NSF Faculty Early Career Development (CAREER) Program

NSF 05-579

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February 1996 – July 1998

Outline

- CAREER Program Overview
- Science and Education Plan Development
- Rutgers CAREER Faculty Strategies and Insights

Faculty Early Career Development (CAREER) Program

Proposals for Fiscal Years 2006, 2007, and 2008
(includes the description of the NSF component of the Presidential Early Career Awards for Scientists and Engineers (PECASE))

Program Solicitation
NSF 05-579
Replaces Document NSF 02-111

National Science Foundation
Directorate for Biological Sciences
Directorate for Computer and Information Science and Engineering
Directorate for Education and Human Resources
Directorate for Engineering
Directorate for Geosciences
Directorate for Mathematical and Physical Sciences
Directorate for Social, Behavioral, and Economic Sciences
Office of Polar Programs

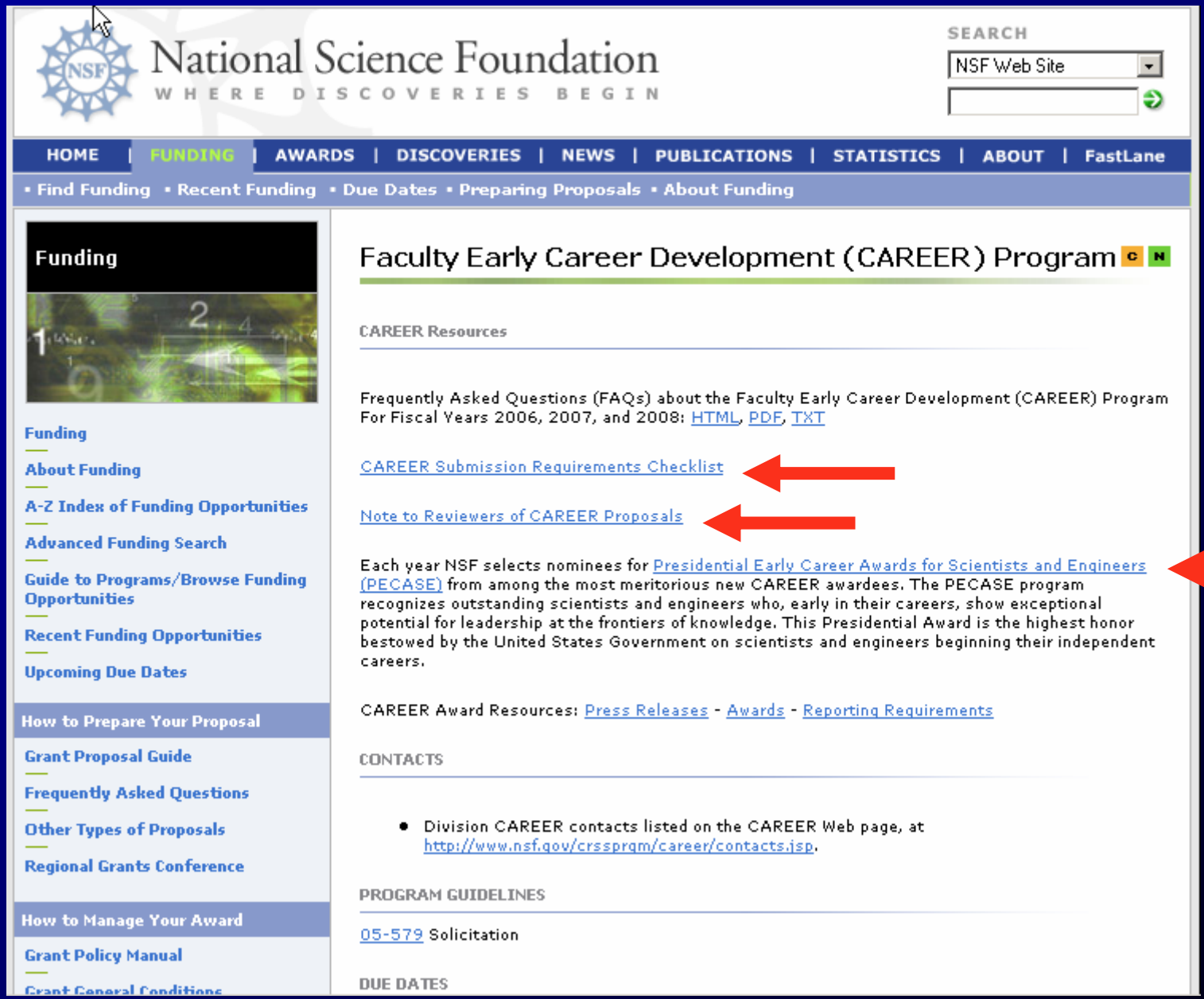
Full Proposal Deadline(s) (due by 5 p.m. proposer's local time):

