MESSAGE FROM THE DEAN

Dear College of Natural Sciences Community and Friends,

At The University of Texas at Austin, the College of Natural Sciences continues to lead in making world-changing discoveries, establishing pathways for excellence in science education and telling the stories about how scientific breakthroughs at UT improve lives and our knowledge of the universe.

**Key accomplishments of 2015–16 include:**
- The 21st Century Undergraduate Education Task Force and the 21st Century Graduate Education Task Force completed their reviews and offered recommendations for bold transformation in our approaches to education.
- Renovations on the 1929 west wing of Welch Hall were completed, and renovations to the 1978 wing entered the detailed design phase.
- Our Texas Institute for Discovery Education in Science published research showing the College’s Freshman Research Initiative increases graduation rates and the likelihood of students completing a STEM degree.
- An assistant dean was appointed to help support and promote the engagement and career pathways for our non-tenure-track teaching faculty.
- The Council for Diversity Engagement student group took the lead in community-building efforts for all underrepresented students in the College.
- We expanded capacity in the Biology Scholars Program, Women in Natural Sciences and all three College honors programs.
- Graduate program stipends across the College were increased.
- Senior faculty were recruited through the Provost’s Faculty Investment Initiative, which is nucleating future areas of research and transforming departments.
- Two external recruits joined the College as department chairs.
- The Center for Infectious Disease was renamed in honor of public health champion and alumnus John Ring LaMontagne.
In the year ahead, we will continue to focus on:

• Implementing curriculum changes identified by the two 21st Century Education working groups, to best prepare our undergraduate and graduate students for life after UT;
• Ensuring our buildings—including our largest academic facility, Welch Hall — are equipped for cutting-edge research and meaningful educational experiences for our students;
• Hiring outstanding faculty leaders and enhancing diversity in our faculty.
• Attracting the best science and math graduate students, from a diversity of backgrounds, to UT Austin;
• Increasing philanthropic contributions to support CNS priorities; and
• Planning for the next frontiers of scientific research in the College, especially as it pertains to the next five years.

Linda Hicke
Dean, College of Natural Sciences

The College of Natural Sciences works to provide research-enhanced education and educationally connected research. The strategic priorities that guide the College Strategic Plan and which provide a framework for this annual report include: developing scientific leaders, promoting world-changing discovery and communicating our impact to Texas, the nation and the world. A detailed summary of progress on the strategic plan, including updates from the 2015–2016 year, can be found at: cns.utexas.edu/strategic-plan/progress.
DEVELOPING SCIENTIFIC LEADERS

AT A GLANCE

361

tenured and tenure-track faculty

+1

New National Academy of Sciences Member

+3

New Academy of Distinguished Teachers Members

1,387

graduate students

10,802

undergraduates

10

Students Awarded National Science Foundation Research Fellowships

2,111

Class of ’16 graduates
## Faculties Leaders

Tenure-Track Faculty by Department

<table>
<thead>
<tr>
<th>Department</th>
<th>2015–2016</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTRONOMY</td>
<td>23</td>
<td></td>
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<tr>
<td>CHEMISTRY</td>
<td>28</td>
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<tr>
<td>COMPUTER SCIENCE</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>HUMAN DEVELOPMENT AND FAMILY SCIENCES</td>
<td>15</td>
<td></td>
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<tr>
<td>INTEGRATIVE BIOLOGY</td>
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<td>MARINE SCIENCE</td>
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<td>MATHEMATICS</td>
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<tr>
<td>MOLECULAR BIOSCIENCES</td>
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<td>NEUROSCIENCE</td>
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<td>NUTRITIONAL SCIENCES</td>
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<td>PHYSICS</td>
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<td>STATISTICS AND DATA SCIENCES</td>
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<td>TEXTILES AND APPAREL</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>361</strong></td>
<td></td>
</tr>
</tbody>
</table>
New Faculty Joining the College

Scott J. Aaronson, Professor – Department of Computer Science
Scott Aaronson’s research focuses on the capabilities and limits of quantum computers and, more generally, on computational complexity and its relation to physics. He received his bachelor’s from Cornell University and his Ph.D. from the University of California, Berkeley. He did postdoctoral fellowships at the Institute for Advanced Study in Princeton as well as the University of Waterloo. Before coming to UT Austin, he spent nine years as a professor in Electrical Engineering and Computer Science at the Massachusetts Institute of Technology. His first book, *Quantum Computing Since Democritus*, was published in 2013 by Cambridge University Press. He’s received the National Science Foundation’s Alan T. Waterman Award, the United States Presidential Early Career Award for Scientists and Engineers, and MIT’s Junior Bose Award for Excellence in Teaching.

