696,484 GIVAUDAN SA UNSPONSORED 1,084 467,90 50,092 GLACIER BANCORP INC 19,234 667,385 75,7627 GLASO SMITHELINE SPONSORED 2,026 80,993 71,8 | GEA GROUP AG SPONSORED | | | 31,289 |
| GENER\$ MARITIME INC 3,116 15,394 20,628 GENERAL COMMUNICATION INC 991 41,261 38,669 GENERAL DYNAMICS CORP 2,013 302,373 409,545 GENERAL LELECTRIC CORP 63,437 295,716 1,106,976 GENERAL MLS INC 4,171 242,450 247,299 GENERAL MOTORS CO 9,480 333,206 388,585 GENESO INC 885 49,182 28,763 GENNAB A/S SPONSORED 187 21,483 15,499 GENUINE PARTS CO 1,061 95,803 100,806 GERDAU SA SPONSORED 1,016 19,061 14,561 GGP INC 4,527 131,068 105,887 GILDAN ACTIVEWEAR INC-CL A 970 29,903 31,331 GILADA SA UNSPONSORED 1,084 46,790 50,092 GLACIER BANCORP INC 19,234 667,385 757,627 GLAXO SMITHKLINE SPONSORED 2,026 80,993 71,862 GLENCCER PLC UNSPONSORED 2,026 80,993 71,862 | | | 40,206 | 43,716 |
| GENERAL COMMUNICATION INC 991 41,261 38,669 GENERAL DYNAMICS CORP 2,013 302,373 409,545 GENERAL ELECTRIC CORP 63,437 295,716 1,106,976 GENERAL MLS INC 4,171 242,450 247,299 GENERAL MOTORS CO 9,480 333,206 388,585 GENERSCO INC 885 49,182 28,763 GENNBA A'S SPONSORED 1,87 21,483 15,499 GENUBE PARTS CO 1,061 95,803 100,806 GERDAU SA SPONSORED 3,132 11,515 11,651 GETINGE AB UNSPONSORED 1,006 19,061 14,561 GGP INC 4,527 131,068 105,887 GILDAN ACTIVEWEAR INC-CL A 970 29,903 31,331 GILEAD SCIENCES INC 9,722 1,041,810 696,484 GIVAUDAN SA UNSPONSORED 2,026 80,993 71,862 GLAXC SMITHKLINE SPONSORED 2,026 80,993 71,862 GLAXC SMITHKLINE SPONSORED 1,102 80,777 110,464 | GEMALTO SPONSORED | 483 | 11,613 | 14,308 |
| GENERAL DYNAMICS CORP 2,013 302,373 409,545 GENERAL ELECTRIC CORP 63,437 295,716 1,106,976 GENERAL MLS INC 4,171 242,450 247,299 GENERAL MOTORS CO 9,480 333,206 388,585 GENERAL MOTORS CO 9,480 333,206 388,585 GENERAL SPONSORED 1,87 21,483 15,499 GENUNE PARTS CO 1,061 95,803 100,806 GERDAU SA SPONSORED 1,006 19,061 14,561 GETINGE AB UNSPONSORED 1,006 19,061 14,561 GILDAN ACTIVEWEAR INC-CL A 970 29,903 31,331 GILADAN ACTIVEWEAR INC-CL A 970 29,903 71,862 GLAXO SUMTHKLINE SPONSORED 1,084 46,730 50,092 GLAXO SUMTHKLINE SPONSORED 2,026 80,993 71,862 GLOBAL PAYMENTS INC 715 6,522 5,863 GLOBAL PAYMENTS INC 7,609 732,112 762,726 GMS INC 998 34,840 37,555 <td>GENER8 MARITIME INC</td> <td>3,116</td> <td>15,394</td> <td>20,628</td> | GENER8 MARITIME INC | 3,116 | 15,394 | 20,628 |
| GENERAL ELECTRIC CORP 63,437 295,716 1,106,976 GENERAL MLS INC 4,171 242,450 247,299 GENERAL MOTORS CO 9,480 333,206 388,585 GENESCO INC 885 49,182 28,763 GENNAB A/S SPONSORED 187 21,483 15,499 GENUINE PARTS CO 1,061 95,803 100,806 GERDAU SA SPONSORED 1,061 95,803 100,806 GERDAU SA SPONSORED 1,006 19,061 14,561 GGP INC 4,527 131,068 105,887 GILDAN ACTIVEWEAR INC-CL A 970 29,903 31,331 GLEAD SCIENCES INC 9,722 1,041,810 66,484 GIVAUDAN SA UNSPONSORED 1,084 46,790 50,922 GLACIER BANCORP INC 19,244 667,385 757,627 GLASO SMITHKLINE SPONSORED 2,026 80,993 71,862 GLOBAL MEDICAL REIT INC 715 6,522 5,863 GLOBAL PAYMENTS INC 1,012 80,777 110,464 <tr< td=""><td>GENERAL COMMUNICATION INC</td><td>991</td><td>41,261</td><td>38,669</td></tr<> | GENERAL COMMUNICATION INC | 991 | 41,261 | 38,669 |
| GENERAL MLS INC 4,171 242,450 247,299 GENERAL MCTORS CO 9,480 333,206 388,585 GENNESCO INC 885 49,182 28,763 GENMAB A/S SPONSORED 187 21,483 15,499 GENUINE PARTS CO 1,061 95,803 100,806 GERDAU SA SPONSORED 3,132 11,515 11,651 GETINGE AB UNSPONSORED 1,006 19,061 14,561 GGP INC 4,527 131,068 105,887 GILDAN ACTIVEWEAR INC-CL A 970 29,903 31,331 GLEAD SCIENCES INC 9,722 1,041,810 666,484 GIVAUDAN SA UNSPONSORED 1,084 46,790 50,092 GLACIER BANCORP INC 19,234 667,385 57,627 GLASO SMITHKLINE SPONSORED 2,026 80,993 71,862 GLOBAL MEDICAL REIT INC 715 6,522 5,863 GLOBAL PAYMENTS INC 7,609 732,112 762,726 GMS INC 998 34,840 37,565 GOL | GENERAL DYNAMICS CORP | 2,013 | 302,373 | 409,545 |
| GENERAL MOTORS CO 9,480 333,206 388,585 GENESCO INC 885 49,182 28,763 GENMAB A/S SPONSORED 187 21,483 15,499 GENUINE PARTS CO 1,061 95,803 100,806 GERDAU SA SPONSORED 3,132 11,515 11,651 GETINGE AB UNSPONSORED 1,006 19,061 14,561 GOP INC 4,527 131,068 105,887 GILDAN ACTIVEWEAR INC-CL A 970 29,903 31,331 GILEAD SCIENCES INC 9,722 1,041,810 696,484 GIVAUDAN SA UNSPONSORED 1,084 46,790 50,092 GLACIER BANCORP INC 19,234 667,385 757,627 GLAXO SMITHKLINE SPONSORED 2,026 80,993 71,862 GLODAL MEDICAL REIT INC 1,102 80,777 110,464 GLOBAL PAYMENTS INC 1,102 80,777 110,464 GOLDAN SACHS GROUP INC 998 34,840 37,565 GOLDEN ENTERTAINMENT INC 1,102 80,777 110,464 </td <td>GENERAL ELECTRIC CORP</td> <td>63,437</td> <td>295,716</td> <td>1,106,976</td> | GENERAL ELECTRIC CORP | 63,437 | 295,716 | 1,106,976 |
| GENESCO INC 885 49,182 28,763 GENMAB A/S SPONSORED 187 21,483 15,499 GENUINE PARTS CO 1,061 95,803 100,806 GERDAU SA SPONSORED 3,132 11,515 11,651 GETINGE AB UNSPONSORED 1,006 19,061 14,561 GGP INC 4,527 131,068 105,887 GILDAN ACTIVEWEAR INC-CL A 970 29,903 31,331 GILEAD SCIENCES INC 9,722 1,041,810 696,484 GIVAUDAN SA UNSPONSORED 1,084 46,790 50,092 GLACIER BANCORP INC 19,234 667,385 757,627 GLAXOS SMITHKLINE SPONSORED 2,026 80,993 71,862 GLENCORE PLC UNSPONSORED 6,968 65,400 72,537 GLOBAL MEDICAL REIT INC 715 6,522 5,863 GLOBAL PAYMENTS INC 1,102 80,777 110,464 GLOBAL PAYMENTS INC 1,618 11,672 15,667 GOLDCORP INC 914 11,618 11,672 | GENERAL MLS INC | 4,171 | 242,450 | 247,299 |
| GENMAB A/S SPONSORED 187 21,483 15,499 GENUINE PARTS CO 1,061 95,803 100,806 GERDAU SA SPONSORED 3,132 11,515 11,651 GETINGE AB UNSPONSORED 1,006 19,061 14,561 GGP INC 4,527 131,068 105,887 GILDAN ACTIVEWEAR INC-CL A 970 29,903 31,331 GLEAD SCIENCES INC 9,722 1,041,810 696,484 GIVAUDAN SA UNSPONSORED 1,084 46,790 50,092 GLACIER BANCORP INC 19,234 667,385 757,627 GLAXO SMITHKLINE SPONSORED 2,026 80,993 71,862 GLENCORE PLC UNSPONSORED 2,026 80,993 71,862 GLOBAL MEDICAL REIT INC 715 6,522 5,863 GLOBAL PAYMENTS INC 1,102 80,777 110,464 GLOBAL PAYMENTS INC 7609 732,112 762,726 GMS INC 998 34,840 37,565 GOLDCORP INC 1,602 15,067 10,028 13,387 | GENERAL MOTORS CO | 9,480 | 333,206 | 388,585 |
| GENUINE PARTS CO 1,061 95,803 100,806 GERDAU SA SPONSORED 3,132 11,515 11,651 GETINGE AB UNSPONSORED 1,006 19,061 14,561 GGP INC 4,527 131,068 105,887 GILDAN ACTIVEWEAR INC-CL A 970 29,903 31,331 GILEAN ACTIVEWEAR INC-CL A 970 29,903 31,364 GIVAUDAN SA UNSPONSORED 1,084 46,790 50,092 GLACIER BANCORP INC 19,234 667,385 757,627 GLASO SMITHKLINE SPONSORED 2,026 80,993 71,862 GLENCORE PLC UNSPONSORED 2,026 80,993 71,862 GLOBAL MEDICAL REIT INC 715 6,522 5,863 GLOBAL PAYMENTS INC 1,102 80,777 110,464 GLODAN SACHS GROUP INC 998 34,840 37,565 GOLD FIELDS LTD SPONSORED 3,504 15,022 15,067 GOLDORP INC 998 34,840 37,565 GOLD FIELDS LTD SPONSORED 3,504 10,289 13,337 <td>GENESCO INC</td> <td>885</td> <td>49,182</td> <td>28,763</td> | GENESCO INC | 885 | 49,182 | 28,763 |
| GERDAU SA SPONSORED 3,132 11,515 11,651 GETINGE AB UNSPONSORED 1,006 19,061 14,561 GGP INC 4,527 131,068 105,887 GILDAN ACTIVEWEAR INC-CL A 970 29,903 31,331 GILEAD SCIENCES INC 9,722 1,041,810 696,484 GIVAUDAN SA UNSPONSORED 19,234 667,385 757,627 GLACIER BANCORP INC 19,234 667,385 757,627 GLAXO SMITHKLINE SPONSORED 2,026 80,993 71,862 GLENCORE PLC UNSPONSORED 6,968 65,400 72,537 GLOBAL MEDICAL REIT INC 715 6,522 5,863 GLOBAL PAYMENTS INC 1,102 80,777 110,464 GLOBAL PAYMENTS INC 1,102 80,777 110,464 GLOBAL PAYMENTS INC 998 34,840 37,565 GOLD FIELDS LTD SPONSORED 3,504 15,022 15,067 GOLDCORP INC 914 11,618 11,672 GOLDORN NA SACHS GROUP INC 2,682 514,955 683,2 | GENMAB A/S SPONSORED | 187 | 21,483 | 15,499 |
| GETINGE AB UNSPONSORED 1,006 19,061 14,561 GGP INC 4,527 131,068 105,887 GILDAN ACTIVEWEAR INC-CL A 970 29,903 31,331 GILEAD SCIENCES INC 9,722 1,041,810 696,484 GIVAUDAN SA UNSPONSORED 10,884 46,790 50,092 GLACIER BANCORP INC 19,234 667,385 757,627 GLAXO SMITHKLINE SPONSORED 2,026 80,993 71,862 GLENCORE PLC UNSPONSORED 6,968 65,400 72,537 GLOBAL MEDICAL REIT INC 715 6,522 5,863 GLOBAL PAYMENTS INC 1,102 80,777 110,464 GLOBAL PAYMENTS INC 998 34,840 37,565 GOLD FIELDS LTD SPONSORED 3,504 15,022 15,067 GOLDCORP INC 914 11,618 11,672 GOLDCORP INC 914 11,618 11,672 GOLDCORP INC 2,682 514,955 683,266 GOODYEAR TIRE & RUBBER CO 1,820 57,543 58,804 | GENUINE PARTS CO | 1,061 | 95,803 | 100,806 |
| GGP INC4,527131,068105,887GILDAN ACTIVEWEAR INC-CL A97029,90331,331GILEAD SCIENCES INC9,7221,041,810696,484GIVAUDAN SA UNSPONSORED1,08446,79050,092GLACIER BANCORP INC19,234667,385757,627GLAXO SMITHKLINE SPONSORED2,02680,99371,862GLENCORE PLC UNSPONSORED6,96865,40072,537GLOBAL MEDICAL REIT INC7156,5225,863GLOBAL PAYMENTS INC1,10280,777110,464GLOBAL PAYMENTS INC7,609732,112762,726GMS INC99834,84037,565GOLD FIELDS LTD SPONSORED3,50415,02215,067GOLDCORP INC91411,61811,672GOLDEN ENTERTAINMENT INC41010,28913,387GOLDMAN SACHS GROUP INC2,682514,955683,266GOODYEAR TIRE & RUBBER CO1,82057,54358,804GRANDC INC17494,81697,153GRAHAM HOLDINGS COMPANY17494,81697,153GRAND CANYON EDUCATION INC1,868166,186167,242GRANTE POINT MORTGAGE TRUST1,23323,08221,873GREAT AJAX CORP6829,3449,425 | GERDAU SA SPONSORED | 3,132 | 11,515 | 11,651 |
| GILDAN ACTIVEWEAR INC-CL A97029,90331,331GILEAD SCIENCES INC9,7221,041,810696,484GIVAUDAN SA UNSPONSORED1,08446,79050,092GLACIER BANCORP INC19,234667,385757,627GLAXO SMITHKLINE SPONSORED2,02680,99371,862GLENCORE PLC UNSPONSORED6,96865,40072,537GLOBAL MEDICAL REIT INC7156,5225,863GLOBAL PAYMENTS INC1,10280,777110,464GOLDAL PAYMENTS INC7,609732,112762,726GMS INC99834,84037,565GOLD FIELDS LTD SPONSORED3,50415,02215,067GOLDCORP INC91411,61811,672GOLDEN ENTERTAINMENT INC41010,28913,387GOLDMAN SACHS GROUP INC2,682514,955683,266GOODYEAR TIRE & RUBBER CO1,82057,54358,804GRAND CANYON EDUCATION INC1,868166,186167,242GRAND CANYON EDUCATION INC1,868166,186167,242GRANTE POINT MORTGAGE TRUST1,23323,08221,873GREAT AJAX CORP6829,3449,425 | GETINGE AB UNSPONSORED | 1,006 | 19,061 | 14,561 |
| GILEAD SCIENCES INC9,7221,041,810696,484GIVAUDAN SA UNSPONSORED1,08446,79050,092GLACIER BANCORP INC19,234667,385757,627GLAXO SMITHKLINE SPONSORED2,02680,99371,862GLENCORE PLC UNSPONSORED6,96865,40072,537GLOBAL MEDICAL REIT INC7156,5225,863GLOBAL PAYMENTS INC1,10280,777110,464GLOBAL PAYMENTS INC7,609732,112762,726GMS INC99834,84037,565GOLD FIELDS LTD SPONSORED3,50415,02215,067GOLDCORP INC91411,61811,672GOLDEN ENTERTAINMENT INC41010,28913,387GOLDMAN SACHS GROUP INC2,682514,955683,266GOODYEAR TIRE & RUBBER CO1,82057,54358,804GRACO INC19,314788,290873,379GRAHAM HOLDINGS COMPANY17494,81697,153GRAND CANYON EDUCATION INC1,868166,186167,242GRANTE POINT MORTGAGE TRUST1,23323,08221,873GREAT AJAX CORP6829,3449,425 | GGP INC | 4,527 | 131,068 | 105,887 |
| GIVAUDAN SA UNSPONSORED 1,084 46,790 50,092 GLACIER BANCORP INC 19,234 667,385 757,627 GLAXO SMITHKLINE SPONSORED 2,026 80,993 71,862 GLENCORE PLC UNSPONSORED 6,968 65,400 72,537 GLOBAL MEDICAL REIT INC 715 6,522 5,863 GLOBAL PAYMENTS INC 1,102 80,777 110,464 GLOBAL PAYMENTS INC 7,609 732,112 762,726 GMS INC 998 34,840 37,565 GOLD FIELDS LTD SPONSORED 3,504 15,022 15,067 GOLDCORP INC 914 11,618 11,672 GOLDEN ENTERTAINMENT INC 914 10,289 13,387 GOLDMAN SACHS GROUP INC 2,682 514,955 683,266 GOODYEAR TIRE & RUBBER CO 18,20 57,543 58,804 GRACO INC 19,314 788,290 873,379 GRAHAM HOLDINGS COMPANY 174 94,816 97,153 GRAND CANYON EDUCATION INC 1,868 166,186 167,242 <td>GILDAN ACTIVEWEAR INC-CL A</td> <td>970</td> <td>29,903</td> <td>31,331</td> | GILDAN ACTIVEWEAR INC-CL A | 970 | 29,903 | 31,331 |
| GLACIER BANCORP INC19,234667,385757,627GLAXO SMITHKLINE SPONSORED2,02680,99371,862GLENCORE PLC UNSPONSORED6,96865,40072,537GLOBAL MEDICAL REIT INC7156,5225,863GLOBAL PAYMENTS INC1,10280,777110,464GLOBAL PAYMENTS INC7,609732,112762,726GMS INC99834,84037,565GOLD FIELDS LTD SPONSORED3,50415,02215,067GOLDCORP INC91411,61811,672GOLDAN SACHS GROUP INC2,682514,955683,266GOODYEAR TIRE & RUBBER CO1,82057,54358,804GRACO INC19,314788,290873,379GRAHAM HOLDINGS COMPANY17494,81697,153GRAND CANYON EDUCATION INC1,868166,186167,242GRANTE POINT MORTGAGE TRUST1,23323,08221,873GREAT AJAX CORP6829,3449,425 | GILEAD SCIENCES INC | 9,722 | 1,041,810 | 696,484 |
| GLAXO SMITHKLINE SPONSORED2,02680,99371,862GLENCORE PLC UNSPONSORED6,96865,40072,537GLOBAL MEDICAL REIT INC7156,5225,863GLOBAL PAYMENTS INC1,10280,777110,464GLOBAL PAYMENTS INC7,609732,112762,726GMS INC99834,84037,565GOLD FIELDS LTD SPONSORED3,50415,02215,067GOLDCORP INC91411,61811,672GOLDEN ENTERTAINMENT INC41010,28913,387GOLDMAN SACHS GROUP INC2,682514,955683,266GOODYEAR TIRE & RUBBER CO1,82057,54358,804GRACO INC19,314788,290873,379GRAHAM HOLDINGS COMPANY17494,81697,153GRAND CANYON EDUCATION INC1,868166,186167,242GRANTE POINT MORTGAGE TRUST1,23323,08221,873GREAT AJAX CORP6829,3449,425 | GIVAUDAN SA UNSPONSORED | 1,084 | 46,790 | 50,092 |
| GLENCORE PLC UNSPONSORED6,96865,40072,537GLOBAL MEDICAL REIT INC7156,5225,863GLOBAL PAYMENTS INC1,10280,777110,464GLOBAL PAYMENTS INC7,609732,112762,726GMS INC99834,84037,565GOLD FIELDS LTD SPONSORED3,50415,02215,067GOLDCORP INC91411,61811,672GOLDEN ENTERTAINMENT INC41010,28913,387GOLDMAN SACHS GROUP INC2,682514,955683,266GOODYEAR TIRE & RUBBER CO1,82057,54358,804GRACO INC19,314788,290873,379GRAHAM HOLDINGS COMPANY17494,81697,153GRAND CANYON EDUCATION INC1,868166,186167,242GRANTE POINT MORTGAGE TRUST1,23323,08221,873GREAT AJAX CORP6829,3449,425 | GLACIER BANCORP INC | 19,234 | 667,385 | 757,627 |
| GLOBAL MEDICAL REIT INC7156,5225,863GLOBAL PAYMENTS INC1,10280,777110,464GLOBAL PAYMENTS INC7,609732,112762,726GMS INC99834,84037,565GOLD FIELDS LTD SPONSORED3,50415,02215,067GOLDCORP INC91411,61811,672GOLDEN ENTERTAINMENT INC41010,28913,387GOLDMAN SACHS GROUP INC2,682514,955683,266GOODYEAR TIRE & RUBBER CO1,82057,54358,804GRACO INC19,314788,290873,379GRAHAM HOLDINGS COMPANY17494,81697,153GRAND CANYON EDUCATION INC1,868166,186167,242GRANTE POINT MORTGAGE TRUST1,23323,08221,873GREAT AJAX CORP6829,3449,425 | GLAXO SMITHKLINE SPONSORED | 2,026 | 80,993 | 71,862 |
| GLOBAL PAYMENTS INC1,10280,777110,464GLOBAL PAYMENTS INC7,609732,112762,726GMS INC99834,84037,565GOLD FIELDS LTD SPONSORED3,50415,02215,067GOLDCORP INC91411,61811,672GOLDEN ENTERTAINMENT INC41010,28913,387GOLDMAN SACHS GROUP INC2,682514,955683,266GOODYEAR TIRE & RUBBER CO1,82057,54358,804GRACO INC19,314788,290873,379GRAHAM HOLDINGS COMPANY17494,81697,153GRAINGER W W INC37978,89589,539GRAND CANYON EDUCATION INC1,868166,186167,242GRANTE POINT MORTGAGE TRUST1,23323,08221,873GREAT AJAX CORP6829,3449,425 | GLENCORE PLC UNSPONSORED | 6,968 | 65,400 | 72,537 |
| GLOBAL PAYMENTS INC7,609732,112762,726GMS INC99834,84037,565GOLD FIELDS LTD SPONSORED3,50415,02215,067GOLDCORP INC91411,61811,672GOLDEN ENTERTAINMENT INC41010,28913,387GOLDMAN SACHS GROUP INC2,682514,955683,266GOODYEAR TIRE & RUBBER CO1,82057,54358,804GRACO INC19,314788,290873,379GRAHAM HOLDINGS COMPANY17494,81697,153GRAINGER W W INC37978,89589,539GRAND CANYON EDUCATION INC1,868166,186167,242GRANITE POINT MORTGAGE TRUST1,23323,08221,873GREAT AJAX CORP6829,3449,425 | GLOBAL MEDICAL REIT INC | 715 | 6,522 | 5,863 |
| GMS INC99834,84037,565GOLD FIELDS LTD SPONSORED3,50415,02215,067GOLDCORP INC91411,61811,672GOLDEN ENTERTAINMENT INC41010,28913,387GOLDMAN SACHS GROUP INC2,682514,955683,266GOODYEAR TIRE & RUBBER CO1,82057,54358,804GRACO INC19,314788,290873,379GRAHAM HOLDINGS COMPANY17494,81697,153GRAINGER W W INC37978,89589,539GRAND CANYON EDUCATION INC1,868166,186167,242GRANITE POINT MORTGAGE TRUST1,23323,08221,873GREAT AJAX CORP6829,3449,425 | GLOBAL PAYMENTS INC | 1,102 | 80,777 | 110,464 |
| GOLD FIELDS LTD SPONSORED3,50415,02215,067GOLDCORP INC91411,61811,672GOLDEN ENTERTAINMENT INC41010,28913,387GOLDMAN SACHS GROUP INC2,682514,955683,266GOODYEAR TIRE & RUBBER CO1,82057,54358,804GRACO INC19,314788,290873,379GRAHAM HOLDINGS COMPANY17494,81697,153GRAINGER W W INC37978,89589,539GRAND CANYON EDUCATION INC1,868166,186167,242GRANITE POINT MORTGAGE TRUST1,23323,08221,873GREAT AJAX CORP6829,3449,425 | GLOBAL PAYMENTS INC | 7,609 | 732,112 | 762,726 |
| GOLDCORP INC91411,61811,672GOLDEN ENTERTAINMENT INC41010,28913,387GOLDMAN SACHS GROUP INC2,682514,955683,266GOODYEAR TIRE & RUBBER CO1,82057,54358,804GRACO INC19,314788,290873,379GRAHAM HOLDINGS COMPANY17494,81697,153GRAINGER W W INC37978,89589,539GRAND CANYON EDUCATION INC1,868166,186167,242GRANITE POINT MORTGAGE TRUST1,23323,08221,873GREAT AJAX CORP6829,3449,425 | GMS INC | 998 | 34,840 | 37,565 |
| GOLDEN ENTERTAINMENT INC41010,28913,387GOLDMAN SACHS GROUP INC2,682514,955683,266GOODYEAR TIRE & RUBBER CO1,82057,54358,804GRACO INC19,314788,290873,379GRAHAM HOLDINGS COMPANY17494,81697,153GRAINGER W W INC37978,89589,539GRAND CANYON EDUCATION INC1,868166,186167,242GRANITE POINT MORTGAGE TRUST1,23323,08221,873GREAT AJAX CORP6829,3449,425 | GOLD FIELDS LTD SPONSORED | 3,504 | 15,022 | 15,067 |
| GOLDMAN SACHS GROUP INC2,682514,955683,266GOODYEAR TIRE & RUBBER CO1,82057,54358,804GRACO INC19,314788,290873,379GRAHAM HOLDINGS COMPANY17494,81697,153GRAINGER W W INC37978,89589,539GRAND CANYON EDUCATION INC1,868166,186167,242GRANITE POINT MORTGAGE TRUST1,23323,08221,873GREAT AJAX CORP6829,3449,425 | GOLDCORP INC | 914 | 11,618 | 11,672 |
| GOODYEAR TIRE & RUBBER CO1,82057,54358,804GRACO INC19,314788,290873,379GRAHAM HOLDINGS COMPANY17494,81697,153GRAINGER W W INC37978,89589,539GRAND CANYON EDUCATION INC1,868166,186167,242GRANITE POINT MORTGAGE TRUST1,23323,08221,873GREAT AJAX CORP6829,3449,425 | GOLDEN ENTERTAINMENT INC | 410 | 10,289 | 13,387 |
| GRACO INC19,314788,290873,379GRAHAM HOLDINGS COMPANY17494,81697,153GRAINGER W W INC37978,89589,539GRAND CANYON EDUCATION INC1,868166,186167,242GRANITE POINT MORTGAGE TRUST1,23323,08221,873GREAT AJAX CORP6829,3449,425 | GOLDMAN SACHS GROUP INC | 2,682 | 514,955 | 683,266 |
| GRAHAM HOLDINGS COMPANY17494,81697,153GRAINGER W WINC37978,89589,539GRAND CANYON EDUCATION INC1,868166,186167,242GRANITE POINT MORTGAGE TRUST1,23323,08221,873GREAT AJAX CORP6829,3449,425 | GOODYEAR TIRE & RUBBER CO | 1,820 | 57,543 | 58,804 |
| GRAINGER W W INC37978,89589,539GRAND CANYON EDUCATION INC1,868166,186167,242GRANITE POINT MORTGAGE TRUST1,23323,08221,873GREAT AJAX CORP6829,3449,425 | GRACO INC | 19,314 | 788,290 | 873,379 |
| GRAND CANYON EDUCATION INC1,868166,186167,242GRANITE POINT MORTGAGE TRUST1,23323,08221,873GREAT AJAX CORP6829,3449,425 | GRAHAM HOLDINGS COMPANY | 174 | 94,816 | 97,153 |
| GRAND CANYON EDUCATION INC1,868166,186167,242GRANITE POINT MORTGAGE TRUST1,23323,08221,873GREAT AJAX CORP6829,3449,425 | GRAINGER W W INC | 379 | 78,895 | |
| GRANITE POINT MORTGAGE TRUST 1,233 23,082 21,873 GREAT AJAX CORP 682 9,344 9,425 | GRAND CANYON EDUCATION INC | 1,868 | 166,186 | |
| GREAT AJAX CORP 682 9,344 9,425 | GRANITE POINT MORTGAGE TRUST | | | |
| | GREAT AJAX CORP | | | |
| | GREAT WESTERN BANCORP INC | 2,194 | 66,763 | |