2005
July 19: BIO, CISE, EHR
July 20: ENG
July 21: GEO, MPS, SBE, OPP

2006
July 18: BIO, CISE, EHR
July 19: ENG
July 20: GEO, MPS, SBE, OPP

2007
July 17: BIO, CISE, EHR
July 18: ENG
July 19: GEO, MPS, SBE, OPP

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5262&org=NSF&from=fund



Career Checklist

http://www.nsf.gov/crssprgm/career/career_submission_checklist.pdf

Faculty Early Career Development (CAREER) Program
Program Solicitation NSF 05-579
Submission Requirements Checklist
FastLane Help Desk 1-800-673-6188

CAREER PROPOSAL PREPARATION AND SUBMISSION CHECKLIST

Note: This checklist is intended to be a supplementary aid in the preparation of CAREER proposals, and is not intended as an all-inclusive repetition of the requirements specified in the Grant Proposal Guide (GPG) and the CAREER Program solicitation (NSF 05-579). Those documents describe the required proposal contents and associated proposal preparation guidelines; an overall checklist can be found in Appendix A of the GPG. It is, however, meant to highlight certain critical items so they will not be overlooked when the proposal is prepared. Please refer to the GPG, the CAREER Program solicitation, and the CAREER FAQs (NSF 05-027) for complete instructions.

✓ **PROPOSAL PREPARATION ORDER**

- **Prepare (and save) the proposal cover sheet first.** Entering the CAREER Program Solicitation Number (NSF 05-579) on the cover sheet will ensure that you have the correct forms for CAREER proposals, and that your proposal will be considered in the CAREER competition.

✓ **PROPOSAL MARGIN AND SPACING REQUIREMENTS** (see Chapter II of the GPG)

Note to Reviewers

- NSF's commitment to encourage faculty to practice and academic institutions to value integration of research and education
- Stable support at sufficient level and duration to enable awardees to develop careers as outstanding teacher-scholars
- Project Description developed in consultation with department head
- Considers Departmental Letter (institutional commitment
- Merit Review Criteria– Intellectual Merit, Broader Impacts

Overview CAREER Program

PI Eligibility Limit

- Tenure-track position as Assistant Professor
- Participate not more than 3 times in NSF CAREER
- U.S. citizen, national or permanent resident (PECASE)

Award Information

- Duration = 5 years
- $400K minimum over 5 yrs; $500K minimum (BIO)
- CAREER Web page 2005-2008 Program Solicitation

http://www.nsf.gov/career

Overview CAREER Program

Award Information

- Eligible for supplemental funding

  See NSF Grant Proposal Guide (GPG)
  http://www.nsd.gov/cgi-bin/getpub?gpg

  Translates to 10% extra funding available if requested YR 3 or YR 4 of CAREER Award

  Decision is at discretion of Program Officer through FASTLANE supplement request before March

  SAVE THIS RFP!! (NSF-05-579)

Overview CAREER Program

Proposal Preparation and Submission Instructions

- FASTLANE submission required
- NSF Grant Proposal Guide for general guidelines and proposal organization

Proposal organization is how project information is communicated to reviewers and NSF program managers

Good organization, graphics, tables, text boxes, & spell checked document are critical components

Overview CAREER Program

CAREER Development Plan

- Specific proposal for activities over a 5-year period "…build a firm foundation for a lifetime of integrated contributions to research and education."

