The University of Mississippi

NSF CAREER

ORSP INFORMATION SESSIONS
FALL 2017
OCT 9, 2PM: BREVARD 2ND FLOOR
OCT 12, 3PM: LYCEUM 308
OCT 16, 2PM: BREVARD 319
OCT 18, 2PM: BREVARD 209
OCT 19, 3PM: LYCEUM 308

Brief Introductions

- Previous Awardees Present:
  - Name, Rank, Department, Year, and Amount of CAREER Award
  - Number of Attempts before CAREER Award
- Attendees:
  - Name, Rank, and Department
  - First NSF CAREER Proposal?
  - Planning for Summer 2018?
  - Any prior NSF proposal experience/success?
  - Ever attended an NSF CAREER proposal writing workshop?
- Research Development Fellows
  - Name, Rank, Department
- ORSP Personnel

Today

- Introductions
- Brief Summary of NSF CAREER Program
- Vision for the CAREER Faculty Development Group
- Grant Mentors Program
- Perspectives from Previous NSF Awardees
- Research Development Fellows
- Next Steps
- Questions/Discussion

What is NSF CAREER

- Faculty Early-Career Development (CAREER) Program
  - Most prestigious awards to help a junior faculty member develop activities that can effectively **integrate research and education** within the context of his/her organization
  - **Education component** as important as research

Goals of NSF CAREER

- Provide stable support for five years (≥400K in most Directorates – BIO, GEO/PLR, ENG are ≥500K) to allow the career development
- Build a foundation for a lifetime of integrated contributions to research and education.
- Integration of research and education.
- Increase participation of those traditionally underrepresented in science and engineering

Eligibility

- Hold a doctoral degree in any field supported by NSF by proposal deadline
- **Be untenured by Oct 1st** following proposal deadline
- Be employed in a **tenure-track** (or equivalent) position at an eligible institution as an **Assistant Professor** (by Oct 1st following deadline)
- Have not previously received a CAREER award
- **Have not had more than two CAREER proposals reviewed**

Merit Review across NSF Divisions

- Ad hoc + Panel (with other proposals in the Program)
  - most of GEO (AGS uses ad hoc only)
  - BIO and SBE

- Primarily dedicated CAREER Panels
  - ENG, CISE, HER
  - MPS varies by Division: AST : Panel only; CHE, DMR – Mix of ad hoc and panels; DMS – mostly panels (2 programs ad hoc only)

Standard NSF Review Criteria

- **Merit criteria**: Potential to advance, if not transform, the frontiers of knowledge; assessment based on appropriate metrics

- **Broader Impact:** potential to benefit society and contribute to the achievement of specific, desired societal outcomes.

- **Review elements:**

  1. What is the potential for the proposed activity to: a. **advance knowledge** b. **benefit society**

  2. To what extent do the proposed activities suggest and explore **creative, original, or potentially transformative** concepts?

  3. Is the **plan** for carrying out the proposed activities **well-reasoned**, with a mechanism to **assess success**?

  4. How well **qualified** is the PI and team?

  5. Are there **adequate resources** available to the PI?

Special Criteria for CAREER

- A compelling research plan
- An innovative but feasible education plan
- A plan for the effective integration of both sets of activities (evaluation plan is a big plus)
- Departmental Letter
- Letters of Collaboration if appropriate
- A budget that is consistent with the scope of the research and education activities

NSF CAREER: UM Recent History & Goals

- In last 10 years, 9 UM faculty have received CAREER awards
- In 2016: UM submitted 6 NSF CAREER proposals (a record)
- In 2017: UM submitted 10 NSF CAREER proposals
  - 5 from the School of Engineering
  - 1 from Sociology and Anthropology
  - 1 from Modern Languages
  - 1 from Mathematics
  - 1 from Chemistry/Biochemistry
  - 1 from Physics/Astronomy
- ORSP Goal for 2018: 20 submissions
- ORSP Goal: 5 CAREER Awards/year

NSF CAREER Development Group
Why Participate?

