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HIGHLIGHTS OF ACCOMPLISHMENTS FOR THE YEAR

Welcome to the inaugural issue of the College of Natural Science's Annual Business Report. This report summarizes significant outcomes of the past academic year and includes historical trends in enrollment and research funding. We also take this time to introduce our new faculty and recognize our award-winning students, faculty and staff.

To achieve its mission of excellence, the College of Natural Sciences seeks to provide research-enhanced education and to promote educationally-connected research. Our three strategic priorities include:

1. Optimally train scientists and mathematicians for the future.
2. Produce world-class, high impact research discoveries.
3. Make sure that our impact is known across the campus, the state and the nation.

Key Accomplishments of 2013–14
- The President and Provost have become our trusted supporters and largest donors, with a generous commitment to support faculty hiring over the next 5 years.
- Significantly increased philanthropic donations; 55% over last year
- Developed a strong, achievable master space plan
- Improved and streamlined dean’s office operations
- Implemented the Bachelor of Sciences & Arts degree
- Established The Texas Institute for Discovery Education in Science

Focus for 2014–2015
- Implementing the master space plan
- Activities to promote faculty and student diversity
- Optimizing graduate student program size and support
- Education innovations – TIDES
- Continued improvements in operations in the dean’s office
  - Continue to improve HR services
  - New development team and structure
  - College Budget Council
2013–14 CNS Budget

- Available University Fund: 3%
- External Research/Other: 40%
- Gifts & Endowments: 8%
- Tuition & Fees: 16%
- State Support: 33%

Total Budget: $240.22 Million

CNS Gift History Over the UT Capital Campaign

- 06–07: $29.2M
- 07–08: $35.8M
- 08–09: $29.5M
- 09–10: $60.6M*
- 10–11: $44.7M
- 11–12: $27.9M
- 12–13: $32.9M
- 13–14: $51.1M

*Gates Building Gift

ANNUAL REPORT 2013–2014
CNS Endowment Growth

10 YEAR HISTORY — MARKET VALUE AS OF 8/31

- 2004: $222M
- 2005: $257M
- 2006: $279M
- 2007: $326M
- 2008: $311M
- 2009: $264M
- 2010: $286M
- 2011: $317M
- 2012: $322M
- 2013: $339M
- 2014: $373M
In 2013–14, Natural Sciences was home to 370 tenured and tenure-track faculty.

<table>
<thead>
<tr>
<th>Field</th>
<th>Faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Astronomy</td>
<td>20</td>
</tr>
<tr>
<td>Chemistry</td>
<td>32</td>
</tr>
<tr>
<td>Computer Science</td>
<td>42</td>
</tr>
<tr>
<td>Human Development and Family Sciences</td>
<td>13</td>
</tr>
<tr>
<td>Integrative Biology</td>
<td>35</td>
</tr>
<tr>
<td>Marine Science</td>
<td>14</td>
</tr>
<tr>
<td>Mathematics</td>
<td>54</td>
</tr>
<tr>
<td>Molecular Biosciences</td>
<td>66</td>
</tr>
<tr>
<td>Neuroscience</td>
<td>23</td>
</tr>
<tr>
<td>Nutritional Sciences</td>
<td>11</td>
</tr>
<tr>
<td>Physics</td>
<td>56</td>
</tr>
<tr>
<td>Textiles and Apparel</td>
<td>4</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>370</strong></td>
</tr>
</tbody>
</table>
Ten new faculty joined the College this year.

**Taft Armandroff**, Director – McDonald Observatory, Professor – Astronomy
Taft Armandroff joins us as the director of McDonald Observatory, one of the world’s leading centers for astronomical research, teaching, and public education and outreach. His scientific interests include stellar populations in our galaxy and nearby galaxies, dwarf spheroidal galaxies, and globular clusters. Dr. Armandroff served for eight years as Director of the W. M. Keck Observatory in Hawaii.

**Emily Que**, Assistant Professor – Chemistry
Emily Que received her Ph.D. in Chemistry at the University of California at Berkeley where she developed Gd-based contrast agent sensors for copper. During her post-doctoral research at Northwestern University, she worked at the interface of chemistry and reproductive biology. Dr. Que is developing chemical tools for probing the cellular functions of metals and for medical diagnostics.