Examples of activities:

"NSF Merit Review Broader Impacts Criterion: Representative Activities"

http://www.nsf.gov/pubs/2002/nsf022/bicexamples.pdf

- Developed in consultation with the department head (or equivalent)

Overview CAREER Program

CAREER Development Plan

- Description of proposed research project, preliminary supporting data where appropriate, specific objectives, methods and procedures to be used, expected significance of results
- Description of proposed educational activities, plans to evaluate their impact
- Description of how research and education activities are integrated with one another
- Results of prior NSF support, if applicable

Overview CAREER Program

CAREER Development Plan

- Relation of plan to PI's career goals, position responsibilities, and goals of department/organization
- Summary of prior research and educational accomplishments

Special Information & Supplementary Documentation

- Departmental endorsement (includes organizational commitment and verification of PI eligibility)
- Letters of commitment from collaborators

Outline

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- **Science and Education Plan Development**
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CAREER Program

Program Goal

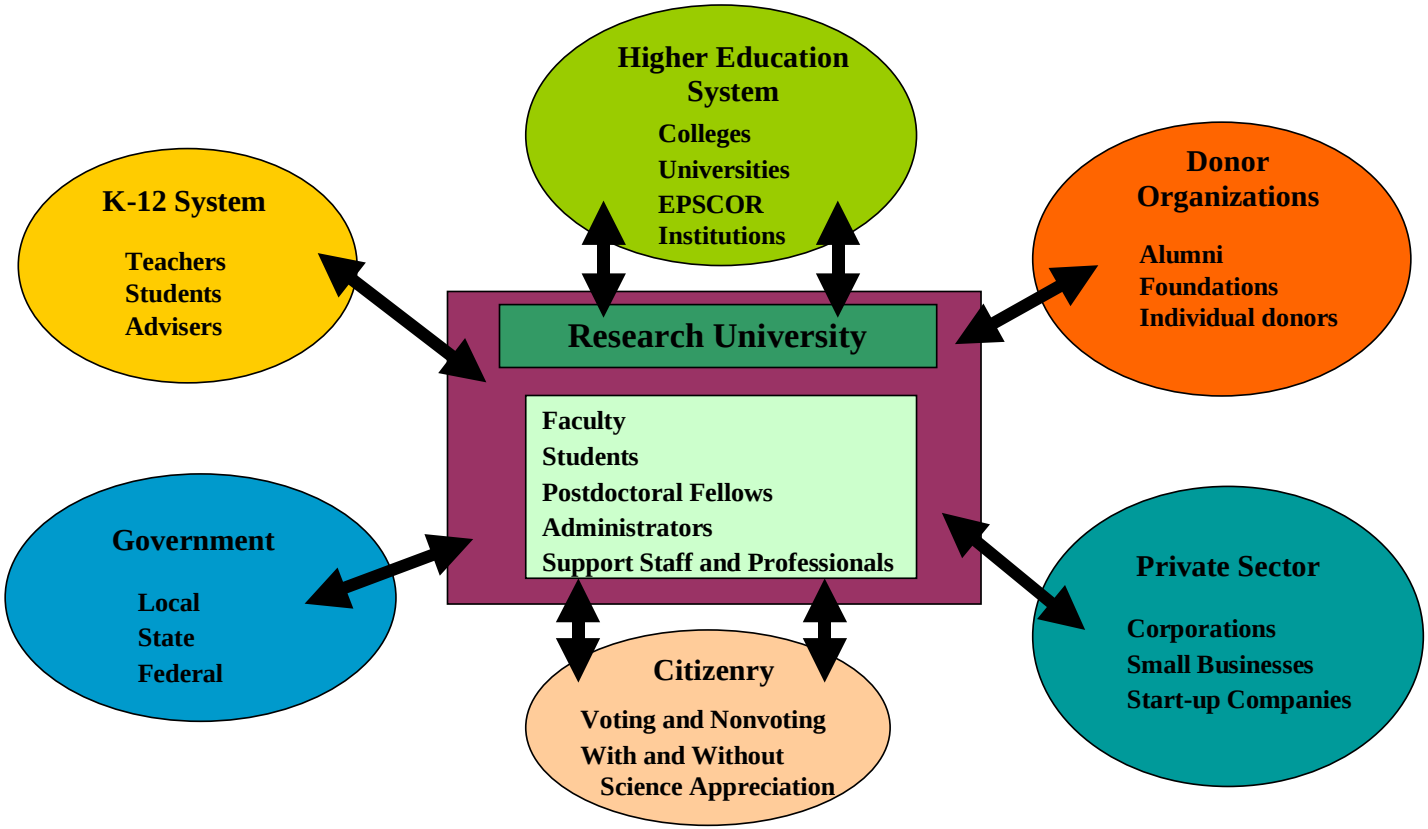
"…recognizes and supports the early career-development activities of those teacher scholars who are most likely to become the academic leaders of the 21st century." from NSF 02-111