| SECURITY NAME | QUANTITY | COST | MARKET |
|-------------------------------------|----------|---------|-----------|
| GREEN BANCORP INC | 781 | 18,109 | 15,854 |
| GREEN DOT CORP CL A | 1,795 | 38,804 | 108,167 |
| GREEN PLAINS INC | 1,254 | 33,557 | 21,130 |
| GREENBRIER COS INC | 1,018 | 37,947 | 54,259 |
| GRIFOLS S.A. SPONSORED | 1,341 | 27,845 | 30,736 |
| GRUBHUB INC | 3,243 | 169,747 | 232,847 |
| GRUPO AEROPORTUARIO PAC SPONSORED | 181 | 19,374 | 18,600 |
| GRUPO AEROPORTUARIO SPONSORED | 144 | 28,629 | 26,281 |
| GRUPO AVAL ACCIONES Y VAL SPONSORED | 2,038 | 18,711 | 17,323 |
| GRUPO FIN SANTANDER SPONSORED | 1,193 | 11,759 | 8,721 |
| GRUPO TELEVISA SA DE CV SPONSORED | 856 | 21,318 | 15,982 |
| GUESS INC | 2,250 | 36,781 | 37,980 |
| GULF IS FABRICATION INC | 917 | 11,226 | 12,311 |
| H LUNDBECK SPONSORED | 331 | 19,448 | 16,792 |
| HALLIBURTON CO | 6,273 | 244,794 | 306,562 |
| HALYARD HEALTH INC | 1,756 | 77,295 | 81,092 |
| HAMILTON BEACH BRANDS HOLDING CL A | 184 | 3,067 | 4,727 |
| HANCOCK HOLDING CO | 3,077 | 98,607 | 152,312 |
| HANESBRANDS INC | 2,635 | 75,706 | 55,098 |
| HARLEY DAVIDSON INC | 1,233 | 59,212 | 62,735 |
| HARRIS CORP DEL | 866 | 68,989 | 122,669 |
| HARTFORD FINL SVCS GROUP INC | 2,633 | 122,126 | 148,185 |
| HASBRO INC | 823 | 62,160 | 74,802 |
| HAVERTY FURNITURE COMPANIES INC | 617 | 14,450 | 13,975 |
| HAWAIIAN TELCOM | 397 | 8,857 | 12,251 |
| HCA HEALTHCARE INC | 2,089 | 144,008 | 183,498 |
| HCP INC | 3,390 | 113,623 | 88,411 |
| HEALTH INSURAN-A | 563 | 12,110 | 14,047 |
| HEIDELBERGCEMENT AG UNSPONSORED | 1,170 | 23,385 | 25,243 |
| HEINEKEN NV SPONS ADR | 1,187 | 59,730 | 61,866 |
| HELIX ENERGY SOLUTIONS GROUP | 5,212 | 49,352 | 39,298 |
| HELMERICH & PAYNE INC | 785 | 46,222 | 50,742 |
| HENKEL AG & CO KGAA SPONSORED | 431 | 52,867 | 51,787 |
| HENKEL AG & CO KGAA SPONSORED | 264 | 36,104 | 34,988 |
| HENNES & MAURITZ AB UNSPONSORED | 4,600 | 25,090 | 18,768 |
| HENRY SCHEIN INC | 1,147 | 86,706 | 80,152 |
| HERITAGE FINL CORP WASH COM | 1,125 | 34,335 | 34,650 |
| HERITAGE-CRYSTAL CLEAN INC | 492 | 9,760 | 10,701 |
| HERMES INTERNATIONAL UNSPONSORED | 656 | 33,088 | 35,096 |
| HERSHA HOSPITALITY TRUST | 1,477 | 27,588 | 25,700 |
| HESKA CORP | 238 | 11,240 | 19,090 |
| HESS CORPORATION | 1,953 | 109,757 | 92,709 |
| HEWLETT PACKARD ENTERPRISE COMPANY | 11,874 | 100,005 | 170,511 |
| HEXAGON AB UNSPONSORED | 1,082 | 53,378 | 54,371 |
| HIBBETT SPORTS INC | 919 | 12,967 | 18,748 |
| HILTON WORLDWIDE HOLDINGS INC | 1,476 | 98,031 | 117,873 |
| HILTON WORLDWIDE HOLDINGS INC | 14,455 | 759,052 | 1,154,376 |
| HITACHI LTD SPONSORED | 1,129 | 80,418 | 88,107 |
| HOLOGIC INC | 2,027 | 70,517 | 86,654 |
| HOME BANCORP INC | 243 | 10,218 | 10,502 |

| SECURITY NAME | QUANTITY | COST | MARKET |
|--------------------------------------|----------|-----------|-----------|
| HOME DEPOT INC | 8,648 | 1,075,227 | 1,639,055 |
| HOME DEPOT INC | 2,300 | 324,751 | 435,919 |
| HOMESTREET INC | 1,091 | 25,180 | 31,584 |
| HOMETRUST BANCSHARES INC | 837 | 17,243 | 21,553 |
| HONDA MOTOR LTD SPONSORED | 2,095 | 62,195 | 71,398 |
| HONEYWELL INTERNATIONAL INC | 5,650 | 591,351 | 866,484 |
| HOOKER FURNITURE | 436 | 21,078 | 18,508 |
| HORIZON GLOBAL CORP | 26,863 | 451,129 | 376,619 |
| HORMEL FOODS CORPORATION | 1,948 | 69,599 | 70,888 |
| HOST HOTELS & RESORTS, INC | 5,349 | 89,776 | 106,178 |
| HP INC | 12,073 | 159,455 | 253,654 |
| HSBC HOLDINGS PLC SPONSORED | 4,675 | 229,403 | 241,417 |
| HUANENG PWR INTL INC SPONSORED | 463 | 11,705 | 11,575 |
| HUDSON TECHNOLOGIES INC | 1,765 | 11,318 | 10,714 |
| HUMANA INC | 1,045 | 191,731 | 259,233 |
| HUMANA INC | 2,256 | 417,944 | 559,646 |
| HUNT JB TRANS SVCS | 617 | 46,836 | 70,943 |
| HUNTINGTON BANCSHARES INC | 7,879 | 76,543 | 114,718 |
| HYPERMARCAS SA SPONSORED | 1,789 | 19,482 | 19,652 |
| IBERDROLA SPONSORED | 1,382 | 44,167 | 42,752 |
| IBERIABANK CORP | 2,013 | 151,919 | 156,008 |
| ICF INTERNATIONAL INC | 724 | 23,410 | 38,010 |
| ICHOR HOLDINGS LTD | 668 | 22,625 | 16,433 |
| ICICI BANK LTD SPONSORED | 9,332 | 83,541 | 90,800 |
| ICONIX BRAND GROUP | 2,144 | 10,993 | 2,766 |
| ICU MED INC | 5,665 | 1,043,986 | 1,223,640 |
| IDEXX LABS INC | 631 | 73,171 | 98,676 |
| IDEXX LABS INC | 4,399 | 698,886 | 687,916 |
| IHS MARKIT LTD | 2,626 | 122,414 | 118,564 |
| II-VI INC | 2,154 | 46,866 | 101,130 |
| ILG INC | 3,986 | 116,934 | 113,521 |
| ILLINOIS TOOL WKS INC | 2,239 | 206,190 | 373,577 |
| ILLUMINA INC | 1,055 | 183,204 | 230,507 |
| IMPAC MORTGAGE HOLDINGS INC | 540 | 7,441 | 5,486 |
| IMPALA PLATINUM HOLDINGS SPONSORED | 4,669 | 11,840 | 12,074 |
| IMPAX LABORATORIES INC | 25,178 | 527,424 | 419,214 |
| IMPERIAL BRANDS PLC SPONSORED | 964 | 42,895 | 41,134 |
| IMPERIAL OIL LTD | 1,553 | 48,404 | 48,438 |
| INCYTE CORPORATION | 1,234 | 165,131 | 116,872 |
| INCYTE CORPORATION | 3,864 | 448,272 | 365,959 |
| INDEPENDENCE REALTY TRUST INC | 2,595 | 25,036 | 26,184 |
| INDEPENDENT BANK GROUP INC | 645 | 39,399 | 43,602 |
| INDITEX UNSPONSORED | 2,474 | 47,815 | 43,097 |
| INDUST & COMM BANK CHINA UNSPONSORED | 5,383 | 80,495 | 86,720 |
| INFINEON TECHNOLOGIES AG SPONSORED | 505 | 12,373 | 13,774 |
| INFOSYS LTD SPONSORED | 5,856 | 86,779 | 94,984 |
| INFRAREIT INC | 1,462 | 33,914 | 27,164 |
| ING GROEP NV SPONSORED | 3,941 | 71,914 | 72,751 |
| INGENICO GROUP UNSPONSORED | 1,534 | 29,523 | 32,889 |
| INGERSOLL-RAND PLC | 1,834 | 107,907 | 163,574 |
| | | | |

| SECURITY NAME | QUANTITY | COST | MARKET |
|--------------------------------------|----------|-----------|-----------|
| INGLES MARKETS INC | 446 | 21,902 | 15,432 |
| INNERWORKINGS INC | 1,844 | 15,550 | 18,495 |
| INOGEN INC | 616 | 32,573 | 73,353 |
| INSIGHT ENTERPRISES INC | 1,443 | 39,956 | 55,252 |
| INSPERITY INC | 1,384 | 43,527 | 79,372 |
| INSTALLED BUILDING PRODUCTS | 743 | 26,754 | 56,431 |
| INSTRUCTURE INC | 717 | 24,994 | 23,733 |
| INTEGER HOLDINGS CORPORATION | 1,056 | 57,348 | 47,837 |
| INTEL CORP | 34,499 | 1,192,221 | 1,592,474 |
| INTERCONTINENTAL EXCHANGE INC | 4,254 | 217,290 | 300,162 |
| INTERCONTINENTAL EXCHANGE INC | 15,300 | 813,552 | 1,079,568 |
| INTERCONTINENTAL HOTELS SPONSORED | 612 | 30,811 | 38,868 |
| INTERNATIONAL BANCSHARES CORP | 2,033 | 53,657 | 80,710 |
| INTERNATIONAL FLAVORS & FRAGRANCES | 571 | 65,950 | 87,140 |
| INTERNATIONAL PAPER CO | 2,985 | 130,185 | 172,951 |
| INTERNATIONAL SEAWAYS INC | 1,095 | 19,605 | 20,214 |
| INTERPUBLIC GROUP COS INC | 2,843 | 64,212 | 57,315 |
| INTERSECT ENT INC | 1,020 | 31,203 | 33,048 |
| INTESA SANPAOLO SPONSORED | 2,770 | 58,749 | 55,275 |
| INTL BUSINESS MACHINES CORP | 6,404 | 908,396 | 982,502 |
| INTL CONSOLIDATED AIRLINES SPONSORED | 720 | 11,524 | 12,614 |
| INTREPID POTASH INC | 3,568 | 13,510 | 16,984 |
| INTUIT INC | 1,759 | 172,102 | 277,535 |
| INTUIT INC | 7,378 | 891,142 | 1,164,101 |
| INTUITIVE SURGICAL INC | 810 | 143,154 | 295,601 |
| INTUITIVE SURGICAL INC | 5,187 | 930,534 | 1,892,944 |
| INVACARE CORP | 1,235 | 18,042 | 20,810 |
| INVESCO LTD | 2,941 | 100,069 | 107,464 |
| INVESCO MORTGAGE | 4,190 | 50,886 | 74,708 |
| IQVIA HOLDINGS INC | 1,096 | 104,308 | 107,298 |
| IRHYTHM TECHNOLOGIES INC | 682 | 36,131 | 38,226 |
| IRIDIUM COMMUNICATIONS, INC. | 3,150 | 27,630 | 37,170 |
| IROBOT CORP | 1,058 | 43,928 | 81,149 |
| IRON MOUNTAIN INC | 1,911 | 68,092 | 72,102 |
| ISRAEL CHEMICALS LTD | 4,159 | 18,866 | 16,802 |
| ISTAR INC | 2,708 | 32,673 | 30,600 |
| ITAU UNIBANCO HOLDING SPONSORED | 3,187 | 43,882 | 41,431 |
| ITERIS INC | 1,016 | 7,332 | 7,082 |
| ITRON INC | 1,280 | 101,638 | 87,296 |
| J SAINSBURY PLC SPONSORED | 2,208 | 29,449 | 28,792 |
| JACOBS ENGINEERING GROUP INC | 870 | 33,843 | 57,385 |
| JAMES HARDIE INDS-SPONSORED | 2,118 | 29,623 | 37,298 |
| JAMES RIVER GROUP HOLDINGS LTD | 20,208 | 808,902 | 808,522 |
| JAPAN AIRLINES CO UNSPONSORED | 1,137 | 18,862 | 22,274 |
| JAPAN EXCHANGE GROUP INC UNSPONSORED | 4,765 | 40,721 | 41,551 |
| JAPAN TOBACCO INC UNSPONSORED | 3,297 | 54,807 | 52,983 |
| JARDINE MATHESON UNSPONSORED | 1,322 | 86,368 | 80,292 |
| JBS SA SPONSORED | 2,179 | 11,739 | 12,878 |
| JD COM INC SPONSORED | 1,151 | 50,561 | 47,674 |
| JERNIGAN CAPITAL INC | 502 | 10,852 | 9,543 |

| SECURITY NAME | QUANTITY | COST | MARKET |
|--------------------------------------|----------|-----------|-----------|
| JGC CORP UNSPONSORED | 923 | 28,906 | 35,914 |
| JM SMUCKER CO | 821 | 95,775 | 102,001 |
| JOHN B SANFILIPPO & SON | 300 | 19,908 | 18,975 |
| JOHNSON & JOHNSON | 19,750 | 2,025,152 | 2,759,470 |
| JOHNSON CONTROLS INTERNATIONAL PLC | 6,740 | 321,145 | 256,861 |
| JOHNSON OUTDOORS INC CL A | 199 | 5,377 | 12,356 |
| JP MORGAN CHASE & CO | 25,704 | 378,262 | 2,748,786 |
| JULIUS BAER GROUP LTD UNSPONSORED | 5,530 | 64,733 | 67,466 |
| JUNIPER NETWORKS INC | 2,749 | 86,927 | 78,347 |
| K12 INC | 1,583 | 24,397 | 25,170 |
| K2M GROUP HOLDINGS INC | 22,198 | 471,042 | 399,564 |
| KADANT INC | 514 | 21,207 | 51,606 |
| KANSAS CITY SOUTHERN | 762 | 63,424 | 80,178 |
| KAO CORP SPONSORED | 1,053 | 63,790 | 71,156 |
| KASIKORNBANK PUBLIC COMPANY LTD | 3,150 | 84,882 | 93,177 |
| KB FINANCIAL GROUP INC SPONSORED | 2,127 | 103,365 | 124,451 |
| KB HOME COM | 3,127 | 43,900 | 99,908 |
| KBC GROUP NV UNSPONSORED | 1,123 | 47,384 | 48,019 |
| KDDI CORP UNSPONSORED | 3,411 | 45,013 | 42,196 |
| KELLOGG CO | 1,796 | 127,199 | 122,092 |
| KELLY SERVICES INC | 1,140 | 21,339 | 31,088 |
| KEMET CORPORATION | 1,559 | 13,153 | 23,479 |
| KEMPER CORPORATION | 1,965 | 76,595 | 135,389 |
| KERING SA UNSPONSORED | 1,300 | 51,420 | 61,191 |
| KEYCORP | 7,861 | 100,659 | 158,556 |
| KIMBALL ELECTRONICS INC | 1,025 | 13,233 | 18,706 |
| KIMBALL INTL INC CL B | 1,496 | 18,991 | 27,930 |
| KIMBERLY CLARK CORP | 2,554 | 309,091 | 308,166 |
| KIMCO REALTY CORP | 3,077 | 82,905 | 55,848 |
| KINDER MORGAN INC | 13,878 | 365,169 | 250,775 |
| KINGFISHER PLC SPONSORED | 3,806 | 32,488 | 35,853 |
| KINROSS GOLD CORP | 2,598 | 11,454 | 11,223 |
| KINSALE CAPITAL GROUP INC | 731 | 31,860 | 32,895 |
| KIRIN HOLDINGS COMPANY SPONSORED | 2,875 | 65,438 | 72,608 |
| KLA-TENCOR CORP | 1,134 | 75,011 | 119,149 |
| KLX INC | 1,930 | 73,746 | 131,723 |
| KMG CHEMICALS INC | 362 | 12,545 | 23,921 |
| KOC HOLDING AS UNSPONSORED | 1,200 | 28,575 | 29,317 |
| KOHLS CORP | 1,219 | 56,030 | 66,106 |
| KOMATSU LTD SPONSORED | 1,740 | 49,534 | 63,040 |
| KONE OYJ UNSPONSORED | 1,358 | 37,846 | 36,367 |
| KONINKLIJKE AHOLD DELHAIZE SPONSORED | 1,966 | 35,875 | 43,272 |
| KONINKLIJKE DSM NV SPONSORED | 1,638 | 32,675 | 39,115 |
| KONINKLIJKE PHILIPS NV | 1,132 | 47,300 | 42,790 |
| KOREA ELECTRIC POWER CORP SPONSORED | 5,254 | 92,076 | 93,048 |
| KRAFT HEINZ CO | 4,315 | 334,067 | 335,534 |
| KRATON CORP | 1,189 | 36,233 | 57,274 |
| KRATOS DEFENSE & SECURITY | 2,677 | 34,525 | 28,349 |
| KROGER CO | 6,486 | 244,758 | 178,041 |
| KRONOS WORLDWIDE INC | 826 | 21,625 | 21,286 |
| | | | |

| SECURITY NAME | QUANTITY | COST | MARKET |
|------------------------------------|----------|-----------|-----------|
| KT CORP SPONSORED | 5,944 | 84,259 | 92,786 |
| KUBOTA SPONSORED | 383 | 34,899 | 37,794 |
| KULICKE & SOFFA INDS INC | 2,674 | 35,748 | 65,072 |
| KYOCERA CORP | 1,489 | 93,880 | 97,544 |
| L BRANDS, INC | 1,804 | 172,725 | 108,637 |
| L3 TECHNOLOGIES INC | 565 | 74,882 | 111,785 |
| LABORATORY CORP AMERICA HOLDINGS | 736 | 90,381 | 117,399 |
| LAFARGEHOLCIM LTD UNSPONSORED | 3,099 | 37,983 | 34,740 |
| L'AIR LIQUIDE UNSPONSORED | 1,312 | 30,915 | 33,003 |
| LAKELAND BANCORP INC | 1,727 | 22,367 | 33,245 |
| LAM RESEARCH CORP | 1,174 | 111,544 | 216,098 |
| LANTHEUS HOLDINGS INC | 1,105 | 20,177 | 22,597 |
| LAUDER ESTEE COS CL-A | 1,618 | 133,532 | 205,874 |
| LAUREATE EDUCATION INC CL A | 1,328 | 18,472 | 18,008 |
| LA-Z-BOY INC | 1,811 | 47,907 | 56,503 |
| LCI INDUSTRIES | 920 | 61,353 | 119,600 |
| LEGG MASON INC | 3,266 | 126,840 | 137,107 |
| LEGGETT & PLATT INC | 956 | 43,030 | 45,630 |
| LEMAITRE VASCULAR INC | 507 | 6,758 | 16,143 |
| LENDINGTREE INC | 270 | 44,086 | 91,922 |
| LENNAR CORP-CL A | 1,469 | 66,671 | 92,900 |
| LENOVO GROUP LTD SPONSORED | 2,755 | 29,360 | 30,966 |
| LEUCADIA NATIONAL CORP | 2,289 | 55,945 | 60,636 |
| LG DISPLAY CO LTD SPONSORED | 5,439 | 75,967 | 74,841 |
| LGI HOMES INC | 601 | 20,256 | 45,093 |
| LHC GROUP INC | 553 | 24,383 | 33,871 |
| LIBERTY EXPEDIA HOLDINGS INC SER A | 2,013 | 113,692 | 89,236 |
| LIFETIME BRANDS INC | 454 | 8,670 | 7,491 |
| LILLY ELI & CO | 7,003 | 579,085 | 591,473 |
| LIMELIGHT NETWORK | 2,790 | 13,900 | 12,304 |
| LINCOLN ELEC HLDGS INC | 9,697 | 901,675 | 888,051 |
| LINCOLN NATL CORP | 1,601 | 85,353 | 123,069 |
| LINE CORP SPONSORED | 530 | 18,597 | 21,725 |
| LITHIA MOTORS INC-CLASS A | 7,815 | 887,456 | 887,706 |
| LIVEPERSON INC | 2,035 | 29,619 | 23,403 |
| LKQ CORP | 2,233 | 70,183 | 90,816 |
| LLOYDS BANKING GROUP PLC-SPONSORED | 19,122 | 68,366 | 71,708 |
| LOCALIZA RENT A CAR SPONSORED | 4,335 | 28,126 | 29,352 |
| LOCKHEED MARTIN CORP | 1,811 | 399,766 | 581,422 |
| LOEWS CORPORATION | 1,995 | 76,897 | 99,810 |
| LOGMEIN INC | 9,657 | 1,160,053 | 1,105,727 |
| LONDON STOCK EXCHANGE UNSPONSORED | 5,459 | 71,875 | 71,295 |
| LONZA GROUP AG UNSPONSORED | 1,744 | 46,090 | 47,053 |
| L'OREAL CO UNSPONSORED | 1,186 | 50,551 | 52,516 |
| LOWES COS INC | 6,102 | 451,431 | 567,120 |
| LOXO ONCOLOGY INC | 809 | 70,084 | 68,102 |
| LUFTHANSA SPONSORED | 752 | 20,324 | 27,674 |
| LUKOIL PJSC SPONSORED | 1,355 | 69,456 | 78,116 |
| LUMBER LIQUIDATORS HOLDINGS INC | 1,067 | 37,206 | 33,493 |
| LUMENTUM HOLDINGS INC | 2,307 | 81,363 | 112,812 |

