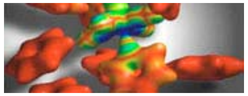
Working with NSF:
Proposing, Reviewing, and Rotating

Kelsey Cook

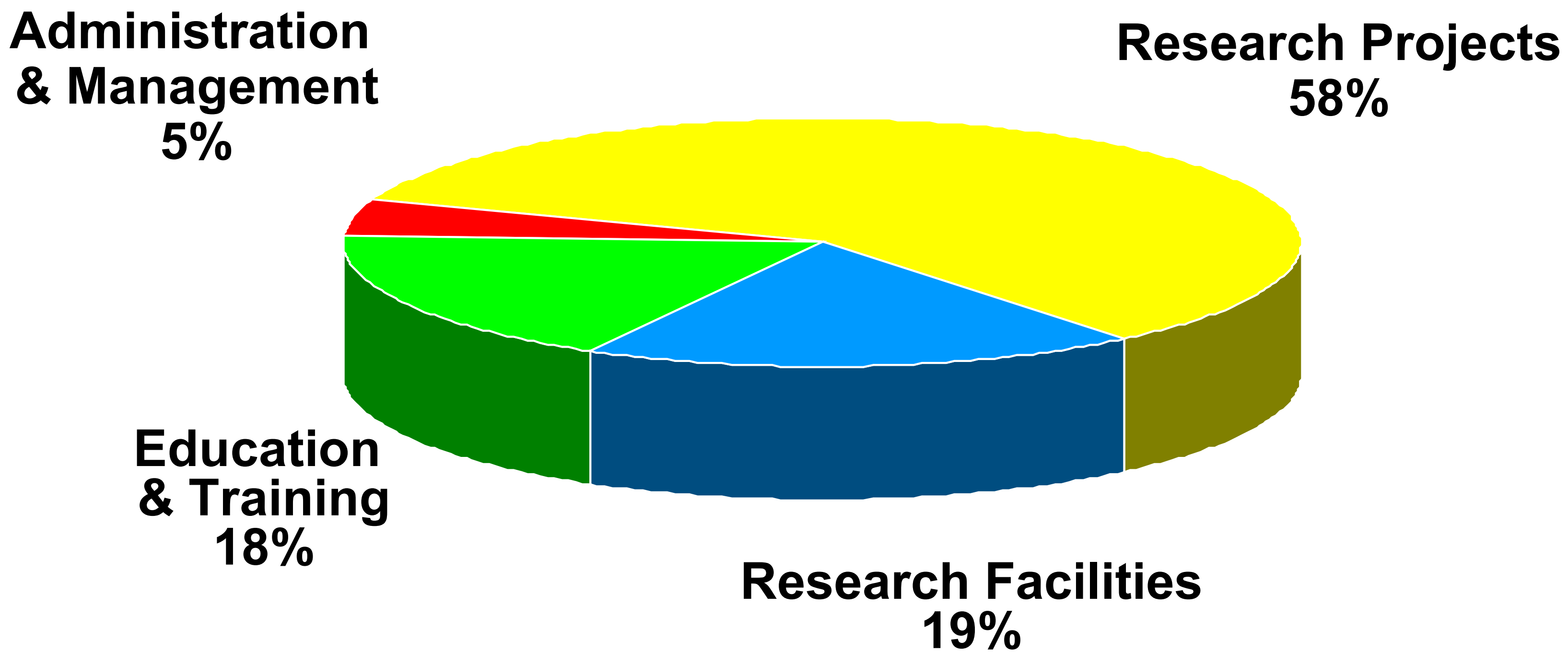
NATIONAL • SCIENCE • FOUNDATION

Investments in people, ideas, and tools



NSF Funding Profile (FY 2004)

Total = $5.6 B

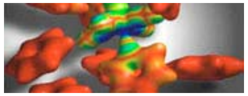


Larry’s Request:

“[A] talk about the NSF, granting situations/reviewing/etc., possibly something about getting into the reviewing process and perhaps job opportunities (?) with the NSF. We have a lot of post-docs up here and this would certainly be of interest.”

In other words….

- How can we help choose grantees?
- How can we become grantees?



Chemistry (CHE)

CHE Home

About CHE

Funding Opportunities

Awards

News

Events

Discoveries

Publications

Career Opportunities

Chemistry Proposal Window and Deadlines

Become a Chemistry Reviewer

Chemistry Highlights, Publications, and Workshop Reports

View CHE Staff

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MPS Organizations

Astronomical Sciences (AST)

Chemistry (CHE)

Materials Research (DMR)

Mathematical Sciences (DMS)

Physics (PHY)

Office of Multidisciplinary Activities (OMA)

Chemistry (CHE)

Programs and Funding Opportunities

Key: C Crosscutting | N NSF-wide

Analytical & Surface Chemistry

Broader Impacts

Chemical Bonding Centers (CBC), Phase I

Chemical Bonding Centers Phase II

Chemistry Research Instrumentation and Facilities

Chemistry Research Instrumentation and Facilities: Departmental Multi-User Instrumentation

Chemistry Research Instrumentation and Facilities: Instrument Development

Chemistry Research Instrumentation and Facilities:Cyberinfrastructure and Research Facilities

Collaborative Research in Chemistry

Cooperative Activities in Chemistry between U.S. and German Investigators

Cyber-Enabled Chemistry

Discovery Corps Fellowships

Environmental Molecular Science Institutes

Inorganic, Bioinorganic and Organometallic Chemistry

NATIONAL LABORATORIES AND USER FACILITIES

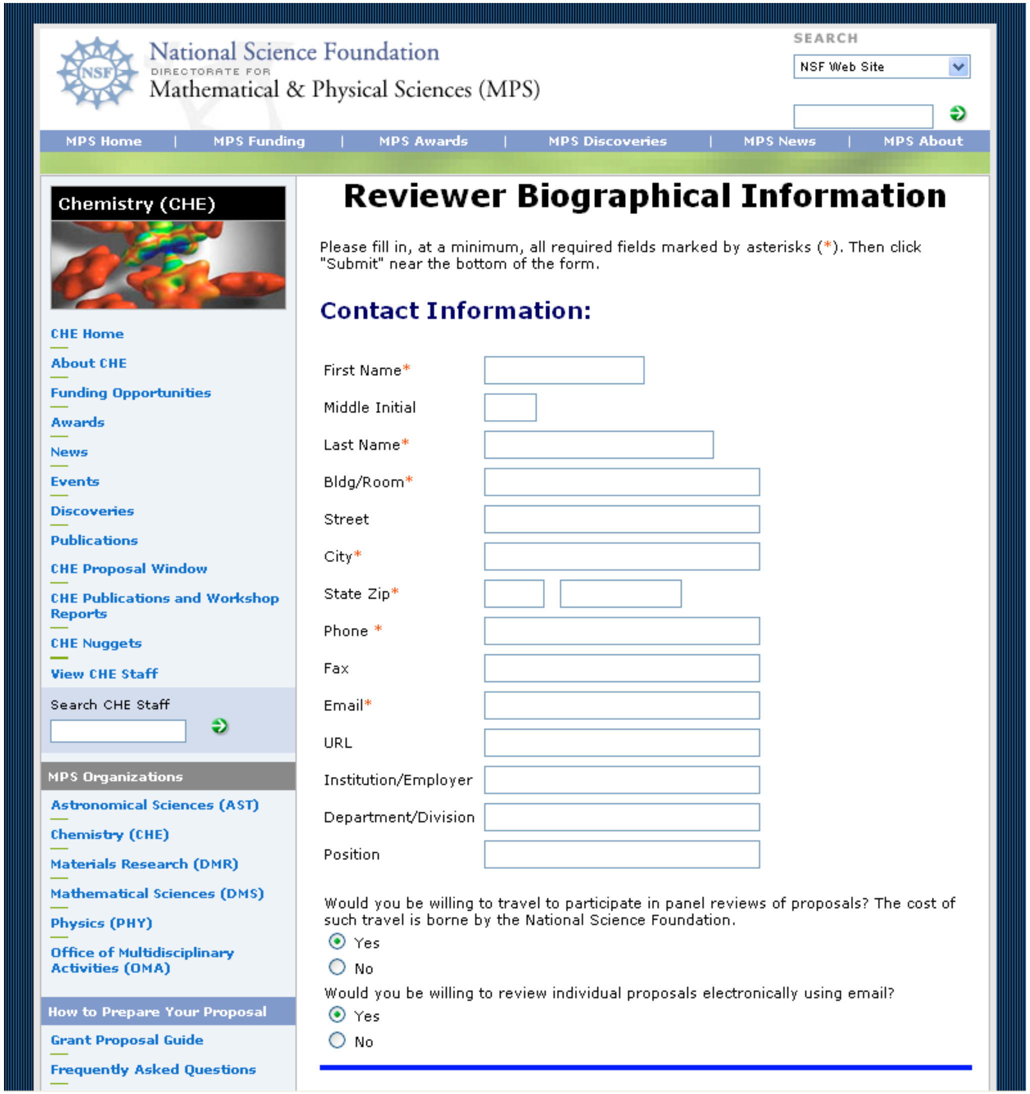
NSF-NIST Interaction in Chemistry, Materials Research, Molecular Biosciences, Bioengineering, and Chemical Engineering C

Organic and Macromolecular Chemistry

Physical Chemistry

Undergraduate Research Collaboratives

Would you like to be a reviewer?



National Science Foundation
DIRECTORATE FOR
Mathematical & Physical Sciences (MPS)

SEARCH
NSF Web Site

MPS Home | MPS Funding | MPS Awards | MPS Discoveries | MPS News | MPS About

Chemistry (CHE)

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- Office of Multidisciplinary Activities (OMA)

How to Prepare Your Proposal

- Grant Proposal Guide
- Frequently Asked Questions

Reviewer Biographical Information

Please fill in, at a minimum, all required fields marked by asterisks (*). Then click "Submit" near the bottom of the form.