**Eric Price**, Assistant Professor – Computer Science
Eric Price studies computational and information theoretic aspects of sparse recovery and compressive sensing, with a particular focus on Fourier transforms. He completed his undergraduate and graduate studies at the Massachusetts Institute of Technology. He recently completed a year of postdoctoral research at the Simons Institute for the Theory of Computing and the IBM Almaden Research Center.

**Etienne Vouga**, Assistant Professor – Computer Science
Etienne Vouga received his PhD from Columbia University and held an NSF Mathematical Sciences Postdoctoral Fellow at Harvard University. He studies the geometry of the physics of everyday materials. Dr. Vouga seeks to develop more accurate and efficient computational tools for predicting the motion of these materials, with applications across multiple fields.

**Brad Erisman**, Assistant Professor – Marine Science
Brad Erisman utilizes a blend of field, laboratory, and analytical techniques to understand the influence of variations in behavioral, demographic, and life history traits in fishes in response to environmental change. His research seeks to inform management policies for healthy marine ecosystems. Dr. Erisman received his Ph.D. from Scripps Institution of Oceanography, where he also served as a Postdoctoral Researcher and an Assistant Research Scientist.
Jeffrey Danciger, Assistant Professor – Mathematics
Jeffrey Danciger received his Ph.D. in mathematics from Stanford University in 2011 under Steven Kerckhoff. He was awarded a Mathematical Sciences Postdoctoral Research Fellowship by the NSF, and did his postdoctoral work here at UT Austin during 2011-2014. His research interests lie in low-dimensional geometry and topology including hyperbolic manifolds and other non-Euclidean geometric structures.

Arie Israel, Assistant Professor – Mathematics
Arie Israel received his master’s degree from Florida Atlantic University and his Ph.D. from Princeton University. Israel’s research is in harmonic analysis and problems related to the smooth extension of functions. Israel was an NSF postdoctoral fellow at the Courant Institute before arriving at the Department of Mathematics at the University of Texas at Austin.

Ian Nauhaus, Assistant Professor – Neuroscience and Psychology
Ian Nauhaus researches coding strategies and corresponding mechanisms of the brain’s visual system to help uncover general principles of how a healthy brain processes input from the natural environment. His lab employs multiple imaging and electrophysiological methods to measure neural activity at different spatial and temporal scales.

Lizhen Lin, Assistant Professor – Statistics and Data Sciences
Lizhen Lin received a Ph.D in Mathematics from University of Arizona under the guidance of Rabi Bhattacharya. She spent two years as a postdoc at Duke University and has been a member of the Laboratory for Psychiatric Neuroengineering in Duke University Medical Center working on neuro-psychiatric research. Her general areas of research include Bayesian nonparametric theory and asymptotics, big data analysis, and machine learning in neuroscience.

Purnamrita Sarkar, Assistant Professor – Statistics and Data Sciences
Purnamrita Sarkar works on large-scale statistical machine learning problems with a focus on statistical models, asymptotic theory and scalable inference algorithms for large networks. She graduated from Carnegie Mellon University. After her doctorate she was a postdoctoral scholar at U. C. Berkeley jointly in the Department of Electrical Engineering and Computer Sciences and the Department of Statistics.
The number of undergraduate majors in the College has increased by more than 30% since 2009.

Most departments have seen an increase in undergraduate majors over the last five years. Note that biochemistry majors are now housed in Molecular Biosciences and included among biological science majors.
Total Numbers of Graduate Students (PhD and Masters) in CNS

<table>
<thead>
<tr>
<th>Year</th>
<th>Masters</th>
<th>Doctoral</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004-05</td>
<td>1300</td>
<td>1200</td>
</tr>
<tr>
<td>2005-06</td>
<td>1200</td>
<td>1100</td>
</tr>
<tr>
<td>2006-07</td>
<td>1100</td>
<td>1000</td>
</tr>
<tr>
<td>2007-08</td>
<td>1000</td>
<td>900</td>
</tr>
<tr>
<td>2008-09</td>
<td>900</td>
<td>800</td>
</tr>
<tr>
<td>2009-10</td>
<td>800</td>
<td>700</td>
</tr>
<tr>
<td>2010-11</td>
<td>700</td>
<td>600</td>
</tr>
<tr>
<td>2011-12</td>
<td>600</td>
<td>500</td>
</tr>
<tr>
<td>2012-13</td>
<td>500</td>
<td>400</td>
</tr>
<tr>
<td>2013-14</td>
<td>400</td>
<td>300</td>
</tr>
</tbody>
</table>
The College has had an increase of 18% in undergraduate seats taught in the last 10 years.