| SECURITY NAME | QUANTITY | COST | MARKET |
|--------------------------------------|----------|-----------|-----------|
| LUXOTTICA GROUP SPA SPONSORED | 360 | 20,475 | 22,021 |
| LVMH MOET HENNESSY LOUIS UNSPONSORED | 1,396 | 76,980 | 81,945 |
| LYONDELLBASELL INDUSTRIES NV | 2,346 | 216,710 | 258,811 |
| M & T BANK CORP | 1,098 | 135,935 | 187,747 |
| M/I HOMES, INC. | 1,117 | 26,680 | 38,425 |
| MACERICH CO COM | 787 | 67,141 | 51,690 |
| MACQUARIE GROUP LTD SPONSORED | 911 | 64,589 | 70,666 |
| MACY'S INC | 2,201 | 110,486 | 55,443 |
| MAGELLAN HEALTH INC | 889 | 58,872 | 85,833 |
| MAGIC LEAP INC | 4,645 | 106,988 | 125,415 |
| MAGIC LEAP INC | 1,126 | 30,402 | 30,402 |
| MAGNA INTERNATIONAL INC CL A | 664 | 34,644 | 37,629 |
| MAINSOURCE FINANCIAL GROUP INC | 1,000 | 23,878 | 36,310 |
| MAKITA CORP-SPONSORED | 1,244 | 51,264 | 52,522 |
| MANTECH INTERNATIONAL CORP CL A | 907 | 29,682 | 45,522 |
| MANULIFE FINANCIAL CORP | 2,830 | 56,069 | 59,034 |
| MARATHON OIL CORP | 6,144 | 94,278 | 104,018 |
| MARATHON PETROLEUM CORPORATION | 3,659 | 184,295 | 241,421 |
| MARINE HARVEST ASA SPONSORED | 1,539 | 29,621 | 26,086 |
| MARKETAXESS | 9,734 | 1,758,746 | 1,963,835 |
| MARKS & SPENCER PLC SPONSORED | 2,181 | 20,408 | 18,386 |
| MARRIOT VACATIONS WORLDWIDE CORP | 904 | 115,296 | 122,230 |
| MARRIOTT INTERNATIONAL INC | 2,261 | 160,173 | 306,886 |
| MARSH & MCLENNAN COS INC | 3,705 | 207,849 | 301,550 |
| MARTIN MARIETTA MATLS INC | 454 | 70,135 | 100,352 |
| MASCO CORP | 2,303 | 67,452 | 101,194 |
| MASIMO CORP | 1,765 | 97,221 | 149,672 |
| MASTEC INC | 2,515 | 107,911 | 123,109 |
| MASTERCARD INC CL A | 6,896 | 695,618 | 1,043,779 |
| MATADOR RESOURCES CO | 25,673 | 688,435 | 799,200 |
| MATERION CORP | 720 | 30,787 | 34,992 |
| MATTEL INC | 2,477 | 57,997 | 38,096 |
| MAURI GROUP CO., LTD UNSPONSORED | 972 | 28,062 | 35,740 |
| MAXAR TECHNOLOGIES LTD | 1,143 | 66,932 | 73,518 |
| MAZDA MTR CORP UNSPONSORED | 2,762 | 20,515 | 18,340 |
| MBIA INC | 4,962 | 38,683 | 36,322 |
| MCBC HOLDINGS INC | 620 | 14,223 | 13,776 |
| MCCORMICK & CO INC | 860 | 72,358 | 87,643 |
| MCDERMOTT INTERNATIONAL INC | 11,332 | 62,558 | 74,565 |
| MCDONALDS CORP | 5,983 | 681,814 | 1,029,794 |
| MCGRATH RENTCORP | 901 | 40,838 | 42,329 |
| MCKESSON CORP | 1,520 | 275,813 | 237,044 |
| MDC HOLDINGS INC | 1,683 | 39,571 | 53,643 |
| MEDEQUITIES REALTY TRUST INC | 1,192 | 13,906 | 13,374 |
| MEDICAL PROPERTIES TRUST INC | 4,852 | 70,542 | 66,861 |
| MEDIFAST INC | 466 | 19,646 | 32,531 |
| MEDTRONIC PLC | 10,048 | 750,445 | 811,376 |
| MELCO RESORTS & ENTERTAINMENT | 1,530 | 36,297 | 44,431 |
| MERCK & CO INC | 20,077 | 1,120,395 | 1,129,733 |
| MERCK & CO INC | 11,700 | 726,108 | 658,359 |

| SECURITY NAME | QUANTITY | COST | MARKET |
|--------------------------------------|----------|-----------|-----------|
| MERCURY SYSTEMS, INC. | 1,952 | 64,400 | 100,235 |
| MERIT MED SYSTEM INC | 1,891 | 40,536 | 81,691 |
| MERITAGE HOMES CORPORATION | 1,433 | 69,369 | 73,370 |
| METHANEX CORP | 370 | 19,180 | 22,404 |
| METLIFE INC | 7,683 | 350,622 | 388,452 |
| METTLER-TOLEDO INTERNATIONAL INC | 186 | 74,690 | 115,231 |
| MFA FINANCIAL INC | 14,311 | 107,964 | 113,343 |
| MGIC INVESTMENT CORPORATION | 13,908 | 191,531 | 196,242 |
| MGM RESORTS INTERNATIONAL | 3,742 | 128,260 | 124,945 |
| MGP INGREDIENTS INC | 554 | 26,633 | 42,592 |
| MICHAEL KORS HOLDINGS LTD | 1,096 | 49,676 | 68,993 |
| MICHAELS COS INC/THE | 30,774 | 657,625 | 744,423 |
| MICHELIN (CGDE) UNSPONSORED | 1,690 | 48,950 | 48,368 |
| MICROCHIP TECHNOLOGY INC | 1,682 | 89,039 | 147,814 |
| MICRON TECHNOLOGY INC | 8,714 | 187,801 | 358,320 |
| MICROSOFT CORP | 56,617 | 3,089,183 | 4,843,018 |
| MICROSOFT CORP | 53,400 | 3,382,987 | 4,567,836 |
| MID-AMER APARTMENT COMM | 821 | 72,995 | 82,560 |
| MID-AMER APARTMENT COMM | 7,228 | 776,719 | 726,848 |
| MIDDLEBY CORP | 5,761 | 711,189 | 777,447 |
| MILLER HERMAN INC | 2,245 | 65,364 | 89,912 |
| MILLER INDUSTRIES INC/TENN | 467 | 11,151 | 12,049 |
| MIMEDX GROUP INC | 3,884 | 54,012 | 48,977 |
| MISCELLANEOUS | | | (738) |
| MITEK SYSTEMS INC | 1,262 | 8,969 | 11,295 |
| MITSUBISHI CORP SPONSORED | 864 | 40,599 | 47,909 |
| MITSUBISHI ELECTRIC CORP UNSPONSORED | 1,641 | 52,542 | 54,580 |
| MITSUBISHI ESTATE | 5,662 | 95,778 | 98,066 |
| MITSUBISHI UFJ FINANCIAL-SPONSORED | 13,607 | 86,609 | 98,923 |
| MITSUI & CO LTD SPONSORED | 114 | 34,556 | 37,221 |
| MITSUI FUDOSAN CO LTD UNSPONSORED | 1,703 | 107,303 | 107,289 |
| MIZUHO FINANCIAL GROUP INC SPONSORED | 12,318 | 43,426 | 44,838 |
| MMC NORILSK NICKEL PJSC SPONSORED | 710 | 11,792 | 13,426 |
| MOBILE TELESYSTEMS SPONSORED | 1,808 | 19,551 | 18,424 |
| MODINE MFG CO | 1,965 | 23,809 | 39,693 |
| MOHAWK INDUSTRIES INC | 457 | 89,645 | 126,086 |
| MOLSON COORS BREWING CO-B | 1,335 | 121,417 | 109,563 |
| MOMO INC SPONSORED | 325 | 11,398 | 7,956 |
| MONARCH CASINO & RESORT INC | 613 | 15,266 | 27,475 |
| MONDELEZ INTERNATIONAL INC | 10,898 | 497,182 | 466,434 |
| MONSANTO CO | 3,176 | 297,334 | 370,893 |
| MOODYS CORP | 1,201 | 119,189 | 177,280 |
| MORGAN STANLEY | 10,222 | 340,687 | 536,348 |
| MORGAN STANLEY | 23,666 | 798,733 | 1,241,755 |
| MOTOROLA SOLUTIONS, INC | 1,176 | 82,636 | 106,240 |
| MOVADO GROUP INC | 574 | 12,944 | 18,483 |
| MTGE INVESTMENT CORP | 1,637 | 23,769 | 30,285 |
| MTN GROUP LTD SPONSORED | 2,426 | 22,288 | 26,371 |
| MUENCHENER UNSPONSORED | 2,512 | 52,343 | 54,360 |
| MURPHY OIL CORP | 6,157 | 158,455 | 191,175 |

| SECURITY NAME | QUANTITY | COST | MARKET |
|--|-----------|------------|------------|
| MYLAN NV | 3,876 | 160,034 | 163,994 |
| NASDAQ INC | 844 | 58,288 | 64,845 |
| NASPERS LTD SPONSORED | 2,641 | 119,781 | 149,481 |
| NATIONAL AUSTRALIA BK LTD SPONSORED | 8,344 | 104,260 | 95,622 |
| NATIONAL GRID PLC SPONSORED | 529 | 34,206 | 31,110 |
| NATIONAL PRESTO INDS INC | 167 | 14,706 | 16,608 |
| NATIONAL RESEARCH CORP | 346 | 13,052 | 12,906 |
| NATIONAL-OILWELL INC | 2,747 | 101,587 | 98,947 |
| NATIONSTAR MORTGAGE HLDGS INC | 1,065 | 20,938 | 19,703 |
| NAVIENT CORP | 1,981 | 27,358 | 26,387 |
| NEDBANK GROUP LTD SPONSORED | 1,842 | 28,694 | 38,083 |
| NELNET INC-A | 836 | 32,007 | 45,796 |
| NESTLE SA SPONSORED | 3,380 | 282,083 | 290,579 |
| NETAPP INC | 1,950 | 61,987 | 107,874 |
| NETEASE INC SPONSORED | 125 | 35,270 | 43,134 |
| NETFLIX INC | 3,229 | 348,223 | 619,839 |
| NETFLIX INC | 3,100 | 337,853 | 595,076 |
| NETSCOUT SYSTEMS INC | 3,361 | 104,665 | 102,342 |
| NEUBERGER BERMAN HIGH INCOME BOND | 1,378,961 | 11,767,806 | 11,983,173 |
| NEW MEDIA INVESTMENT GROUP INC | 1,936 | 27,777 | 32,486 |
| NEW ORIENTAL EDUCATION SPONSORED | 492 | 42,541 | 46,248 |
| NEW YORK TIMES CO | 4,717 | 91,763 | 87,265 |
| NEWCREST MINING LTD SPONSORED | 1,458 | 26,402 | 26,025 |
| NEWELL BRANDS INC | 3,543 | 162,848 | 109,479 |
| NEWFIELD EXPLORATION CO | 1,440 | 50,275 | 45,403 |
| NEWMONT MNG CORP | 3,854 | 91,989 | 144,602 |
| NEWPARK RESOURCES INC | 3,213 | 30,381 | 27,632 |
| NEWS CORP/NEW CL A | 2,482 | 37,255 | 40,233 |
| NEWS CORP/NEW CL B | 1,576 | 24,412 | 26,162 |
| NEWSTAR FINANCIAL INC | 1,190 | - | 12 |
| NEXEO SOLUTIONS INC | 2,679 | 20,111 | 24,379 |
| NEXTERA ENERGY INC | 3,516 | 385,525 | 549,164 |
| NICE LTD SPONSORED | 238 | 19,506 | 21,875 |
| NIDEC CORPORATION SPONSORED | 1,664 | 50,699 | 58,490 |
| NIELSEN HOLDINGS PLC | 2,428 | 116,836 | 88,379 |
| NIKE INC-CLASS B | 9,498 | 615,672 | 594,100 |
| NIKE INC-CLASS B | 4,200 | 269,825 | 262,710 |
| NIKON CORP UNSPONSORED | 2,917 | 50,539 | 58,734 |
| NINTENDO LTD UNSPONSORED | 1,225 | 58,297 | 55,211 |
| NIPPON TELEGRAPH & TELEPHN SPONSORED | 857 | 39,242 | 40,485 |
| NISOURCE INC | 2,356 | 48,365 | 60,479 |
| NISSAN MOTOR LTD SPONSORED | 1,170 | 24,288 | 23,283 |
| NITTO DENKO CORP-UNSPONSORED | 754 | 33,583 | 33,463 |
| NMI HOLDINGS INC | 1,996 | 28,611 | 33,932 |
| NOBLE ENERGY INC | 3,517 | 115,302 | 102,485 |
| NOBLE ENERGY INC NOKIA CORP SPONSORED | 6,596 | 40,545 | 30,737 |
| NOMURA HOLDINGS INC SPONSORED | 6,255 | 35,752 | 36,404 |
| NORDEA BANK AB SPONSORED | 3,620 | 47,196 | 43,838 |
| NORDEA BANK AB SPONSORED NORDSON CORP | 7,483 | 874,885 | 1,095,511 |
| NORDSTROM INC | 841 | 54,387 | 39,847 |
| | 041 | 54,507 | 57,047 |

| SECURITY NAME | QUANTITY | COST | MARKET |
|-------------------------------------|----------|---------|-----------|
| NORFOLK SOUTHERN CORP | 2,083 | 15,333 | 301,827 |
| NORSK HYDRO ASA SPONSORED | 1,572 | 11,724 | 11,947 |
| NORTHEAST BANCORP | 481 | 12,483 | 11,135 |
| NORTHERN TR CORP | 1,552 | 110,448 | 155,029 |
| NORTHRIM BANCORP INC | 320 | 8,803 | 10,832 |
| NORTHROP GRUMMAN CORPORATION | 1,259 | 243,408 | 386,400 |
| NORTHSTAR REALTY EUROPE CORP | 2,074 | 28,528 | 27,854 |
| NORTHWEST PIPE CO | 274 | 5,447 | 5,244 |
| NORWEGIAN CRUISE LINE HOLDINGS | 1,294 | 76,176 | 68,906 |
| NOVANTA INC | 1,206 | 54,405 | 60,300 |
| NOVARTIS AG SPONSORED | 2,178 | 186,130 | 182,865 |
| NOVO NORDISK AS SPONSORED | 1,899 | 93,202 | 101,919 |
| NOVOZYMES A/S SPONSORED | 415 | 21,400 | 23,701 |
| NRG ENERGY INC | 2,173 | 28,336 | 61,887 |
| NRG YIELD INC | 2,674 | 45,073 | 50,405 |
| NRG YIELD INC CL C | 3,600 | 56,950 | 68,040 |
| NTT DOCOMO INC SPONSORED | 706 | 16,276 | 16,782 |
| NU SKIN ENTERPRISES INC | 1,946 | 121,072 | 132,776 |
| NUCOR CORP | 2,309 | 98,282 | 146,806 |
| NUTRISYSTEM INC | 1,082 | 31,962 | 56,913 |
| NV5 GLOBAL INC | 251 | 5,967 | 13,592 |
| NVIDIA CORP | 4,439 | 246,602 | 858,947 |
| NVIDIA CORP | 240 | 34,885 | 46,440 |
| OCCIDENTAL PETE CORP | 5,527 | 408,753 | 407,119 |
| OCEANFIRST FINANCIAL CORPORATION | 479 | 10,692 | 12,574 |
| OCLARO INC | 4,515 | 41,521 | 30,431 |
| OFFICE DEPOT INC | 19,462 | 73,669 | 68,895 |
| OFG BANCORP | 2,018 | 18,885 | 18,969 |
| OGE ENERGY CORP | 22,594 | 816,459 | 743,569 |
| OLD NATL BANCORP | 5,087 | 71,762 | 88,768 |
| OLD SECOND BANCORP INC | 1,643 | 14,488 | 22,427 |
| OLLIE'S BARGAIN OUTLET HOLDINGS INC | 1,953 | 72,203 | 103,997 |
| OLYMPIC STEEL INC | 320 | 9,686 | 6,877 |
| OLYMPUS CORP SPONSORED | 902 | 31,092 | 34,673 |
| OMNICELL INC | 1,406 | 75,301 | 68,191 |
| OMNICOM GROUP | 1,668 | 124,886 | 121,480 |
| ONEOK INC | 2,746 | 141,614 | 146,774 |
| OPEN TEXT CORP | 637 | 20,112 | 22,722 |
| ORACLE CORPORATION | 22,273 | 885,819 | 1,053,067 |
| ORASURE TECHNOLOGIES INC | 2,232 | 45,192 | 42,096 |
| O'REILLY AUTOMOTIVE INC | 636 | 169,666 | 152,983 |
| ORION GROUP HOLDINGS INC | 978 | 6,134 | 7,658 |
| ORIX CORP SPONSORED | 582 | 47,507 | 49,342 |
| ORKLA ASA SPONSORED | 3,004 | 30,240 | 31,700 |
| ORTHOFIX INTERNATIONAL N.V. | 922 | 34,766 | 50,433 |
| OTSUKA HOLDINGS LIMITED | 1,640 | 32,042 | 35,949 |
| OVERSTOCK.COM INC | 627 | 9,114 | 40,065 |
| OXFORD INDS INC | 631 | 40,996 | 47,445 |
| PACCAR INC | 2,540 | 135,781 | 180,543 |
| PACIFIC ETHANOL INC | 1,383 | 10,311 | 6,293 |
| | _,000 | | 0,_,0 |

| SECURITY NAME | QUANTITY | COST | MARKET |
|----------------------------------|----------|-----------|-----------|
| PACIFIC PREMIER BANCORP | 959 | 23,751 | 38,360 |
| PACKAGING CORP OF AMERICA | 682 | 74,058 | 82,215 |
| PANASONIC CORPORATION SPONSORED | 3,570 | 53,501 | 52,515 |
| PANDORA A/S SPONSORED | 835 | 21,281 | 22,741 |
| PARAMOUNT GROUP INC | 8,533 | 136,114 | 135,248 |
| PARKER HANNIFIN CORP | 962 | 99,539 | 191,996 |
| PATRICK INDS INC | 867 | 29,175 | 60,213 |
| PATTERSON COS INC | 966 | 40,216 | 34,902 |
| PAYCHEX INC | 2,312 | 120,398 | 157,401 |
| PAYPAL HOLDINGS INC | 8,170 | 301,170 | 601,475 |
| PAYPAL HOLDINGS INC | 19,745 | 822,789 | 1,453,627 |
| PC CONNECTION INC | 427 | 9,781 | 11,192 |
| PDL BIOPHARMA INC | 5,756 | 23,436 | 15,771 |
| PEARSON PLC SPONSORED | 2,588 | 19,997 | 25,414 |
| PEGASYSTEMS INC | 1,441 | 39,833 | 67,943 |
| PEMBINA PIPELINE CORP | 1,258 | 42,987 | 45,514 |
| PENNYMAC MORTGAGE INVT TRUST | 2,483 | 36,326 | 39,902 |
| PENTAIR PLC | 1,194 | 65,527 | 84,320 |
| PEOPLES BANC INC | 957 | 25,652 | 31,217 |
| PEOPLES UNITED FINANCIAL, INC | 2,489 | 42,487 | 46,544 |
| PERFORMANCE FOOD GROUP CO | 3,155 | 89,120 | 104,431 |
| PERKINELMER INC | 797 | 40,647 | 58,277 |
| PERNOD RICARD SA UNSPONSORED | 2,316 | 62,806 | 73,255 |
| PERRIGO CO PLC | 959 | 153,151 | 83,586 |
| PETMED EXPRESS INC | 780 | 13,127 | 35,490 |
| PETROCHINA CO LTD SPONSORED | 511 | 32,362 | 35,739 |
| PETROLEO BRASILEIRO SA SPONSORED | 2,196 | 22,634 | 22,597 |
| PETROLEO BRASILEIRO SPONSORED | 2,387 | 23,800 | 23,464 |
| PFIZER INC | 43,728 | 857,903 | 1,583,828 |
| PG & E CORP | 3,707 | 201,135 | 166,185 |
| PHH CORP | 2,082 | 31,667 | 21,445 |
| PHILIP MORRIS INTERNATIONAL | 11,403 | 1,036,361 | 1,204,727 |
| PHILIP MORRIS INTERNATIONAL | 7,750 | 779,929 | 818,788 |
| PHILLIPS 66 | 3,106 | 267,185 | 314,172 |
| PHOTRONICS INC | 2,401 | 23,050 | 20,469 |
| PHYSICIANS REALTY TRUST | 52,242 | 959,706 | 939,834 |
| PICO HOLDINGS INC | 869 | 15,926 | 11,123 |
| PING AN INSURANCE SPONSORED | 5,323 | 86,158 | 111,197 |
| PINNACLE FINANCIAL PARTNERS INC | 10,885 | 696,053 | 721,676 |
| PINNACLE WEST CAP CORP | 807 | 54,107 | 68,740 |
| PIONEER NATURAL RESOURCES CO | 1,230 | 171,271 | 212,606 |
| PIPER JAFFRAY COS | 551 | 26,486 | 47,524 |
| PJSC GAZPROM SPONSORED | 11,505 | 47,808 | 50,737 |
| PLATFORM SPECIALTY PRODUCTS | 8,072 | 89,967 | 80,074 |
| PLDT INC SPONSORED | 1,475 | 47,508 | 44,368 |
| PNC FINANCIAL SERVICES GROUP | 3,464 | 319,537 | 499,821 |
| POLARIS INDUSTRIES INC | 7,932 | 850,917 | 983,489 |
| POOL CORPORATION | 4,878 | 525,798 | 632,433 |
| POPULAR INC | 3,753 | 145,995 | 133,194 |
| PORSCHE AUTOMOBIL UNSPONSORED | 4,728 | 29,909 | 39,408 |
| | | | |

| SECURITY NAME | QUANTITY | COST | MARKET |
|-------------------------------------|----------|-----------|-----------|
| PORTLAND GENERAL ELECTRIC CO | 19,348 | 898,177 | 881,882 |
| POSCO SPONSORED | 1,481 | 105,618 | 115,711 |
| POTASH CORP SASK INC | 1,156 | 22,112 | 23,871 |
| POWELL INDS INC | 322 | 12,065 | 9,225 |
| POWER INTEGRATIONS INC | 8,969 | 645,547 | 659,670 |
| PPG INDUSTRIES INC | 1,854 | 193,412 | 216,584 |
| PPL CORPORATION | 4,938 | 171,750 | 152,831 |
| PRAXAIR INC | 2,068 | 234,179 | 319,878 |
| PREFERRED APARTMENT COMMUNITIES INC | 1,118 | 11,337 | 22,640 |
| PREMIER INC | 20,413 | 657,666 | 595,855 |
| PRICELINE GROUP INC | 355 | 503,537 | 616,898 |
| PRICELINE GROUP INC | 2,083 | 2,943,742 | 3,619,712 |
| PRICESMART INC | 12,290 | 1,081,654 | 1,058,169 |
| PRINCIPAL FINANCIAL GROUP | 1,943 | 98,662 | 137,098 |
| PROASSURANCE CORP | 15,626 | 846,951 | 893,026 |
| PROCTER & GAMBLE CO | 18,670 | 1,455,171 | 1,715,400 |
| PROGRESSIVE CORP OHIO | 4,206 | 140,850 | 236,882 |
| PROLOGIS INC | 3,844 | 173,640 | 247,976 |
| PROSIEBENSAT 1 MEDIA AG UNSPONSORED | 2,399 | 20,313 | 20,415 |
| PROSPERITY BANCSHARES INC | 2,608 | 156,645 | 182,743 |
| PROVIDENT FINL SVCS INC | 2,294 | 46,669 | 61,869 |
| PRUDENTIAL FINL INC | 3,087 | 258,056 | 354,943 |
| PRUDENTIAL PLC | 2,114 | 101,667 | 107,349 |
| PT BANK MANDIRI UNSPONSORED | 8,150 | 81,057 | 96,089 |
| PUBLIC SERVICE ENTERPRISE GROUP INC | 3,657 | 151,306 | 188,336 |
| PUBLIC STORAGE INC | 1,082 | 247,814 | 226,138 |
| PUBLICIS GROUPE SPONSORED | 1,913 | 33,017 | 32,502 |
| PULTE GROUP INC | 2,006 | 36,971 | 66,700 |
| PVH CORP | 560 | 54,337 | 76,838 |
| QCR HLDGS INC | 459 | 20,292 | 19,668 |
| QEP RESOURCES INC | 32,834 | 276,945 | 314,221 |
| QIAGEN N.V. | 1,240 | 39,607 | 38,353 |
| QORVO INC | 920 | 41,566 | 61,272 |
| QUAKER CHEMICAL CORP | 5,324 | 777,315 | 802,806 |
| QUALCOMM INC | 10,999 | 661,581 | 704,156 |
| QUALITY SYSTEMS INC | 1,843 | 29,020 | 25,028 |
| QUANTA SERVICES INCORPORATED | 1,093 | 21,696 | 42,747 |
| QUEST DIAGNOSTICS INC | 986 | 65,863 | 97,111 |
| QUIDEL CORP | 1,080 | 45,113 | 46,818 |
| RADIANT LOGISTICS INC | 1,268 | 6,316 | 5,833 |
| RALPH LAUREN CORP | 400 | 44,976 | 41,476 |
| RANDGOLD RESOURCES LTD | 176 | 17,425 | 17,405 |
| RANGE RESOURCES CORP | 1,632 | 54,693 | 27,842 |
| RAVEN INDUSTRIES INC | 1,355 | 45,527 | 46,544 |
| RAYMOND JAMES FINANCIAL INC | 928 | 72,299 | 82,870 |
| RAYTHEON COMPANY | 2,098 | 248,872 | 394,109 |
| RBC BEARINGS INC | 10,131 | 1,218,249 | 1,280,558 |
| RCI HOSPITALITY HOLDINGS INC | 335 | 9,417 | 9,373 |
| RE/MAX HOLDINGS INC | 741 | 34,695 | 35,939 |
| REALTY INCOME CORP | 1,981 | 101,229 | 112,957 |
| | 1,701 | 101,227 | 112,757 |