Contact Information:

First Name*
Middle Initial
Last Name*
Bldg/Room*
Street
City*
State Zip*
Phone *
Fax
Email*
URL
Institution/Employer
Department/Division
Position

Would you be willing to travel to participate in panel reviews of proposals? The cost of such travel is borne by the National Science Foundation.

- Yes
- No

Would you be willing to review individual proposals electronically using email?

- Yes
- No

National Science Foundation
Division of Chemistry

Would you like to review proposals for NSF?

Please go to:
http://www.nsf.gov/mps/che/reviewer/reviewer_info.jsp

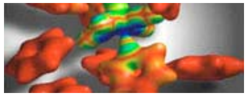
URL: www.nsf.gov/chem

Phone: 703.292.8840

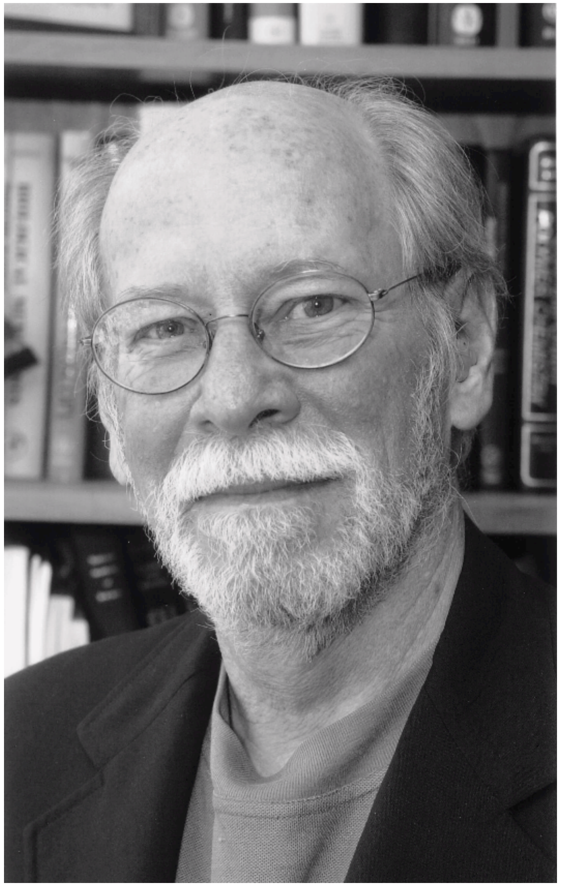
Would you like to be a panelist?

- Only a fraction of CHE proposals are panel reviewed
- Take part in mail reviewing
- Provide substantive reviews, justifying your opinion
- Review within 4 weeks of request
- Let your interest be known
- Visit NSF (with a purpose)

“A great learning experience!”



Rotators



"Being an NSF Rotator and being exposed to a blizzard of ideas and ways to think about a research project was a mind-stretching experience that seriously influenced how I thereafter did chemistry. I left NSF less parochial, and much more adventuresome about entering new research subjects."

Royce W. Murray, CHE 1971-72

Would you like to be grantee?

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FastLane
www.fastlane.nsf.gov

FastLane is an interactive real-time system used to conduct NSF business over the Internet. FastLane is for official NSF use only. More About FastLane...

FastLane User Support (7 AM to 9 PM Eastern Time • M-F)
1-800-673-6188
FastLane Availability (recording):
1-800-437-7408

Proposals, Awards and Status | Proposal Review | Panelist Functions | Research Administration | Financial Functions

Honorary Awards | Graduate Research Fellowship Program | Postdoctoral Fellowships and Other Programs

Quick Link

- Registration Information
- Award Search and Funding Trends
- FastLane FAQs (Opens new Browser Window)
- DEMONSTRATION SITE

Advisories

11/03/06 - Coming November 18 - Enhancements to the Project Reports System

09/29/06 - Public Affairs Support For PIs Via PIOs (Opens new browser window)

07/24/06 - New Laptop Screening Process

11/21/05 - NSF FY 2006 Grants.gov Implementation Strategy (Opens new browser window)

11/16/05 - FastLane Web Browser Compatibility (Opens new browser window)

Recent Advisories

https://www.fastlane.nsf.gov
Password from institutional SRO

National Science Foundation
4201 Wilson Boulevard, Arlington, Virginia 22230, USA
Tel: 703-292-5111, FIRS: 800-877-8339 | TDD: 703-292-5090

Privacy and Security

National Science Foundation
WHERE DISCOVERIES BEGIN

SEARCH
NSF Web Site

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Grant Proposal Guide

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NSF 04-23 September 2004

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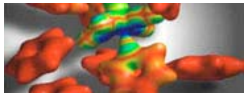
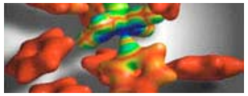
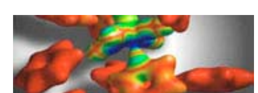
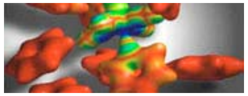






Chemistry Specifics



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Chemistry (CHE)

Programs and Funding Opportunities

Key: C Crosscutting | N NSF-wide

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- Broader Impacts
- Chemical Bonding Centers (CBC), Phase I
- Chemical Bonding Centers Phase II
- Chemistry Research Instrumentation and Facilities
- Chemistry Research Instrumentation and Facilities: Departmental Multi-User Instrumentation
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- Chemistry Research Instrumentation and Facilities:Cyberinfrastructure and Research Facilities
- Collaborative Research in Chemistry
- Cooperative Activities in Chemistry between U.S. and German Investigators
- Cyber-Enabled Chemistry
- Discovery Corps Fellowships
- Environmental Molecular Science Institutes
- Inorganic, Bioinorganic and Organometallic Chemistry
- NATIONAL LABORATORIES AND USER FACILITIES
- NSF-NIST Interaction in Chemistry, Materials Research, Molecular Biosciences, Bioengineering, and Chemical Engineering C
- Organic and Macromolecular Chemistry
- Physical Chemistry
- Undergraduate Research Collaboratives

Submission Window for "Core" Proposals

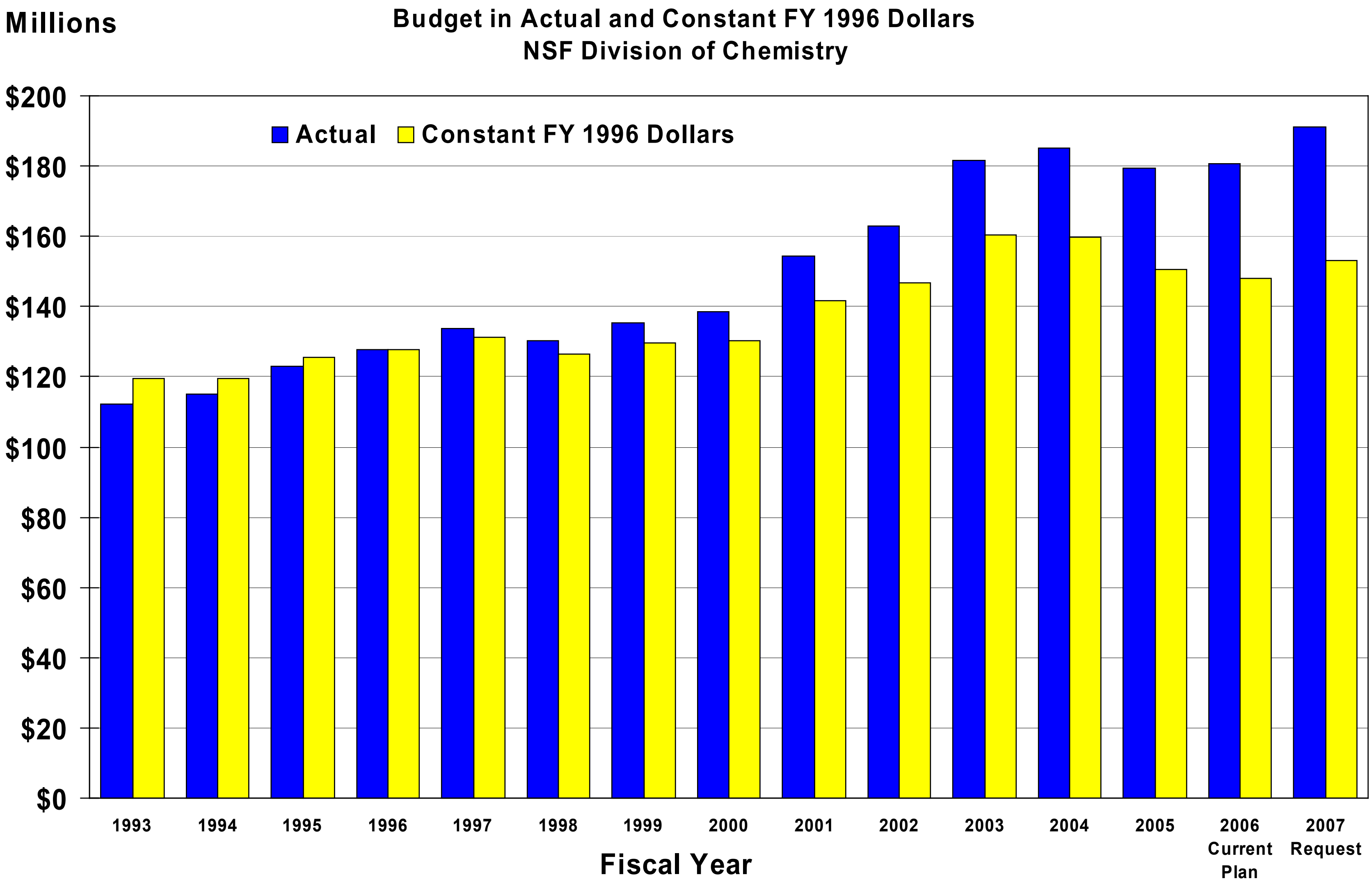
2nd Monday in July **2nd Friday in January**

