Faculty Early Career Development (CAREER) Program

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Chair, CAREER Coordinating Committee

National Science Foundation Organizational Structure

- Biological Sciences (**BIO**)
- Computer & Information Science & Engineering (**CISE**)
- Education & Human Resources (**EHR**)
- Engineering (**ENG**)
- Geosciences (**GEO**)
- Mathematical & Physical Sciences (**MPS**)
- Social, Behavioral & Economic Sciences (**SBE**)

National Science Foundation Support for New Investigators

- All NSF programs support new investigators through regular ("core") research competitions
- Approximately 2/3 of new investigators are supported by regular research programs and program solicitations for special research topics
- Faculty Early Career Development (CAREER) Program is the most prestigious source of NSF support for junior investigators

CAREER

"… is a Foundation-wide activity that offers the National Science Foundation's most prestigious awards in support of junior faculty who exemplify the role of teacher-scholars through

outstanding research,

excellent education, and

the integration of education and research

within the context of the mission of their organizations."

www.nsf.gov/career

Goals of the CAREER Program

- Provide stable support for five years
  (≥ $400K in most Directorates; ≥ $500K in ENG, BIO, GEO/PLR)
  to facilitate the career development of outstanding new teacher-scholars
- Build a foundation for a lifetime of integrated contributions to research and education
- Provide incentives to universities to value the integration of research and education
- Increase participation of those historically underrepresented in science and engineering

CAREER is NSF-Wide

- The program started in 1996
- All Directorates/Offices participate
- Proposals are submitted to program of interest
- More than 9,000 CAREER awards have been made over the years
- NSF Presidential Early-Career Awards in Science and Engineering (PECASE) are selected out of the pool of recent CAREER awardees

Investigator Eligibility Criteria

- Hold a doctoral degree in a field supported by NSF by proposal due date
- Be untenured up until Oct 1 following due date
- Be employed in a tenure-track (or equivalent) position at an eligible institution as an Assistant Professor (until Oct 1st following due date)
- Have not previously received a CAREER award
- Have not had more than two CAREER proposals reviewed previously
- Associate Professors are not eligible, even if untenured