It costs approximately $22M to appoint instructors and teaching assistants to cover our lab and lecture courses each year. Another $4.5M is spent on instructional support (M&O, personnel, equipment and student wages) each year, for a total annual instructional budget of $26.5M.

### Instructional Budget Breakdown for This Year
#### 2013–14 Instructional Costs

<table>
<thead>
<tr>
<th>Instructional Costs</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tenure-Track Faculty (summer courses)</td>
<td>$445K</td>
</tr>
<tr>
<td>Non Tenure-Track Faculty</td>
<td>$9.1M</td>
</tr>
<tr>
<td>Teaching Assistants</td>
<td>$12.5M</td>
</tr>
<tr>
<td>Total</td>
<td>$22.1M</td>
</tr>
</tbody>
</table>

| Instructional Resource Costs             | $4.5M    |

**Total Instructional Budget** $26.5M
SPONSORED RESEARCH TRENDS

External Research Expenditures by Department

<table>
<thead>
<tr>
<th>UNIT</th>
<th>2013–2014 (EXPENDITURES)</th>
<th>Faculty Count</th>
<th>Average $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neuroscience</td>
<td>$10,870,823</td>
<td>23</td>
<td>$472,644</td>
</tr>
<tr>
<td>Marine Science</td>
<td>$6,063,061</td>
<td>14</td>
<td>$433,076</td>
</tr>
<tr>
<td>Chemistry</td>
<td>$12,709,182</td>
<td>32</td>
<td>$397,162</td>
</tr>
<tr>
<td>Molecular Biosciences</td>
<td>$26,035,593</td>
<td>66</td>
<td>$394,479</td>
</tr>
<tr>
<td>Integrative Biology</td>
<td>$9,577,214</td>
<td>33</td>
<td>$290,219</td>
</tr>
<tr>
<td>Nutritional Sciences</td>
<td>$2,794,314</td>
<td>11</td>
<td>$254,029</td>
</tr>
<tr>
<td>Physics</td>
<td>$13,808,233</td>
<td>56</td>
<td>$246,576</td>
</tr>
<tr>
<td>Astronomy</td>
<td>$4,197,110</td>
<td>20</td>
<td>$209,856</td>
</tr>
<tr>
<td>Statistics &amp; Data Sciences</td>
<td>$370,761</td>
<td>2</td>
<td>$185,381</td>
</tr>
<tr>
<td>Computer Sciences</td>
<td>$7,372,682</td>
<td>42</td>
<td>$175,540</td>
</tr>
<tr>
<td>Human Dev/Family Sciences</td>
<td>$1,383,682</td>
<td>13</td>
<td>$106,437</td>
</tr>
<tr>
<td>Mathematics</td>
<td>$3,026,248</td>
<td>54</td>
<td>$56,042</td>
</tr>
<tr>
<td>Textiles &amp; Apparel</td>
<td>$194,710</td>
<td>4</td>
<td>$48,678</td>
</tr>
<tr>
<td><strong>Totals:</strong></td>
<td><strong>$98,403,613</strong></td>
<td><strong>370</strong></td>
<td><strong>$265,956</strong></td>
</tr>
</tbody>
</table>

Distribution of 2013–14 CNS External Research Funding

- National Institutes of Health: 27%
- Department of Defense: 7%
- National Science Foundation: 20%
- Department of Education: 11%
- Other: 35%
Quick Look at 2013–14 CNS Graduates

<table>
<thead>
<tr>
<th>Category</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number of Graduates</td>
<td>1,669</td>
</tr>
<tr>
<td>Graduated in 4 Years</td>
<td>61%</td>
</tr>
<tr>
<td>Male/Female</td>
<td>51%/49%</td>
</tr>
<tr>
<td>Underrepresented Minority</td>
<td>22%</td>
</tr>
<tr>
<td>Transferred into CNS</td>
<td>27%</td>
</tr>
<tr>
<td>Internship</td>
<td>43%</td>
</tr>
<tr>
<td>Undergraduate Research</td>
<td>22%</td>
</tr>
<tr>
<td>UTeach</td>
<td>17%</td>
</tr>
<tr>
<td>Study Abroad</td>
<td>10%</td>
</tr>
</tbody>
</table>

*Self-reported demographic data comes from the 90% of graduates that completed the graduation survey