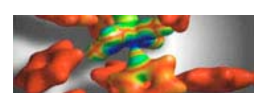
Other programs have different deadlines (see announcements)

Decisions in $\leq$ 6 months

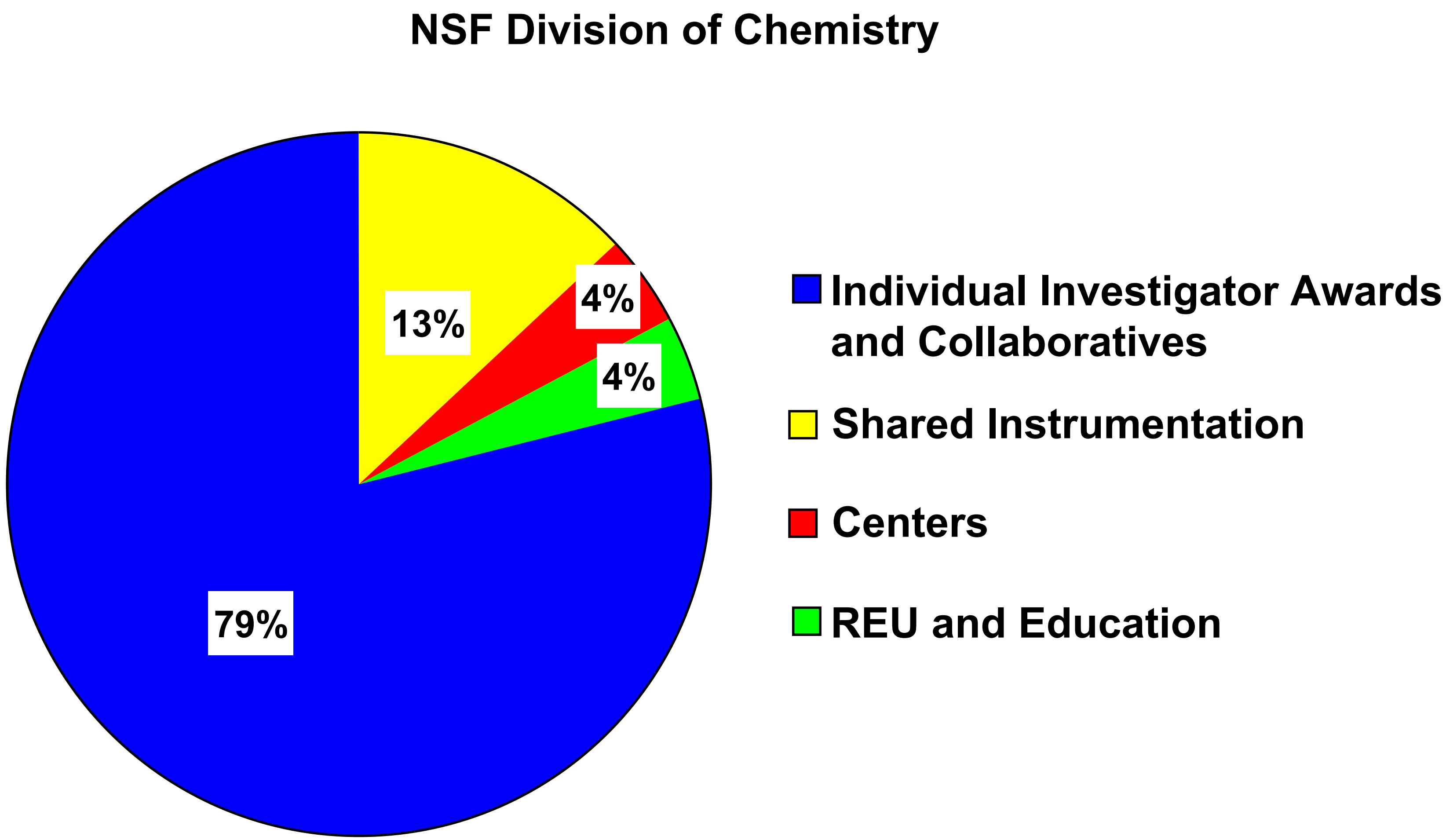
Electronic FastLane submission (Grants.gov is coming)

CHE Annual Funding

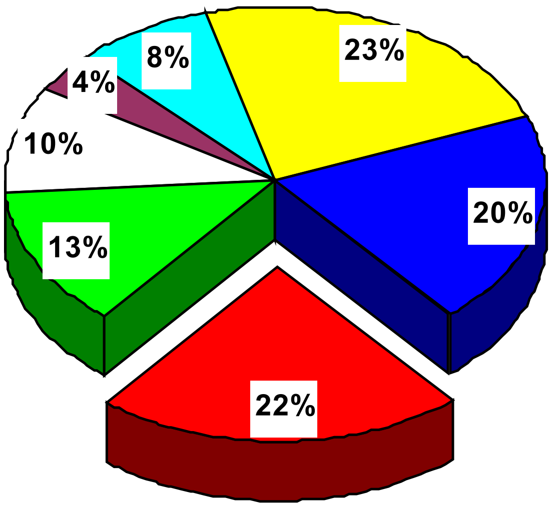




Funding by "Mode" -- FY 2006

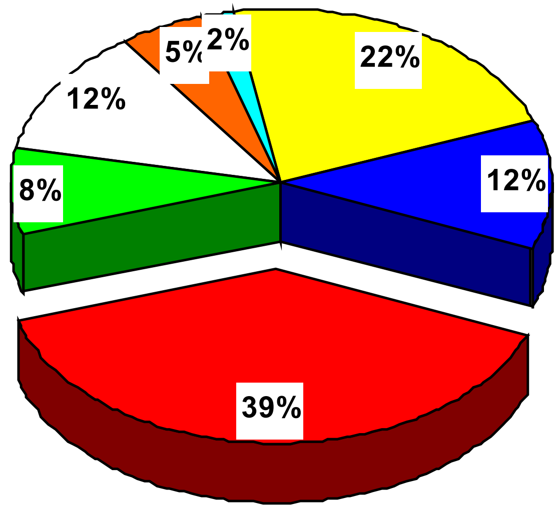


Trends in Analytical and Surface Chemistry



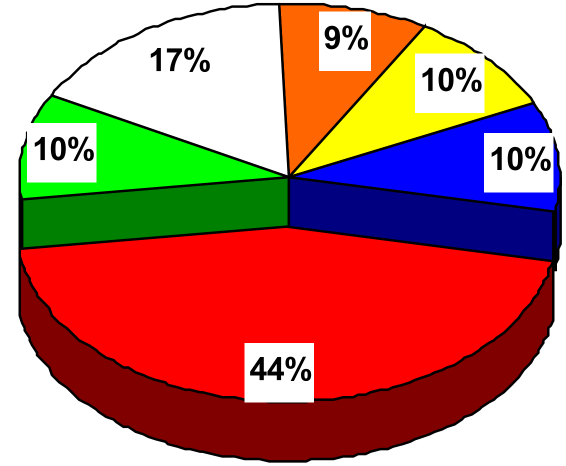
- Electrochemistry
- Atomic and Molecular Spec.
- Surface Science
- Separations
- Mass Spec.
- Kinetic Methods and Analysis
- Other

1984-85 avg.



- Electrochemistry
- Atomic and Molecular Spec.
- Surface Chem
- Separations
- Mass Spec.
- Sensors
- Other

1994



- Electrochemistry
- Atomic and Molecular Spec.
- Surface and Interface
- Separations
- Mass Spec.
- Sensors