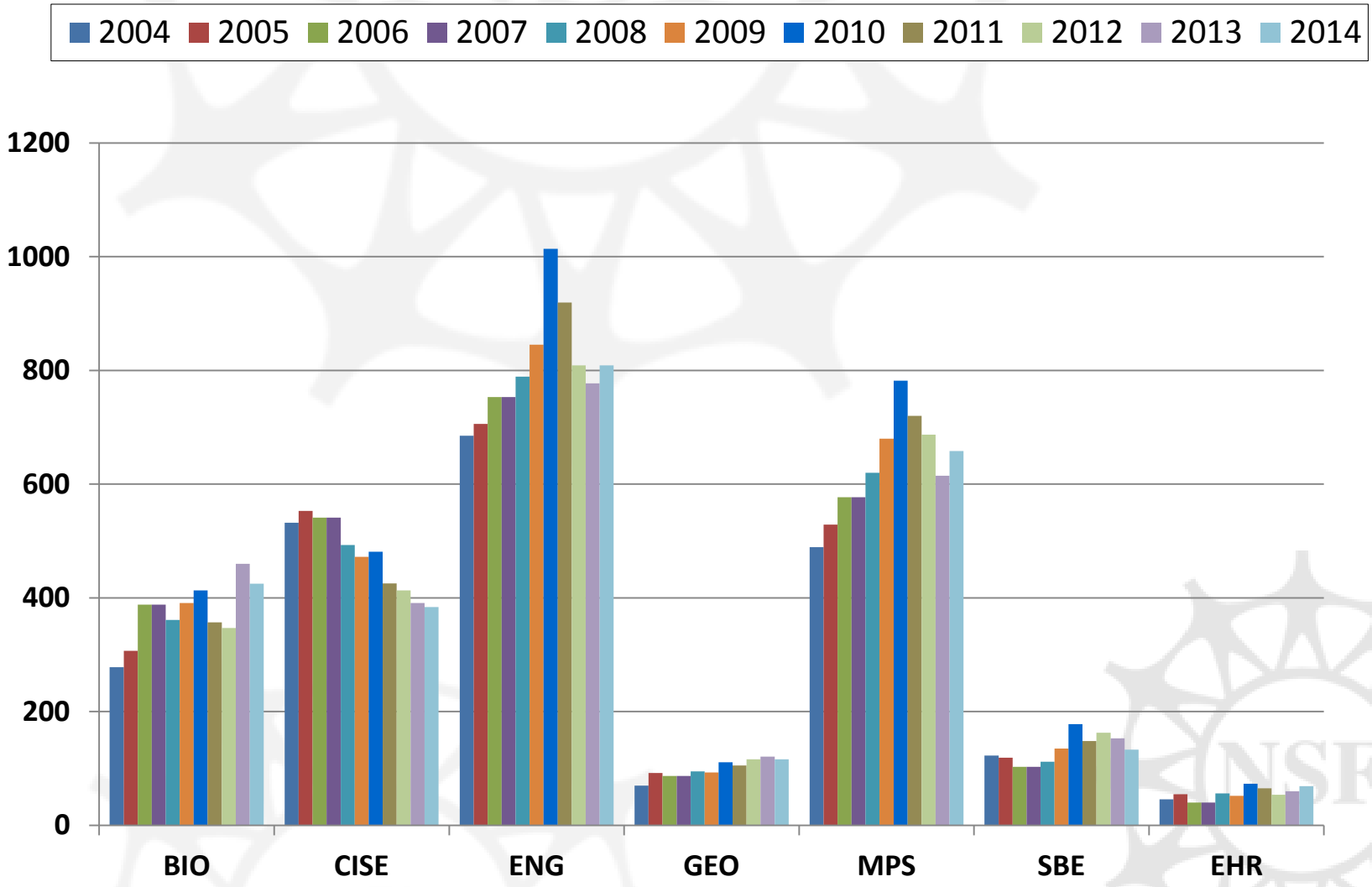
Institutional Eligibility

- Academic institutions in the U.S., its territories or possessions, and the Commonwealth of Puerto Rico that award degrees in fields supported by NSF
- Non-profit, non-degree-granting organizations such as museums, observatories, or research labs may also be eligible to submit proposals, if the eligibility requirements of the PI's position are satisfied
- NSF encourages proposals from different institutional types, including Minority Serving and Undergraduate Institutions

CAREER Varies Across NSF

- Number of submitted CAREER proposals varies widely across NSF
- Review and funding procedures vary according to Directorate and Division practices
- Many CAREER proposals compete with other research proposals in a relevant research program
- Oversight provided by CAREER Coordinating Committee made up of members from the different Directorates/Offices – Serves as the liaison between the programs and the senior management at NSF