- Learn from those with NSF CAREER experiences
  - UM CAREER Awardees (8 total)
  - UM Reviewers on NSF CAREER Panels
- Get a look at funded NSF CAREER proposals
- Get feedback from peers and iteratively improve your proposal
- Learn about available resources here at UM to strengthen your proposal/project
- Access extra travel funds from ORSP
- Give and receive encouragement with other CAREER aspirants

NSF CAREER Development Group: How it Works

- Access to UM NSF CAREER proposal bank
  - UM Box Folder
  - Hardcopies in ORSP offices
- Monthly Group Meetings
  - To be scheduled based on greatest availability
  - A different topic each month, with guest presenters
  - Learn about available UM resources to strengthen proposal
- Monthly Writing Assignments
  - Share with Research Fellows for feedback (encouraged and optional)
  - Share with one another for feedback (encouraged and optional)
- Result: a Complete, vetted NSF CAREER proposal by Summer

NSF CAREER Development Group: Tentative Schedule

- October: Overview/Information Sessions/ Sign Up
- November: Project Summaries
- December: Education Plans and Broader Impacts
- January: Research Plans
- February: Budget and Budget Justification
- March: Departmental Letter; Other Letters
- April: Biosketches, Collaborators and Other Affiliations, Current and Pending, Results of Prior NSF Support
- May: Data Management Plans, Postdoc Mentoring Plans, Facilities, Equipment, & Other Resources
- June: Presentation, Feedback, and Editing
- July: Submit to NSF

NSF CAREER Development Group: Recognition Event

In August or September, everyone who submitted and NSF CAREER proposal will be recognized at a reception or dinner.

- Chancellor, Provost, and/or Vice Chancellor for Research.
- Deans and Chairs of submitting PIs
- Previous CAREER Award Winners

ORSP UM Grant Mentors Program

- Proposer: Identify a potential UM Mentor for a funding opportunity
  - UM faculty member with recent success in extramural funding competitions
  - ORSP can assist in identifying/vetting mentors
- Mentor and Proposer: Agree to work together on the proposal
  - Complete a Mentor Agreement Form
  - Obtain sign-off from Chair and Dean of Mentor and Proposer
  - Upload the signed form to the online transmittal (TSS)
- Develop and submit proposal
  - Mentor receives $500 in extra pay for extra work (from Proposer's dept./school)
  - If proposal is funded, mentor receives $500 award pay from ORSP

Meet the UM CAREER Holders

- 9 UM Faculty Members have been awarded NSF CAREER grants

- 8 of them are still at UM
  - Tammy Goulet, 2008 — Biology
  - Nathan Hammer, 2010 — Chemistry & Biochemistry
  - Emanuele Berti, 2011 — Physics & Astronomy
  - Amal Dass, 2013 — Chemistry & Biochemistry
  - Sarah Liljegren, 2015 — Biology
  - Jared Delcamp, 2016 — Chemistry & Biochemistry
  - Patrick Curtis, 2016 — Biology
  - Davita Watkins, 2017 — Chemistry & Biochemistry

Chemist Lands $650,000 NSF Career Development Grant

Award will fund research, allow development of outreach programs for K-12 students

JULY 20, 2013 BY **DEBORAH A. PURNELL**

From left to right: Vijay Jupally, Nuwan Kothalawala, Dave Crasto, Chanaka Kumara, Asantha Dharmaratne, and Amala Dass. Photo by Kevin Bain/Ole Miss Communications

OXFORD, Miss. – Amala Dass, assistant professor of chemistry and biochemistry at the University of Mississippi, has been awarded a $650,000 Faculty Early Career Development (CAREER) Program grant from the National Science Foundation.

The prestigious five-year grant allows Dass and his students to continue research in the study of gold alloy nanomolecules and to launch and sustain a summer chemistry research program for Mississippi high school students.

"Dr. Dass is synthesizing and studying interesting nanomaterials that are made from microscopic gold particles and sulfur compounds called thiols that have unusual architectures and interesting electronic properties," said Charles L. Hussey, chair of the Department of Chemistry and Biochemistry. "These gold nanoparticles may have applications in everything from microelectronics to drug delivery systems."

https://news.olemiss.edu/chemist-lands-650000-nsf-career-development-grant/

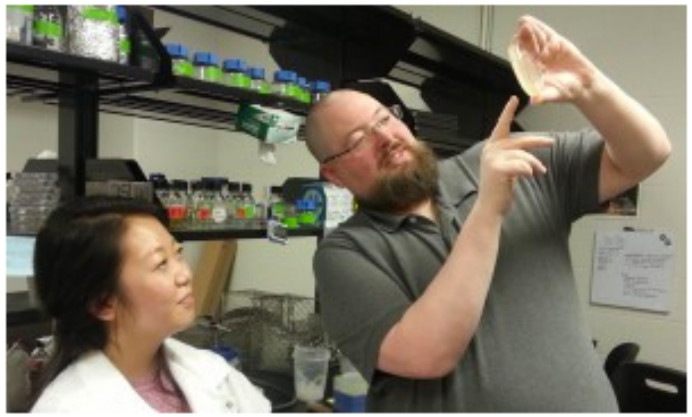
Ole Miss
UNIVERSITY OF MISSISSIPPI NEWS

https://news.olemiss.edu/third-um-professor-this-year-receives-nsf-career-award/

UM Biology Professor Receives NSF CAREER Award

Patrick Curtis is the third faculty member in a year to receive the prestigious funding