Selection Basis

"…creative career-development plans that effectively integrate research and education within the context of the mission of their organization. Such plans should build a firm foundation for a life-time of integrated contributions to research and education." from NSF 05-579

CAREER Plan: Making Connections

Established Connections within the Research Enterprise



NSF Funding Decisions

A Two-part Evaluation

Criterion 1: What is the intellectual merit of the proposed activity? Scientific merit

Criterion 2: What are the broader impacts of the proposed activity? Big picture

NSF CAREER Awards

Scientific Merit most important element but **Education Activities are the tie breaker**

NSF Funding Decisions

Researching Criterion 1

Criterion 1: What is the intellectual merit of the proposed activity? Scientific merit

- ✓ Why is the science important?
- ✓ What is new, innovative?
- ✓ What does work build on?
- ✓ Are literature references recent and well researched?
- ✓ Has NSF funded similar projects?
- ✓ National Academies position document available outlining research needs and how project fits?

NSF Funding Decisions

Addressing Criterion 2 Issues Improves Successful Outcomes

Criterion 2: What are the broader impacts of the proposed activity? Big picture

- ✓ Impact on teaching, training, learning
- ✓ Broadened participation of underrepresented groups
- ✓ Industrial partnerships
- ✓ Effect on infrastructure for research and education (facilities, instrumentation, networks)
- ✓ Broadened scientific and technological understanding
- ✓ Benefits to society