CAREER Proposals Submitted



CAREER Varies Across NSF

Merit Review Procedures

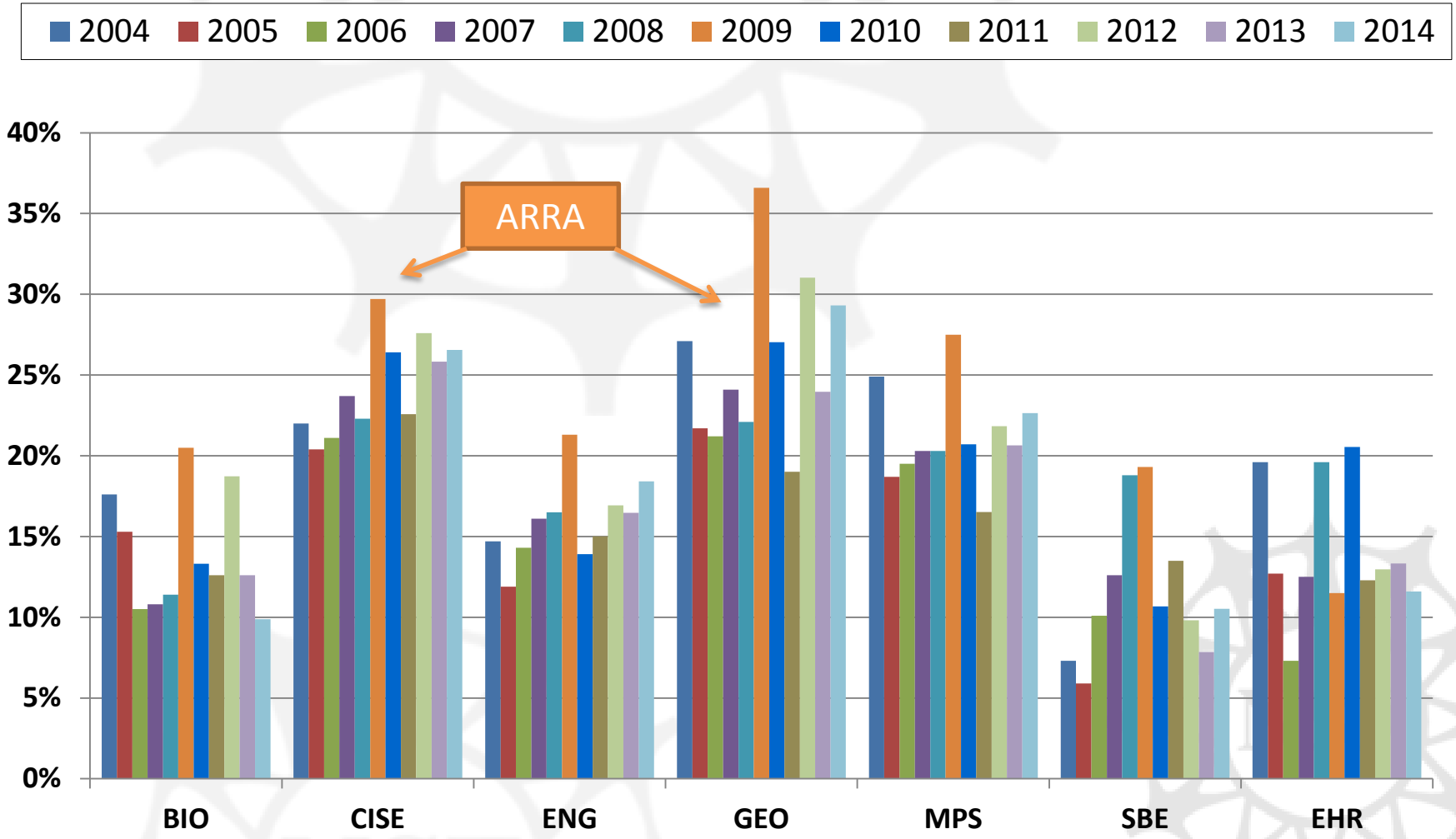
- Ad hoc plus panel review
  (with other proposals in the disciplinary program)
  - most of GEO (AGS uses ad hoc only)
  - BIO and SBE
- Primarily dedicated CAREER Panels
  - ENG, CISE, EHR
  - MPS varies by Division
    - AST: Panel only
    - CHE, DMR: Mix of ad hoc and panels
    - DMS: mostly panels (2 programs ad hoc only)

CAREER Varies Across NSF

Program Expectations

- CAREER proposals are submitted to, and reviewed by, a disciplinary program
- Assessment of Departmental Letter (2 pages) is part of the review procedure for CAREER
- Typical award sizes vary
- Expectations for scope of research and education plans vary
- Talk to Divisional Contact for more information (**www.nsf.gov/crssprgm/career/contacts.jsp**)
- Interdisciplinary research proposals should indicate co-reviewing program(s)

CAREER Proposal Success Rates



CAREER Proposal Ingredients

- A compelling research plan
- An innovative but feasible education plan
- A plan for effective integration of research and educational activities
- Departmental Letter
- Statements of collaboration if relevant
- Appropriate proposal budget

CAREER Research Plan

- Place the work into context
  - Why is the proposed research important?
  - What has been done / what is known to date?
  - In what way(s) is the proposed work novel?
- Provide some details for an expert reviewer
  - How do you plan to approach the problem(s) under study?
  - What will you do if the approach does not succeed?
  - Why does the project require five years of effort?