FEBRUARY 22, 2016 BY **EDWIN SMITH**



UM biologist Patrick Curtis examines bacterial specimens with one of his students.

OXFORD, Miss. – They say good news comes in threes, and for the third time in 12 months, a University of Mississippi professor has received a Faculty Early Career Development Award from the **National Science Foundation**.

Patrick Curtis, assistant professor of biology, is the university's seventh CAREER award recipient in the last eight years. Sarah Liljegren, associate professor of biology, got the award in November and Jarad Delcamp, assistant professor of chemistry and biochemistry, was given a similar award in June 2015. This marks the first time three UM faculty members were selected in the same academic year.

Curtis' research on "Investigation of Conserved Global Regulatory Systems Using Cross-organism Comparison" will be funded for $ 767,103. His award begins in March and runs through February 2021.

Dr. Tamar Liberman Goulet

Professor
Department of Biology
The University of Mississippi
University, MS 38677

Contact:

Office: 524 Shoemaker Hall
E-mail: **tlgoulet@olemiss.edu**
Telephone: (662) 915-7457
FAX: (662) 915-5144

- **Research Interests**
- **Publications**
- **Graduate Students**
- **Teaching**
- **Goulet Lab in the News**
- **Colleagues Working on Symbiotic Systems**

Dr. Goulet received an NSF CAREER award in 2008.

Dr. Hammer received an NSF CAREER award in 2010.

Nathan Hammer

Associate Professor of Chemistry & Biochemistry

180 Coulter Hall

662-915-3989 | **nhammer@olemiss.edu**

EDUCATIONAL AND PROFESSIONAL BACKGROUND

Honors B.S. in Chemistry, University of Tennessee, 1998

Ph.D. Physical Chemistry, University of Tennessee, 2003

Postdoctoral Researcher, Yale University, 2003-2005

Intelligence Community Postdoctoral Fellow, University of Massachusetts, 2005-2007

Assistant Professor, University of Mississippi, 2007-present

National Science Foundation Faculty Early Career Development (CAREER) Award in 2010

Director, Ole Miss Physical Chemistry Summer Research Program and NSF REU

Chair (2010, 2011 and 2015) and Chair-Elect (2010 and 2014) of the Ole Miss Local Section of the American Chemical Society

PROFESSIONAL RECOGNITION

Nathan Hammer, Associate Professor

Emanuele Berti

Dr. Berti received an NSF CAREER award in 2011.

Office: 205 Lewis Hall
Email: **eberti@olemiss.edu**
Phone: (662) 915-1941

Degrees Earned

- 2002: PhD in Astrophysics, University of Rome "La Sapienza"
- 1998: Laurea degree in Physics, University of Rome "La Sapienza"

Experience

- 2014- : Associate Professor, University of Mississippi
- 2009-2014 : Assistant Professor, University of Mississippi
- 2007-2009: NASA ORAU Senior Fellow, JPL/Caltech
- 2006-2007: Research Scientist, Washington University
- 2004-2006: Postdoc, Washington University
- 2003-2004: Postdoc, Institut d'Astrophysique de Paris

https://www.nsf.gov/awardsearch/showAward?AWD_ID=1055103

Sarah Liljegren Honored with NSF Career Award

Associate professor of biology is sixth faculty member to receive the prestigious funding

NOVEMBER 5, 2015 BY **EDWIN SMITH**

Sarah Liljegren

OXFORD, Miss. – For the second time this year, a University of Mississippi professor has received a Faculty Early Career Development Award from the National Science Foundation.

Sarah Liljegren, associate professor of **biology**; is the sixth CAREER award recipient at UM in the last eight years. Jared Delcamp, assistant professor of chemistry and biochemistry, received the same award in June. This is the first time two UM faculty members have been selected in the same calendar year.

The award provides $606,079 over a five-year period for Liljegren's project, titled "Roles of Organ Boundaries in *Arabidopsis* Abscission."