Vijay Chidambaram, Assistant Professor – Department of Computer Science
Vijay Chidambaram’s research focus is to ensure the reliability of applications in the rapidly changing landscape of storage and cloud computing. Specifically, he has contributed new reliability techniques in local and distributed storage systems and built frameworks for finding reliability bugs in applications. His work has resulted in patent applications by VMware, Samsung and Microsoft. He was awarded the Microsoft Research Fellowship in 2014 and the University of Wisconsin-Madison Alumni Scholarship in 2009. He received his Ph.D. from the University of Wisconsin-Madison in 2015 and went on to spend one year as a postdoctoral researcher in VMware Research before joining UT Austin.

Caroline Farrior, Assistant Professor – Department of Integrative Biology
Caroline Farrior’s research in plant ecology focuses on how competition among individual plants for resources influences the prominence of important plant traits in the environment, a topic with important implications for the stability and resilience of ecosystems amid climate change. Farrior uses a combination of theoretical and empirical approaches in her work, which has applications for science’s understanding of the global carbon cycle and predictions related to climate change. Farrior received her B.A. from the University of Pennsylvania in 2007 and her Ph.D. from Princeton University in 2012. She then spent two years as a postdoctoral researcher at the Princeton Environmental Institute and completed a fellowship at the National Institute for Mathematical and Biological Synthesis, before joining the faculty at UT Austin this fall.
Qixing Huang, Assistant Professor – Department of Computer Science

Qixing Huang’s research spans computer vision, computer graphics, computational biology and machine learning. In particular, his recent focus is on developing machine learning algorithms (particularly deep learning) that leverage Big Data to solve core problems in computer vision, computer graphics, and computational biology. He is also interested in statistical data analysis, compressive sensing, low-rank matrix recovery and large-scale optimization, which provide a theoretical foundation for much of his research. Huang obtained his Ph.D. from Stanford University in 2012. From 2012 to 2014, he was a postdoctoral research scholar at Stanford. He has also interned at Google Street View, Google Research and Adobe Research.

Philipp Krähenbühl, Assistant Professor – Department of Computer Science

Philipp Krähenbühl’s research spans the fields of computer vision, machine learning, and computer graphics, with a special focus on deep learning. He is particularly interested in learning rich visual representations from a minimal amount of human supervision. Krähenbühl obtained his Ph.D. from Stanford University and his B.S. from ETH Zurich. Before joining UT Austin, he worked as a postdoctoral researcher at the University of California, Berkeley.

Daniel Leahy, Professor and Chair – Department of Molecular Biosciences

Daniel Leahy researches molecular mechanisms of cell signaling. As a structural biologist, he examines the processes by which proteins and other molecules behave within living systems. Relying on X-ray crystallography and cryo-electron microscopy, he has studied molecular mechanisms that regulate growth in normal and malignant cells and how specific anticancer drugs work to shed light on the effectiveness of different therapies for cancers of the lung, breast, colon and gastric system. Leahy received his Ph.D. in biophysics from Stanford University and his bachelor’s degree in mathematics from Yale University. He conducted postdoctoral research at Columbia University and was previously a professor of biophysics and biophysical chemistry at Johns Hopkins University School of Medicine.