Education Examples

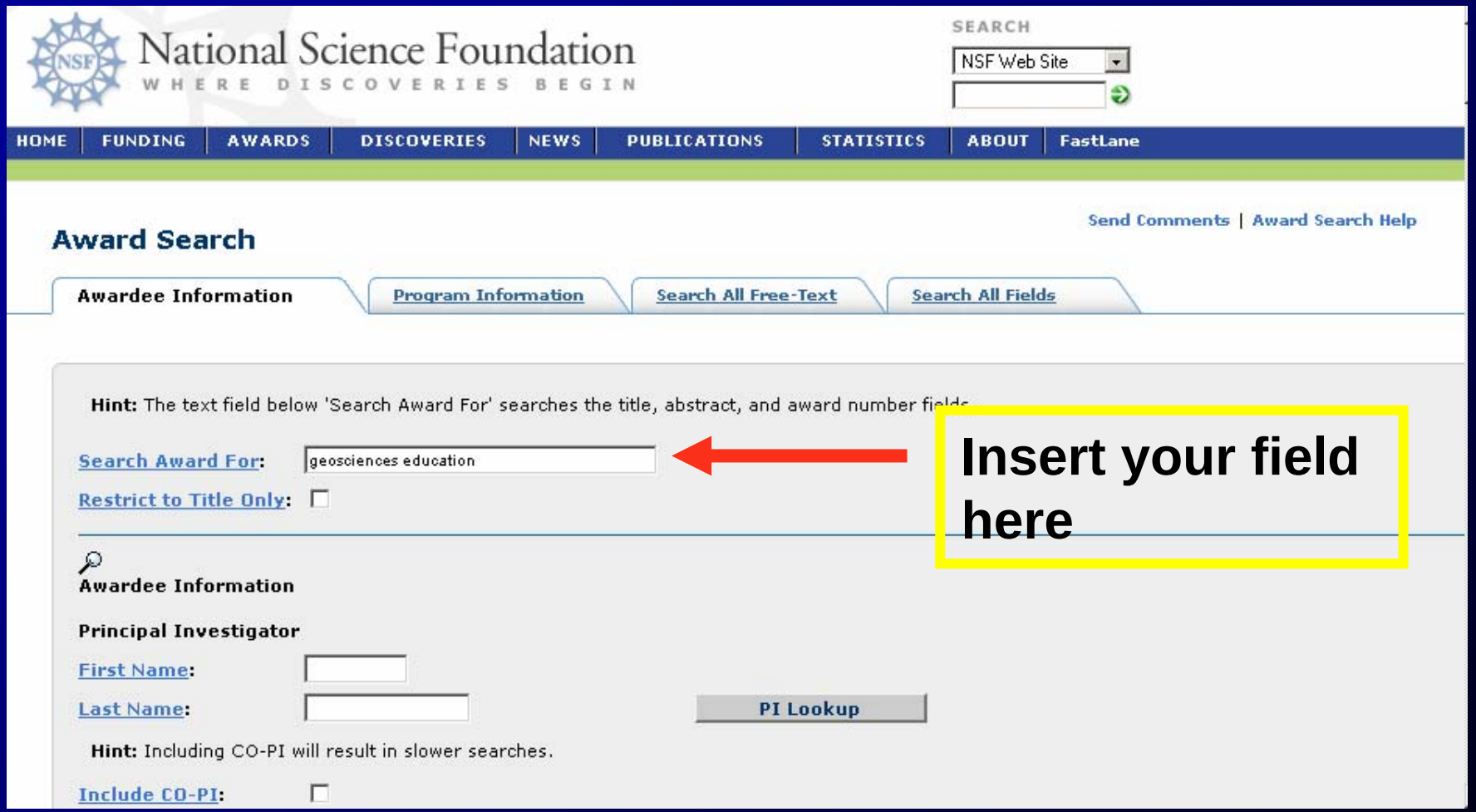
K-12 Outreach Programs

- **Research Experiences for Teachers (RET) (NSF 03-554)**
  http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5736&from=fund

  Supports the active involvement of K-12 teachers and community college faculty in engineering research in order to bring knowledge of engineering and technological innovation into their classrooms
  RET Supplements and RET Sites

Education Examples

Search awards within your discipline



Education Examples

Undergraduate Education Programs DUE

- National Science, Technology, Engineering, and Mathematics Education Digital Library (NSDL)
  http://www.nsf.gov/pubs/2006/nsf06533/nsf06533.pdf

  Supports creation, development national digital library for science, technology, engineering, and mathematics (STEM) education

  Synergistic collaboration of research and education efforts

  Virtual facility--learning environments and resources network for K-12, undergraduate, graduate, and lifelong learning (linked to Digital Libraries Initiative
  http://www.dli2.nsf.gov/

Education Resources & Ideas

- Rutgers Center for the Advancement of Teaching http://TeachX.rutgers.edu/
  Dr. Monica Devanas
- Rutgers C.O.O.L. Classroom
  http://marine.rutgers.edu/mrs/
- FAS Math Science Learning Center
  http://mslc.rutgers.edu