| SECURITY NAME | QUANTITY | COST | MARKET |
|-------------------------------------|----------|-----------|-----------|
| RECKITT BENCKISER GROUP SPONSORED | 4,486 | 83,602 | 85,279 |
| RED ELECTRICA CORP UNSPONSORED | 3,810 | 40,706 | 42,634 |
| RED HAT INC | 1,283 | 101,483 | 154,088 |
| RED HAT INC | 8,600 | 672,077 | 1,032,860 |
| REGAL BELOIT CORP | 1,663 | 132,893 | 127,386 |
| REGENCY CENTERS CORPORATION | 1,070 | 73,196 | 74,023 |
| REGENERON PHARMACEUTICALS INC | 555 | 307,346 | 208,658 |
| REGIONAL MANAGEM | 552 | 10,714 | 14,523 |
| REGIONS FINANCIAL CORP | 8,638 | 82,715 | 149,265 |
| RELX NV SPONSORED | 1,756 | 37,445 | 40,511 |
| RELX PLC SPONSORED | 1,620 | 36,117 | 38,394 |
| RENAULT SA UNSPONSORED | 1,159 | 22,569 | 23,331 |
| RENEWABLE ENERGY GROUP INC | 1,277 | 12,660 | 15,069 |
| RENT A CENTER INC | 2,001 | 20,885 | 22,211 |
| REPSOL SA SPONSORED | 1,933 | 35,524 | 34,253 |
| REPUBLIC BANCORP INC | 375 | 11,576 | 14,258 |
| REPUBLIC FIRST BANCORP INC | 1,926 | 17,821 | 16,275 |
| REPUBLIC SERVICES INC | 1,655 | 72,208 | 111,895 |
| RESMED INC | 1,028 | 79,863 | 87,061 |
| RESOURCE CAPITAL CORP | 1,175 | 14,547 | 11,010 |
| RESTAURANT BRANDS INTERNATIONAL INC | 10,700 | 660,544 | 657,836 |
| RESTAURANT BRANDS INTERNATIONAL INC | 506 | 33,116 | 31,109 |
| REX AMERICAN RESOURCES CORPORATION | 218 | 11,973 | 18,048 |
| RH | 706 | 59,163 | 60,864 |
| RINGCENTRAL INC | 2,358 | 57,204 | 114,127 |
| RIO TINTO PLC SPONSORED | 1,018 | 48,579 | 53,883 |
| RITCHIE BROS AUCTIONEERS INC | 27,749 | 857,033 | 830,528 |
| RMR GROUP INC CL A | 260 | 12,193 | 15,418 |
| ROADRUNNER TRANSHOLDINGS INC | 1,182 | 10,889 | 9,113 |
| ROBERT HALF INTL INC | 912 | 47,169 | 50,652 |
| ROCHE HOLDING LTD SPONSORED | 5,445 | 173,510 | 171,953 |
| ROCKWELL AUTOMATION INC | 928 | 101,016 | 182,213 |
| ROCKWELL COLLINS INC | 1,174 | 112,322 | 159,218 |
| ROGERS COMMUNICATIONS-CL B | 437 | 22,802 | 22,256 |
| ROGERS CORP | 682 | 94,829 | 110,429 |
| ROLLS-ROYCE HOLDINGS PLC SPONSORED | 2,886 | 34,969 | 32,958 |
| ROPER TECHNOLOGIES INC | 739 | 143,902 | 191,401 |
| ROSS STORES INC | 2,813 | 141,839 | 225,743 |
| ROSS STORES INC | 9,500 | 603,404 | 762,375 |
| ROWAN COMPANIES PLC | 4,265 | 71,703 | 66,790 |
| ROYAL BANK OF CANADA | 1,269 | 96,312 | 103,614 |
| ROYAL BANK OF SCOTLAND SPONSORED | 3,056 | 21,503 | 23,348 |
| ROYAL CARIBBEAN CRUISES LTD | 1,244 | 121,644 | 148,384 |
| ROYAL DUTCH SHELL PLC SPONSORED | 2,085 | 126,359 | 142,385 |
| ROYAL DUTCH SHELL SPONSORED | 2,508 | 147,325 | 167,309 |
| ROYAL KPN NEDERLAND NV SPONSORED | 8,206 | 29,535 | 28,721 |
| ROYAL MAIL PLC UNSPONSORED | 2,806 | 29,835 | 34,654 |
| RPM INTERNATIONAL INC | 31,452 | 1,601,445 | 1,648,714 |
| RPX CORP | 1,909 | 26,396 | 25,657 |
| RUBICON PROJECT INC/THE | 1,514 | 5,251 | 2,831 |
| | 1,517 | 5,251 | 2,001 |

| SECURITY NAME | QUANTITY | COST | MARKET |
|--------------------------------------|----------|-----------|-----------|
| RUSH ENTERPRISES INC | 1,169 | 31,035 | 59,397 |
| RUSH ENTERPRISES INC CL B | 189 | 4,285 | 9,112 |
| RWE AKTIENGESELLSCHAF SPONSORED | 1,328 | 32,946 | 26,945 |
| RYANAIR HOLDINGS PLC SPONSORED | 350 | 37,397 | 36,467 |
| S&P GLOBAL INC | 1,858 | 173,971 | 314,745 |
| SAFETY INCOME AND GROWTH INC | 1,014 | 18,905 | 17,846 |
| SAFRAN SA UNSPONSORED | 2,043 | 51,756 | 52,607 |
| SAIA INC | 955 | 59,695 | 67,566 |
| SALESFORCE.COM | 5,134 | 414,312 | 524,849 |
| SALESFORCE.COM | 14,100 | 1,027,327 | 1,441,443 |
| SAMPO OYJ A SHARES UNSPONSORED | 2,307 | 59,652 | 63,385 |
| SANDERSON FARMS INC | 751 | 54,274 | 104,224 |
| SANDVIK AB SPONSORED | 1,992 | 34,317 | 34,860 |
| SANLAM LTD SPONSORED | 4,882 | 50,656 | 68,494 |
| SANMINA CORPORATION | 2,829 | 69,610 | 93,357 |
| SANOFI SPONSORED | 2,366 | 116,648 | 101,738 |
| SANTEN PHARMACEUTICAL CO UNSPONSORED | 1,837 | 29,865 | 28,823 |
| SAP SE SPONSORED | 800 | 87,492 | 89,888 |
| SASOL LTD SPONSORED | 744 | 20,818 | 25,452 |
| SBA COMMUNICATIONS CORP CL A | 870 | 133,596 | 142,123 |
| SBERBANK RUSSIA SPONSORED | 4,525 | 61,530 | 77,061 |
| SCANA CORP | 1,033 | 60,399 | 41,093 |
| SCANSOURCE INC | 1,089 | 39,145 | 38,986 |
| SCHLUMBERGER LTD | 10,044 | 782,713 | 676,865 |
| SCHNEIDER ELECTRIC UNSPONSORED | 2,637 | 45,511 | 44,684 |
| SCHNEIDER NATIONAL INC CL B | 32,217 | 785,737 | 920,118 |
| SCHNITZER STEEL INDS INC-A | 1,149 | 24,773 | 38,492 |
| SCHOLASTIC CORP | 1,007 | 40,956 | 40,391 |
| SCOR SPONSORED | 13,449 | 54,894 | 54,603 |
| SCRIPPS NETWORKS INTERACT INC CL A | 694 | 44,143 | 59,254 |
| SEAGATE TECHNOLOGY PLC | 2,081 | 81,107 | 87,069 |
| SEALED AIR CORP NEW | 1,374 | 65,500 | 67,738 |
| SECOM LTD UNSPONSORED | 1,777 | 32,817 | 33,496 |
| SEIKO EPSON UNSPONSORED | 3,993 | 49,898 | 46,838 |
| SELECT INCOME | 2,349 | 62,533 | 59,030 |
| SEMPRA ENERGY | 1,815 | 185,899 | 194,060 |
| SEMPRA ENERGY | 4,200 | 485,984 | 449,064 |
| SEMTECH CORP | 2,487 | 95,435 | 85,055 |
| SENECA FOODS CORP CL-A | 377 | 11,885 | 11,593 |
| SERVICENOW INC | 6,176 | 498,068 | 805,289 |
| SEVEN & I HOLDINGS UNSPONSORED | 2,981 | 58,229 | 61,498 |
| SGS SA UNSPONSORED | 1,375 | 32,035 | 35,791 |
| SHARP CORPORATION UNSPONSORED | 1,530 | 11,652 | 13,020 |
| SHAW COMMUNICATIONS INC-CL B | 1,696 | 38,788 | 38,720 |
| SHERWIN WILLIAMS CO | 594 | 158,495 | 243,564 |
| SHIMANO INC UNSPONSORED ADR | 2,321 | 31,002 | 33,074 |
| SHIN ETSU CHEMICAL CO UNSPONSORED | 2,378 | 53,760 | 60,330 |
| SHINHAN FINANCIAL GROUP SPONSORED | 2,305 | 103,142 | 106,952 |
| SHIRE PLC SPONSORED | 289 | 44,413 | 44,830 |
| SHISEIDO LTD SPONSORED | 1,076 | 42,728 | 52,143 |
| | -,0,0 | ,0 | ,0 |

| SECURITY NAME | QUANTITY | COST | MARKET |
|---|----------|-----------|-----------|
| SHOE CARNIVAL INC | 419 | 10,039 | 11,208 |
| SHOPIFY INC CL A | 2,697 | 260,930 | 272,397 |
| SHOPRITE HLDGS SPONSORED | 1,909 | 29,871 | 34,095 |
| SHORE BANCSHARES INC | 489 | 7,374 | 8,166 |
| SI FINANCIAL GROUP INC | 417 | 6,366 | 6,130 |
| SIBANYE-STILLWATER SPONSORED | 2,479 | 11,441 | 12,519 |
| SIEMENS AG SPONSORED | 1,580 | 109,349 | 109,447 |
| SIERRA BANCORP | 409 | 11,299 | 10,863 |
| SIGMA DESIGNS INC | 1,617 | 14,262 | 11,238 |
| SIGNATURE BANK | 8,623 | 1,025,055 | 1,183,593 |
| SIGNET JEWELERS LTD | 437 | 65,556 | 24,712 |
| SILICON LABORATORIES INC | 9,060 | 722,270 | 799,998 |
| SILICONWARE PRECISION SPONSORED | 10,901 | 85,632 | 91,677 |
| SIMON PROPERTY GROUP INC | 2,247 | 455,451 | 385,900 |
| SIMULATIONS PLUS INC | 415 | 7,169 | 6,682 |
| SINA CORP | 170 | 19,710 | 17,053 |
| SINGAPORE EXCHANGE LTD UNSPONSORED | 1,053 | 88,732 | 87,899 |
| SINGAPORE TELECOM SPONSORED | 646 | 17,759 | 17,216 |
| SINOPEC SHANGHAI PETRO SPONSORED | 464 | 28,058 | 26,448 |
| SITEONE LANDSCAPE SUPPLY INC | 1,489 | 93,244 | 114,206 |
| SK TELECOM LTD SPONSORED | 3,643 | 86,811 | 101,676 |
| SKF AB SPONSORED | 881 | 18,650 | 19,514 |
| SKY PLC SPONSORED | 426 | 21,394 | 23,511 |
| SKYWEST INC | 1,964 | 46,162 | 104,288 |
| SKYWORKS SOLUTIONS INC | 1,328 | 102,837 | 126,094 |
| SL GREEN REALTY CORP | 715 | 84,815 | 72,165 |
| SLEEP NUMBER CORP | 1,541 | 33,829 | 57,926 |
| SMC CORPORATION SPONSORED | 2,537 | 46,191 | 52,135 |
| SMITH & NEPHEW PLC SPONSORED | 1,224 | 44,018 | 42,852 |
| SMITH A O CORPORATION | 1,058 | 58,209 | 64,834 |
| SMITHS GROUP PLC SPONSORED | 1,845 | 40,457 | 37,204 |
| SNAP-ON INC | 416 | 68,958 | 72,509 |
| SOCIEDAD QUIMICA MINERA SPONSORED | 190 | 10,970 | 11,280 |
| SOCIETE GENERALE SPONSORED | 4,640 | 53,338 | 48,070 |
| SODEXHO ALLIANCE SA SPONSORED | 1,304 | 31,836 | 35,104 |
| SOFTBANK GROUP CORP UNSPONSORED | 1,939 | 79,777 | 77,085 |
| SOLAREDGE TECHNOLOGIES INC | 1,327 | 40,350 | 49,829 |
| SONIC AUTOMOTIVE INC CL A | 879 | 21,931 | 16,218 |
| SONIC HEALTHCARE LTD SPONSORED | 2,891 | 50,699 | 51,604 |
| SONOVA HOLDING AG UNSPONSORED | 1,759 | 60,435 | 54,969 |
| SONY CORP SPONSORED | 1,614 | 60,929 | 72,549 |
| SOUTH STATE CORPORATION | 300 | 17,899 | 26,145 |
| SOUTH32 LTD SPONSORED | 2,375 | 29,960 | 32,122 |
| SOUTHERN COMPANY | 7,225 | 139,500 | 347,450 |
| SOUTHWEST AIRLINES CO | 3,981 | 181,855 | 260,556 |
| SP PLUS CORPORATION | 846 | 23,762 | 31,387 |
| SPARK ENERGY INC CL A | 459 | 6,446 | 5,692 |
| SPARK NEW ZEALAND SPONSORED | 1,643 | 22,670 | 21,063 |
| SPARK NEW ZEALAND SPONSORED SPARTAN MOTORS INC | 1,043 | 5,186 | 19,577 |
| SPARTAN MOTORS INC SPARTANNASH CO | 1,245 | | |
| SI AKTAINIASH CO | 1,394 | 41,598 | 37,192 |

| SECURITY NAME | QUANTITY | COST | MARKET |
|--------------------------------------|----------|-----------|-----------|
| SPECTRUM PHARMACEUTICALS INC | 2,856 | 55,340 | 54,121 |
| SPEEDWAY MOTORSPORTS INC | 431 | 9,923 | 8,133 |
| SPOK HOLDINGS INC | 749 | 14,263 | 11,722 |
| SPROUTS FARMERS MARKETS LLC | 4,733 | 89,956 | 115,249 |
| SS&C TECHNOLOGIES HLDGS INC | 26,915 | 1,046,335 | 1,089,519 |
| SSE PLC SPONSORED | 1,188 | 22,933 | 21,194 |
| STAMPS COM INC | 590 | 130,893 | 110,920 |
| STANDARD BANK GROUP SPONSORED | 2,748 | 33,599 | 43,570 |
| STANLEY BLACK & DECKER INC | 1,107 | 118,275 | 187,847 |
| STARBUCKS CORP | 10,437 | 653,848 | 599,397 |
| STATE STREET CORP | 2,703 | 189,172 | 263,840 |
| STATOIL ASA SPONSORED | 1,215 | 23,963 | 26,025 |
| STERICYCLE INC | 617 | 75,156 | 41,950 |
| STERIS PLC | 13,467 | 1,171,898 | 1,177,958 |
| STERLING BANCORP | 2,919 | 55,002 | 71,807 |
| STERLING CONSTRUCTION CO INC | 845 | 6,610 | 13,757 |
| STMICROELECTRONICS NV-NY SHS | 942 | 18,276 | 20,573 |
| STONERIDGE INC | 993 | 17,871 | 22,700 |
| STORA ENSO CORPORATION SPONSORED | 2,167 | 29,941 | 34,195 |
| STRYKER CORPORATION | 2,325 | 234,762 | 360,003 |
| STRYKER CORPORATION | 7,822 | 937,736 | 1,211,158 |
| SUBARU CORP UNSPONSORED | 2,005 | 35,884 | 31,839 |
| SUEZ UNSPONSORED | 3,088 | 28,639 | 26,912 |
| SUMITOMO CHEM CO LTD UNSPONSORED | 1,309 | 41,625 | 47,268 |
| SUMITOMO MITSUI FINL GROUP SPONSORED | 6,044 | 46,755 | 52,522 |
| SUMMIT HOTEL PROPERTIES | 3,979 | 56,100 | 60,600 |
| SUMMIT HOTEL PROPERTIES | 61,575 | 953,532 | 937,787 |
| SUN COMMUNITIES INC | 11,283 | 996,660 | 1,046,837 |
| SUN HUNG KAI PROP LTD SPONSORED | 6,354 | 108,907 | 105,762 |
| SUN LIFE FINANCIAL INC | 1,244 | 48,312 | 51,327 |
| SUNCOR ENERGY INC | 1,907 | 64,963 | 70,025 |
| SUNRUN INC | 2,471 | 13,781 | 14,579 |
| SUNSHINE BANCORP INC | 468 | 11,341 | 10,736 |
| SUNSTONE HOTEL | 4,260 | 70,444 | 70,418 |
| SUNTRUST BANKS INC | 3,469 | 28,712 | 224,063 |
| SUPERIOR ENERGY SERVICES INC | 28,416 | 311,226 | 273,646 |
| SUPERNUS PHARMACEUTICALS INC | 1,991 | 47,294 | 79,341 |
| SUTHERLAND ASSET MANAGEMENT CO | 321 | 5,069 | 4,863 |
| SVB FINANCIAL GROUP | 8,025 | 1,404,767 | 1,876,004 |
| SVENSKA HANDELSBANKEN AB UNSPONSORED | 3,255 | 23,750 | 22,053 |
| SWATCH GROUP AG UNSPONSORED | 1,083 | 21,320 | 22,050 |
| SWEDBANK AB SPONSORED | 893 | 24,296 | 21,472 |
| SWISS RE LTD SPONSORED | 1,725 | 37,688 | 40,331 |
| SYKES ENTERPRISES INC | 1,503 | 43,894 | 47,269 |
| SYMANTEC CORPORATION | 4,442 | 99,122 | 124,643 |
| SYMRISE AG UNSPONSORED | 2,166 | 41,603 | 46,222 |
| SYNCHRONY FINANCIAL | 5,404 | 165,308 | 208,648 |
| SYNNEX CORP | 1,095 | 114,975 | 148,865 |
| SYNOPSYS INC | 1,086 | 76,300 | 92,571 |
| SYSCO CORP | 3,510 | 145,621 | 213,162 |
| 2.200 COM | 5,510 | 110,041 | 213,102 |

| SECURITY NAME | QUANTITY | COST | MARKET |
|------------------------------------|-----------|------------|------------|
| SYSMEX CORP | 975 | 30,927 | 38,464 |
| SYSTEMAX INC | 515 | 14,611 | 17,134 |
| T ROWE PRICE GROUP INC | 1,737 | 130,891 | 182,263 |
| TACTILE SYSTEMS TECHNOLOGY INC | 389 | 12,448 | 11,273 |
| TAIWAN SEMICONDUCTOR SPONSORED | 7,644 | 287,887 | 303,085 |
| TAKEDA PHARMACEUTICAL SPONSORED | 2,308 | 63,173 | 65,663 |
| TAL EDUCATION GROUP SPONSORED | 1,465 | 48,010 | 43,525 |
| TAPESTRY INC | 2,043 | 64,480 | 90,362 |
| TARGET CORP | 3,948 | 302,032 | 257,607 |
| TARO PHARMACEUTICAL INDS LTD | 175 | 18,707 | 18,324 |
| TATA MOTORS LTD SPONSORED | 1,944 | 61,838 | 64,288 |
| TAYLOR MORRISON HOME CORP | 2,721 | 56,670 | 66,583 |
| TD AMERITRADE HOLDING CORP | 13,242 | 397,830 | 677,063 |
| TDK CORP SPONSORED | 610 | 41,334 | 48,748 |
| TE CONNECTIVITY LIMITED | 2,554 | 162,397 | 242,732 |
| TECH DATA CORP | 1,303 | 105,896 | 127,655 |
| TECHNIPFMC LTD | 3,175 | 106,894 | 99,409 |
| TECHTRONIC INDS LTD SPONSORED | 1,810 | 48,350 | 59,042 |
| TECK RESOURCES LIMITED | 978 | 21,347 | 25,594 |
| TEEKAY CORP | 2,007 | 17,533 | 18,705 |
| TELECOM ITALIA SPA SPONSORED | 2,176 | 20,793 | 18,779 |
| TELEFONICA SA SPONSORED | 2,587 | 28,129 | 25,042 |
| TELEKOMUNIKASI INDONESIA SPONSORED | 1,947 | 68,034 | 62,732 |
| TELENOR ASA SPONSORED | 555 | 11,639 | 11,871 |
| TELEPHONE AND DATA SYSTEMS INC | 3,375 | 90,419 | 93,825 |
| TELETECH HLDGS INC | 892 | 38,187 | 35,903 |
| TELSTRA CORP SPONSORED | 807 | 11,639 | 11,419 |
| TEMPLETON GLOBAL BOND FUND | 1,972,496 | 24,136,600 | 23,374,073 |
| TENARIS SA SPONSORED | 1,031 | 29,419 | 32,848 |
| TENCENT HLDGS LTD UNSPONSORED | 19,700 | 389,645 | 1,022,824 |
| TENCENT HLDGS LTD UNSPONSORED | 6,806 | 300,728 | 353,368 |
| TEREX CORP | 3,187 | 146,113 | 153,677 |
| TERNA RETE ELETTRICA UNSPONSORED | 3,944 | 70,347 | 68,704 |
| TESCO PLC SPONSORED | 5,650 | 43,085 | 47,969 |
| TESLA INC | 2,100 | 549,574 | 653,835 |
| TEVA PHARMACEUTICAL INDS SPONSORED | 683 | 11,682 | 12,943 |
| TEXAS CAPITAL BANCSHARES | 9,714 | 788,405 | 863,575 |
| TEXAS INSTRUMENTS INC | 7,370 | 444,539 | 769,723 |
| TEXTAINER GROUP HOLDINGS LTD | 917 | 18,212 | 19,716 |
| TEXTRON INC | 1,913 | 80,433 | 108,257 |
| THE HERSHEY COMPANY | 1,021 | 90,233 | 115,894 |
| THE MOSAIC COMPANY | 2,537 | 87,182 | 65,099 |
| THE TRADE DESK INC CL A | 725 | 46,132 | 33,154 |
| THERMO FISHER SCIENTIFIC INC | 2,893 | 391,903 | 549,323 |
| THIRD POINT REINSURANCE LTD | 2,797 | 46,402 | 40,976 |
| THOMSON CORP | 1,060 | 48,357 | 46,205 |
| TIFFANY & CO | 738 | 57,092 | 76,715 |
| TIM PARTICIPACOES SA SPONSORED | 1,520 | 29,101 | 29,351 |
| TIME INC | 3,795 | 68,927 | 70,018 |
| TIME WARNER INC | 5,622 | 424,134 | 514,244 |
| | | | |

| SECURITY NAME | QUANTITY | COST | MARKET |
|-------------------------------------|----------|-----------|-----------|
| TIMKENSTEEL CORPORATION | 1,466 | 25,770 | 22,269 |
| TITAN INTERNATIONAL INC | 2,202 | 22,409 | 28,362 |
| TITAN MACHINERY | 690 | 8,638 | 14,607 |
| TIVITY HEALTH INC | 1,271 | 52,377 | 46,455 |
| TIVO CORPORATION | 4,576 | 85,078 | 71,386 |
| TJX COS INC | 4,599 | 336,784 | 351,640 |
| T-MOBILE US INC | 11,900 | 539,309 | 755,769 |
| TOKIO MARINE HOLDINGS SPONSORED | 1,002 | 40,611 | 45,842 |
| TOKYO ELECTRON LTD UNSPONSORED | 625 | 23,953 | 28,391 |
| TOPBUILD CORP | 1,335 | 52,934 | 101,113 |
| TORAY INDS | 2,234 | 43,021 | 42,111 |
| TORCHMARK CORP | 782 | 45,700 | 70,935 |
| TORO CO | 18,834 | 1,166,201 | 1,228,542 |
| TORONTO DOMINION BANK | 1,900 | 104,906 | 111,302 |
| TOSHIBA CORP UNSPONSORED | 1,215 | 20,909 | 20,297 |
| TOTAL S.A. SPONSORED | 1,805 | 99,184 | 99,780 |
| TOTAL SYSTEM SERVICES INC | 1,212 | 65,851 | 95,857 |
| TOWNE BANK | 2,298 | 52,455 | 70,664 |
| TOYOTA MOTOR CORP SPONSORED | 1,548 | 186,098 | 196,859 |
| TPG RE FINANCE TRUST INC | 517 | 9,942 | 9,849 |
| TRACTOR SUPPLY CO | 916 | 84,116 | 68,471 |
| TRANSCANADA CORP | 1,151 | 58,258 | 55,985 |
| TRANSDIGM GROUP INC | 349 | 91,441 | 95,842 |
| TRANSOCEAN LTD | 4,265 | 42,463 | 45,550 |
| TRAVELERS COMPANIES INC | 1,995 | 227,215 | 270,602 |
| TREASURY WINE ESTATES LTD | 3,512 | 40,727 | 44,023 |
| TREND MICRO INC SPONSORED | 391 | 18,996 | 22,189 |
| TREX COMPANY INC | 1,144 | 68,500 | 123,998 |
| TRIBUNE MEDIA COMPANY | 2,840 | 115,717 | 120,615 |
| TRINET GROUP INC | 1,536 | 53,590 | 68,106 |
| TRINITY INDUSTRIES INC | 5,682 | 138,401 | 212,848 |
| TRIPADVISOR INC | 783 | 64,054 | 26,982 |
| TRIPLE-S MANAGEMENT CORP | 813 | 17,209 | 20,203 |
| TRITON INTERNATIONAL LTD OF BERMUDA | 1,580 | 26,471 | 59,171 |
| TRIUMPH BANCORP INC | 768 | 16,002 | 24,192 |
| TRONOX LTD | 2,546 | 67,054 | 52,218 |
| TRUEBLUE INC | 1,787 | 47,898 | 49,143 |
| TRUECAR INC | 2,884 | 35,106 | 32,301 |
| TRUPANION INC | 766 | 14,314 | 22,421 |
| TRUSTMARK CORP | 2,543 | 61,309 | 81,020 |
| TUPPERWARE BRANDS CORPORATION | 8,071 | 476,463 | 506,052 |
| TURKIYE GARANTI BANKASI SPONSORED | 6,612 | 20,072 | 18,712 |
| TURQUOISE HILL RESOURCES LTD | 6,105 | 19,083 | 20,940 |
| TUTOR PERINI CORP | 1,467 | 26,846 | 37,188 |
| TWENTY-FIRST CENTURY FOX INC CL A | 7,608 | 230,510 | 262,704 |
| TWENTY-FIRST CENTURY FOX INC CL B | 3,175 | 89,302 | 108,331 |
| TWO HARBORS INVESTMENT CORP | 6,508 | 111,131 | 105,820 |
| TYLER TECHNOLOGIES INC | 7,226 | 1,225,581 | 1,279,363 |
| TYSON FOODS INC CL A | 2,091 | 93,688 | 1,279,505 |
| UBER TECHNOLOGIES INC | 2,091 | 132,856 | 93,916 |
| UDEN TECHNOLOGIES INC | 2,124 | 152,050 | 93,910 |