Dana Moshkovitz, Associate Professor – Department of Computer Science

Dana Moshkovitz’s research is in theoretical computer science, focused largely on the limitations of approximation algorithms and probabilistic checking of proofs. She completed her Ph.D. at the Weizmann Institute of Science in Israel. Her thesis co-won the Nessyahu Prize for best math Ph.D. thesis in Israel in 2009, and part of this work was awarded the Foundations of Computer Science 2008 Best Paper. Moshkovitz went on to spend two years at Princeton University and the Institute of Advanced Study before joining the Massachusetts Institute of Technology as an assistant professor in late 2010. She is the recipient of MIT’s Jerome Saltzer Teaching Award.
Simon Peter, Assistant Professor – Department of Computer Science
Simon Peter conducts research in operating systems and networks, in particular focusing on data-center performance and energy efficiency. He received his Ph.D. from ETH Zurich in 2012 and an M.Sc. from the Carl-von-Ossietzky University of Oldenburg, Germany in 2006. Before joining UT Austin, he was a research associate at the University of Washington from 2012-2016. For his work on the Arrakis high I/O performance operating system, he received the Jay Lepreau Best Paper award (2014) and the Madrona prize (2014). He has conducted further award-winning systems research at various locations, including Microsoft Research in Silicon Valley and Cambridge, Intel Labs and the University of California, Riverside.

Andrew Potter, Assistant Professor – Department of Physics
Andrew Potter is a theoretical physicist investigating quantum phases of matter, phase transitions, and non-equilibrium dynamics in electronic materials and cold atomic gases. His research combines ideas from quantum field theory, topology and quantum information science to build basic organizing principles for understanding quantum materials and how to harness their capabilities for electronic, magnetic and optical device or quantum communication and computing applications. Potter obtained his Ph.D. from the Massachusetts Institute of Technology in 2013, followed by three years as a Moore Foundation postdoctoral fellow at the University of California, Berkeley.

Chris Rossbach, Assistant Professor – Department of Computer Science
Chris Rossbach’s research focuses on operating system and architectural support for emerging hardware, particularly those that leverage concurrency. His work involves exploring mechanisms that enable systems to take advantage of concurrency to improve performance and that simplify the development of parallel programs. His approach is to identify future changes in technology and user needs, considering new operating system and architectural mechanisms and abstractions that can potentially address these needs, simplify the system, or improve performance. Rossbach received his Ph.D. from The University of Texas at Austin in 2009. Since then, he has worked as a postdoctoral researcher at UT Austin, a researcher at Microsoft Research Silicon Valley, and a senior researcher at VMware Research Group.

Thibaud Taillefumier, Assistant Professor – Neuroscience and Mathematics
Taillefumier’s research in applied mathematics and theoretical neuroscience focuses on the emerging collective properties and possible design principles of neural networks. His approach combines ideas from optimization theory and stochastic dynamics on questions at the nexus of information theory and non-equilibrium thermodynamics, to better understand the nature of neural computations. Originally trained in mathematical physics at Ecole Polytechnique in France, Taillefumier completed his Ph.D. in biophysics at The Rockefeller University in 2012. Before joining UT Austin, Taillefumier was an Associate Research Scholar at the Lewis-Sigler Institute for Integrative Genomics at Princeton University.
David Taylor, Assistant Professor – Department of Molecular Biosciences
Taylor’s research focuses on how macromolecular machines assemble and function. His current interests include understanding the structural basis for CRISPR RNA-guided adaptive immunity in prokaryotes and genome maintenance and double-strand DNA break repair in eukaryotes. To accomplish these goals, he directly visualizes the structures of these protein-nucleic acid complexes using cryo-electron microscopy. Taylor received his Ph.D. in molecular biophysics and biochemistry at Yale University in 2013, followed by two years as a Damon Runyon postdoctoral fellow at the University of California, Berkeley.

Davarajan “Dave” Thirumalai, Professor and Chair – Department of Chemistry
Dave Thirumalai is a theoretical chemist whose research spans biophysics, chemical physics, soft matter, and system biology. He has published more than 325 peer-reviewed journal articles on topics ranging from Alzheimer’s disease to cancer, and he has won multiple research awards for theoretical chemistry and biophysics. He received his Ph.D. in physical chemistry from the University of Minnesota and his M.Sc. from the Indian Institute of Technology in Kanpur, India. He was a postdoctoral researcher at Columbia University in New York and later joined the faculty at the University of Maryland.