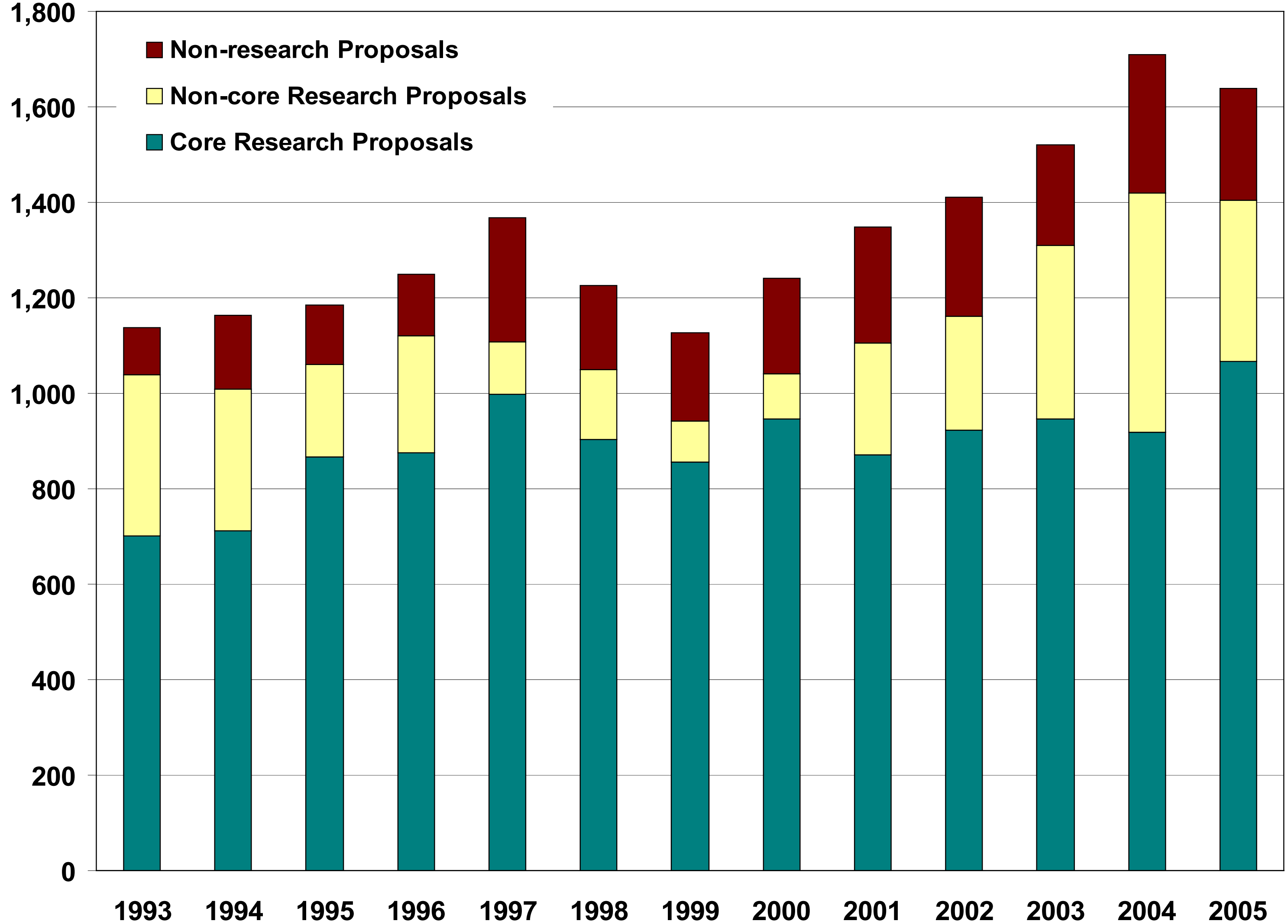
2004-5 avg.

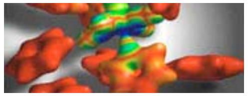
Proposal Pressure: The Pulse of Research

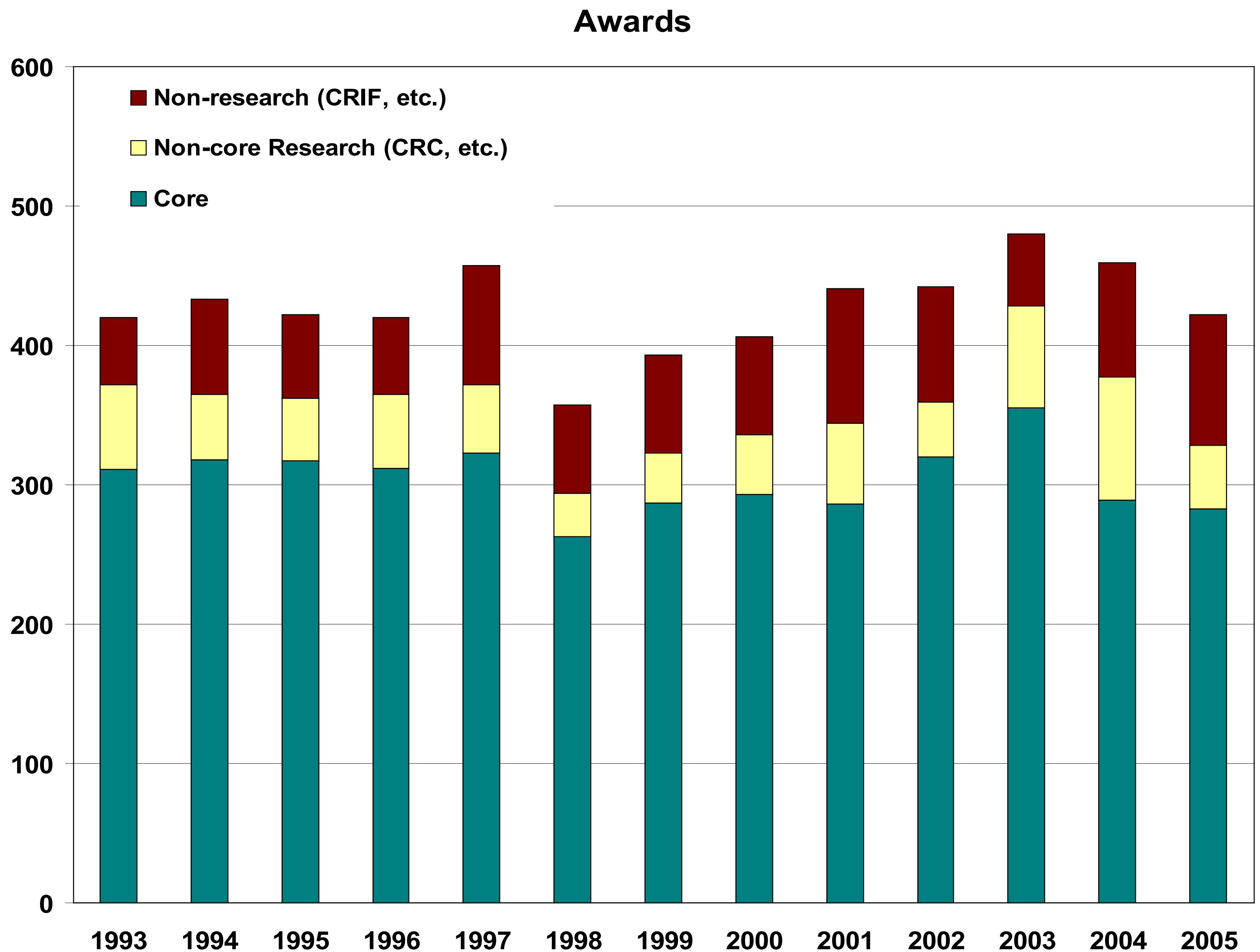
~1650 proposals/year; ~26% success rate

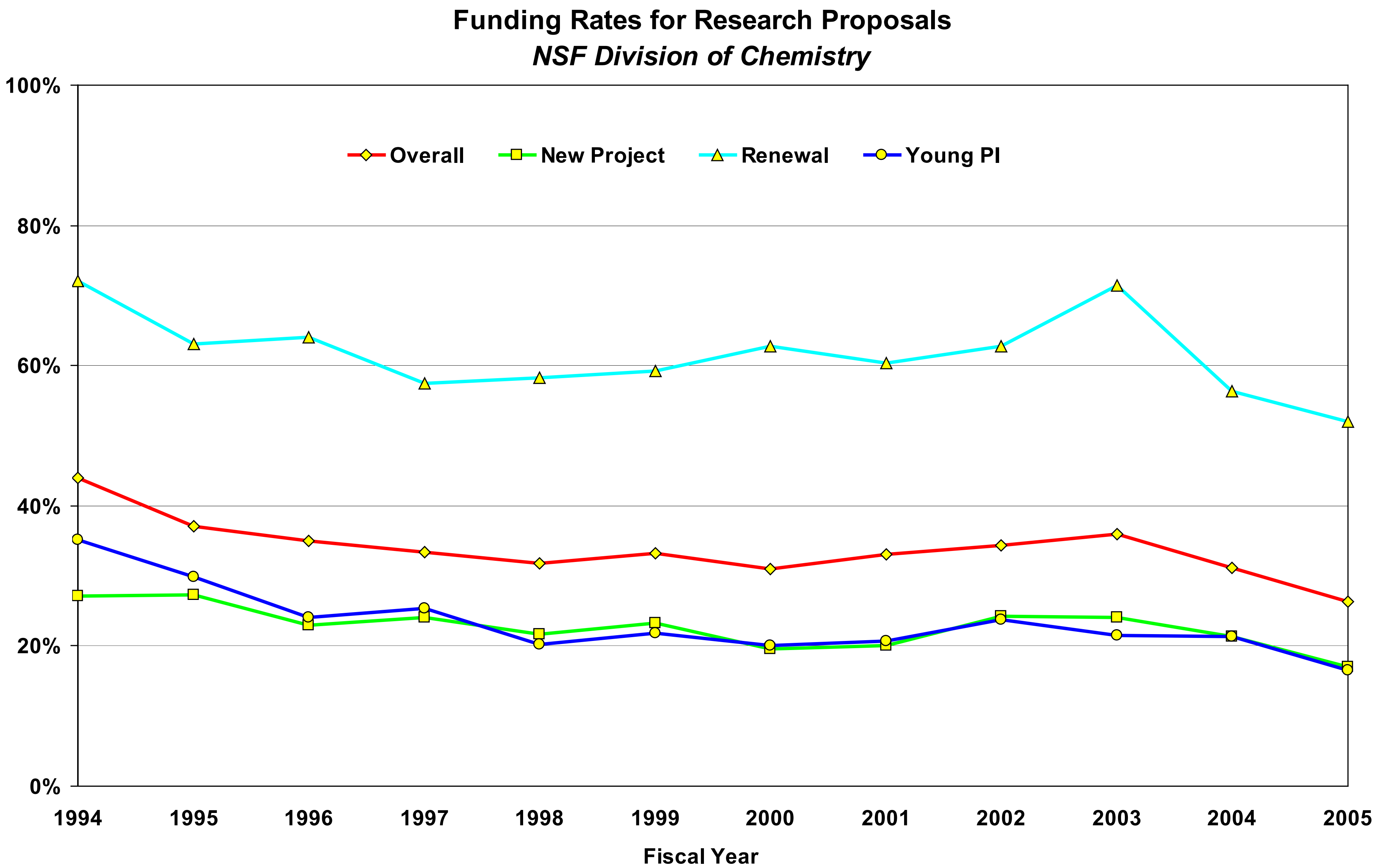
Actions on ~70% of these proposals in 6 months or less