| SECURITY NAME | QUANTITY | COST | MARKET |
|-------------------------------------|----------|-----------|-----------|
| UBIQUITI NETWORK | 949 | 59,820 | 67,398 |
| UBS GROUP AG | 3,981 | 67,337 | 73,211 |
| UDR INC | 1,934 | 67,245 | 74,498 |
| ULTA BEAUTY INC | 422 | 86,118 | 94,385 |
| ULTIMATE SOFTWARE GROUP INC | 4,339 | 798,125 | 946,900 |
| ULTRA CLEAN HOLDINGS | 1,273 | 6,225 | 29,394 |
| ULTRAPAR PARTICIPACOES SPONSORED | 829 | 20,578 | 18,843 |
| UMPQUA HLDGS CORP | 8,220 | 148,169 | 170,976 |
| UNDER ARMOUR INC CL C | 2,267 | 62,160 | 30,196 |
| UNDER ARMOUR INC-CL A | 2,182 | 65,609 | 31,486 |
| UNIBAIL-RODAMCO SE | 4,452 | 108,803 | 111,901 |
| UNILEVER NV NY SHARES | 1,970 | 117,613 | 110,950 |
| UNILEVER PLC SPONSORED | 1,746 | 101,828 | 96,624 |
| UNION PAC CORP | 5,950 | 541,293 | 797,895 |
| UNIT CORP | 1,986 | 36,438 | 43,692 |
| UNITED CMNTY FINL CORP OHIO | 2,120 | 16,830 | 19,356 |
| UNITED CONTINENTAL HOLDINGS INC COM | 1,869 | 104,097 | 125,971 |
| UNITED FINANCIAL BANCORP, INC. | 2,170 | 29,930 | 38,279 |
| UNITED MICROELECTRONICS SPONSORED | 18,660 | 48,762 | 44,597 |
| UNITED NAT FOODS INC | 1,897 | 77,817 | 93,465 |
| UNITED OVERSEAS BANK-SPONSORED | 2,416 | 83,079 | 95,758 |
| UNITED PARCEL SERVICE CL B | 4,979 | 513,191 | 593,248 |
| UNITED RENTALS INC | 611 | 45,642 | 105,037 |
| UNITED STATES CELLULAR CORP | 528 | 20,306 | 19,869 |
| UNITED TECHNOLOGIES CORP | 5,538 | 83,043 | 706,483 |
| UNITED UTILITIES GROUP SPONSORED | 1,261 | 30,417 | 28,284 |
| UNITEDHEALTH GROUP INC | 7,094 | 882,251 | 1,563,943 |
| UNITEDHEALTH GROUP INC | 11,049 | 1,459,373 | 2,435,863 |
| UNIVERSAL CORP VA | 1,137 | 68,287 | 59,693 |
| UNIVERSAL HEALTH SVCS INC | 639 | 77,383 | 72,431 |
| UNIVEST CORPORATION OF PENNSYLVANIA | 741 | 16,555 | 20,785 |
| UNUM GROUP | 1,631 | 60,532 | 89,526 |
| UPLAND SOFTWARE INC | 389 | 8,706 | 8,426 |
| UPM KYMMENE CORP SPONSORED | 1,211 | 32,454 | 37,577 |
| US BANCORP NEW | 11,487 | 499,661 | 615,473 |
| V.F. CORP | 2,362 | 160,010 | 174,788 |
| VALE S.A. SPONSORED | 3,554 | 37,300 | 43,465 |
| VALEANT PHARMACEUTICALS INTL | 853 | 11,939 | 17,725 |
| VALEO SA-SPONSORED | 1,229 | 44,745 | 45,885 |
| VALERO ENERGY CORP | 3,193 | 204,742 | 293,469 |
| VARIAN MEDICAL SYSTEMS INC | 664 | 45,123 | 73,804 |
| VARONIS SYSTEMS INC | 734 | 32,600 | 35,636 |
| VECTRUS INC | 417 | 9,349 | 12,864 |
| VEDANTA LTD SPONSORED | 3,276 | 65,851 | 68,239 |
| VENTAS INC | 2,574 | 147,120 | 154,466 |
| VEOLIA ENVIRONNEMENT SPONSORED | 902 | 20,945 | 23,001 |
| VERA BRADLEY INC | 729 | 5,599 | 8,879 |
| VERASTEM INC | 1,307 | 5,169 | 4,012 |
| VERISIGN INC | 621 | 52,655 | 71,067 |
| VERISK ANALYTICS INC | 1,123 | 81,277 | 107,808 |

| SECURITY NAME | QUANTITY | COST | MARKET |
|--------------------------------------|----------|------------|------------|
| VERITIV CORP | 419 | 16,184 | 12,109 |
| VERIZON COMMUNICATIONS | 29,904 | 951,152 | 1,582,819 |
| VERMILION ENERGY INC | 783 | 29,339 | 28,439 |
| VERTEX PHARMACEUTICALS INC | 1,822 | 219,460 | 273,045 |
| VERTEX PHARMACEUTICALS INC | 9,977 | 1,058,847 | 1,495,153 |
| VESTAS WIND SYSTEMS UNSPONSORED | 771 | 23,209 | 17,795 |
| VIACOM INC-B | 2,550 | 126,409 | 78,566 |
| VIAD CORP | 762 | 22,951 | 42,215 |
| VICOR CORP | 610 | 14,299 | 12,749 |
| VILLAGE SUPER MKT INC CL A | 208 | 6,171 | 4,769 |
| VINCI SA UNSPONSORED | 1,889 | 45,354 | 48,170 |
| VIPSHOP HLDGS LTD SPONSORED | 1,738 | 16,495 | 20,369 |
| VISA INC CL A | 13,417 | 1,057,524 | 1,529,806 |
| VISA INC CL A | 31,400 | 2,511,169 | 3,580,228 |
| VISHAY INTERTECHNOLOGY INC | 5,036 | 54,700 | 104,497 |
| VISHAY PRECISION GROUP | 676 | 10,882 | 17,001 |
| VIVENDI SA UNSPONSORED | 1,471 | 37,001 | 39,452 |
| VMWARE INC. | 7,744 | 922,444 | 970,478 |
| VOCERA COMMUNICATIONS | 1,093 | 33,062 | 33,030 |
| VODAFONE GROUP SPONSORED | 1,994 | 57,414 | 63,609 |
| VOLKSWAGEN AG SPONSORED | 345 | 11,664 | 13,950 |
| VOLKSWAGEN AG SPONSORED | 785 | 25,636 | 31,290 |
| VOLVO AB B SHS UNSPONSORED | 2,036 | 38,048 | 37,646 |
| VONAGE HOLDINGS CORP | 7,875 | 50,019 | 80,089 |
| VORNADO REALTY TRUST | 1,246 | 101,187 | 97,412 |
| VSE CORP | 322 | 19,064 | 15,594 |
| VULCAN MATERIALS CO | 956 | 91,081 | 122,722 |
| VULCAN VALUE PARTNERS SMALL CAP FUND | 898,515 | 17,749,005 | 17,637,842 |
| WABASH NATL CORP | 2,216 | 28,822 | 48,087 |
| WABTEC CORP | 13,556 | 1,017,944 | 1,103,865 |
| WAGEWORKS INC | 16,973 | 1,013,022 | 1,052,326 |
| WAL MART DE MEXICO SPONSORED | 903 | 21,582 | 22,051 |
| WAL MART STORES INC | 10,819 | 630,304 | 1,068,376 |
| WALGREENS BOOTS ALLIANCE INC | 6,540 | 545,042 | 474,935 |
| WALKER & DUNLOP | 1,084 | 34,253 | 51,490 |
| WASHINGTON FEDERAL INC | 3,240 | 81,331 | 110,970 |
| WASTE CONNECTIONS INC | 11,100 | 656,399 | 787,434 |
| WASTE MANAGEMENT INC | 2,926 | 159,162 | 252,514 |
| WATERS CORP | 577 | 75,111 | 111,471 |
| WATERSTONE FINANCIAL, INC. | 967 | 12,890 | 16,487 |
| WAYFAIR INC | 1,522 | 74,378 | 122,171 |
| WEBSTER FINL CORP WATERBURY CT | 16,522 | 823,019 | 927,876 |
| WEC ENERGY GROUP INC | 2,281 | 118,201 | 151,527 |
| WEIBO CORP SPONSORED | 185 | 18,561 | 19,140 |
| WEIGHT WATCHERS INTL INC | 1,039 | 47,804 | 46,007 |
| WEIS MARKETS INC | 621 | 31,522 | 25,703 |
| WELLS FARGO & CO | 32,702 | 1,792,449 | 1,984,030 |
| WELLTOWER INC | 2,666 | 176,022 | 170,011 |
| WEST JAPAN RAILWAY CO UNSPONSORED | 749 | 52,557 | 55,089 |
| WEST PHARMACEUTICAL SVCS INC | 14,445 | 1,364,891 | 1,425,288 |

| SECURITY NAME | QUANTITY | COST | MARKET |
|--------------------------------------|----------------|--------------------|-----------|
| WESTERN ALLIANCE | 14,191 | 701,956 | 803,494 |
| WESTERN ASSET MORTGAGE CAPITAL CORP | 2,047 | 20,327 | 20,368 |
| WESTERN DIGITAL CORP | 2,131 | 133,348 | 169,478 |
| WESTERN UNION CO | 3,354 | 64,159 | 63,760 |
| WESTFIELD CORPORATION SPONSORED | 7,790 | 95,658 | 116,694 |
| WESTPAC BKG CORP SPONSORED | 4,816 | 121,585 | 117,414 |
| WESTROCK CO | 1,836 | 89,842 | 116,054 |
| WEYERHAEUSER CO | 5,443 | 148,867 | 191,920 |
| WHEATON PRECIOUS METALS CORP | 605 | 11,576 | 13,389 |
| WHIRLPOOL CORPORATION | 528 | 83,701 | 89,042 |
| WILLDAN GROUP INC | 279 | 8,267 | 6,679 |
| WILLIAM LYONS HOMES | 975 | 18,525 | 28,353 |
| WILLIAMS COS INC | 5,975 | 208,827 | 182,178 |
| WILLIS TOWERS WATSON PLC | 971 | 116,510 | 146,320 |
| WILLIS TOWERS WATSON PLC | 3,780 | 611,088 | 569,608 |
| WINNEBAGO INDS INC | 1,080 | 51,580 | 60,048 |
| WINTRUST FINANCIAL CORP | 1,736 | 99,199 | 142,994 |
| WIPRO LTD SPONSORED | 15,635 | 87,483 | 85,523 |
| WM MORRISON SUPERMARKETS UNSPONSORED | 3,127 | 49,865 | 46,139 |
| WOLTERS KLUWER NV SPONSORED | 716 | 32,201 | 37,361 |
| WOODSIDE PETROLEUM SPONSORED | 2,430 | 55,494 | 62,548 |
| WOORI BANK SPONSORED | 1,873 | 88,251 | 83,704 |
| WORKDAY INC-CLASS A | 3,800 | 382,570 | 386,612 |
| WORKIVA INC CL A | 899 | 20,000 | 19,239 |
| WORLD ACCEPTANCE CORP | 221 | 18,104 | 17,839 |
| WPP PLC SPONSORED | 261 | 24,389 | 23,636 |
| WPX ENERGY INC | 14,935 | 158,657 | 210,135 |
| WYNDHAM WORLDWIDE CORP | 743 | 58,927 | 86,091 |
| WYNN RESORTS LTD | 578 | 47,938 | 97,445 |
| XCEL ENERGY INC | 3,670 | 131,912 | 176,564 |
| XCERRA CORP | 2,571 | 25,434 | 25,170 |
| XENIA HOTELS & RESORTS INC | 4,306 | 94,767 | 92,967 |
| XEROX CORPORATION | 1,543 | 40,659 | 44,978 |
| XILINX INC | 1,797 | 87,527 | 121,154 |
| XILINX INC | 8,672 | 567,649 | 584,666 |
| XL GROUP LTD | 1,865 | 71,553 | 65,573 |
| XO GROUP INC | 940 | 16,810 | 17,352 |
| XYLEM INC | 1,298 | 61,740 | 88,524 |
| YAHOO JAPAN CORP UNSPONSORED | 1,302 | 11,690 | 11,913 |
| YAMANA GOLD INC | 4,239 | 11,455 | 13,226 |
| YANZHOU COAL SPONSORED | 1,822 | 19,018 | 21,317 |
| YARA INTERNATIONAL SPONSORED | 433 | 20,025 | 19,849 |
| YASKAWA ELECTRIC CORP UNSPONSORED | 786 | 50,949 | 69,600 |
| YELP INC | 2,825 | 125,788 | 118,537 |
| YUM CHINA HOLDINGS INC | 1,112 | 44,741 | 44,502 |
| YUM! BRANDS INC | 2,492 | 132,936 | 203,372 |
| YUM! BRANDS INC | 2,492 8,000 | 573,539 | 652,880 |
| YY INC SPONSORED | 248 | 19,192 | 28,039 |
| ZAGG INC | 1,089 | 9,588 | 20,092 |
| ZEBRA TECHNOLOGIES CORP | 13,925 | 9,388 1,492,468 | 1,445,415 |
| LEDIA IECHNOLOUED COM | 15,725 | 1,472,400 | 1,440,410 |

| SECURITY NAME | QUANTITY | COST | MARKET |
|----------------------------------|----------|---------|---------|
| ZIMMER BIOMET HOLDINGS INC | 1,462 | 158,444 | 176,420 |
| ZIONS BANCORPORATION | 1,461 | 48,828 | 74,263 |
| ZOETIS INC | 3,548 | 159,332 | 255,598 |
| ZURICH INSURANCE GROUP SPONSORED | 2,469 | 73,643 | 75,082 |
| ZYNGA INC | 30,727 | 92,191 | 122,908 |
| | | | |

487,102,346

3,223,366,200

AGREEMENT RE: EXPENDITURE RESPONSIBILITY

This Agreement Re Expenditure Responsibility is made and entered into as of the 21st day of December, 2016, by and between the Robert W. Woodruff Foundation, Inc. ("Grantor") and Ichauway, Inc. ("Grantee").

WHEREAS, Grantor has agreed to make a grant of \$9,975,000 to Grantee contingent upon certain requirements and conditions; and

WHEREAS, Grantor and Grantee wish to set forth those requirements and conditions in writing;

NOW THEREFORE, Grantor and Grantee agree as follows:

- 1. Grantor shall make a grant of \$9,975,000 to Grantee for operating and capital expenses of the Joseph W. Jones Ecological Research Center in 2017. Grantee shall use the grant for operating and capital expenditures in accordance with the budget approved by its trustees. Grantee hereby agrees to repay any portion of the grant not used for such purposes.
- 2. Grantee hereby agrees to submit to Grantor full and complete annual reports on the manner in which the grant is spent and the progress made in accomplishing the purposes of the grant.
- 3. Grantee hereby agrees to maintain records of receipts and expenditures and to make its books and records available to Grantor at any reasonable time.
- 4. Grantee shall not use any of the grant
 - a) to carry on propaganda or otherwise to attempt to influence legislation (within the meaning of Section 4945 (d)(1) of the Internal Revenue Code),
 - b) to influence the outcome of any specific public election, or to carry on, directly or indirectly, any voter registration drive (within the meaning of Section 4945 (d)(2) of the Internal Revenue Code),
 - to make any grant which does not comply with the requirements of Section 4945
 (d)(3) or (4) of the Internal Revenue Code, or
 - d) to undertake any activity for any purpose other than one specified in Section 170(c)(2)(B) of the Internal Revenue Code.

| Name: | hasself . |
|--------|------------------|
| By: | P Russell Hardin |
| Title: | President |

| ICHAU | WAY, DTC. d/b/a Joseph W. Jones Ecological Research Center |
|--------------|--|
| Name: By: | Lindsay R. Boring |
| Title: | Director |

Director's 2017 Annual Report to the Trustees of Ichauway, Inc.



April 3, 2018

Submitted by Kier D. Klepzig, Ph.D. Director

Introduction and Summary

The Joseph W. Jones Ecological Research Center at Ichauway continues its mission to understand, demonstrate, and promote excellence in natural resource management and conservation.

This past year was one of change and vision. With the hiring of a new director, the Center began a formal strategic planning process. With the retirement of the only other director of the Center up to this point, the Center found itself at an exciting juncture. Seeking to go beyond our distinguished reputation, the Center will continue the work that we do well, while realizing that it is time to let go of some aspects of our operations that do not move us toward our new vision and goals. Our commitment to excellence and the impact we already make will not waver. We will expand on the path that has brought us this far in achieving this mission. Ichauway will serve as a working forest, and an outdoor laboratory for research, educational demonstrations, and conserving and restoring regional ecosystems. This maintenance of our strong tradition will be joined with new realizations about how we can most effectively carry out this mission and our new vision: To be an effective, impactful, trusted source and broker of natural resource knowledge. We have developed new goals to realize our vision. While we continue to do the work that we do well, we will move forward by focusing on the following goals: 1) Increase our role as a crossroads for researchers and practitioners. 2) Ensure that all who come in contact with the Jones Center become inspired advocates for our conservation and research philosophies. 3) Maximize the impact of our knowledge and conservation ethic on natural resources management. Objectives supporting these goals are found in the formal strategic plan.

The Jones Center is entering a new era in many respects. We have a new director, new challenges to successful research and management, and a new strategic plan to address these new challenges in new ways. The past 26 years have seen the creation of a one-of-a-kind research, demonstration and education center, a working and learning landscape. Our next phase will concentrate on being known for excellence in natural resource management and learning, on making a greater impact on science and the landscape, and on convening the best minds in research and management to address needs in the southeast and beyond.

As mentioned in last year's report from Dr. Boring, "The Center has many great attributes... close teamwork of staff, dedicated support and funding from the Woodruff Foundation, Ichauway and its excellent management, a list of impressive and committed long-term advisors, extensive connections with other organizations, and the long-term research and education programs."

We stand poised to further the vision and legacy of those who created this Center from a historic, inspiring place and turned it into the premier institution it is now. We look forward to interacting with all of our advisors, partners and you the trustees to

realize our new vision and goals. We feel confident that no one has yet seen just how much the Jones Center at Ichauway can do.

Despite the transitions of this past year, and the substantial effort required to develop a new strategic plan, the Center continued its excellent record of productivity and impact.

The Center's synthesis book Ecological Restoration and Management of Longleaf Pine Ecosystems is now out and available from CRC press. This landmark work provides the definitive summary of research on this ecosystem, and provides critical insights into future research, education and management directions. We have distributed this book to over 80 scientists, managers and influencers of the coastal plain and beyond. This significant achievement was matched by a strong journal publication year, with many appearing in high impact journals.

The Conservation staff continues to excel in stewardship of Ichauway and its natural assets. The redesigned apprentice program and the demonstration of Stoddard-Neel forest management through a more active timber harvest program are major steps in a new direction. The apprentice program will now consist of a non-research MS degree to develop future conservation employees and leaders. This year saw the beginning of an initiative to operationally demonstrate the Stoddard-Neel forest management philosophy and concepts through an active operational (and revenue generating) timber harvest program. By physically demonstrating and studying such operations, the Center can be more effective in teaching and promoting ecological forest management principles.

The Education and Outreach Program is having more impact and touching more stakeholders than ever before. To address current needs and strategic future directions, this group has already completed a social media analysis, and is commissioning a communications plan for the Center.

This was another major transitional year, with the arrival of a new director and the creation of a detailed strategic plan to guide work and performance into the future. With the July 2017 arrival of the new director, and the development of a new strategic plan, the Center will strive to go beyond its distinguished reputation. The Center will continue the work it does so well, while realizing that it is time to let go of some aspects of operations that do not move the Center toward its new vision and goals.

Jones Center Advisory Committee (JCAC)

The Jones Center Advisory Committee (JCAC), Bob Larimore, Nova Silvy, and Jim Vose convened at Ichuaway, 5–7 February 2018. The JCAC spent this time in meetings and discussions with members of the Woodruff Foundation, Center staff, graduate students, and support personnel. The team was especially appreciative of the time spent during the poster session with the lead technicians and graduate students.

The JCAC was appreciative of the responsiveness of the Center to recommendations and concerns raised in last year's report. Priority recommendations in last year's report included: (1) Increasing Science and Education/Outreach Capacity (2) Re-Starting the Apprentice Program, (3) Increasing Education and Outreach exposure and impact, (4) Continuing to Expand Influence and Impact, and (5) Continued Emphasis on Publications. The team noted the hiring of post-doctoral associates to focus on hydrology and analysis of the long-term monitoring data, the re-design of the Apprentice Program, and thinking about innovative approaches (including bringing in an outside consultant) to increase education and outreach exposure and impact. In addition, much of the strategic planning discussion centered on expanding the Jones Center's influence and impact. Many of the science presentations indicated a high level of scientific output in 2017. The team acknowledged the work being done to create a strategic plan, saying:

"...our impression is that the process has been extremely successful in creating an atmosphere of shared vision, ownership, and commitment by all JC employees to the overall JC mission. There also was a high level of excitement and participation in meeting discussions by a wide range of JC staff. We think this reflects a high level of trust by JC Staff in the leadership of the new JC Director and the support received by the Woodruff Foundation."

Research

General

The Jones Center's funded research is still organized into five long-term integrated projects, described in more detail below, which are likely to change as the strategic plan is implemented. The addition of a new scientist (and director), Dr. Kier D. Klepzig, has expanded the research program on longleaf pine ecosystems to include insects, diseases and discovery of new medicinal compounds from plants within the forests of Ichauway.

Center research is led by our scientists but enhanced by lead technicians, visiting scientists, and over 75 other scientists and collaborators. This past year the Center supported 25 graduate students from 8 universities, and added 1 new externally funded research project to the 7 ongoing projects from 7 agencies.

Research Projects

The six long-term research projects are complemented with additional but related externally funded projects that either expand our Ichauway projects, or extend our studies to be regional in scope with other valuable sites, cooperators and issues outside of Ichauway. In 2017 these were key project goals and achievements for each long-term project:

 Ecological Forestry in the Longleaf Pine Forest Type-Management to Sustain and Restore the Ecosystem and Reconnect the Landscape Investigators: Steve Jack, Mike Conner, Kay Kirkman, Kevin McIntyre, Lora Smith, and Seth Bigelow
 Collaborators: Lindsay Boring, Jean Brock, and Jimmy Atkinson

The goal for this project is to meet the challenge of providing sound management information supported by a strong scientific understanding through coordinated research, outreach and demonstration efforts. This large and comprehensive project incorporates many applied research sub-projects focused on the longleaf pine forest. The two major focal areas are: 1) management of longleaf plantations to achieve a multi-aged condition sustained by natural regeneration and with a diverse plant community, and assessment of wildlife community use at different stages of stand development during the restoration process; and 2) assessing long-term effects of 3 uneven-aged harvest treatments on longleaf overstory and regeneration, the ground cover plant community, wildlife communities, and fuels distribution and fire behavior.

The signature achievement associated with this project in 2017 was completion and publication of the book Ecological Restoration and Management of Longleaf Pine Forests, a synthesis of basic and applied research based largely upon work conducted at the Jones Center but also including work reported in the literature. The book, edited by Kay Kirkman and Steve Jack, has 17 chapters plus Foreword and Preface; 12 current staff were lead or co-authors for the chapters. While the book is not solely associated with this long-term project, much of the information in this synthesis volume can be associated with its many sub-projects as well as several previous projects with a longleaf pine focus.

Field work with this project involved continuing long-term periodic measurements, with no major operational activities. Specific achievements include:

- Supervision of 9 graduate students associated with this project; 14
 presentations made at national and regional meetings; 14 manuscripts
 published, in press or submitted; 3 proposals funded by external agencies; and
 multiple outreach events of variable duration.
- Continued measurements of longleaf pine regeneration, hardwood sprout development, litterfall and seedfall from longleaf pine, fire mortality of hardwoods stems, and cone predation in the Ecological Forestry plots.
- Assessed establishment of seeded ground cover in the older slash pine plantation, and measured survival of longleaf pine seedlings underplanted in all (old and young) slash pine plantations included in Restoration project.
- Monitored small mammal and bird use of plantations included in the Restoration project to assess their use at different stages of stand development.

- Soils were sampled in the long-term restoration plantation and old field stands to monitor carbon and nitrogen profiles following thinning and/or planting treatments.
- Adaptive Silviculture for Climate Change (ASCC) in Southeastern USA Investigators: Seth Bigelow, Steve Jack, Steven Brantley, Mike Conner, Lora Smith

Lead Research Technicians: Lisa Giencke, Jen Howze, Andy Whelan, Gail Morris, Stribling Stuber, and Mary Frances Nieminen

The project, part of a nation-wide study, is designed to test alternative silvicultural strategies for preparing stands in anticipation of impacts from a changing climate. Major goals of the project are to test strategies of resistance, resilience, and transition to future climates; our implementation of these strategies incorporates research questions regarding the role of oaks in longleaf pine savannahs. A battery of pre-treatment measurements were done in 2017. We implemented a nationally consistent measurement protocol, installing 128 1/10th acre plots: within these plots all trees are mapped and measured, and in subplots, hardwood shrubs and regenerating longleaf pines have been counted, photos for leaf area index and before/after documentation have been made, and all groundcover plant species have been identified and estimated for cover (%). Additional measurements, not part of the national protocol, involve trapping herpetofauna (mainly lizards) in control and resistance treatments; camera surveys and live trapping of small mammals. Key activities include:

- A graduate student (University of Florida) was recruited to carry out a study on the effects of neighboring oaks on the resilience of longleaf pines to drought.
- A study of the effects of mesic- and xeric-site oaks on prescribed fire temperature and duration was carried out by Lead Tech Andy Whelan
- Bigelow participated in a special session devoted to the ASCC project at the National Silviculture Workshop (Flagstaff, AZ).