Lauren Yeager, Assistant Professor – Department of Marine Science
Lauren Yeager is an ecologist whose research focuses on understanding how global climate change is altering patterns in marine biodiversity, and what these altered patterns mean for associated ecosystem functions and services. She employs food web, landscape and macroecology approaches to examine how humans affect coastal systems at multiple levels (e.g., individual, population, community and ecosystem) via altered environmental conditions, changes in habitat pattern, and/or removal of key species by overharvest. After completing her Ph.D. at Florida International University in 2013, she held a postdoctoral appointment at the Institute of Marine Sciences, University of North Carolina at Chapel Hill and a postdoctoral fellowship at the National Science Foundation’s National Socio-Environmental Synthesis Center.

Faculty scheduled to join the College in the year ahead
Gregory Durrett, Assistant Professor, Department of Computer Science
Philip Isett, Assistant Professor, Department of Mathematics
Joseph Neeman, Assistant Professor, Department of Mathematics
Ngoc Tran, Assistant Professor, Department of Mathematics
Major Faculty Research and Teaching Awards

2015–2016 Faculty Research Award Recipients

Member of the National Academy of Sciences
James Bull | Department of Integrative Biology

Fellows of the American Mathematical Society
Natasa Pavlovic | Department of Mathematics
Alexis Vasseur | Department of Mathematics

Fellows of the National Academy of Inventors
George Georgiou | Department of Molecular Biosciences
Jonathan Sessler | Department of Chemistry

Institute of Electrical and Electronics Engineers Fellows
Lorenzo Alvisi | Department of Computer Science
Risto Miikkulainen | Department of Computer Science

Education Commission of the States Distinguished Senior Fellow
Uri Treisman | Charles A. Dana Center and Department of Mathematics

Presidential Early Career Award for Scientists and Engineers
Keji Lai | Department of Physics

Alfred P. Sloan Foundation Fellows
Brett Baker | Department of Marine Science
Jeff Danciger | Department of Mathematics

New Horizons in Physics Breakthrough Award Prize
Raphael Flauger | Department of Physics
Cottrell Scholar, Research Corporation for Science Advancement
  Michael Rose | Department of Chemistry

Carl Friedrich Siemens Research Award
  Harold Zakon | Departments of Integrative Biology and Neuroscience
  Philip J. Morrison | Department of Physics

Humboldt Research Award
  Mike Downer | Department of Physics

Auffenberg Medal
  Eric Pianka | Department of Integrative Biology

NASA Group Achievement Award
  Taft Armandroff | Department of Astronomy

American Chemical Society 2016 Award in Theoretical Chemistry
  Dave Thirumalai | Department of Chemistry

Semiconductor Industry Association University Research Award
  Grant Willson | Department of Chemistry

Pioneer Prize of the International Council for Industrial and Applied Mathematics
  Björn Engquist | Department of Mathematics

Thomson Reuters’ 2015 Highly Cited Researcher
  Allan MacDonald | Department of Physics

2015 Pedler Award from the Royal Society of Chemistry
  Mike Krische | Department of Chemistry

The Susie Bayarri Award
  James Scott | Department of Statistics and Data Sciences

2016 D. O. Hebb Distinguished Scientific Contributions Award, American Psychological Association
  David Crews | Department of Integrative Biology

Distinguished Fellow, the Botanical Society of America
  Don Levin | Department of Integrative Biology

2015 Wilhelmine Key Distinguished Lecturer Award
  Mark Kirkpatrick | Department of Integrative Biology

Distinguished Engineer of the Association for Computing Machinery
  Warren Hunt | Department of Computer Science

Autonomous Agents Research Award
  Peter Stone | Department of Computer Science

Simons Foundation Investigator in Theoretical Computer Science
  David Zuckerman | Department of Computer Science

2015 Grace Murray Hopper Award
  Brent Waters | Department of Computer Science

Lifetime Contribution Award of the Society for Molecular Biology and Evolution
  Nancy Moran | Department of Integrative Biology

André Lichnerowicz Prize in Poisson Geometry
  Travis Schedler | Department of Mathematics
2015–2016 Faculty Teaching Awards Recipients