Proposal Pressure
All CHE Competing Proposals



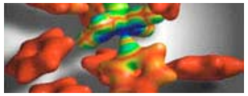



Awards
600
500
400
300
200
100
0
Non-research (CRIF, etc.)
Non-core Research (CRC, etc.)
Core
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005


Funding Rates for Research Proposals
NSF Division of Chemistry
Overall
New Project
Renewal
Young PI
100%
80%
60%
40%
20%
0%
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
Fiscal Year

NSF Chemistry 1993 and 2005

	1993	2005
Number of Proposals	1050	1600
Number of POs	16	16
Total $	112M	180M
Young $	1.5M	20M
% I. I.	80%	70%
Number of Grad Students	1200	1600
Funding rate	40%	26%



Winning Proposals

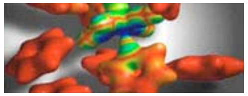
NSF Mission

Agency created by Congress in 1950 "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense…"

NSB 2020 Vision

Strategic Priorities

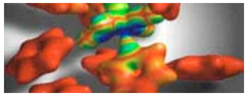
- Position of eminence at the global frontier of fundamental and transformative research; emphasize areas of greatest opportunity and potential benefit.
- World-class S&E workforce; scientific literacy of all citizens.
- Build basic research capacity through critical investments in infrastructure: advanced instrumentation, facilities, cyberinfrastructure, cutting edge experimental equipment



NSF/CHE

Vision

To support innovative research in chemical sciences, integrated with education, through strategic investment in a globally engaged workforce reflecting the diversity of America.



Review Criteria

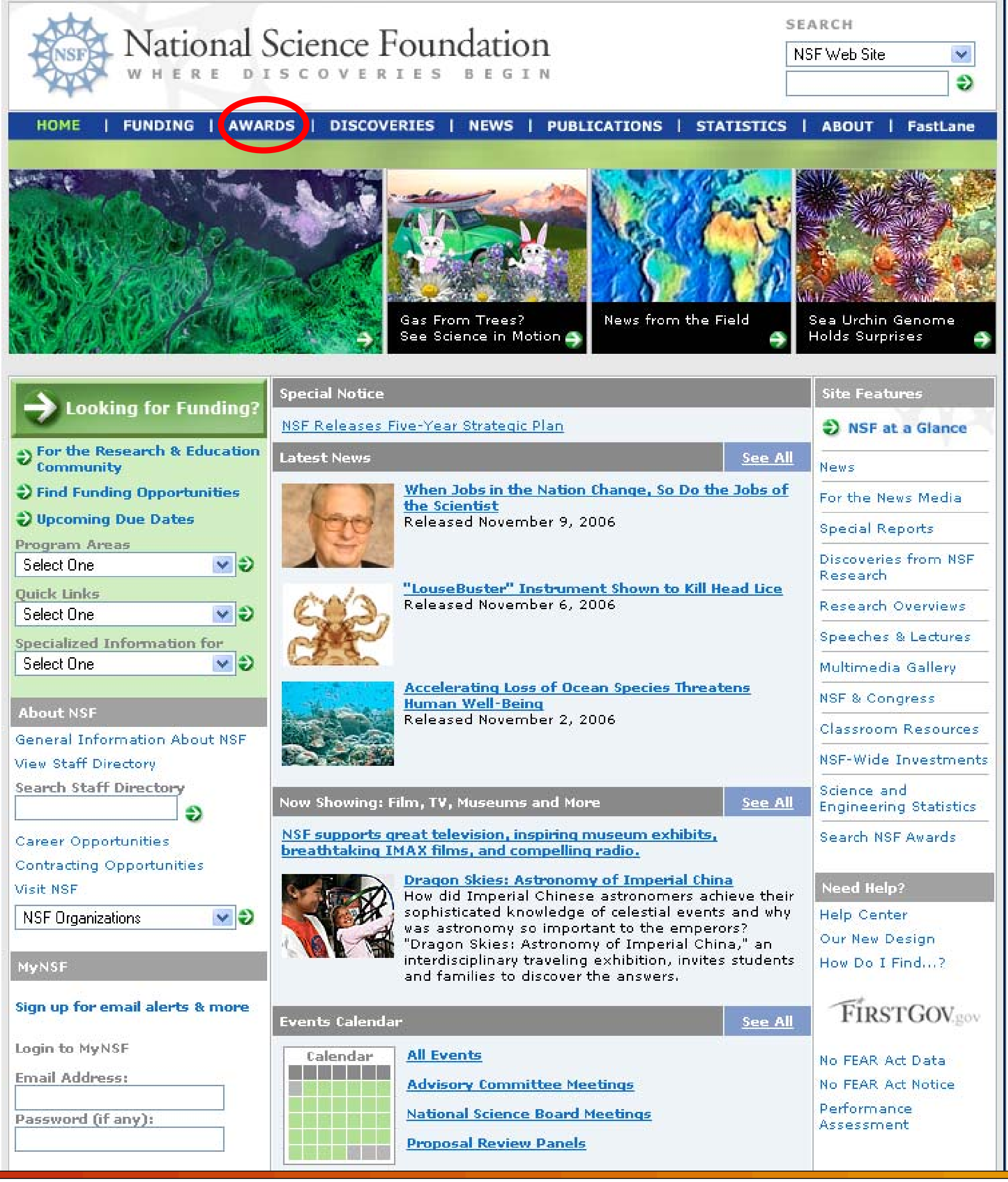
Criterion 1: ***intellectual merit***

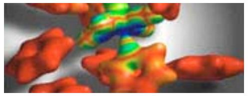
- *Advancement of knowledge and understanding*
- *How well qualified is the proposer*
- *Impact of prior work*
- *Exploration of creative and original concepts*
- *How well conceived and organized*
- *Resources*

Criterion 2: ***broader impacts***

- *Promotion of teaching, training, and learning*
- *Broadening participation*
- *Enhancement of infrastructure*
- *Dissemination*
- *Benefits to society*

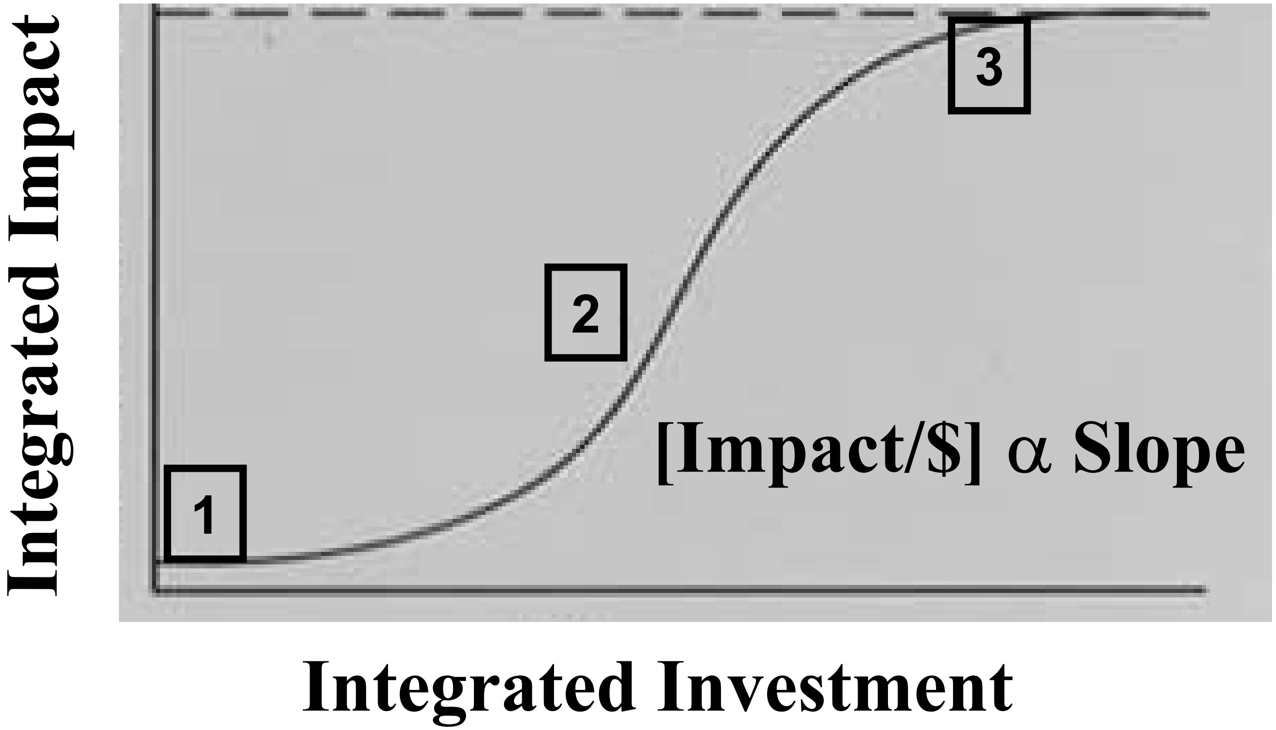
Dear colleague letters on broader impacts:
NSF 02-161 and 04-045





Chemistry (CHE)

Advancing the Frontier



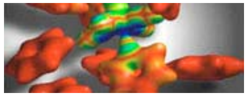
"…if it's 'safe science,' NSF should not fund it." A. Bement

Transformative Research

- What do we mean by transformative or high-risk research?
- How do we identify it?
- How do we plan for it?