Self-Reported Pathways after Graduation

<table>
<thead>
<tr>
<th>Pathway</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seeking a Job</td>
<td>45%</td>
</tr>
<tr>
<td>Health Professions School</td>
<td>34%</td>
</tr>
<tr>
<td>Graduate School</td>
<td>19%</td>
</tr>
<tr>
<td>Other (military, law school, etc.)</td>
<td>2%</td>
</tr>
</tbody>
</table>

Number of 2013–14 CNS Graduates by Major

![Bar chart showing the number of graduates by major]
Bonnie Cole 2013 Barry M. Goldwater Scholar
Bonnie Cole, a Dean’s Scholars Honors Biology senior from Bastrop, Texas, was awarded the 2013 Barry M. Goldwater Scholarship for her work in the molecular biology lab of Professor Alan Lloyd. Her research in developmental and stem cell biology culminated in an honors thesis, “Development of Xenopus laevis systems to characterize thyroid folliculogenesis.” Before undertaking this work, Bonnie sought and obtained prestigious fellowships to perform summer research at the University of California at Berkeley and at Harvard University. She graduated this year as a Dean’s Honored Graduate with a perfect 4.0 GPA. This fall, Bonnie has decided to attend the University of California at San Francisco, where she will pursue a PhD in the Developmental and Stem Cell Biology.

Victor Rodriguez 2013 Barry M. Goldwater Scholar
Victor Rodriguez, a Dean’s Honored Graduate in the Departments of Physics and Mathematics, received the 2013 Barry M. Goldwater Scholarship for his work in experimental high-energy physics, and in particular for his participation in the global effort to find the Higgs boson particle under the direction of Professor Peter Onyisi. This distinction follows a long list of honors, including an Unrestricted Endowed Presidential Scholarship, Phi Beta Kappa, the Albert Bennett Calculus Prize, and a scholarship from the American Physical Society. Victor received two significant summer research fellowships, one from the U.S. Department of Energy and one from the U.S. National Science Foundation. In the fall Victor will attend Harvard University to earn a PhD in theoretical physics thanks to a prestigious Graduate Research Fellowship from the National Science Foundation.

Aubrey Herrera 2014–15 Fulbright Scholar
Aubrey Herrera, a Dean’s Honored Graduate from the Department of Molecular Biosciences, was awarded a 2014–15 Fulbright-García Robles Research Grant to study the effects of Mexican adolescents’ and young adults’ social networks on their mental health service use. Aubrey performed outstanding research in public health in her pursuit of a Bachelor of Science in Public Health, including an epidemiological analysis of tuberculosis in the US with the Texas Department of Health Services. She was inducted to the Phi Kappa Phi andSigma Alpha Lambda Honor Societies, served on the UT Presidential Task Force on the Honor Code and Student Judicial Processes, and was an undergraduate research committee member for the UT Senate of College Councils. Aubrey will spend her Fulbright year in Mexico City at the Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz.
GRADUATE FELLOWSHIP AWARD WINNERS

National Science Foundation
Graduate Research Fellowships
Program Fellows

Aaron Smith (Astronomy)
Emlyn Resetarits (EEB)
John Ortmann (Physics)
Kathleen Lyons (EEB)
Lauren Kreeger (Neuroscience)
Maria Kaczmarek (EEB)
Eleisha Jackson (EEB)
Matthew Harger (CMB)
Brian Gereke (Neuroscience)
Jeffrey Dick (Chemistry)
Brian Barrett (EEB)
Austin Reynolds (EEB)
Rynne Ambrose (Chemistry)
Elizabeth Keneski (Human Development and Family Sciences)
Lisa Piccirillo (Mathematics)

National Institutes of Health
National Research Service Awards Pre-doctoral Fellows

Dana Most (Neuroscience)
Brannon Sam (Chemistry)
Joanna Tychowski (CMB)
Patrick McGurk (CMB)
Kevin Bieri (Neuroscience/MD-PhD)

Other Major External Awards

2014 Reaxys PhD Prize
Changxia Yuan (Chemistry)

NASA Harriett G. Jenkins Graduate Fellowship Recipient
Josephine Cunningham (Chemistry)

NASA Harriett G. Jenkins Graduate Fellowship Recipient
Nick Brenes (Biochemistry)