Academy of Distinguished Teachers
Lorenzo Alvisi | Department of Computer Science
Volker Bromm | Department of Astronomy
Uri Treisman | Department of Mathematics

Minnie Stevens Piper Professor Award
Uri Treisman | Department of Mathematics

Regents Outstanding Teaching Awards
Anita Latham | Biology Instructional Office, 2015
Jennifer Moon | Biology Instructional Office, 2015
Michael Drew | Department of Neuroscience, 2016

President’s Associates Teaching Excellence
Amanda Hager | Department of Mathematics
Anita Latham | Biology Instructional Office
Calvin Lin | Department of Computer Science
David Vanden Bout | Department of Chemistry

Dads’ Association Centennial Teaching Fellowships
Amanda Hager | Department of Mathematics, 2015
Fatima Fakhreddine | Department of Chemistry, 2016

Provost’s Teaching Fellows
Arturo de Lozanne | Department of Molecular Biosciences
Jen Moon | Department of Molecular Biosciences

Texas Exes’ “Texas 10” Teaching Award
Ockhee Bego | School of Human Ecology Textiles and Apparel Division, 2015
Inderjit Dhillon | Departments of Computer Science and Mathematics, 2015
Laura Lashinger | Department of Nutritional Sciences, 2016
GRADUATE STUDENT LEADERS

The College is working with departments to identify, recruit and admit the highest-performing students into 15 graduate programs across the College. With fewer graduate students now entering these programs, departments have been able to increase stipend levels to support the work of these high-achieving students.

Total Number of Graduate Students (Ph.D. and Master’s) in CNS
Major Graduate Student Awards in 2015–16:

2015–16 NSF Graduate Research Fellowship Awardees:
Hannah Turner | Mathematics
James Sanders | Chemistry
Zachary Philips | Ecology, Evolution and Behavior
Alexandra Nishida | Microbiology
Sinclaire Manning | Astronomy
Jessica Luna | Astronomy
Alexander Boulgakov | Cellular and Molecular Biology

2015–16 NSF Graduate Research Fellowship Honorable Mention:
Melissa Meyerson | Chemistry
Megan Mehaffey | Chemistry
Claire McWhite | Cellular and Molecular Biology
Benjamin Kidder | Astronomy
Briana Indahl | Astronomy
Caroline Davis | Cellular and Molecular Biology
Austin Cole | Cellular and Molecular Biology
Roberto Cofresi | Neuroscience
Joshua Black | Microbiology
James Bachman | Chemistry
Bryan Wygant | Chemistry
Carolyn Whiting | Microbiology
Anna Warden | Neuroscience
Sydney Sherman | Astronomy

NIH National Research Service Award Predoctoral Fellows
Gizelle Robinson | Cellular and Molecular Biology
Laura Ferguson | Neuroscience
Anthony Lacagnina | Neuroscience

HHMI International Student Research Fellowship
Jagruti Pattadkal | Neuroscience

NSF East Asia and Pacific Summer Institute Award
Joshua Lonthair | Marine Science
James Brewster | Chemistry

DOE – Nuclear Energy, Integrated University Program Fellowship
Robert Fimognari | Chemistry
American Chemical Society – Division of Organic Chemistry Graduate Fellowship
Zach Kasun | Chemistry

Japan Student Services Organization Scholarship
Hiroki Sato | Chemistry

ITO Foundation for International Education Exchange Fellowship
Tatsuhiro Tsukamoto | Chemistry

Simons Award for Graduate Students in Theoretical Computer Science
Pravesh Kothari | Computer Science

Google Ph.D. Fellowship in Distributed Computing
Natacha Crooks | Computer Science

Dept. of Health and Human Services Administration for Children and Families – Child Care Research Scholar
Aryi Ansari | Human Development and Family Sciences
Efforts to ensure every student receives guidance, information, and community support to help them progress in their degree plans have proven effective in the College. In the last year, CNS had its largest number of graduates ever, as well as the highest four-year graduation rate on record. It welcomed its largest-ever freshman class for the 2016–2017 year.
Undergraduate Enrollment by Major in 2015–16

Graduating Class of 2016 – Undergraduate Degrees Awarded
2015–16 Fall & Spring Graduates

*Self-reported demographic data comes from the graduates who completed the graduation survey.