"My lab is investigating the design of molecular circuits that allow plants to release their organs – e.g. leaves, flowers, fruit and seeds – at specific points in their life cycle," she said. "We would like to know which genes determine where separation zones are found in plants and which genes direct the development of the specialized cells within t

https://news.olemiss.edu/sarah-liljegren-honored-nsf-career-award/

Using the flowers from a small mustard plant, *Arabidopsis thaliana*, as a model, Liljegren and her team are studying mutants that disrupt the abscission, or separation, process. In this way, they can identify

UM Professor Wins Prestigious CAREER Award

National Science Foundation recognizes Jared Delcamp for teaching, research on solar energy

JUNE 29, 2015 BY **MICHAEL NEWSOM**

OXFORD, Miss. – Jared Delcamp, an assistant professor of chemistry and biochemistry at the **University of Mississippi**, has won a prestigious $523,000 **National Science Foundation CAREER Award** for his teaching and research on converting solar energy to electricity.

Jared Delcamp

Delcamp was recognized for teaching, particularly his efforts to increase interest in **STEM** education among students of all majors and among high school students from Mississippi's economically underprivileged regions. He was also recognized for his group's research on converting solar energy to electricity through an affordable technology using dye-sensitized solar cells. He said the funding will greatly enhance that work.

"Personally, I have been blown away by the support shown to our research program and STEM recruiting efforts in the department and now by NSF," Delcamp said. "I'm beyond overjoyed to have been awarded such a tremendous

https://news.olemiss.edu/um-professor-wins-prestigious-career-award//

Davita Watkins Wins Prestigious NSF CAREER Award

Dr. Davita Watkins

Davita Watkins, an assistant professor of chemistry and biochemistry, has won a prestigious **National Science Foundation CAREER Award** for her research in elucidating the role of sigma-hole interactions in advanced functional materials that she develops in her labs on the campus of the University of Mississippi. The award totals approximately $500,000 and has a duration of five years. The operational efficiency of functional materials—ranging from solar-harvesting polymers to nanosized therapeutic drug delivery systems—depend on two factors: (1) the nature of the constituting components (i.e., molecules); and (2) the arrangement of those molecules to yield a useful overall composition. The ability to control these molecules and understand their organization into discrete nanoscale arrays that exhibit unique properties affords transformative advances in chemistry and material science. The research focus of this CAREER plan is to establish guidelines towards developing molecules that absorb natural energy and produce/conduct electrical current. These molecules are unique in that they are programmed to self-organize and form structures that enhance those light-harvesting properties. The new knowledge gained from this research leads to the development of more efficient organic-based materials and devices; thereby, advancing the pursuit of technological applications (e.g., electronic devices and biomedical implants). Moreover, the project affords opportunities to technically train the next generation of scientists and engineers. Specifically, outreach initiatives are aimed towards increasing the number of females and minorities in chemistry-related fields by immersing rising high school seniors into a summer research program called Operation ICB (I Can Be). The program ensures continuation in scientific career fields by establishing networks and mentorship across disciplines; in turn, diversifying the future of the scientific workforce and culture. Move information about Dr. Watkins can be found on her research program website at **http://watkinsresearchgroup.org**.

Watkins RESEARCH GROUP
Supramolecular Chemistry

Research Development Fellows

- ORSP Research Development Fellows
  - Greg Easson, Professor of Geological Engineering, Director of Mississippi Mineral Resources Institute
  - Christian Sellar, Associate Professor of Public Policy Leadership
  - Nathan Hammer, Associate Professor of Chemistry & Biochemistry
- Mission is to help faculty be more competitive for grant proposals, including but not exclusively interdisciplinary proposals)
- Available for discussions, enhanced reviews of CAREER proposal ideas, draft proposals, and full proposals
- E-mail researchfellows@olemiss.edu

Next Steps

- Let ORSP know if you want to be a part of the NSF CAREER Development Group, 2018 Cohort
- Consider pairing up with mentor under the ORSP Grant Mentors Program
- Schedule Times for Monthly Meetings
- E-mail List and Shared Box Folder Access
- Monthly Meetings and Regular E-mail Discussions

1st Month's Assignment

- Answer Doodle Poll on Available Meeting times
- Access Mailing List and Shared Box Folder
- Read the NSF 2017 CAREER Solicitation
- Look at NSF Website and read abstracts of all CAREER proposals have been funded in your discipline last 5 yrs
- Google to see if any NSF Career Development Workshops have been scheduled that you might attend
- Write first draft Project Summary; e-mail it by 10/31 to:
  - Share with ORSP: jghale@olemiss.edu
  - Share with Research Fellows?? researchfellows@olemiss.edu
  - Share with CAREER Dev Group ??? nsfcareer2018@olemiss.edu

Questions/Discussion

NSF CAREER

- The Following Slides Taken from NSF CAREER Slides at https://www.nsf.gov/mps/dms/career_and_pecase_information/career_webinar_slides_2017.pdf.