Dr. Kathleen Scott, Director

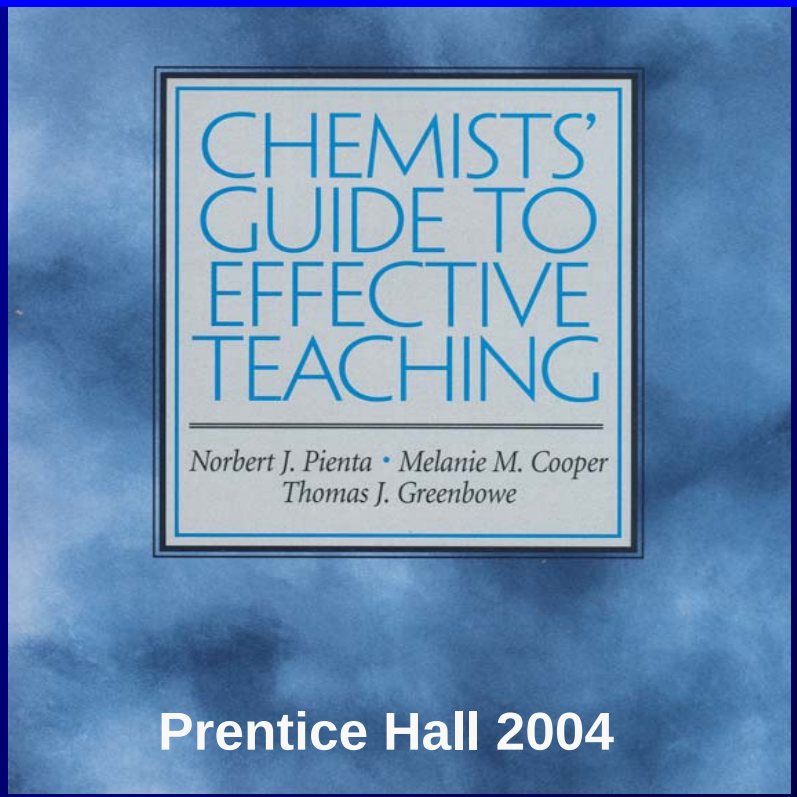
http://sciencebus.rutgers.edu/

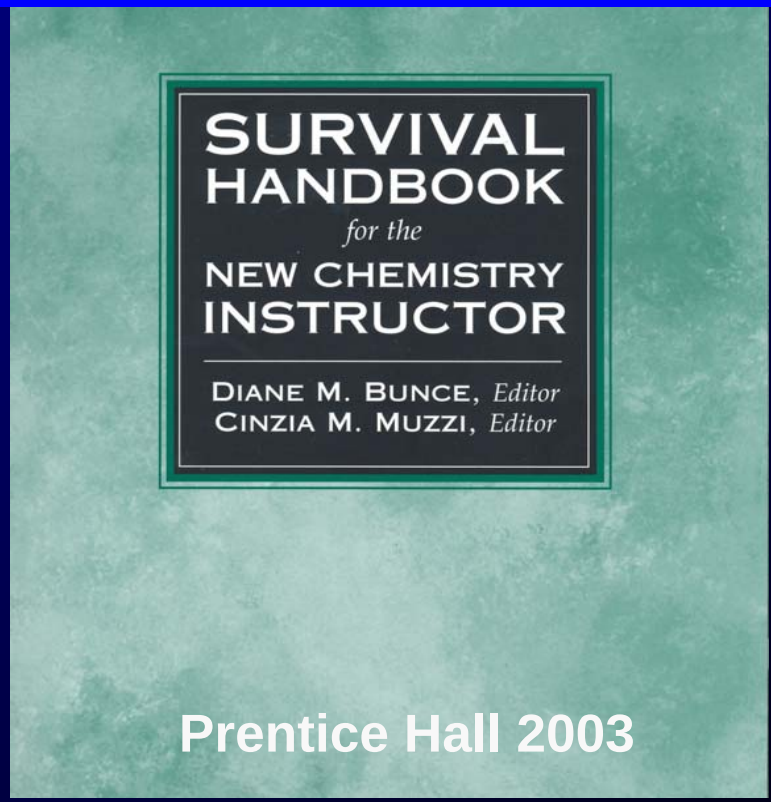
Proposal Writing Resources

- *Research Proposals: A Guide to Success* Thomas Ogden, Israel Goldberg (1995) ISBN 0781703131, Raven Press
- *Writing Successful Science Proposals* Andrew Friedland, Carol Folt, (2000) ISBN 08141-3 http://www.yalebooks.com/mailsale
- National Academy Press www.nap.edu

Articulating Your Approach to Teaching…

Guides to good pedagogy within your discipline





Genesis of a Proposal

- **Individual investigator** 150 person hours (NSF internal study)
- **Collaborative, inter-institutional, industrial partnership** 0.5 -3 months from initial contact
- **Institutional matching funds** 1 month lead time
- **Departmental/College (Dean)/ORSP/ endorsements** 2-5 days
- **FASTLANE** 1 day uploading data, files; **avoid submission on due date!!!!**

Department Chair Role

Departmental letter included overall merits of proposal, institutional commitment to professional development and mentoring of PI, commitment to and understanding of effective integration of research & education

Describes the support the department/organization will provide: academic-year or summer salary; released time for curriculum development; instrumentation, laboratory facilities; research support; student stipends

Verifies the PI's CAREER eligibility information

PI's department head must sign the letter. Official's name, title, and date must appear below the signature

Outline

- CAREER Program Overview
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- **Rutgers CAREER Faculty Strategies and Insights**

Thank you

End of presentation