Total Number of Graduates: 2,371

- Male/Female: 51% Female; 49% Male
- Underrepresented Minority: 22%
- Transferred into CNS: 34%
- Internship: 60%
- Participated in FRI: 27%
- Graduated in 4 Years: 70%

Self-Reported Pathways after Graduation

<table>
<thead>
<tr>
<th>Pathway</th>
<th>B.S.</th>
<th>B.S.A./B.A.</th>
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<tbody>
<tr>
<td>Seeking/Secured a Job</td>
<td>59%</td>
<td>54%</td>
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<tr>
<td>Health Professions School</td>
<td>21%</td>
<td>27%</td>
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<tr>
<td>Graduate School</td>
<td>14%</td>
<td>9%</td>
</tr>
<tr>
<td>Other (military, Peace Corps, etc.)</td>
<td>7%</td>
<td>10%</td>
</tr>
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</table>

Major Undergraduate Student Awards in 2015–16:

Barry M. Goldwater Scholar Honorable Mention
- Victor Lam | B.S. Biology
- Kayla Leonard | B.S. Astronomy and B.S. Physics

NSF Graduate Research Fellowships Program Fellow
- Celia Beron | B.S. Biology

NSF Graduate Research Fellowships Program Honorable Mention
- Taylor Hoyt | B.S. Astronomy
- Surya Raghavendran | B.S. Mathematics

Rhodes Scholar Finalist
- Patrick Haley | B.S. Computer Science
PROMOTING WORLD-CHANGING DISCOVERY

AT A GLANCE

6 papers published in Nature and Science

1929 west wing of Welch Hall renovation completed

Renamed Center for Infectious Disease in honor of John Ring LaMontagne

More than $102 Million in sponsored research funding


Distribution of 2015–2016 CNS External Funding

External Research Expenditure by Department

<table>
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<tr>
<th>UNIT</th>
<th>2015–2016</th>
<th>Average per Faculty</th>
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<tbody>
<tr>
<td>Marine Science</td>
<td>$7,205,520</td>
<td>$514,680</td>
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<tr>
<td>Neuroscience</td>
<td>$12,473,635</td>
<td>$498,945</td>
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<td>Chemistry</td>
<td>$11,997,995</td>
<td>$428,500</td>
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<tr>
<td>Statistics &amp; Data Sciences</td>
<td>$809,597</td>
<td>$404,799</td>
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<tr>
<td>Molecular Biosciences</td>
<td>$23,390,360</td>
<td>$403,282</td>
</tr>
<tr>
<td>Nutritional Sciences</td>
<td>$3,058,429</td>
<td>$339,825</td>
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<tr>
<td>Physics</td>
<td>$15,649,672</td>
<td>$289,809</td>
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<tr>
<td>Integrative Biology</td>
<td>$8,498,328</td>
<td>$242,809</td>
</tr>
<tr>
<td>Computer Science</td>
<td>$9,466,930</td>
<td>$225,403</td>
</tr>
<tr>
<td>Astronomy</td>
<td>$3,912,032</td>
<td>$170,088</td>
</tr>
<tr>
<td>Mathematics</td>
<td>$4,414,968</td>
<td>$84,903</td>
</tr>
<tr>
<td>Human Dev/Family Sciences</td>
<td>$1,193,275</td>
<td>$79,552</td>
</tr>
<tr>
<td>Textiles &amp; Apparel</td>
<td>$230,293</td>
<td>$57,573</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>$102,301,034</td>
<td>$283,382.37</td>
</tr>
</tbody>
</table>
The New Welch Hall: A Home for Innovative Education and Research

Just in time for the fall 2016 semester, the north wing of Welch Hall renovations were completed. This project adds significantly to the College’s teaching space: two ‘active learning’ classrooms, two Freshman Research Initiative labs, analytical chemistry teaching laboratories and the ‘Sandbox’—an innovative experimental learning environment. This renovation also creates 17,500 square feet of state-of-the-art research laboratories for synthetic, analytical and physical chemistry.