2014 Award for Outstanding Research in Privacy Enhancing Technologies
Suman Jana (Computer Science)

2014 Kleiner Perkins Caufield & Byers Engineering Fellow
Wesley Tansey (Computer Science)

2013 Howard Hughes Medical Institute International Student Fellowship
Leor Katz (Neuroscience)

IBM PhD Fellowship
Michael Maher (Chemistry)

IBM PhD Fellowship
Cho-Jui Hsieh (Computer Science)

Google PhD Fellowship
Yang Wang (Computer Science)
MAJOR FACULTY, STAFF AND POSTDOC AWARDS

FACULTY AWARDS

Research Award Recipients

Aneesur Rahman Prize for Computational Physics from American Physical Society
James Chelikowsky | Departments of Physics and Chemistry

Burroughs Welcome Fund Investigator
Sara Sawyer | Department of Molecular Biosciences

Elected fellows of the American Association for the Advancement of Science
Ron Elber | Department of Chemistry
William Press | Department of Computer Science

Enrico Fermi Award
Allen Bard | Department of Chemistry

Fellows of the American Academy of Microbiology
Andrew Ellington | Department of Molecular Biosciences
Stephen Trent | Department of Molecular Biosciences
Marvin Whiteley | Department of Molecular Biosciences

Jim Tiedje Award from the International Society for Microbial Ecology for her “Outstanding lifetime contribution to the field of microbial ecology”
Nancy Moran | Department of Integrative Biology

Presidential Early Career Awards for Scientists and Engineers
Kristen Grauman | Department of Computer Science

Sloan Research Fellowships from the Alfred P. Sloan Foundation
Guangbin Dong | Department of Chemistry
Pradeep Ravikumar | Department of Computer Science
Amir Mohammadi | Department of Mathematics

Steele Prize from the American Mathematical Society for “Seminal Contribution to Research”
Luis Caffarelli | Department of Mathematics
University Teaching Awards Recipients

Academy of Distinguished Teachers
John Stanton | Department of Chemistry
Calvin Lin | Department of Computer Science
Peter Stone | Department of Computer Science
Theresa O’Halloran | Department of Molecular Biosciences

Dads’ Association Centennial Teaching Fellowship
Jane Arledge | Department of Mathematics

Jean Holloway Award for Excellence in Teaching
Calvin Lin | Department of Computer Science

President’s Associates Teaching Excellence
Leanne Field | Biology Instructional Office
Cynthia LaBrake | Department of Chemistry
Jane Arledge | Department of Mathematics
Andrew Ellington | Department of Molecular Biosciences

Regents Outstanding Teaching Awards
Donald Winget | Department of Astronomy
Simon Humphrey | Department of Chemistry
Peter Stone | Department of Computer Science
K. Sata Sathasivan | Department of Integrative Biology
Elizabeth Stepp | Department of Mathematics
Arturo De Lozanne | Department of Molecular Biosciences
Sonia Paban | Department of Physics
Cassandra Delgado-Reyes | Texas Interdisciplinary Plan

William David Blunk Memorial Professorship
Alan Cline | Department of Computer Science

Staff Award Recipients

President’s Outstanding Staff Awards
Kimberly Williams | CNS Dean’s Office
Jennifer Gilmore | Department of Integrative Biology
Venus Mills | Marine Science Institute
Sandra Catlett | Department of Mathematics
Terry Bruegging | McDonald Observatory
POST DOC AWARDS

Postdoctoral Fellowships/Awards in 2013–14:

NIH National Research Service Award Postdoctoral Fellowship
Kevin Drew (Center for Systems and Synthetic Biology)
Andrea Hartsock (Institute for Cellular and Molecular Biology)
Michael Mack (Center for Learning and Memory)

Lymphoma Research Foundation Postdoctoral Fellowship
Joe Dekker (Molecular Biosciences)

American Cancer Society Postdoctoral Fellowship
Jacob Grohman (Institute for Cellular and Molecular Biology)

Astronomy and Astrophysics Postdoctoral Fellowship
Jeff Silverman (Astronomy)

USDA National Institute of Food and Agriculture Postdoctoral Fellow
Gordon Bennett (Integrative Biology)
S. Hollis Woodard (Integrative Biology)

NSF Postdoctoral Fellowship in Biology
Farr Niere (Neuroscience)

DAAD (Deutscher Akademischer Austauschdienst) postdoctoral fellowship
Karen Everschor-Sitte (Physics)

Frederick V. Hunt Postdoctoral Research Fellowship in Acoustics (provided support in 2013–14)
Likun Zhang (Physics)