3) Longleaf Pine Ecosystem Study

Investigators: Steven Brantley, Lindsay Boring, Kay Kirkman, Mike Conner, Scott Taylor, Lisa Giencke, Gail Morris, and Stribling Stuber

The Longleaf Pine Ecosystem Study is a continuation of work started two decades ago to understand the effects of fire regime and site resources (water, nitrogen, etc.) on productivity and species diversity, and guide ecosystem management and restoration efforts. That original project has created numerous opportunities for outside collaboration and graduate student mentoring, and has resulted in a number of critical publications and long-term data sets. In 2008,

three Eddy-Flux towers were added to the project to pursue questions about the effects of fire and soil water availability on carbon and water dynamics in longleaf pine woodlands. In 2015, a fire reintroduction study was initiated in 2 of the 5 fire suppression sites. At that time, the ecohydrology lab initiated a study to construct a comprehensive water budget for longleaf pine with and without prescribed fire. Also in 2015, a study was initiated to examine differences in bark beetle communities and tree defenses among the prescribed fire, fire suppressed, and fire reintroduced sites. Current research objectives are: (1) quantify changes in the longleaf pine-wiregrass ecosystem function, resilience, and forest health among fire maintained woodlands, woodlands where fire has been absent, and woodlands where fire is being reintroduced to suppressed areas; (2) determine fire and climate influences on C cycling, CO2 emissions, and forest water use using eddy covariance; and (3) quantify changes in plants, small mammals, and birds in response to fire suppression and reintroduction. Key activities include:

- · Supporting 2 doctoral students and 1 master of science student
- Published 2 journal articles, 2 chapters in the longleaf pine restoration book, and gave 5 professional presentations.
- Organized and hosted an on-site workshop "Integrated Ecosystem Network workshop" with the goal of establishing both formal and informal linkages among eddy-covariance sites across the southeastern U.S. to answer macroscale questions about fluxes of CO2, water, and smoke emissions.
- The project was highlighted in 2 university class visits, 2 stakeholder outreach events, and 5 resource professional group tours.

Hydrologic Variation and Human Development in the Lower Flint River Basin: An Ongoing Landscape-Scale Experiment Investigators: Steve Golladay and Steven Brantley Lead Research Technicians: Chelsea Smith and Stribling Stuber

Our ongoing research is assessing the effects of water withdrawals and land use on water resources of the lower Flint River Basin (FRB). Since the 1970's, population growth, reforestation, and rapid expansion of irrigated agriculture in southwestern Georgia have led to increased water demands from agriculture, forestry, industry, and municipalities. These increased demands have stressed regional water resources, particularly during droughts, and have likely negatively impacted aquatic biota and ecosystem services. Our research addresses three fundamental questions associated with human activity in the lower FRB: (1) how does human land use and appropriation of water influence water quality and quantity in the lower FRB; (2) how does temporal variation in water availability affect aquatic ecosystems of the lower FRB; and (3) what management actions are necessary to provide for human demand while maintaining ecosystem services. Selected accomplishments include:

- Organized a workshop entitled "Hydrologic Connectivity: Bridging Terrestrial and Aquatic Ecosystems in a Karst Landscape," July 18-21, 2016. The workshop helped frame our rationale for future priorities for regional water resources research with well-defined applications to management and conservation challenges. Additionally, at least one new collaboration resulted directly from the workshop.
- Studies of sediments, invasive bivalves, and invasive vegetation revealed that a novel combination of species in Lake Seminole is reducing concentrations of, and sequestering nutrients and metals from upstream runoff. Results were published in Biological Invasions Record. Several other manuscripts based on Lake Seminole invasive species research are in review (Freshwater Biology, Aquatic Ecology).
- A time-series of land cover data was used along with published ET values to estimate changes in water yield in the Ichawaynochaway watershed since 1948. These estimates were validated using historic climate and streamflow records that show significant reductions in water yield starting in 1981.
- The Soil Water Assessment Tool (SWAT) was parameterized and calibrated for Ichawaynochaway Creek. Preliminary simulations show small increases (<20%) in monthly stream runoff from increases in forest cover and changes in forest type, with the greatest changes from longleaf pine restoration. This model will also be used in a collaborative partnership with GA TNC to explore irrigation efficiency efforts and landscape factors influencing streamflow.
- We participated in technical advisement for the NOAA Drought Early Warning System being implemented in the ACF River basin. We also participated, as external advisors, in strategic planning efforts for the USGS Southeastern Climate Science Center in Raleigh, North Carolina.
- 4 Journal articles, 1 outreach publication, 3 proposals submitted (1 funded, 1 pending), 13 meeting presentations.
- Geographically Isolated Wetlands in the Coastal Plain Landscape Investigators: Lora Smith, Steve Golladay, Steven Brantley, Mike Conner, Kay Kirkman

Research Associates/Lead Research Technicians: Jennifer Howze, Chelsea Smith, Stribling Stuber, Lisa Giencke, Gail Morris

This study is designed to enhance the understanding of wetland functions and services that could guide future policy relative to wetland management and conservation (nationally and at the state level). This study integrates research of the functional role of wetlands in the region, specifically with the goals to: 1) provide new information related to linkages of isolated wetlands to the regional watershed; 2) relate wetland ecosystem services to human health and well-being; and 3) use Ichauway's wetlands as a reference for evaluating functions and services of wetlands across a gradient of wetland alteration in the region.

Long term monitoring of wetland water levels, water quality, and biota (plants, invertebrates including mosquitoes, fish, amphibians, birds) at reference and altered wetlands is ongoing. Key activities include:

- Supporting 3 graduate students on the project and publishing 7 papers.
- Submitted 2 external proposals:
 - From Heterogeneity and Connectivity to Wetland Meta-ecosystem Functions.; NSF Macrosystem Biology Proposal: Collaborative Research: MSB-FRA: (Smith, Golladay, & Brantley, with UF, USF, VT, FIU, NC State)
 - New eDNA Sequencing Approaches to Improve Assessment of Genetic Diversity and Landscape Genetics in Amphibian Populations; Preproposal to Strategic Environmental Research and Development Program: (Smith, with UA, UGA, Tyndall AFB, Eglin AFB)
- The project was highlighted with 4 university class visits, and 3 resource professional groups.
- Co-organizers Special Session "Wetlands in Agriculture-Dominated Landscapes." Georgia Water Resources Conference 2017.
- Organizers- "Biological Connectivity among Geographically Isolated Wetlands: Patterns across Space and Time." American Water Resources Association, 2017 Spring Specialty Conference.
- Completed installation of a new instrument cluster to monitor hydrologic parameters in selected wetlands.
- 6) The Ecological Role of Mesopredators, the Effects of Mesopredator Control, and Habitat Approaches for Managing Predation Investigators: Mike Conner, and Lora Smith Research Associates: Gail Morris, and Jennifer Howze

Our research objectives are based on the premise that wildlife populations need food, cover, and space (i.e., habitat) to persist. Food and cover generally occur in patches with some patches providing more cover than food, other patches more food than cover and some providing little of either. The composition and distribution of patches vary in space and time, providing challenges for both individual animals and populations.

An animal that fails to incorporate predation risk into day-to-day behaviors is unlikely to survive and even more unlikely to reproduce. Therefore, predation is one of the most important drivers of animal behaviors such as diet, movements, and activity patterns, all of which influence habitat selection, or more generally space use patterns. Competition also impacts animal behavior, and intraspecific competition has long been a core component of habitat selection theory. Our research capitalizes on existing infrastructure (predator exclosures, herbivore exclosures, and small animal enclosures) to better understand mechanisms behind animal behaviors (e.g., movement, foraging, habitat selection, etc.) and how those mechanisms affect animal populations. Our goals are straightforward, but in addressing these goals, we hope to advance our ability to manage wildlife populations, communities, and ecosystems in the face of changing environmental conditions. Therefore, we seek to understand how interspecific interactions, such as predation and competition, alter animal behaviors, such as foraging and habitat selection, to ultimately affect their distribution, abundance, and ecosystem impacts. Key Achievements in 2017 include:

- Continued data collection (mammal, snake, and gopher tortoise abundance and demographics; antipredator behavior assessment, small mammal foraging; developed technique to measure antipredator behavior in deer).
- Publications: 11 in print, 4 in press, 6 in review.
- SERDP pre-proposals: 1 submitted
- SERDP full proposal: 1 (subcontract) funded
- Organized and hosted a USFWS Tortoise Population Target Workshop
- Graduate students: 2 new PhD students finished their first semester of classes. 1 MS and 1 PhD student to defend spring/summer 2018.

Productivity

The Center research program continues to achieve a high level of publication productivity, both in numbers and quality.

Numerous presentations were given by staff and graduate students at national and regional professional meetings. A total of 25 graduate students from 8 universities were supported by the Center in this past year.

External Support and Collaboration

Our staff has secured external funding from seven agencies for a total of eight projects for research and outreach programs that are compatible with organizational objectives. These awards, spanning multiple years, totaled \$924,047. The total received in 2017 was \$159,675.

University of Georgia (1) National Science Foundation (2) The Nature Conservancy (1) U.S. Fish and Wildlife Service (1)Florida Fish and Wildlife Conservation Commission (1)USDA Forest Service (1)Georgia Department of Natural Resources (1)

Education and Outreach

General

2017 was a busy and productive year for the Jones Center's education and outreach program. We continue to emphasize a diverse range of efforts for our target audiences of practicing natural resource professionals and university students enrolled in dedicated natural resource programs. These audiences represent the best opportunity for implementation and application of Center science now and in the near future. We target high-leverage activities that make the most of programmatic resources. Over the last few years, the program has put greater emphasis on natural resource professionals, with this group comprising approximately over half of the participants in 2017 Center activities. We continue to balance onsite educational activities, collaborative partnerships throughout the region, and digital and printed media for communication. Highlights on several of these topics are below with details listed in the Appendix.

Onsite Educational Activities

- 550 individuals participated in 29 Center educational events at Ichauway, and approximately 900 people attended our Open House.
- The Center conducted two week-long university Maymester courses for UGA and UF; Longleaf Pine Restoration and Management and Prescribed Fire. We also hosted two other visiting UGA maymesters; Hydrology and Geology of Georgia and Ecological Issues Around Georgia.
- We held our annual Ecological Forestry Workshop, with 19 participants from federal and state natural resource agencies as well as conservation NGOs across the southeast
- Center staff hosted a visit from the Carl Vinson Institute of Government's Environmental Policy Academy, designed to educate legislators from the GA House and Senate Natural Resource Committee about current issues of relevance to their committees.
- The Center hosted a 3-day workshop for natural resource professionals involved in setting priorities and strategies for gopher tortoise conservation across its range as they work to preclude the need for listing this species under the Endangered Species Act.

Regional Collaborative Partnerships

- The Center continues to be active in the Longleaf Partnership Council (LPC). The LPC is a collaborative group working to implement the America's Longleaf Rangewide Conservation Plan for Longleaf Pine, which seeks to double the acreage of longleaf pine.
- Center staff serve as permanent vice-chair of the Georgia Prescribed Fire Council, Chair of the Coalition of Fire Councils, and as a member of the national Wildland Fire Leadership Council.
- Center scientists and staff served on various professional societies, as well as advisory committees for government agencies and NGO conservation groups.
- The Center helped lead offsite conferences such as the GA Prescribed Fire Council meeting, which set another record for attendance in 2017.

Printed and Digital Media

- The Center produced the 2016-2017 edition of its Biennial Report, which can be found at: http://www.jonesctr.org/products/biennial/2016.pdf
- Center staff have presented webinars and on-line presentations in collaboration with the Southern Fire Exchange and the Wildland Fire Leadership Council. The Center consulted with a communications professional to review opportunities for greater utilization of digital communications media.

Conservation and Land Management

Stewardship of Ichauway

The Conservation staff at the Jones Center is charged with the long-term stewardship of the natural resources of Ichauway, and also to provide support for the Center's Research and Education programs. Broad resource management objectives for the Conservation program can be characterized as ecological management and restoration of a functioning pine-grassland system in a landscape that includes embedded wetlands and streams and diverse animal and plant communities. The primary tool to meet these broad objectives is an active prescribed fire program. Other activities include forest management at the stand scale, vegetative conversion and restoration, and habitat management for multiple game species as well as some threatened and endangered fauna . Although many operational activities do not change a great deal from year to year, a list of notable achievements within the Conservation program in 2017 is included below.

In 2017 a post-doctoral associate was hired into the Conservation program to lead analyses on the multiple long-term monitoring data sets collected by Conservation program personnel. Achievements in 2017 are listed below, and focus in 2018 will shift toward collaboration with the wildlife research programs to link wildlife population data (from research and monitoring) with information on decadal vegetation changes at multiple spatial scales.

Significant Achievements in 2017

- A total of 12,962 acres were burned using prescribed fire to meet specific objectives, with 5687 acres (44%) burned during the growing season.
- The red-cockaded woodpecker population continued to increase under our restoration and management program. In 2017 we had 37 active clusters with 31 potential breeding groups; 36 chicks were banded during the 2017 spring breeding season. Our current RCW population is approximately 100 birds.
- The Conservation Post-doctoral Associate made significant progress on analyzing monitoring data gathered over 20 years. Efforts in 2017 focused on summarizing and reporting 16 years' data from the long-term vegetation monitoring plots and developing protocols to update the analyses as new data are added in the future. A manuscript reporting on this work is under development with completion planned in 2018.
- Conservation staff made major contributions to the Center's synthesis book Ecological Restoration and Management of Longleaf Pine Forests published in the fall, serving as co-editor and author or co-author on multiple chapters. In addition, Conservation staff were co-authors on 2 refereed journal publications.
- Discussions continued on how to redirect and revitalize the conservation apprentice program. The program was refocused toward recruitment of nonthesis Master degree students (Ichauway Conservation Fellows) with applied management interests. These students will work with Center staff on the projects and reports required to complete their degrees, and also will acquire experience with resource management practices conducted on Ichauway. Initial recruitment efforts are in conjunction with Universities of Florida and Georgia.
- Following the January 2 storm events, conservation crews cleaned-up damaged trees and debris from the salvage operation on 1108 acres. In addition, hardwood removals for restoration were conducted on 7 acres.
- Conservation staff worked to prepare a timber sale on 717 acres across the property. This sale included silvicultural treatments in research plots and operational management for timber stand improvement.

Budget Summary

The total budget for Ichauway, Inc. and the Joseph W. Jones Ecological Research Center for 2017 was \$10,700,176 of which \$9,975,000 was the board-approved internally funded budget and \$159,675 was funded from outside grants. The major source of funding for this budget was a grant from the Robert W. Woodruff Foundation.

All divisions of Ichauway operated within budget in 2017. Expenses for Research and support activities were \$3,479,571. Conservation and Land Management expenses were \$2,242,953. The expenses for Education and Outreach activities were \$574,916. Expenses for Administration, Maintenance and Operations were \$3,254,149, which also included overall Center operating expenses such as taxes, electric power and insurance costs.

APPENDIX

DIRECTOR'S 2017 ANNUAL REPORT to the TRUSTEES OF ICHAUWAY, INC.



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Publications, Presentations and Grants

"In Press" Publications for 2017

Bigelow, S. W., R. H. Yahner, C. G. Mahan, A. D Rodewalk, **L. M. Conner**, and **L. L. Smith**. Forest management for wildlife. *In* N. Silvy, Editor. Wildlife Techniques Manual. The Wildlife Society, Bethesda, MD, USA.

Farmer, A. L., K. M. Enge, J. B. Jensen, D. J. Stevenson, and **L. L. Smith**. A rangewide assessment of the status and distribution of the striped newt (*Notophthalmus perstriatus*). Herpetological Conservation and Biology.

Smith, L. L. Book review: Alabama Wildlife. The University of Alabama Press, Tuscaloosa, AL. Herpetological Review.

Marzolf, N. S., S. W. Golladay, P. McCormick, A. P. Covich, and S. Wilde. Inter- and intra-annual apple snail egg mass dynamics in a large southeastern US reservoir. Hydrobiologia. https://doi.org/10.1007/s10750-017-3475-x.

McIntyre, R. K., J. M. Guldin, T. Ettel, C. Ware, and K. Jones. Restoration of longleaf pine in the southern United States: a status report. In: Proceedings of the 19th Biennial Southern Silviculture Research Conference.

Murphy, C. M., **J. M. Howze**, **D. D. Knapp, L. L. Smith**, and S. K. Hoss. *Crotalus horridus* (Canebrake/Timber Rattlesnake). Hibernation Behavior. Herpetological Review.

Nieminen, M. F. and **S. B. Jack**. Long-term effects of prescribed fire site preparation on longleaf pine regeneration. Proceedings of the 19th Biennial Southern Silvicultural Resaerch Conference. USDA Forest Service General Technical Report.

Brooks, J. R. and **S. B. Jack**. Longleaf pine: restoration or reforestation? Proceedings of the 19th Biennial Southern Silvicultural Research Conference. USDA Forest Service General Technical Report.

Published Refereed Journal Articles and Books

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Biggerstaff, M. T., M. A. Lashley, M. C. Chitwood, C. E. Moorman, and C. S. DePerno. Sexual segregation of forage patch use: support for the social-factors and predation hyphotheses. Behavioural Processes 136:36-42.

Boring, L. R., J. J. Hendricks, **R. S. Taylor**, and D. Markewitz. Ecosystem processes and restoration. Pages 123-139 in **L. K. Kirkman**, and **S. B. Jack** (eds.). Ecological Restoration and Management of Longleaf Pine Forests. CRC Press, Boca Raton, FL.

Brantley, S. T., A. E. Mayfield, III, R. Jetton, D. R. Zeitlow, J. Rhea, and C. F. Miniat. Elevated light levels reduce HWA infestation and improve carbon balance in eastern hemlock seedlings. Forest Ecology and Management 385:150-160.

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Cherry, M. J., P. Howell, C. D. Seagraves, R. J. Warren, and **L. M. Conner**. Effects of Land cover on coyote abundance. Wildlife Research doi/10.1071/WR16052.

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Chitwood, M. C., M. A. Lashley, J. C. Kilgo, M. J. Cherry, **L. M. Conner**, M. Vukovich, H. S. Ray, C. Ruth, R. J. Warren, C. S. DePerno, and C. E. Moorman. Are camera surveys useful for assessing recruitment in white-tailed deer? Wildlife Biology. doi 10.2981/wlb.00178.

Conner, L. M., and **M. J. Cherry**. Considering Herbivory and Predation in Forest Management. *In* **L. K. Kirkman** and **S. B. Jack** (Eds). Ecological Restoration of Longleaf Pine Forests, CRC Press, Boca Raton, FL, USA. pp. 141-152.

Creed, I. F., C. R. Lane, J. N. Serran, L. Alexander, N. B. Base, A. J. K. Calhoun, J. Christensen, M. J. Cohen, C. Craft, E. D'Amico, E. DeKeyser, L. Fowler, H. E. Golden, J. W. Jawitz, P. Kalla, **L. K. Kirkman**, M. Lang, S. G. Leibowitz, D. B. Lewis, J. Marton, D. L. McLaughlin, H. Raanan-Kiperwas, M. C. Rains, K. C. Rains, **L. L. Smith**. Enhancing protection for vulnerable waters. Nature Geoscience 10(11):809-815.

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Jack, S. B. and **R. K. McIntyre**. Restoring and managing the overstory: An ecological forestry approach. *In* L. K. Kirkman and S. B. Jack. (eds). Ecological management and restoration of longleaf pine foersts. CRC Press, Boca Raton, FL, USA. pp. 175-205.

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McKee, A. M., J. C. Maerz, **L. L. Smith**, and T. C. Glenn. Habitat predictors of genetic diversity for two sympatric wetland-breeding amphibian species. Ecology and Evolution 7:6271-6283. doi: 10.1002/ece3.3203.

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K. Kirkman and S. B. Jack (eds.) Ecological Restoration and Management of Longleaf Pine Forests. CRC Press, Boca Raton, Florida.

Smith, L. L., J. A. Cox, R. A. McCleery, L. M. Conner, and E. M. Schlimm.
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Press, Boca Raton, Florida.

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Tietjen, W. L., S. Becker, T. Muenz, and **S. W. Golladay**. Observations on the spider fauna of geographically isolated wetlands in southwestern Georgia. Georgia Journal of Science 75: Article 14. (https://digitalcommons.gaacademy.org/gjs/vol75/iss2/14)

Turner, K. L., E. F. Abernathy, **L. M. Conner**, O. E. Rhodes, J. C. Beasley. Abiotic and biotic factors modulate carrion fate and scavenging communities. Ecology 98:2413-2424.

Warren, A. E., S. B. Castleberry, **L. M. Conner**, and D. Markewitz. Understory vegetation and soil characteristics of southeastern pocket gopher habitat in southwestern Georgia. American Midland Naturalist 178:215-225.

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Proceedings, Outreach and Other Publications

Atkinson, C. L., **S. W. Golladay**, and **L. L. Smith**. Larval anuran stable isotope signatures and stoichiometry across multiple geographically isolated wetlands in the southeastern United States. Southeastern Naturalist. 16(1):87-104.

Gandhi, K. J. K., B. F. Barnes, D. R. Coyle, **K. D. Klepzig**, F. H. Koch, L. Morris, J. T. Nowak, W. J. Otrosina, and W. D. Smith. Interactions among abiotic and biotic factors affecting the health of pine forests in the southeastern United States. Pages 169-174 in K. M. Potter, and B. L. Conkling (eds.). Forest Health Monitoring: National Status, Trends, and Analysis 2016. General Technical Report SRS-222. USDA, Forest Service, Southern Research Station, Asheville, NC.

Peterson, C., **S. W. Bigelow, S. B. Jack**, and L. Nagel. Flyer for Adaptive Silviculture for Climate Change, Southeastern Site.

Meeting Presentations, Posters and Abstracts

Abernathy, H. N., **D. A. Crawford**, E. P. Garrision, R. P. Chandler, K. Engerbretsen, D. B. Schindle, **L. M. Conner**, K. V. Miller, B. D. Kelly, and M. J. Cherry. What do white-tailed deer do in a hurricane? Annual meeting of The Wildlife Society. Albuquerque NM.

Atkinson, A., **S. McLeay**, **L. L. Smith, S. W. Golladay**. Biotic Connections: Drivers of Community Dynamics, Nutrient Dynamics, and Subsidy Strength. American Water Resources Association, 2017 Spring Specialty Conference. Snowbird, Utah.

Belovitch, M. W., S. T. Brantley, and D. P. Aubrey. Hydraulic redistribution within the xeric longleaf pine savannas of southern Georgia. Warnell Graduate Student Symposium. Athens, GA. Poster presentation. Received 2nd place in student poster competition.

Bigelow, S. W., A. W. Whelan, and **S. B. Jack**. Spatial elements of fire temperatures and hardwood response in longleaf pine silbicultural systems. 7th International Fire Ecology and Management Congress/2nd Applied Fire Science Workshop. Oral presentation.

Bigelow, S. W., S. B. Jack, and L. Nagel. Climate Change Coping Strategies for Longleaf Pine Savannas. National Silviculture Workshop, Flagstaff, AZ. Poster presentation.

Biggerstaff, M. T., M. J. Cherry, **L. M. Conner**, C. H. Killmaster, **J. T. Johnson**, R. B. Chandler, and K. V. Miller. Environmental and seasonal influences on white-tailed deer activity rates. Annual Meeting of the Georgia Chapter of The Wildlife Society, Covington, Georgia. Oral presentation.

Biggerstaff, M. T., M. J. Cherry, **L. M. Conner**, R. B. Chandler, C. H. Killmaster, **J. T. Johnson**, and K. V. Miller. Using passive cameras to monitor deer activity during the breeding season. 40th Annual Meeting of the Southeast Deer Study Group, St. Louis, Missouri. Poster presentation.

Biggerstaff, M. T., M. J. Cherry, **L. M. Conner**, R. B. Chandler, C. H. Killmaster, **J. T. Johnson**, and K. V. Miller. Using passive cameras to monitor deer activity during the breeding season. Warnell Graduate Student Symposium 2017, Athens, Georgia. Poster presentation.

Biggerstaff M. T., M. J. Cherry, **L. M. Conner**, C. H. Killmaster, **J. T. Johnson**, R. B. Chandler, and K. V. Miller. Environmental and seasonal influences on white-tailed deer activity rates. Georgia Department of Natural Resources Wildlife Research Meeting, Mansfield, Georgia. Oral presentation.

Brantley, S. T., O. S. Stuber, B. T. Rutledge, and **S. B. Jack**. Effects of hardwood removal on transpiration in a longleaf pine ecosystem. Ecological Society of America annual meeting. Portland, OR. Poster presentation.

Brooks, J. R., and **S. B. Jack**. Longleaf pine: Restoration or reforestation? 19th Biennial Southern Silviculture Resarch Conference, Blacksburg, VA. Oral presentation.

Buland, M., B. F. Barnes, K. D. Klepzig, K. J. Gandhi, and C. Villari. Species composition of root-feeding beetle associated Leptographium and Grosmannia blue-stain fungi in loblolly pine stands in Georgia. Mycological Society of America Meeting, Athens, GA. Oral presentation.

Conner, L. M. Predator control and game management. Kidd Graveyard Hunting Club. Fountain, AL. Oral presentation.

Covich, A. C., S. D. Shivers, **S. W. Golladay**, M. N. Waters, and S. B. Wilde. Rivers to reservoirs: Hydrologic drivers control reservoir function by affecting submerged aquatic vegetation coverage. Georgia Water Resources Conference. Athens, GA.

Cross, D. A., C. R. Smith, and **S. W. Golladay**. State citizen science biomonitoring protocols and their comparability to national invertebrate metrics. Georgia Water Resources Conference. Athens, GA.