The renovation in the largest wing of the building—the 1978 wing, which runs along Speedway—is in its design phase. This project will include all new mechanical systems, modern research and teaching labs, and an updated student space in the grand concourse. The first phase of construction is scheduled to begin in May 2017 and should be completed in early 2019. The second and final phase of the renovation should be completed in early 2020.
Norman Hackerman Building Additions
The Welch ’78 renovation has triggered two additional projects that are currently underway in the Norman Hackerman Building (NHB). Mechanical and programming considerations of the Welch 1978 wing renovation require moving the old greenhouse on the roof and the biochemistry and FRI labs from the third floor.

A 4,300 square foot space on the first floor of NHB is being finished out to provide a new home for the biochemistry teaching laboratory and a new FRI lab. These spaces will be ready for students by May 2017.

A modern research greenhouse also will be constructed on the roof of NHB. This new facility, which replaces the old greenhouse on the roof of Welch, will support the research needs of our plant biologists for years to come.

Patterson Hall: A Home for the Department of Integrative Biology
A new administrative suite for the Department of Integrative Biology is under construction on the first floor of Patterson Hall. The newly renovated space will house offices for the department chair and staff, a conference room for faculty meetings and seminars, and an informal collaboration space for faculty and students.
CREATING AND COMMUNICATING IMPACT

AT A GLANCE

25%
average increase in STEM retention tied to Freshman Research Initiative

3,603 CNS alumni
invested in the College in 2015–2016

1,100+
media accounts featuring CNS experts

>100
submissions for annual Visualizing Science contest
Freshman Research Initiative

The decade-old Freshman Research Initiative (FRI) was the focus of a study published in *CBE-Life Sciences Education* (Rodenbusch et al., 2016) that represented the largest and most carefully controlled analysis to date of how participating in course-based undergraduate research experiences affects student outcomes. The study found that across all demographic groups students who participated in FRI were more likely to graduate college and to earn degrees in STEM disciplines. FRI, which is already being replicated on college campuses around the country:

- increases a student’s likelihood of graduating with an undergraduate degree from 66 to 83 percent, and
- increases a graduate’s likelihood of earning a STEM degree from 71 to 94 percent.

Engaging Alumni

The College has more than 64,000 living alumni. These individuals, many with deep ties to the University, are responsible for key investments in the future of Natural Sciences at UT Austin.

Members of the College leadership team and the Office of External Relations held Roadshow events in nine cities involving hundreds of alumni, as well as parents of current CNS students. By the end of the year 3,603 alumni had supported the College directly.
Publicizing Discoveries
College of Natural Sciences media tracking found that CNS faculty experts, graduate students and staff were covered in the press more than 1,100 times in the past year, more than a 50% increase over the prior year. Below are some select highlights of coverage in top news outlets.

“A Twist to How a Túngara Frog Finds Her Prince”
*New York Times*
Mike Ryan and Amanda Lea (graduate student), Integrative Biology

“The Strange Link between Global Climate Change and the Rise of the Robots”
*Washington Post*
Risto Miikkulainen, Computer Science

“Algebra Scores Prompt Second Look at Revamped Regents Exams”
*New York Times*
Uri Treisman, Mathematics

“How Fish Make Themselves Invisible—Mystery Solved”
*National Geographic*
Molly Cummings and Parrish Brady, Integrative Biology

“Why Tortillas May Hold The Key To Healthier Babies”
*NPR*
Dean Appling, Molecular Biosciences

“Mosquitoes Could Spread Zika in Dozens of U.S. Cities”
*CBS News*
Sahotra Sarkar, Integrative Biology

“What Aging Parents Want From Their Kids”
*The Atlantic*
Karen Fingerman, Human Development and Family Sciences

“Supermassive Black Holes May Be More Common Than Anyone Imagined”
*NPR*
Karl Gebhardt, Astronomy

“Five-Decade Study Reveals Fallout from Spanking Kids”
*CBS News*
Elizabeth Gershoff, Human Development and Family Sciences

“Random Number Generator ‘Improved’”
*BBC News*
David Zuckerman, Computer Science
“How an Army of Oil-Eating Bacteria can Clean up the Gulf”
Christian Science Monitor
Brett Baker, Nina Dombrowski (graduate student), Marine Science