CAREER Education Plan

- Activities should go beyond what is expected from any assistant professor in your field
- Workload should not be unreasonable
- Should be informed by what has been successful in the past -- intellectual merit of the education component
- Should have a plan for assessing the success of the education program
- Check with your Program Officer or search the abstracts on the web

Integration of Research and Education

How will your research impact your education goals and how will your education activities feed back into your research? Some possibilities:

- Involving others (postdocs, grad. students, undergraduates, K-12, high school teachers, public) in your research using new tools, lab methods, field study, cyber networks, etc…
- Partnering with those in other communities, especially those historically underrepresented in science and engineering
- Bringing the excitement of your research topics to help in the education of others
- Searching for new methods to deliver your research results to a broader audience than those in the research community
- Using the broader community to gather data for your scientific pursuits ("citizen science")

Departmental Letter

- Support for the PI's proposed CAREER research and education activities
- Description of how the PI's career goals and responsibilities mesh with that of the organization and department
- Commitment to the professional development of the PI with mentoring and whatever is needed to forward the PI's efforts to integrate research and education
- Statement indicating that the PI is eligible for the CAREER program
- Should not serve as a letter of recommendation or endorsement of the PI or the research project

Statement(s) of Collaboration

- Project Description must document the nature of and need for all project collaborations, such as:
  - Intellectual contributions to the project
  - Permission to access a site
  - Use of a shared instrument or facility
  - Offer to furnish samples / materials for research
  - Logistical support / evaluation services
  - Mentoring of U.S. students at a foreign site
- Single-sentence statement of collaboration:
  - **"If the proposal submitted by Dr. [name of the PI] entitled [proposal title] is selected for funding by the NSF, it is my intent to collaborate and/or commit resources as detailed in the Project Description."**
  - Must not recommend or endorse PI or project

CAREER Proposal Budget

- No co-principal investigators or other senior personnel are allowed
- Consultants and sub-awards are allowed (but no senior personnel costs in sub-awards)
- Some NSF programs will support buy out of academic year time for teaching intensive institutions (check with your Program Officer)
- International activities are encouraged; may be supported by NSF Office of Int'l. Sci. & Eng. (OISE)
- Division of Advanced CyberInfrastructure (ACI) may support projects to develop cyberinfrastructure
- Some Directorates prefer making awards closer to the $400K ($500K) minimum

Traits of Successful CAREER Proposals

- Match the expectations of the disciplinary programs in terms of research and education -- This is a highly competitive program!
- Written with peer reviewers (Ad Hoc and/or Panel) in mind -- Ask your Program Officer who will be assessing your proposal
- Have appropriate scope of education and research activities -- A 5-year plan, not a lifetime
- Go “outside the education box” of regular research proposals in the field
- Strike a balance between doable research activities and more risky pursuits

Some CAREER Urban Myths

- “You cannot apply if you have another award from NSF”
- “It is an entry program, so apply to CAREER first”
- “You need to see a successful proposal to write a successful proposal”
- “I read on the web that to succeed, you have to…”
- “CAREER proposals are more portable”
- “The education component does not matter”
- “You have no chance, if you are not from a research-intensive institution”

Is CAREER the Right Program?

- Do you have in mind a proposal that is appropriate for NSF, with research and education activities that are innovative and ambitious?
- Is your Department/Organization supportive?
- Are you at the right stage in your career?
- Have you discussed your ideas with mentors, peers, program officers?

The CAREER program web site:

www.nsf.gov/career

- Latest Program Solicitation -- NSF 15-555
- Frequently Asked Questions -- NSF 15-057
- CAREER Directorate/Division Contacts
- Link to recent awards
- Link to PECASE awards
- Deadlines for the current solicitation
  - July 20, 2016 - BIO, CISE, EHR
  - July 21, 2016 - ENG
  - July 22, 2016 - GEO, MPS, SBE