Promoting Transformative Research
One mechanism: Small Grants for Exploratory Research (SGERs)

High-risk, high-payoff projects
Timeliness
Up to $200k for 1 year
Call us before submitting
Internal review
Up to 5% of budget allowed
About 0.5% budget used
No Foundation-wide evaluation



NSF FY07 Priorities

Advancing the Frontier (grant support)

Elementary Particle Physics (EPP), fundamental research across the energy frontier, the neutrino frontier, and the cosmic frontier.

Physics of the universe (POU), in partnership with DOE and NASA, exploring dark matter and dark energy; the fundamental nature of time, matter and space; and the role of gravitation.

Fundamental mathematical and statistical science, strengthening the core of the Mathematical Sciences Priority Area and enable effective partnering across NSF as well as with NIH and DARPA.

Physical sciences at the nanoscale, the foundation for innovative nanoscale technologies in partnership with other NSF organizations and the government-wide National Nanotechnology Initiative.

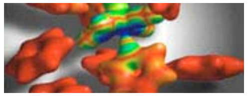
Cyberinfrastructure and the cyberscience it enables, connecting with NSF's high priority activities in this area and the government-wide Networking and Information Technology R&D activities.

Molecular basis of life processes, study of complex biological systems in areas such as self-assembly of disordered collections of molecules into the elements of living systems; protein folding; membranes; and emergence of physiological processes such as breathing and thinking out of complex, coupled arrays of individual reactions.

Sustainability, areas that link the physical sciences with environmental sustainability, including green chemistry, water chemistry and energy.

Facility Stewardship, Instrumentation and CyberInfrastructure

Broadening Participation, Education and Workforce Development



MPS Emphasis Areas

Molecular Basis of Life Processes (MBLP) and Sustainability

Science Drivers for MBLP

Networks of chemical reactions and how they lead to life processes

Tools for multi-scale modeling, simulation and imaging

Complex hierarchical systems

Electronic communication between physical and biological systems

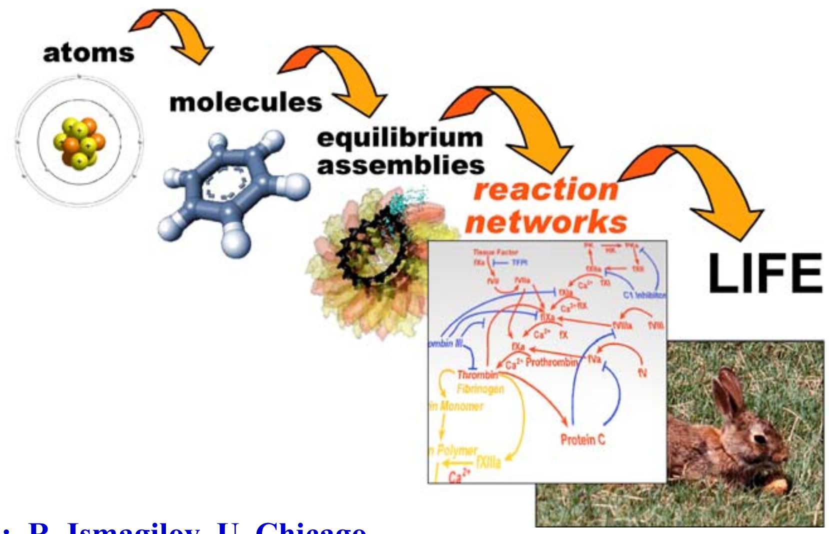


Figure: R. Ismagilov, U. Chicago

Sustainability Science Drivers

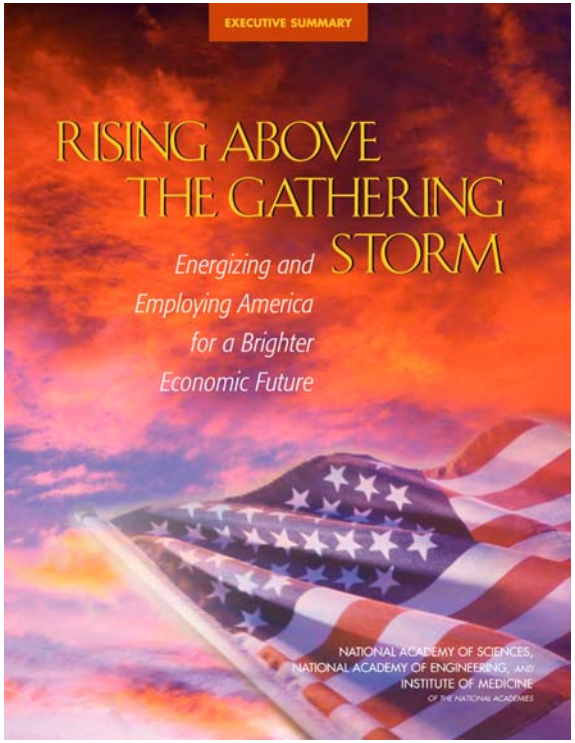
Sustainable energy - meeting the clean air challenge of diminishing fossil fuels by **creating a carbon-neutral economy that will use solar energy and/or alternative feedstocks**.

Green chemistry/processing - more efficient chemical reactions and fewer waste products via **research into tailorable and sustainable molecular building blocks for material synthesis**.

Environment - **a more detailed molecular and elemental understanding of the components of air, water, and soil**.

Educational initiatives - **educating chemistry students and the public in the importance and urgency of sustainability-related research**.

External Drivers



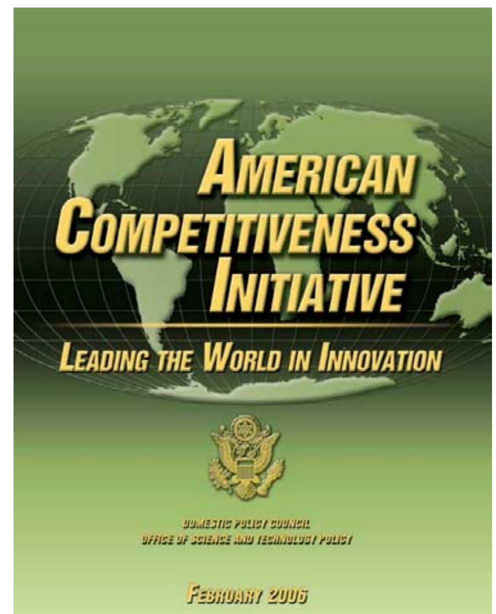
"Action B-4: Allocate at least 8% of the budgets of federal research agencies to discretionary funding that would be managed by technical program managers in the agencies and be focused on catalyzing high-risk, high-payoff research."

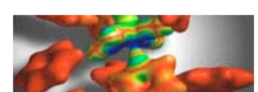
American Competitiveness Initiative

Invest in critical research, ensure the US continues to lead in opportunity and innovation, provide children with a strong foundation in math and science

Double investment in key federal agencies that support ***basic research*** in the ***physical sciences*** over 10 years

ACI Partners NSF, DOE & NIST

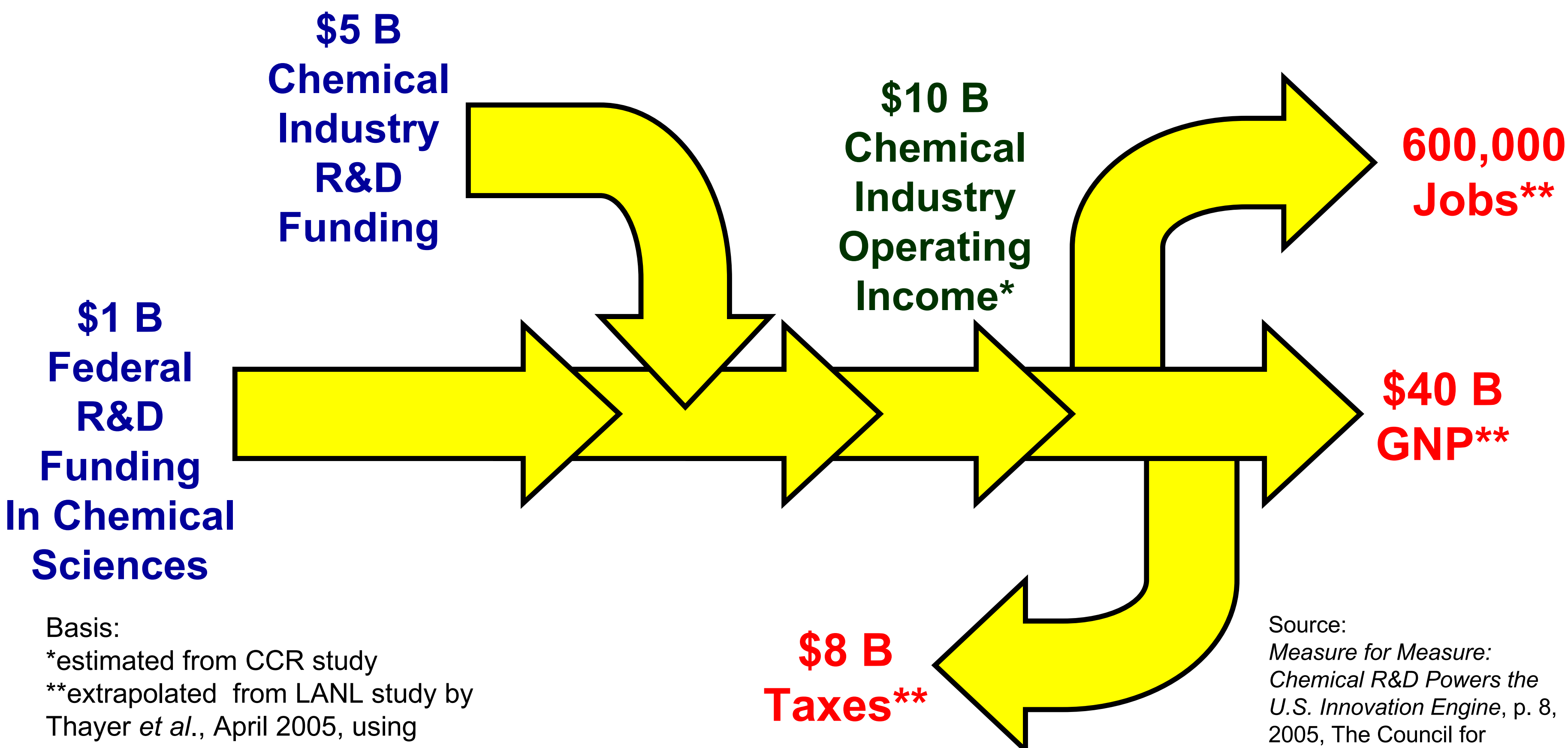




Impact of Federal Investment in Basic Research

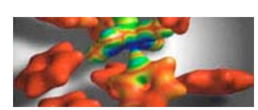
Macroeconomic Implications

http://www.ccrhq.org/Measure_for_Measure_Presentation_04-26-062.ppt



Basis:
*estimated from CCR study
**extrapolated from LANL study by Thayer *et al*., April 2005, using REMI economic model