“Rare translucent Blind Catfish Discovered in Texas”
CBS News
Dean Hendrickson, Integrative Biology

“These Brand New Baby Exoplanets could Help us Understand where Worlds Come from”
Washington Post
Andrew Mann, Astronomy

“Some Microbes Have Been With Us Since Before We Existed”
The Atlantic
Howard Ochman, Integrative Biology
**Visualizing Science**

More than 100 scientific images were submitted to the College’s Visualizing Science contest, and winning images were displayed prominently in buildings around the UT campus.

Brett Baker
Marine Science

John Kuehne
McDonald Observatory

Aaron Fenyes
Mathematics
Melissa Meyerson
Chemistry

Pedro Fernando Morales-Almazan
Mathematics

Culture Collection of Algae
COLLEGE BUDGET AND ENROLLMENT
2015–2016 Budget

- Gifts & Endowments, 9%
- Tuition and Fees, 14%
- Available University Fund, 3%
- State Support, 32%
- External Research/Other, 42%

Total: $258 Million

2015–2016 Instructional Budget

- Faculty Leaves, 17.8%
- External Programming, 3.7%
- Permanent Instructional Funds, 78.5%

Total: $21.9 Million
Change in CNS Majors and Number of Seats Taught

Number of CNS Majors (3-Year History)
Master's Program Enrollment (3-Year History)

- **2013–2014**
- **2014–2015**
- **2015–2016**
FUNDRAISING RESULTS
### Annual Philanthropic Gifts

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Philanthropy</th>
<th>Non-Federal Research Gifts</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011-12</td>
<td>$50,000,000</td>
<td></td>
</tr>
<tr>
<td>2012-13</td>
<td>$40,000,000</td>
<td></td>
</tr>
<tr>
<td>2013-14</td>
<td>$30,000,000</td>
<td></td>
</tr>
<tr>
<td>2014-15</td>
<td>$20,000,000</td>
<td></td>
</tr>
<tr>
<td>2015-16</td>
<td>$10,000,000</td>
<td></td>
</tr>
</tbody>
</table>

### Department/Unit Fundraising Totals

- **Astronomy—McDonald Observatory**
  - 2012/13: $3,000,000
  - 2013/14: $2,000,000
  - 2014/15: $1,000,000
  - 2015/16: $0

- **Chemistry Annual Fund**
  - 2012/13: $2,000,000
  - 2013/14: $1,000,000
  - 2014/15: $0
  - 2015/16: $0

- **Computer Science**
  - 2012/13: $1,500,000
  - 2013/14: $1,000,000
  - 2014/15: $0
  - 2015/16: $0

- **Integrative Biology**
  - 2012/13: $1,000,000
  - 2013/14: $500,000
  - 2014/15: $0
  - 2015/16: $0

- **Mathematics**
  - 2012/13: $1,500,000
  - 2013/14: $1,000,000
  - 2014/15: $0
  - 2015/16: $0

- **Molecular Biosciences**
  - 2012/13: $1,000,000
  - 2013/14: $500,000
  - 2014/15: $0
  - 2015/16: $0

- **Marine Science Institute**
  - 2012/13: $1,000,000
  - 2013/14: $500,000
  - 2014/15: $0
  - 2015/16: $0

- **Neuroscience**
  - 2012/13: $1,000,000
  - 2013/14: $500,000
  - 2014/15: $0
  - 2015/16: $0

- **Physics**
  - 2012/13: $1,500,000
  - 2013/14: $1,000,000
  - 2014/15: $0
  - 2015/16: $0

- **School of Human Ecology**
  - 2012/13: $1,000,000
  - 2013/14: $500,000
  - 2014/15: $0
  - 2015/16: $0

- **Statistics**
  - 2012/13: $1,000,000
  - 2013/14: $500,000
  - 2014/15: $0
  - 2015/16: $0
Advisory Council Contributions – Dean’s Discretionary Fund

95% Participation of giving

2015–2016

Advisory Council Demographics

Age Range

Female, 30%
Male, 70%