Crawford, D. A., R. B. Chandler, M. J. Cherry, E. P. GArrision, D. A. Shindle, **L. M. Conner**, and K. V. Miller. Simultaneous Estimation of individual and population-level resource selection coefficients and home range size using random-effects Poisson process models. Annual meeting of The Wildlife Society. Albuquerque NM. Poster presentation.

Curtin, P. J., B. O. Knapp and **S. B. Jack**. Survival and growth of longleaf pine seedlings over a 10-year period in southwestern Georgia. Poster presentation. 19th Biennial Southern Silvicultural Research Conference, Blacksburg, VA. Poster presentation.

Curtin, P. J., B. O. Knapp and **S. B. Jack**. Midstory growth and canopy recruitment in naturally regenerated longleaf pine woodlands. Society of American Foresters Annual Convention, Albuquerque, NM. Oral presentation.

Davis, J., M. Freeman, and **S. W. Golladay.** Stream drying and fish metapopulation dynamics in the Ichawaynochaway Creek Basin, Southwest GA. Society for Freshwater Science Annual Meeting. Raleigh, NC.

Gaya, H., L. L. Smith and Clinton Moore. Improving line-transect distance sampling (LTDS) for gopher tortoise (Gopherus polyphemus) populations. 39th Annual Gopher Tortoise Council Meeting, Edgefield, SC.

Gaya, H., L. L. Smith and Clinton Moore. Improvements to line transect distance sampling for surveying gopher tortoise (Gopherus polyphemus) populations. 2017 Wildlife Research Meeting, Mansfield GA. Oral presentation.

Gaya, H., L. L. Smith and Clinton Moore. Improving line-transect distance sampling (LTDS) for gopher tortoise (Gopherus polyphemus) populations. Wildlife Society 24th Annual Conference, Albuquerque, NM.

Golladay, S. W. The Challenges of Stream Health. Invited Plenary Session. Georgia Water Resources Conference. Athens, GA.

Golladay, S. W., N. Marzolf, and C. Smith. Applying the sustainable boundary approach to develop flow guidelines in the unregulated Flint River, GA. Society for Freshwater Science Annual Meeting. Raleigh NC.

Herteux, C. E., D. E. Gawlik, and **L. L. Smith**. Wading bird use of geographically isolated wetlands in the southeastern U.S. Coastal Plain. Wilson Ornithology Society, Ft. Myers, Florida. Poster presentation.

Herteux, C. E., D. E. Gawlik and **L. L. Smith**. Wading bird use of geographically isolated wetlands in the southeastern U.S. Coastal Plain. Ornithological Congress of the Americas, Puerto Igauzu, Misiones, Argentina. Oral presentation.

Herteux, C. E., D. E. Gawlik and **L. L. Smith**. Wading bird use of geographically isolated wetlands in the southeastern U.S. Coastal Plain. Georgia Wildlife Society, Covington, GA. Oral presentation.

Holland, A., B. Rutledge, J. Brock and **S. Jack**. Evaluating success of longleaf pine restoration at Ichauway. 11th Southern Forestry and Natural Resource Management GIS Conference, Athens, GA. Poster presentation.

Howze, J. M. and **L. L. Smith**. Detection of Gopher Tortoise Burrows Before and After a Prescribed Fire Event. Gopher Tortoise Council. Palatka, FL. Oral Presentation.

Knapp, D., J. M. Howze, C. M. Murphy, M. C. Dziadzio, and **L. L. Smith**. Prescribed Fire Affects Vertebrate Use of Gopher Tortoise (*Gopherus Polyphemus*) Burrows in a Longleaf Pine (*Pinus palustris*) Forest. Gopher Tortoise Council. Palatka, FL. Oral Presentation.

Murphy, C. D. **D. Knapp, J. M. Howze**, M. C. Dziadzio, and **L. L. Smith**. An Evaluation of the Efficacy of Box Snake Trap Arrays and a Suggested New Trap Design. Gopher Tortoise Council. Palatka, FL. Poster Presentation.

Howze, J. M. and **L. L. Smith**. Detection of Gopher Tortoise Burrows Before and After a Prescribed Fire Event. Georgia Chapter, The Wildlife Society. Covington, Georgia. Poster presentation.

Murphy, C., **D. D. Knapp, J. M. Howze**, M. C. Dziadzio, and **L. L. Smith**. An Evaluation of the Efficacy of Box Snake Trap Arrays and a Suggested New Trap Design. Georgia Chapter, The Wildlife Society. Covington, Georgia. Poster presentation.

Howze, J. M. Amphibians of Southwest Georgia. Sertoma Club. Albany, Ga. Oral presentation.

Howze, J. M. Herpetology Research at the Jones Ecological Research Center. ABAC Wildlife Society Meeting. Oral Presentation.

Jack, S. B. and **S. W. Bigelow**. Climate change, disturbance, canopy density, and longleaf pine regeneration - are we missing something? Society of American Foresters National Convention, Albuquerque, NM. Oral presentation.

Johnson J. T., M. J. Cherry, L. M. Conner, R. B. Chandler, B. T. Rutledge, C. H. Killmaster, M. T. Biggerstaff, K. V. Miller. Do pre-season camera surveys reflect harvest availability during the hunting season? 40th Annual Meeting of the Southeast Deer Study Group. St. Louis, Missouri. Oral presentation.

Johnson J. T., M. J. Cherry, **L. M. Conner**, R. B. Chandler, **B. T. Rutledge**, C. H. Killmaster, **M. T. Biggerstaff**, K. V. Miller. Do pre-season camera surveys reflect harvest availability during the hunting season? Warnell Graduate Student Symposium 2017. Athens, Georgia. Poster presentation.

Johnson, J. T., M. J. Cherry, **L. M. Conner**, C. H. Killmaster, R. B. Chandler, **M. T. Biggerstaff**, and K. V. Miller. Using Infrared Cameras to Estimate White-tailed Deer Population Parameters. Georgia Department of Natural Resources annual update meeting, Covington, Georgia. Oral presentation.

Jorge, M. H., E. P. Garrison, **L. M. Conner**, and M. J. Cherry. Linking wildlife communities to prescribed fire on Camp Blanding Joint Military Installation in northern Florida. Annual meeting of The Wildlife Society. Albuquerque NM.

Klepzig, K. D., and C. Cooper. Citizen Science: The Sum of Us. Southern Forest Insect Work Conference, Melbourne, FL. Oral presentation.

Klepzig, K. D. Microbial symbionts at the interface: Chemical and biological warfare within trees. Entomological Society of America Annual Meeting, Denver, CO. Oral presentation.

Lane, C. R., H. E. Golden, **L. K. Kirkman**, S. G. Leibowtiz, D. Mushet, M. C. Rains, **L. L. Smith**. Putting Connectivity in Context: Overview on Geographically Isolated Wetland Research. American Water Resources Association, 2017 Spring Specialty Conference. Snowbird, Utah.

Marzolf, N., S. D. Shivers, B. Clayton, and **S. W. Golladay**. Intra- and inter-annual apple snail population dynamics in Lake Seminole. Georgia Water Resources Conference. Athens, GA.

Marzolf, N., C. Smith, and **S. W. Golladay**. Inter- and intra-annual apple snail (Pomacea spp.) egg mass production in Lake Seminole, GA, USA. Society for Freshwater Science Annual Meeting. Raleigh NC.

Marzolf, N., S. Shivers, C. Smith, **S. W. Golladay**, and A. C. Covich. An overview of Pomacea research in Lake Seminole, GA. Invited oral presentation. National Shellfisheries Association Annual Meeting. Knoxville TN.

O'Donnell, K. M., W. J. Barichivich, K. A. Buhlmann, J. Chandler, K. M. Enge, A. Farmer, T. A. Gorman, C. A. Haas, P. Hill, J. B. Jensen, M. Mandica, J. Mott, J. G. Palis, **L. L. Smith**, S. C. Walls. Estimating local and range-wide occupancy dynamics for federallylisted flatwoods salamanders. Ecological Society of America. Portland, OR.

Peterson, C., L. Nagel, J. Guldin, C. Swanston, M. Janowiak, M. Battaglia, **S. Bigelow**, A. D'Amato, **S. Jack**, T. Jain, E Sutherland, B. Palik, and C. Woodall. Adap[tive Silvicuture for Climate Change: A Scientist-Manager National Network. Society of American Foresters National Convention, Albuquerque, NM. Poster presentation.

Pynne, J. T., L. M. Conner, S. B. Castleberry, **E. Parsons**, R. Gitzen, S. Duncan, R. McCleery, J. D. Austin. Southeastern Pocket Gopher (*Geomys pinetis*) Associations with Southern Pine Forests, The Wildlife Society Georgia Chapter Meeting 2017 Covington, GA.

Nieminen, M. F. and **S. B. Jack**. Long-term effects of prescribed fire site prerparation on longleaf pine regeneration. 19th Biennial Southern Silviculture Research Conference, Blacksburg, VA. Oral presentation.

Ritger, H. W., L. R. Boring, J. J. O'Brien, **S. T. Brantley**, K. J. K. Gandhi. Short-term effects of fire in longleaf pine: Implications for forest & ecosystem health. Southern Forest Insect Work Conference. Melbourne, FL. Poster presentation.

Ritger, H. W., **L. R. Boring**, J. J. O'Brien, **S. T. Brantley** and K. Gandhi. Effects of fire regime on subcortical insects, tree physiology, and their interactions in longleaf pine. Warnell Graduate Student Symposium. Athens, GA. Oral presentation.

Rugel, K., **S. W. Golladay**, C. R. Jackson, T. C. Rasmussen, R. J. McDowell, and J. F. Dowd. Drivers and effects of groundwater-surface water interaction in the karstic lower Flint River Basin, Southwestern Georgia, USA. American Geophysical Union Fall Meeting. New Orleans, LA.

Smith, L. L. Wildlife Use of Geographically Isolated Wetlands in Forested versus Agricultural Landscapes. Georgia Water Resources Conference. Athens, GA. Oral presentation.

Smith, L. L. Biological Connectivity among Geographically Isolated Wetlands: Connectivity across space and time. Georgia Chapter, The Wildlife Society. Covington, GA.

Smith, C., **N. Marzolf**, **S. W. Golladay**. Invertebrate resistance/resilience mechanisms in an intermittent stream among years with varying hydroperiods. Society for Freshwater Science Annual Meeting. Raleigh, NC.

Stuber, O. S. and **S. T. Brantley**. Species-specific differences in tree water use during drought in longleaf pine savanna. Ecological Society of America annual meeting. Portland, OR. Poster presentation.

Subalusky, A., **L. L. Smith**, L. Fitzgerald, C. Atkinson, T. Glenn, R. Garrick. Measuring Biological Connectivity at Different Scales. American Water Resources Association, 2017 Spring Specialty Conference. Snowbird, Utah.

Waters, M. N., J. M. Smoak, **S. W. Golladay**, M. F. Piehler, and M. Brenner. Ecological change in response to hydrological change in shallow lakes of the SE USA: Evidence from the sediment record. IX International Shallow Lakes Conference. Merida, Mexico.

Whelan, A. W., S. W. Bigelow, M. F. Nieminen, and **S. B. Jack**. Season of fire, longleaf pine forest density and species composition effects on hardwood sprout demography. 7th International Fire Ecology and Management Congress, Orlando FL. Oral presentation.

Wicks, C., A. Webb, **S. T. Brantley**, and **S. W. Golladay**. Are isolated wetlands groundwater recharge hotspots? American Geophysical Union fall meeting. New Orleans, LA.

Professional Seminars, Guest Lectures and Special Presentations

Brantley, S. T. and **S. W. Golladay.** The role of forests in managing water scarcity in an agricultural landscape. Keeping Forests as Forests Workshop. Jacksonville, FL. Invited oral presentation.

Brantley, S. T., S. W. Golladay, and **S. W. Bigelow.** Longleaf pine and drought: Planning for an uncertain future. National Drought Meeting. San Antonio, TX. Invited oral presentation.

Brantley, S. T., S. W. Golladay, O. S. Stuber, and **S. W. Bigelow**. Longleaf pine restoration and water yield: Planning for an uncertain future. Watershed responses to longleaf pine restoration workshop. Cordesville, SC (remote presentation). Invited oral presentation.

Golladay, S. W. Overview of Citizen Science in Natural Resources and Conservation. Georgia Adopt a Stream Confluence Conference. Buford, GA. Invited oral presentation.

Golladay, S. W., C. R. Smith, S. D. Shivers, **N. Marzolf**, and A.C. Covich. Of limpkins and apple snails: Invasive species, novel ecosystems, and an uncertain future. Georgia Chapter of the Wildlife Society Annual Meeting. Covington GA. Invited oral presentation.

Jack, S. B. Underplanting plantations for specieis conversion and restoration - lessons from operational case studies. All-Florida RCW Symposium and RCW Translocation Cooperative Meeting, Tallahassee, FL. Invited oral presentation.

Mayfield A, **S. T. Brantley**, C Brown, et al. Hemlock woolly adelgid research: update from the Southern Research Station. 3rd annual hemlock woolly adelgid program managers meeting. Chattanooga, TN. Invited oral presentation.

Miniat, C. F. and **S. T. Brantley**. Measurement and scaling of sap flow in species rich forests to inform land managers on changing hydrology. 10th International Workshop on Sapflow. Fullerton, CA. Invited keynote address.

Miniat, C. F., K. J. Elliott, J. D. Knoepp, A. C. Oishi, S. N.D. Hawthorne, and **S. T. Brantley**. How reforestation may impact water quantity and quality. USDA Forest Service Restoration Matters Workshop. Portland, OR. Invited oral presentation.

Smith, L. L., C. McElroy, C. Herteux, D. Gawlik, R. L. King, and A. L. Subalusky. Biological Connectivity among Geographically Isolated Wetlands: Patterns across Space and Time. American Water Resources Assocation, 2017 Spring Specialty Conference. Snowbird, Utah. Symposium Speaker and Organizer.

Externally Funded Projects

Boring, L. R., J. F. Franklin, and R. J. Mitchell. Building forest management into Earth system modeling: scaling from stand to continent. The National Science Foundation. June 01, 2013 – May 31, 2017. \$170,872. Received in 2017, \$11,884.

Brantley, S. T., and **S. W. Golladay**. Soil and water assessment tool modeling. The Nature Conservancy. December 07, 2016 – December 31, 2017. \$38,000. Received in 2017, \$38,000.

Conner, L. M., and K. Miller. Development and evaluation of an unbaited camera survey technique for estimating relative abundance and demographic parameters of white-tailed deer. U.S. Fish and Wildlife Service, subcontracted through University of Georgia. July 01, 2014 – September 30, 2018. \$145,140. Received in 2017, \$14,758.

Conner, L. M., M. J. Cherry, R. Chandler, and K. Miller. Effects of hydrology, hunting, and predation on white-tailed deer dynamics in south Florida. Florida Fish and Wildlife Conservation Commission, subcontracted through University of Georgia. September 29, 2014 – December 31, 2018. \$184,734. Received in 2017, \$1,042.

Conner, L. M., and R. A. McCleery. Collaborative research: EAGER-NEON: NEON sites as a platform for transformative wildlife research. National Science Foundation. October 01, 2015 – September 30, 2018. \$167,148. Received in 2017, \$28,360.

Conner, L. M., and R. A. McCleery. Using an ecosystem engineer to restore functionality of natural pinelands in the southeastern United States. Georgia Department of Natural Resources. January 01, 2016 – September 30, 2018. \$187,153. Received in 2017, \$53,387.

Smith, L. L. Gopher tortoise conservation strategy workshop. U.S. Fish and Wildlife Service. August 01, 2017 - May 31, 2018. \$15,000. Received in 2017, \$8,764.

McIntyre, R. K. Forest Service Prescribed Fire Training Center Workshop. USDA-NRCS. November 2015 – 2020. \$16,000. Received in 2017, \$3,480.

Education and Outreach Program On-site Activities

University Class Visits

University of Georgia. A week-long Maymester short course in fire ecology. (16)

University of Florida. A two-day field experience focusing on longleaf pine silviculture, management and restoration. (30)

Abraham Baldwin Agricultural College. A one-day field tour focusing on fire ecology and longleaf pine management and ecology. (33)

University of Georgia. A three-day field experience focusing on herpetofauna in long-leaf pine ecosystems and isolated wetlands. (16)

University of Wisconsin-Milwaukee. A one-day field experience focusing on hydrology the Flint River basin and associated aquatic systems. (13)

University of Georgia. A one-day field experience focusing on environmental issues around Georgia. (20)

University of Georgia and University of Florida. A week-long Maymester short course in longleaf pine management and restoration. (15)

Arkansas Tech University. A two-day field tour focusing on longleaf pine forest ecology. (9)

University of Georgia. A two-day field experience focusing on mammalogy. (13)

Natural Resource Professionals and Conservation Groups

Nonami Plantation. A one-day visit to learn about longleaf restoration in the wake of the January SW GA tornados. (1)

Internal Prescribed Fire Course. A two-day course focusing on prescribed fire for Jones Center employees and graduate students, including execution of a prescribed burn. (16)

National Prescribed Fire Training Center. A one-day field tour focusing on an introduction to longleaf pine ecosystems and prescribed fire in the southeastern U.S. (23) Prescribed Fire and Smoke Management Summit III. A three-day workshop focusing on state, regional, and national prescribed fire, smoke management, and air quality goals and issues. (32)

American Forest Foundation. A one-day scoping session to develop collaborative longleaf restoration and prescribed fire efforts between state agencies, NGOs and American Tree Farm members. (14)

Gopher Tortoise Council. A two-day business meeting and field tour. (10)

Institute for Georgia Environmental Leadership (IGEL). A one-day field tour focusing on longleaf pine ecology, prescribed fire and water resources issues. (33)

Side Scanning Sonar Workshop. A two-day training workshop focusing on a method of stream mapping using side scanning sonar. (5)

Freshwater Mussel Workshop. A four-day training workshop focusing on field survey techniques and identification of freshwater mussels. (20)

Natural Resources Conservation Service Native Warm Season Grasses Workshop. A three-day workshop focusing on native grasses identification. (16)

Carl Vinson Institute Environmental Policy Academy. A one-day workshop for members of the Georgia Legislature House and Senate Natural Resource Committees. (20)

Georgia Prescribed Fire Council (GPFC). A two-day visit with speakers for the Annual GPFC Meeting. (7)

Ecological Forestry Workshop. A three-day open-enrollment workshop focused on longleaf pine ecology, restoration and management, with a specific focus on application of the Stoddard-Neel system of forest management. (19)

Gopher Tortoise Population Workshop. A three-day workshop that brought together researchers and U.S. Fish and Wildlife Service representatives to review recent data and modeling on gopher tortoise population status across the species' range. (18)

Southeastern Pocket Gopher Meeting. A two-day meeting to coordinate regional research efforts to understand the population status of pocket gopher in the Southeast U.S. (9)

Gopher Tortoise Survey Training. A three-day training on gopher tortoise line transect distance sampling. (8)

Coalition of Prescribed Fire Councils. The Coalition held its annual two-day board meeting at the Jones Center. (5)

Public Relations

Open House. A one-day open house of Jones Center facilities. (900)

Ag Teacher Burn Certification Course. A three-day course in collaboration with the Goergia Forestry Commission for regional agriculture teachers to become Certified Prescribed Burners. (21)

Georgia River Network Fall Float on the Flint. A paddle event which included a stop at Ichauway, where Center staff gave overviews of the longleaf pine ecosystem and aquatic system. (115)

Education and Outreach Program Off-site Activities

Regional Partnerships and Advisement

Longleaf Partnership Council

The Center was a founding member of this regional partnership of federal, state, nongovernmental organization, and private groups working to implement the 2009 Rangewide Conservation Plan for Longleaf Pine, which seeks to double the acreage of longleaf from 4 to 8 million acres by 2025. Kevin McIntyre has worked with this effort as the Jones Center representative since it began in 2007 and served a three-year term on the leadership team from 2014-2106. He currently serves on several subcommittees of the Council.

Lowcountry Forest Conservation Partnership

Kevin McIntyre and Steve Jack were funded through a grant from The Nature Conservancy (TNC) to provide advice and develop longleaf restoration plans for approximately 2000 acres owned by TNC, as well as other private lands, around the Francis Marion National Forest. This effort has evolved into a regional longleaf partnership that serves as a local implementation team for the Range-wide Conservation Plan for Longleaf Pine. This grant was completed in 2017.

Apalachicola Regional Stewardship Alliance (ARSA)

Kevin McIntyre is member of the ARSA, a regional partnership for longleaf restoration in a million-acre focus area centered around the Apalachicola National Forest and St. Marks National Wildlife Refuge. This group serves as a local implementation team for the Range-wide Conservation Plan for Longleaf Pine.

Chattahoochee Fall Line Conservation Partnership (CFLCP)

Steve Jack served as a member of the steering committee for the CFLCP, a regional partnership for longleaf restoration around the Ft. Benning/Fall Line Sandhills area of western Georgia. This group serves as a local implementation team for the Range-wide Conservation Plan for Longleaf Pine.

Coalition of Prescribed Fire Councils

Mark Melvin is currently serving on the board of this national organization, whose overarching goal is to create one voice to assist fire practitioners, policymakers, regulators, and citizens with issues surrounding prescribed fire use.

Georgia Prescribed Fire Council (GPFC)

The GPFC is a diverse group of stakeholders collaborating to protect the right, to encourage the use of, and to promote public understanding of prescribed fire in Georgia. Mark Melvin serves as permanent Vice-Chair for this group and coordinates the annual meeting. Mark served his second term as Chair in 2016.

Southern Fire Exchange (SFE)

The SFE is a regional program for fire science delivery in the Southeast, funded by the Joint Fire Science Program. The SFE consolidates southern fire information and provides new ways for the fire community to interact and learn from one another. Mark Melvin serves on the Advisory Board.

National Wildfire Coordination Group (NWCG)

The Fire Use Subcommittee reviews and updates NWCG prescribed fire training standards and policy. Mark Melvin serves as liaison on the Fire Use Subcommittee and also served on the Smoke Management Guide Review Team.

Wildland Fire Cohesive Strategy: Southeast Regional Committee

This group provides executive leadership, oversight, and guidance within their respective region for completing the tasks assigned by the Wildland Fire Executive Council during Phases II and III of the Cohesive Strategy. Mark Melvin serves as Southeast Regional Committee Member.

Southeast Regional Partnership for Planning and Sustainability (SERPPAS)

SERPPAS is a six-state partnership comprised of state and federal agencies that promotes collaboration in making resource use decisions supporting conservation of natural resources, working lands, and national defense. Mark Melvin serves on the Air Quality Subcommittee and Prescribed Fire Work Group, working to develop creative solutions that address smoke management for prescribed fire and increase burning while complying with state air quality regulations.

Georgia Forestry Commission

The Georgia Forestry Commission hosts and administers a certified burn manager course. These classes are conducted at multiple locations annually, and Mark Melvin serves as a class instructor.

Georgia Adopt A Stream

Steve Golladay served on the board of directors for Georgia Adopt A Stream (AAS). Among the priority activities of the group were refining the statewide water quality database, available online. Georgia AAS also started a program of data collection for Paddle Georgia and other river education efforts.