Source:
Measure for Measure: Chemical R&D Powers the U.S. Innovation Engine, p. 8, 2005, The Council for Chemical Research

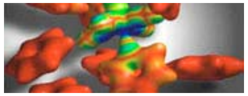


Enhancing Innovation and Competitiveness Through Investments in Fundamental Research

December 3-5, 2006

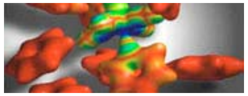
Westin Arlington

Sponsored by NSF, NIST, NIBIB



Workshop Aims

The workshop will provide industrial perspective on the science and education drivers critical to innovation and competitiveness of science- and technology-based industries. Academic and industrial leaders will be asked to consider opportunities for Federally-supported research and programs suitable for execution in academic and government settings, and/or for collaborations among academic, government, and industrial researchers.



Context

Innovate America: Thriving in a World of Challenge and Change (Council on Competitiveness, 12/15/04)

The World is Flat: A Brief History of the Twenty-First Century (Tom Friedman, April, 2005)

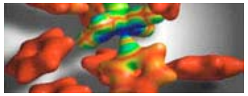
Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future (NRC, 10/12/05)

Protecting America's Competitive Edge (PACE Act, 1/25/06)

National Defense Education and Innovation Initiative: Meeting America's Economic and Security Challenges in the 21st Century (Association of American Universities, 1/26/06)

American Competitiveness Initiative (ACI, 2/2/06)

National Competitiveness Investment Act (NCIA, 10/24/06)



Partial Participants List

Co-Chairs:

Mark Wrighton, Chancellor, Washington University

Joseph Miller, CTO, Corning, Inc.

Other attendees (targeting 20 CTOs, 10 academicians):

Susan Butts, Senior Director of External Technology, Dow Chemical

Gary S. Calabrese, VP and Chief Technology Officer, Rohm and Haas

William E. Clarke, Executive VP and Chief Technology and Medical Officer, GE Healthcare

Charles P. Casey, Professor of Chemistry, University of Wisconsin

Larry Faulkner, President, Houston Endowment, former President of the University of Texas

Katherine T. Hunt, Rohm and Haas, and President-Elect of the American Chemical Society

Ajaz Hussain, VP and Global Head of Biopharmaceutical Development, Sandoz/Novartis

Ganesh Kishore, VP and Chief Biotechnology Officer, DuPont

Charles McWherter, VP, Pfizer Cardiovascular Research

Chad Mirkin, Professor of Chemistry, Northwestern University

Dan Nocera, Professor of Chemistry, Massachusetts Institute of Technology

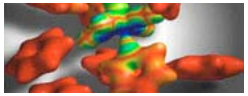
Lynn Schneemeyer, Vice Provost for Research and Professor of Chemistry, Rutgers University

Edward T. Shonsey, Chief Executive Officer, Diversa Corporation

Winston Soboyejo, Professor of Mechanical and Aerospace Engineering, Princeton University

Darlene J. Solomon, VP and CTO, Agilent Labs

Matt Tirrell, Dean of Engineering, University of California – Santa Barbara



Invited Observers

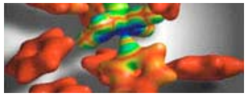
Robert Berdahl, President, AAU

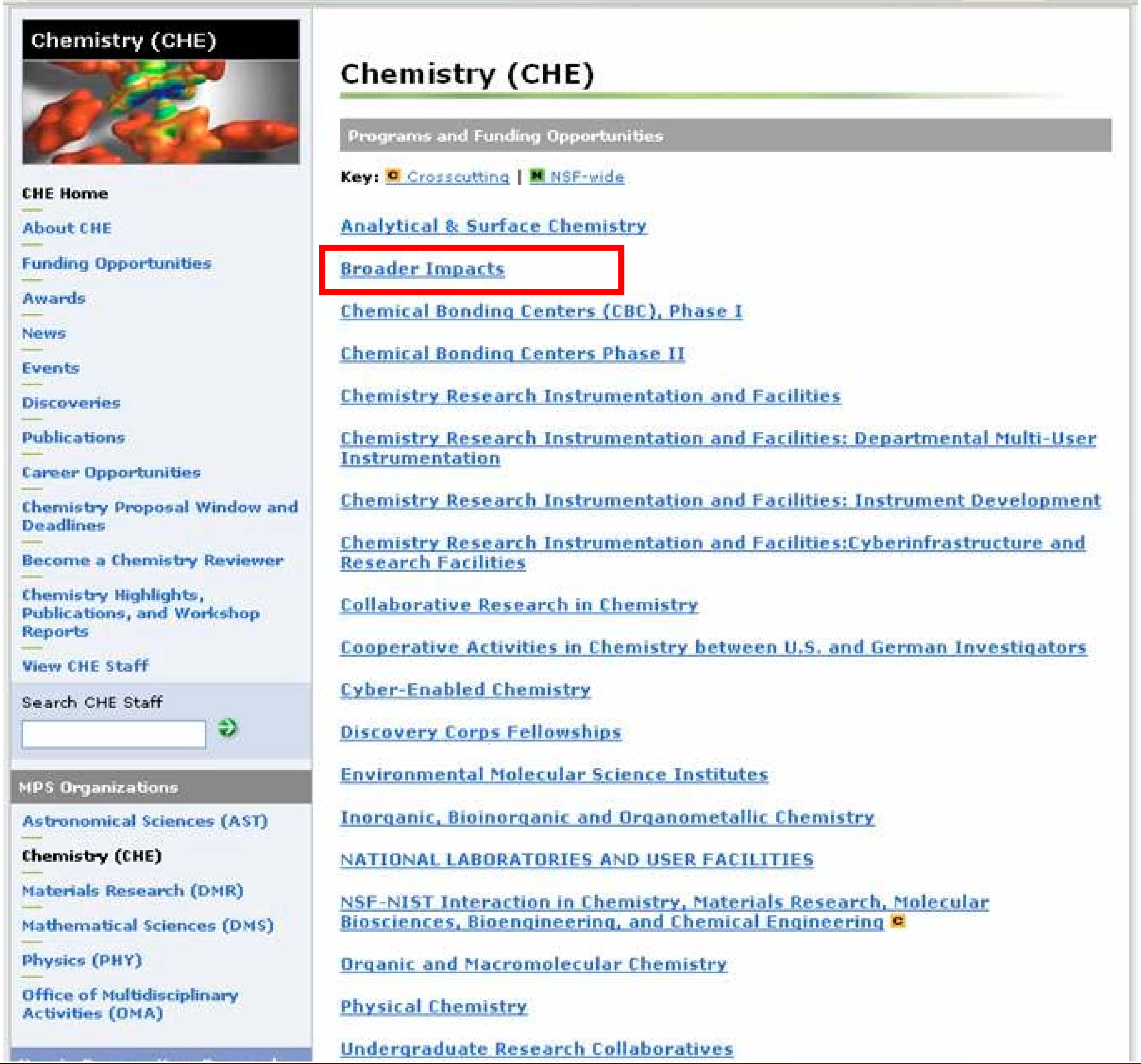
Craig Blue, Deputy Dir., Technology, Materials Science & Technology Div., ORNL

Brian Fitzgerald, Executive Director, Business Higher Education Forum

W. Christopher Hollinshed, Director, Petroleum Research Fund, formerly DuPont

John Vaughn, Executive VP, AAU





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Physics (PHY)
Office of Multidisciplinary Activities (OMA)

Chemistry (CHE)

Programs and Funding Opportunities

Key: C Crosscutting | N NSF-wide

Analytical & Surface Chemistry

Broader Impacts

Chemical Bonding Centers (CBC), Phase I

Chemical Bonding Centers Phase II

Chemistry Research Instrumentation and Facilities

Chemistry Research Instrumentation and Facilities: Departmental Multi-User Instrumentation

Chemistry Research Instrumentation and Facilities: Instrument Development

Chemistry Research Instrumentation and Facilities:Cyberinfrastructure and Research Facilities

Collaborative Research in Chemistry

Cooperative Activities in Chemistry between U.S. and German Investigators

Cyber-Enabled Chemistry

Discovery Corps Fellowships

Environmental Molecular Science Institutes

Inorganic, Bioinorganic and Organometallic Chemistry

NATIONAL LABORATORIES AND USER FACILITIES

NSF-NIST Interaction in Chemistry, Materials Research, Molecular Biosciences, Bioengineering, and Chemical Engineering C