NSF CAREER

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- Integration of research and education.
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Eligibility

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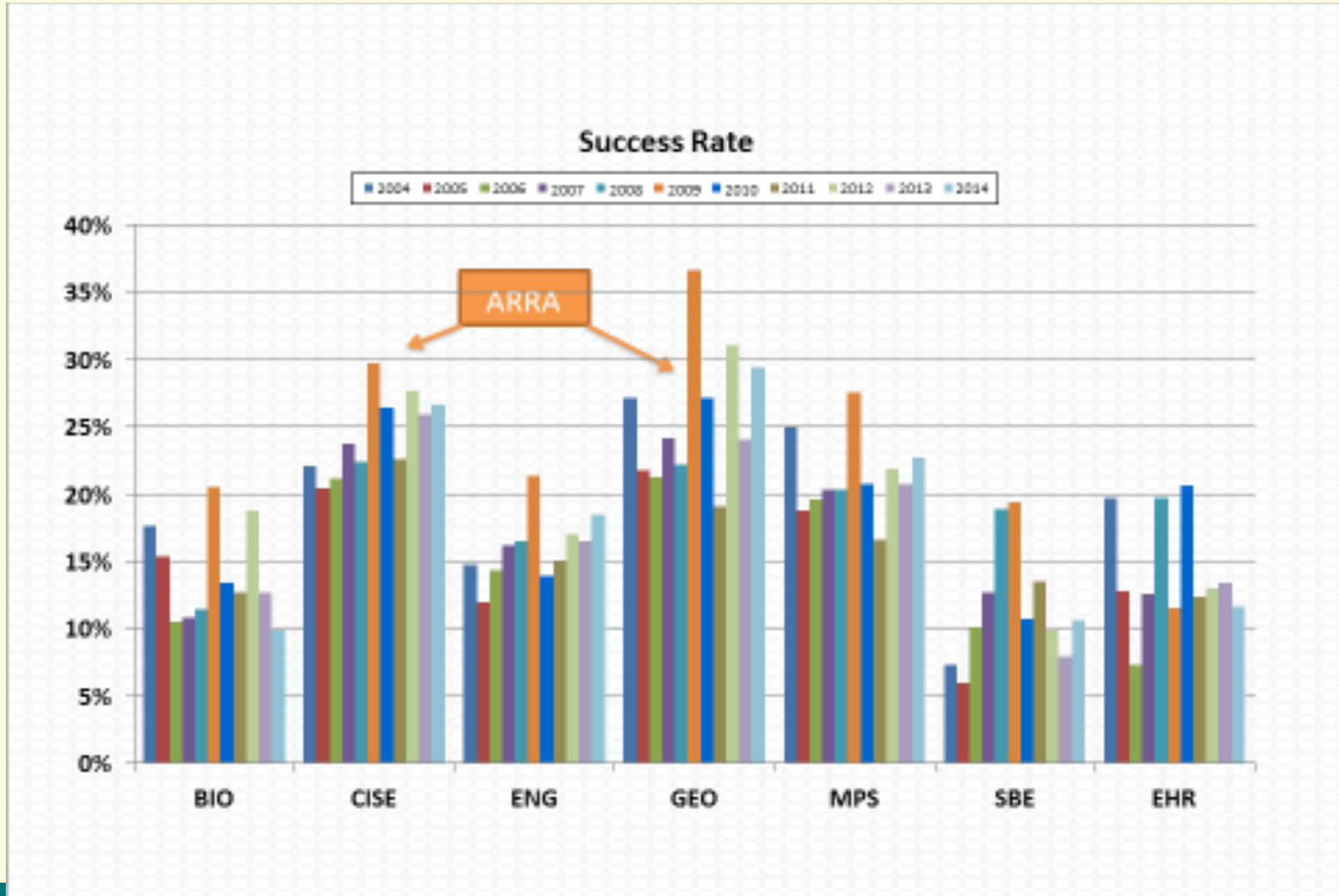
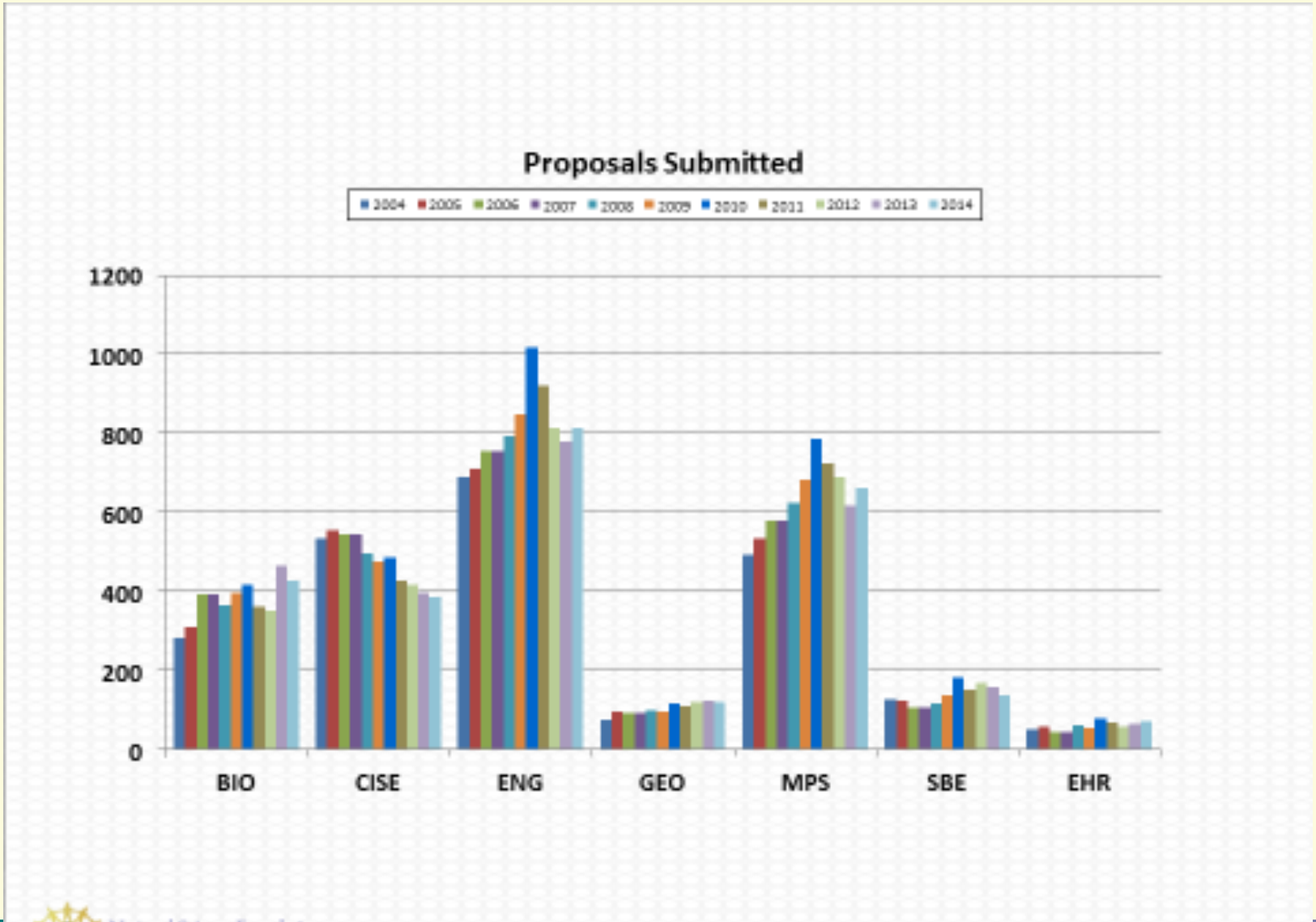
- Have not previously received a CAREER award
- **Have not had more than two CAREER proposals reviewed**
- Untenured Associate Professors are NOT eligible

Success Rate



Proposals Submitted



Special Procedures

- **CAREER proposals are submitted to, and reviewed by one or more of the disciplinary programs**
- Expectations for scope of research and education activities varies with community norms
- Talk to Division Contact(s) for additional information (http://www.nsf.gov/crssprgm/career/contacts.jsp)
- For interdisciplinary proposals, contact all relevant Program Directors or Division Contacts

Questions?