Staff

Scientists

- Kier D. Klepzig Director, Scientist, Entomology Adjunct Faculty – University of Georgia
- *Lindsay R. Boring Director, Scientist, Forest Ecology Adjunct Associate Professor - University of Georgia Adjunct Professor and Graduate Faculty – University of Alabama Courtesy Professor - University of Florida
- Seth W. Bigelow Assistant Scientist, Forest Ecology
- Steven T. Brantley Assistant Scientist, Ecohydrology Adjunct Assistant Professor - University of Georgia
- L. Michael Conner Scientist, Wildlife Ecology Courtesy Assistant Professor - University of Florida Affiliate Assistant Professor - Auburn University Adjunct Assistant Professor - University of Georgia Adjunct Assistant Professor - Mississippi State University Adjunct Assistant Professor - University of Tennessee
- Stephen W. Golladay Associate Scientist, Aquatic Ecology Adjunct Associate Professor - University of Georgia Adjunct Associate Professor - Valdosta State University
- Steven B. Jack Conservation Ecologist, Applied Forest Scientist Courtesy Associate Professor - University of Florida Affiliate Assistant Professor - Auburn University
- *L. Katherine Kirkman Scientist, Plant Ecology Affiliate Professor - Auburn University Adjunct Professor - University of Georgia Courtesy Professor - University of Florida
- Lora L. Smith Scientist, Wildlife Ecology Courtesy Professor - University of Florida Affiliate Professor - Auburn University Adjunct Professor - University of Georgia
- Angela M. Holland Conservation Postdoctoral Associate
- Ji "Jill" Qi Hydrology Postdoctoral Associate

Research Technicians/Associates

Brian A. Clayton - Monitoring Technician II, Groundwater Hydrology

Brian M. Cloninger - Central Analytical Lab Technician

Lisa M. Giencke – Research Associate I, Plant Ecology

Jennifer L. Howze – Research Associate I, Herpetology

Gail Morris – Research Associate I, Wildlife Ecology

Mary Frances Nieminen - Lead Research Technician II, Forest Ecology III

Thomas N. Sheehan – Lead Research Technician I, Forest Entomology

Chelsea R. Smith - Lead Research Technician I, Aquatic Ecology

O. Stribling Stuber - Lead Research Technician II, Ecohydrology

R. Scott Taylor – Research Coordinator, Forest Ecology

Andy W. Whelan – Lead Research Technician I, Forest Ecology

Research Support

Jean C. Brock - Information Technology Manager / Geographic Information Systems

Micheal G. Simmons - Database / Data Analyst

Chandler "Lain" Alexander - IT and Network Support Technician

Elizabeth P. Cox - Science Librarian

Education

R. Kevin McIntyre - Education Coordinator

Jessica D. McCorvey - Education Program Assistant

Mark A. Melvin - Education Technician / Conservation Management

Conservation

James B. Atkinson, Jr. - Natural Resource Manager

T. Scott Smith - Assistant Natural Resource Manager

Steven B. Jack - Conservation Ecologist

Brandon T. Rutledge - Conservation Biologist

Bobby E. Bass - Conservation Technician II

Mark A. Melvin - Conservation Management / Education Technician

Joel L. Rackley - Agricultural Specialist

David C. Varnadoe - Conservation Horticulturist

Maintenance and Operations

H. Kip Davis – Operations Manager

Dennis J. Williams - Maintenance Manager

Scott T. Cumbie – Safety Manager

Bronwyn S. Hinton - Guest Services Manager

Administration

Kier D. Klepzig – Director

*Lindsay R. Boring - Director

Becky H. Gay – Business Administrator

Cindy C. Craft – Administrative and Human Resource Assistant

Denise R. Rovig - Assistant to the Director

*Rosanne B. Bohannon - Procurement Specialist / Accounting Assistant

*Robert S. Lynch - Accountant

Regina E. Carter – Senior Accountant

Deborah R. Roberts - Receptionist

* has left the Center

Graduate Students

Graduated 2017

| Canopy recruitment dynamics in naturally regenerated longleaf pine woodlands. (University of Missouri, M.S., S. B. Jack) | Patrick Curtin |
|--|---------------------|
| The role of stream drying on fish population dynamics in the lower Ichawaynochaway Creek Basin. (University of Georgia, M.S., S. W. Golladay) | Jessica Davis |
| Leaps and Bounds: Landscape connectivity through amphibian composition and genetics. (University of Georgia, M.S., L. L. Smith) | Cara McElroy |
| Stoichiometric implications of anuran production on energy and material fluxes in geographically isolated wetlands. (University of Alabama, M.S., L. L. Smith) | Scotty McLeay |
| Current 2017 Projects | |
| Using a small unmanned aerial system (sUAS) to map macrophyte assemblages in Lake Seminole, Georgia. (University of Georgia, M.S., S. W. Golladay) | Philip Ashford |
| Interspecific variation in hydraulic redistribution and its importance to ecosystem processes in a xeric longleaf pine savanna. (University of Georgia, M.S., S. T. Brantley) | Michael Belovitch |
| Environmental factors influencing white-tailed deer activity patterns. (University of Georgia, M.S., L. M. Conner) | Michael Biggerstaff |
| Improving rainfall-runoff models in the Ichawaynochaway Creek using web soil survey data. (University of Georgia, M.S., S. T. Brantley) | Barrie Coleman |
| Fear, forage, and fire: White-tailed deer in a pyric landscape. (Virginia Tech, Ph.D., L. M. Conner) | Daniel Crawford |

| An integrative study in the behavioral landscape ecology of Sherman's fox squirrels: implications for animal conservation in a changing world. (University of Florida, Ph.D., L. M. Conner) | Catherine Frock |
|--|-------------------|
| Sampling design enhancement for gopher tortoises. (University of Georgia, M. S., L. L. Smith) | Heather Gaya |
| Wading bird use of geographically isolated wetlands in the southeastern U.S. coastal plain. (Florida Atlantic University, M.S., L. L. Smith) | Camille Herteux |
| Development and evaluation of a camera survey technique for estimating population parameters of white-tailed deer (<i>Odocoileus virginianus</i>). (University of Georgia, Ph.D., L. M. Conner) | James Johnson |
| Isolated wetlands as hot spots and hot moments. (University of Alabama, M.S., L. L. Smith) | Dan Knapp |
| Food and fear: Using terrestrial mammals to decouple the drivers of habitat selection. (University of Florida, Ph.D., L. M. Conner) | Jessica Laskowski |
| Impacts of fire predation risk on the Eastern Cottontail (<i>Sylvilagus floridanus</i>). (Pennsylvania State University, Ph.D., L. M. Conner) | Elyse McMahon |
| Management implications of predator exclusion and prescribed fire on snake and lizard populations in a longleaf pine ecosystem. (University of Georgia, M.S., L. L. Smith) | Chris Murphy |
| Indigo snake reintroduction at Apalachicola Bluffs State Preserve. (Auburn University, M.S., L. L. Smith) | Sara Piccolomini |
| Interactions between protective cover, sightlines, and multiple predators influence fox squirrel (<i>Sciurus niger</i>) fear. (University of Florida, M.S., L. M. Conner) | Alex Potash |
| Using an ecosystem engineer to restore functionality of natural pinelands in the southeastern United States. (University of Georgia, Ph.D., L. M. Conner) | J.T. Pynne |
| Effects of fire regime on subcortical Insects, tree physiology, and their Interactions in longleaf pine (<i>Pinus palustris</i>) (University of Georgia, Ph.D., S. T. Brantley) | Haley Ritger |

| Estimating the effect of sympatric hardwoods on the growth and drought resistance of mature longleaf pine. (University of Florida, M.S., S. W. Bigelow) | Anna Rollosson |
|---|-----------------|
| Response of vertebrates to hardwood and shrub encroachment. (University of Florida, Ph.D., L. M. Conner) | Adia Sovie |
| Using seismic surveys and ground penetrating radar to map below-ground structures on Ichauway, specifically focusing on the interface between soils and bedrock around wetlands. (Louisiana State University, Ph.D., S. T. Brantley) | Andrew Webb |
| Maximum entrophy and its role in the carbon and energy cycling of subtropical longleaf pine savannas. (University of Alabama, Ph.D., L. R. Boring) | Susanne Wiesner |

Jones Center Advisory Committee

Dr. Jim Vose (2013-present) Chair (2015-present) Research Ecologist and Project Leader U.S. Forest Service, Southern Research Station Center for Integrated Forest Science

Dr. Jerry F. Franklin (1988-present), Founding Member Professor of Ecosystem Management College of Forest Resources University of Washington

Mr. Robert Larimore (2010-present) Natural Resources Program Manager US Army Installation Management Command Fort Sam Houston, Texas

Dr. Gene E. Likens (1988-present), Founding Member Distinguished Senior Scientist, Ecologist Founding Director and President Emeritus Cary Institute of Ecosystem Studies

*Dr. Nova J. Silvy (2010-2018) Regents Professor Department of Wildlife and Fisheries Sciences Texas A&M University

Dr. Bernard "Bern" W. Sweeney (2016-Present) Director, President, Senior Research Scientist Stroud Water Research Center Avondale, Pennsylvania

*has rotated off the Committee

Guest Seminars

- Dr. Michael Stambaugh, Research Assistant Professor, Department of Forestry, University of Missouri, Columbia, Missouri. "Vignettes of Eastern U.S. Historical Fire Regimes: Trends, Outliers, and their Implications."
- Cara McElroy, M.S. Student, Odum School of Ecology, University of Georgia, Athens, Georgia. "Determining Landscape Connectivity through Amphibian Abundance, Community Composition, and Gene Flow."
- Dr. Jason Vogel, Assistant Professor, Forest Ecosystems Science, School of Forest Resources & Conservation, University of Florida, Gainesville, FL. "The resistance and response of forests in Texas to an extreme drought."
- Dr. Malcolm North, Research Ecologist, U.S. Forest Service, Pacific Southwest Research Station, Davis, California. "The Ecological Role and Roadblocks to using Fire in Western Forest Restoration."
- Andres Villegas, President and CEO, Georgia Forestry Association. "The Future of Forestry in Georgia.
- Dr. Carla Atkinson, Assistant Professor, Biological Sciences, University of Alabama, Tuscaloosa, Alabama. "Exosystem Functions Provided by Biodiverse Aquatic Communities."
- Dr. Eben Broadbent, Assistant Professor, Spatial Ecology and Conservation Lab, School of Forest Resources and Conservation, University of Florida, Gainesville, Florida. "Ecology and conservation across spatial and temporal scales using satellite, aircraft, and UAV-borne sensors."
- Scotty McLeay, M.S. Student, Aquatic Ecology and Conservation, University of Alabama. "The Role of Larval Anuran's as Consumers in Ecosystem Processes within Geographically Isolated Wetlands."
- Dr. Carol M. Wicks, Chair and Frank W. and Patricia Harrison Family Professor, Department of Geology and Geophysics, Louisiana State University, Baton Rouge, Louisiana. "Karst Hydrology: Insights from interpreting responses to transient conditions."
- Dr. Ji "Jill" Qi, Hydrology Postdoctoral Associate, Joseph W. Jones Ecological Research Center. "Potential Climate Change Effects on Deep Soil Carbon and Hydrology in Loblolly Pine Plantations of the Southeast U.S."

- Dr. Monica Rother, Fire Ecologist, Tall Timbers Research Station & Land Conservancy, Tallahassee, Florida. "Climate's Role in Shaping Fire Regimes and Post-burn Landscapes in Ponderosa Pine Forests of Northwestern New Mexico and the Colorado Front Range."
- Dr. Joe-Ann McCoy, Director, The NC Arboretum Germplasm Repository, Asheville, NC. "Development of the NC Arboretum Germplasm Repository for Long-term Conservation, Research, and Economic Development"
- Dr. Doug Aubrey, Assistant Professor, Forest Ecophysiology and Energy Ecology, Savannah River Ecology Lab, Warnell School of Forestry, University of Georgia. "Forest Ecophysiology at the Savannah River Ecology Laboratory."
- Dr. Angela Holland, Conservation Postdoctoral Associate, Jones Ecological Research Center. "Ecology of semi-aquatic mammals in southern Illinois.
- Dr. Joe O'Brien, Research Ecologist, Center for Forest Disturbance Science, USDA Forest Service, Athens, GA. "Patterns and Processes: the Interactions among Fire, Forest Structure and Community Assembly in Longleaf Forests."
- Dr. Brian Bledsoe, Georgia Athletic Association Distinguished Professor and Director, Institute of Resilient Infrastructure Systems, College of Engineering, University of Georgia, Athens, Georgia. "Lessons from the Wild West: a Perspective on Environmental Flows in the Southeast US."
- Dr. Ricardo Holdo, Associate Professor and Odum Chair, Odum School of Ecology, Athens, GA. "Precipitation Variability and Tree-grass Dynamics in African Savannas."
- Jessica Davis, M.S. in Ecology, Odum School of Ecology, University of Georgia, Athens, Georgia. "Stream Fish Response to Intermittence and Drying in the Ichawaynochaway Creek Basin."
- Patrick Curtin, M.S. in Forestry, School of Natural Resources, University of Missouri, Columbia, Missouri. "Canopy Recruitment Dynamics in Naturally Regenerated Longleaf Pine (*Pinus palustris*) Woodlands."

Collaborating Organizations

Auburn University

- Florida Atlantic University
- University of Alabama
- University of Florida
- University of Georgia
- University of Illinois
- University of Missouri
- University of Tennessee
- University of Washington
- America's Longleaf Restoration Initiative
- Flint River Soil and Water Conservation District
- Florida Fish and Wildlife Commission
- Georgia Dept. of Natural Resources
- Georgia Forestry Commission
- Larson & McGowin Forestry Consultants
- Lolly Creek Consultants
- National Environmental Observatory Network
- National Coalition of Prescribed Fire Councils
- Neptune and Company
- The Longleaf Alliance
- The Nature Conservancy
- U.S. Geological Survey
- U.S. Forest Service
- U.S. Environmental Protection Agency
- U.S. Fish & Wildlife Service
- White Oak Forestry
- Wildland Fire Leadership Council

ROBERT W. WOODRUFF FOUNDATION, INC. - #58-1695425 Form 990-PF, Year 2017, Page 6, Part VIII COMPENSATION OF TRUSTEES AND OFFICERS

| (a) Name and Address | (b | (b) (c) (d) Contributions to Benefit Plans | | | (e) | | | |
|--|------------------------------|--|---------|--------|--------|------------------------|--------|----------|
| | Title | Hours Per Week | Comp | 403b | 457b** | Insurance Benefits* | 457f** | Expenses |
| TRUSTEES: | | | | | | | | |
| James B. Williams 191 Peachtree Street, Suite 3540 Atlanta, Georgia 30303 | Trustee Chairman | 5 | 35,000 | | | 1,458 | | |
| Jenner Wood 191 Peachtree Street, Suite 3540 Atlanta, Georgia 30303 | Trustee Vice- Chairman | 1 | 25,000 | | | 1,458 | | |
| Wilton Looney 191 Peachtree Street, Suite 3540 Atlanta, Georgia 30303 | Trustee | 1 | 25,000 | | | 1,458 | | |
| Lawrence Gellerstedt 191 Peachtree Street, Suite 3540 Atlanta, Georgia 30303 | Trustee | 1 | 25,000 | | | 1,458 | | |
| Thomas Lawley 191 Peachtree Street, Suite 3540 Atlanta, Georgia 30303 | Trustee | 1 | 25,000 | | | 1,458 | | |
| TOTAL TRUSTEES | | 9 | 135,000 | | | 7,290 | | |
| OFFICERS: | | | | | | | | |
| P. Russell Hardin 191 Peachtree Street, Suite 3540 Atlanta, Georgia 30303 | President | 17 | 213,375 | 8,175 | 6,543 | 14,239 | 17,288 | 86 |
| Erik S. Johnson 191 Peachtree Street, Suite 3540 Atlanta, Georgia 30303 | Secretary Treasurer | 17 | 99,962 | 8,175 | 6,543 | 9,822 | 276 | 60 |
| | | | | 16,350 | 13,086 | 24,061 | 17,564 | |
| TOTAL OFFICERS | | 34 | 313,337 | | 71, | 062 | | 1,470 |
| | | | | | | | | |
| TOTAL - TRUSTEES & OFFICERS | | | 448,337 | | 78, | 353 | | 1,47 |

* Insurance: Trustees - Directors & Officers Liability only

Officers - Directors & Officers Liability, Medical, Life, Disability, Dental, Workers Compensation and Travel Accident **457b and 457f not expensed and not included in Part I, Line 15

457f - unvested and contingent upon the employee working to a specified age.

ROBERT W. WOODRUFF FOUNDATION, INC. - #58-1695425 990-PF, Year 2017, Page 8, Part X, Line 1e

As of December 31, 2017, the Foundation owned 59,134,600 shares of The Coca-Cola Company common stock. These represent approximately 1.39% of the total average of 4,259 million shares outstanding which is an insignificant decrease from the 2012 amount evaluated in the attached opinion letter.

The average monthly fair market value of the Foundation's Coca-Cola stock before applying the blockage discount was \$2,708,488,976. Based upon the attached opinion letter from Shearwater Valuation Associates, the Foundation applied a blockage discount factor of 3.41%.

\$2,708,488,976 @ 3.41% = \$92,359,474

April 25, 2013

Mr. Erik S. Johnson General Counsel and Secretary The Robert W. Woodruff Foundation, Inc. 191 Peachtree Street, N.E. Suite 3450 Atlanta, Georgia 30303

Dear Mr. Johnson:

At your request Shearwater Valuation Associates, LLC ("SVA") was retained to prepare a valuation analysis and appraisal (Valuation Engagement and Conclusions of Value) and detailed appraisal report ("Appraisal Report") to assist in the determination of blockage discounts for 65,135,390 shares, 31,573,400 shares and 26,680,000 shares of the common stock ("Subject Property") of The Coca-Cola Company ("Coca-Cola" or "The Company"). The valuation date is December 31, 2012. The Conclusions of Value and Appraisal Report are to be used only as of this date and are not valid as of any other date.

We have performed a Valuation Engagement and present our detailed report in conformity with the "Statement of Standards for Valuation Services No. 1" (SSVS) of the American Institute of Certified Public Accountants. SSVS defines a Valuation Engagement as "an engagement to estimate value in which a valuation analyst determines an estimate of the value of a subject interest by performing appropriate procedures, as outlined in the AICPA Statement on Standards for Valuation Services, and is free to apply the valuation approaches and methods he or she deems appropriate in the circumstances. The valuation analyst expresses the results of the valuation engagement as a conclusion of value, which may be either a single amount or a range." SSVS defines a Conclusion of Value as "an estimate of the value of a business, business ownership interest, security, or intangible asset, arrived at by applying the valuation procedures appropriate for a valuation engagement and using professional judgment as to the value or range of values based on those procedures." SSVS addresses a detailed report as follows: "The *detailed report* is structured to provide sufficient information to permit intended users to understand the data, reasoning, and analyses underlying the valuation analyst's conclusion of value."

This Valuation Engagement was performed to assist in the determination of the blockage discounts for the Subject Property solely for the purpose of Client's preparation of 990-PF tax returns ("Specified Purpose"). The resulting Conclusions of Value should not be used for any other purpose, or by any other party for any purpose, without our express written consent.

SHEARWATER

ROBERT W. WOODRUFF FOUNDATION, INC. - #58-1695425 Form 990-PF, Year 2017, Page 8, Part X, Line 1e

Mr. Erik S. Johnson April 25, 2013 Page Two

The standard of value is fair market value, defined as "the price at which the property would change hands between a willing buyer and a willing seller when the former is not under any compulsion to buy and the latter is not under any compulsion to sell, both parties having reasonable knowledge of relevant facts." Revenue Ruling 59-60 also defines the hypothetical willing buyer and seller as follows: "Court decisions frequently state in addition that the hypothetical buyer and seller are assumed to be able, as well as willing, to trade and to be well informed about the property and concerning the market for such property." Furthermore, fair market value assumes that the price is transacted in cash or cash equivalents. Revenue Ruling 59-60, while used in tax valuations, is also used in many non-tax valuations. We considered all the factors described in Revenue Ruling 59-60, as modified and amplified by subsequent rulings,¹ which states that all relevant factors should be considered, including:

- The nature and history of the business;
- The general economic outlook;
- The general industry outlook;
- The book value of the stock and the financial condition of the business;
- The earnings and distribution paying capacity of the business;
- The intangible assets of the business;
- Sales of the business interest and the size of the subject property; and
- Stock prices of similar publicly traded companies.

Fair market value is also defined in a similar way in the *International Glossary of Business* Valuation Terms² as "the price, expressed in terms of cash equivalents, at which property would change hands between a hypothetical willing and able buyer and a hypothetical willing and able seller, acting at arm's length in an open and unrestricted market, when neither is under compulsion to buy or sell and when both have reasonable knowledge of the relevant facts."

The premise of value is liquidation. The type of liquidation is orderly, which assumes assets are sold over a reasonable period of time to maximize the proceeds received.

² The International Glossary of Business Valuation Terms has been jointly adopted by the AICPA, ASA, Canadian Institute of Chartered Business Valuators, NACVA and the IBA.



¹ Revenue Ruling 59-60 has been modified by Revenue Ruling 65-193 and further amplified by Revenue Rulings 77-287 and 83-120.

ROBERT W. WOODRUFF FOUNDATION, INC. - #58-1695425 Form 990-PF, Year 2017, Page 8, Part X, Line 1e

Mr. Erik S. Johnson April 25, 2013 Page Three

There were no restrictions or limitations in the scope of our work or data available for analysis. We did not rely on the work of a third-party specialist in developing our Conclusions of Value. We believe the analyses, opinions, and conclusions of this Appraisal Report were completed in conformity with the American Institute of Certified Public Accountants Statement on Standards for Valuation Services No. 1 and the standards of the National Association of Certified Valuators and Analysts for conducting and reporting on business valuations. In performing our Valuation Engagement, we performed various economic, industry and market research. Our Conclusions of Value are based on the economic, market and business conditions as they existed as of the effective valuation date, based on information available at that time. We first evaluated the most advantageous method of disposing the Subject Property available to the hypothetical seller, and concluded a gradual open-market liquidation of the shares appears to provide the greatest present value of net proceeds relative to the time and transaction costs (including professional fees) associated with other disposal methods. We estimated the amount of time required to gradually liquidate the shares of each block in an orderly fashion in the open market, and calculated the present value of future proceeds based on the December 31, 2012 freely-traded share price. We then calculated the costs of a hypothetical put option required to protect the December 31, 2012 share price.

The approaches and methodologies used in our work did not comprise an examination or any attest service in accordance with generally accepted accounting principles, the objective of which is an expression of an opinion regarding the fair presentation of financial statements or other financial information, whether historical or prospective, presented in accordance with generally accepted accounting principles or auditing standards. We express no opinion and accept no responsibility for the accuracy and completeness of the financial information (audited, reviewed, compiled, internal, prospective or tax returns), or other data provided to us by others, and we have not verified such information unless specifically stated in this report. We assume that the financial and other information provided to us is accurate and complete, and we have relied upon this information in performing our valuation.

The Conclusions of Value are subject to the representations found in Section V of this report, and to the Statement of Assumptions and Limiting Conditions found in Appendix D. The Appraisal Report and Conclusions of Value stated herein are valid only as of December 31, 2012. We have no obligation to update this Appraisal Report or our Conclusions of Value for information that comes to our attention after the date of this Appraisal Report. Based on the analyses, procedures, assumptions and limiting conditions described herein, our Conclusions of Value regarding the blockage discounts for the Subject Property are as follows:



ROBERT W. WOODRUFF FOUNDATION, INC. - #58-1695425 Form 990-PF, Year 2017, Page 8, Part X, Line 1e

Mr. Erik S. Johnson April 25, 2013 Page Four

The Coca-Cola Company Summary of Estimated Blockage Discounts December 31, 2012

| Block | | Discount Due to Disposition Period | | Cost of Price Protection | | | Blockage Discount |
|------------|--------|---------------------------------------|--|--------------------------|----------------|--|----------------------|
| 65,135,390 | 0.042% | Exhibit III.A. | | 3.37% | Estribit IV.A. | | 3.41% |
| 31,573,400 | 0.042% | Exhibit III.B. | | 2,26% | Exhibit IV,B. | | 2.31% |
| 26,680,000 | 0.04% | Exhibit III.C. | | 2.10% | Eshibit IV.C. | | 2.14% |

We appreciate the opportunity to serve you in this matter.

Sincerely,

BY:

Robert A. Ethridge, CFA, CPA, CVA Shearwater Valuation Associates, LLC Promenade Two 1230 Peachtree Street, N.E. Suite 1900 Atlanta, Georgia 30309



ROBERT W. WOODRUFF FOUNDATION, INC. - # 58-1695425 Form 990-PF, Year 2017, Page 10, Part XV, Line 2 INFORMATION REGARDING GRANT PROGRAMS

P. Russell Hardin, President
 Robert W. Woodruff Foundation, Inc.
 191 Peachtree Street, NE
 Suite 3540
 Atlanta, Georgia 30303

Telephone: (404) 522-6755

- (b) Application form not required. Proposals should be made in letter form and include the following information:
 - A description of the organization, its purposes, programs, staffing and governing board
 - The organization's latest financial statements including the most recent audit report
 - A description of the proposed project and full justification for its funding
 - An itemized project budget, including other sources of support in hand or anticipated
 - Evidence from the IRS of the organization's tax-exempt status and that the applying organization itself is not a private foundation
- (c) Grant applications are considered semi-annually in April and November for requests received by the first of February and September.
- (d) Grants generally are limited to tax-exempt charities and selected governmental agencies located and operating in Georgia, with primary interest to the metropolitan Atlanta area. Grants to qualified public charities headquartered outside Georgia occasionally are considered when it is demonstrated that the proposed project will have particular impact in Georgia and fits within the program interests of the Foundation. These interests are focused on the following program areas:
 - Elementary, secondary and higher education
 - Health care and education
 - Human services, particularly for children and youth
 - Economic development and civic affairs
 - Art and cultural activities
 - Conservation of natural resources and environmental education

Grants for regular operating expenses are avoided.

No grants are made to individuals.

ROBERT W. WOODRUFF FOUNDATION, INC. - #58-1695425 Form 990-PF, Year 2017, Page 11, Part XV, Line 3b GRANTS APPROVED FOR FUTURE PAYMENT

| Recipient | Foundation Status | Purpose of Grant | Amount |
|---|----------------------|---|-------------|
| ARTS & CULTURE Buffalo Bill Center of the West 720 Sheridan Avenue Cody, WY 82414 | PC | Renovation and reinstallation of the Cody Firearms Museum. | 1,000,000 |
| <u>COMMUNITY DEVELOPMENT</u> Bobby Jones Golf Course Foundation 2560 Brookdale Drive, NW Atlanta, GA 30305 | PC | \$17.4 million Phase I renovation of the Bobby Jones Golf Course property. | 5,000,000 |
| Georgia Center for Nonprofits 100 Peachtree Street, Suite 1500 Atlanta, GA 30303 | PC | Program support (\$200,000 per year) and support of capacity-building effort. | 300,000 |
| Greater Atlanta Chamber Foundation 191 Peachtree Street, NE, Suite 3400 Atlanta, GA 30303 | PC | Continued support of the ChooseATL campaign. | 750,000 |
| | | TOTAL COMMUNITY DEVELOPMENT | 6,050,000 |
| EDUCATION Rabun Gap-Nacoochee School 339 Nacoochee Drive Rabun Gap, GA 30568 | PC | \$7 million Phase I campaign to construct a new dining hall. | 2,000,000 |
| ENVIRONMENT Ichauway, Incorporated 3988 Jones Center Drive Newton, GA 39870 | POF | 2018 capital and operating needs. | 10,175,000 |
| HEALTH Georgia State University Research Foundation P.O. Box 3999 Atlanta, GA 30302-3999 | PC | Support over three years for the Georgia Health Policy Center's effort to educate and inform state legislators regarding healthcare policy. | 330,000 |
| Robert W. Woodruff Health Sciences Center Fund, Inc. 191 Peachtree Street NE, Suite 3540 Atlanta, GA 30303 | SO II | Development of Emory University's Winship Tower Midtown and Health Sciences Research Building II. | 360,000,000 |
| | | TOTAL HEALTH | 360,330,000 |
| HUMAN SERVICES LifeLine Animal Project P.O. Box 15466 Atlanta, GA 30333 | PC | Construction of the LifeLine Community Animal Center. | 400,000 |
| | | TOTAL GRANTS | 379,955,000 |
| Foundation status of recipient: | PC POF SO II | Public charity described in 509(a)(1) or (2) Private operating foundation (section 4942(j)(3)) other than an EOF Type II supporting organization (sections 509(a)(3) and 509(a)(3)(B)(ii)) other than an SO-DP | |