Organic and Macromolecular Chemistry

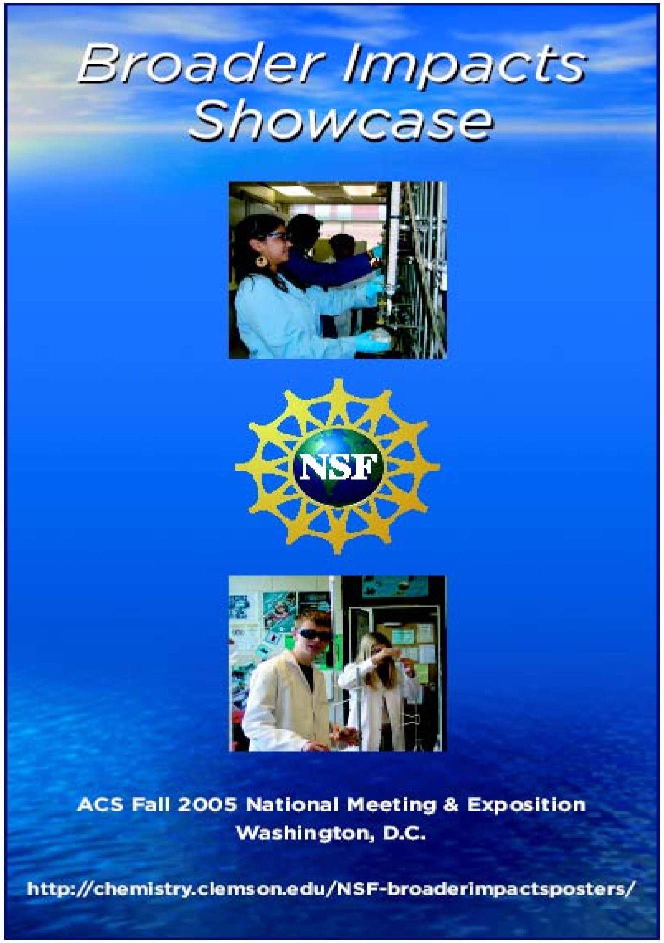
Physical Chemistry

Undergraduate Research Collaboratives

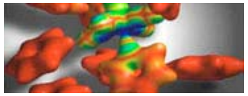
Broader Impacts of NSF Awards

Organized by Luis Echegoyen on behalf of MPSAC chemists

- Communication
- Education
- Industry
- Environment
- National security
- Health
- Quality of life



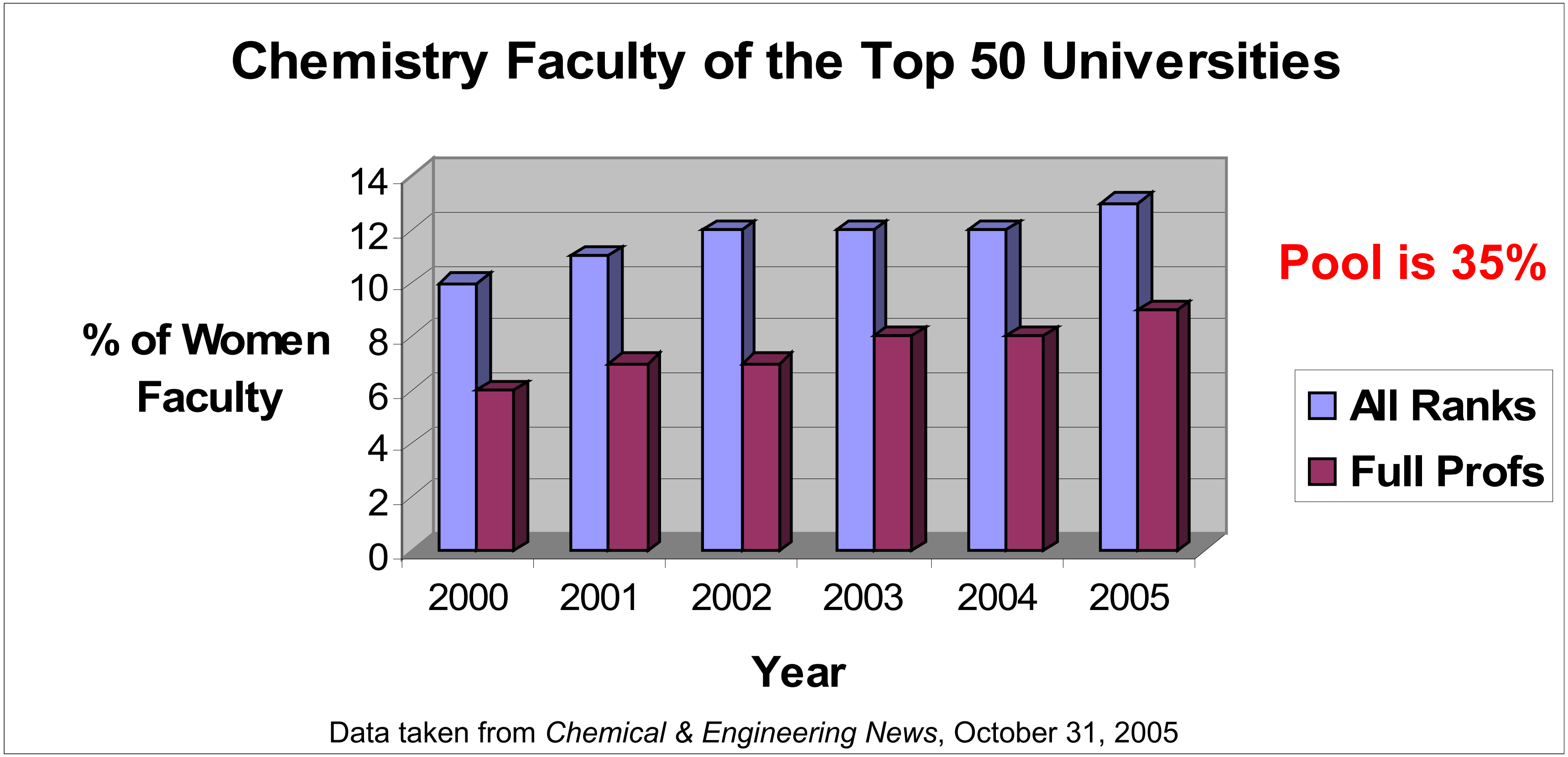
Brochure, CD, and website of chemistry exemplars



Broader Impacts

	PI-1	PI-2	PI-3	PI-4	PI-5
PEOPLE					
training students	X	X	X	X	X
diversity	X	X		X	
international collaborations		X		X	X
IDEAS					
publications	X	X	X	X	X
patents	X				X
start-ups	X		X		
TOOLS					
websites	X	X	X	X	X
instrument development	X		X	X	
shared software			X		X

Broadening Participation



Prof. Zare's Reading:

"Progress is slow to almost imperceptible"

NSF-NIH-DOE Gender Equity Workshop

Jan. 29-31, 2006

'That's an excellent suggestion, Miss Triggs. Perhaps one of the men here would like to make it.'

From Punch, Jan. 8, 1988, with thanks to C. Rohlfing

With thanks to Dick Zare, Stanford

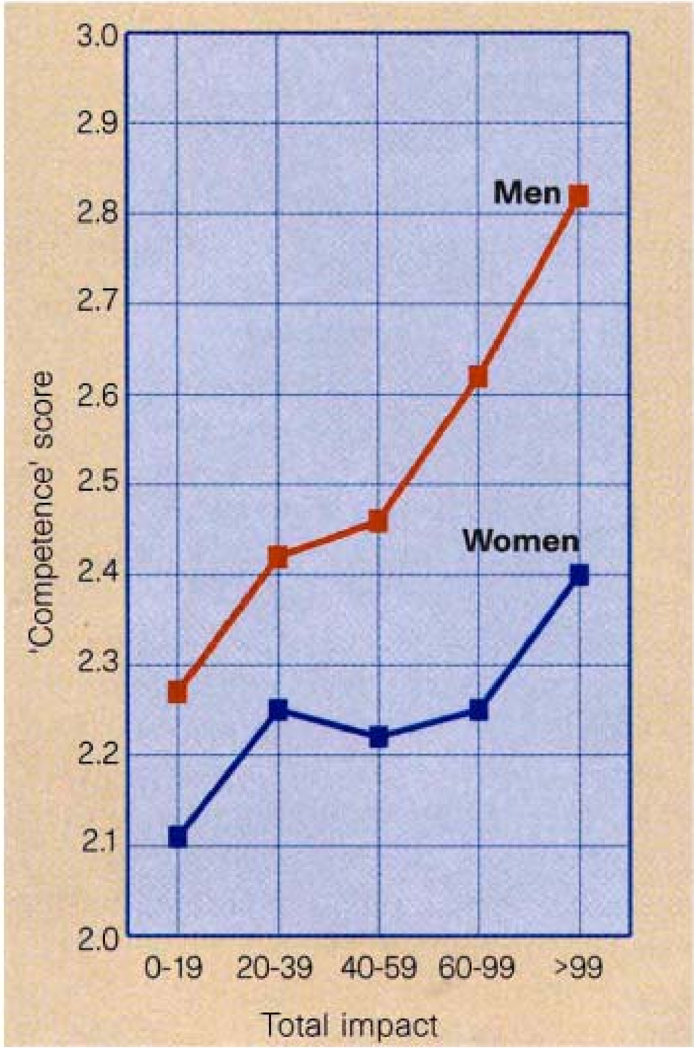


Figure 1 **The mean competence score given to male (red squares) and female (blue squares) applicants by the MRC reviewers as a function of their scientific productivity, measured as total impact. One impact point equals one paper published in a journal with an impact factor of 1. (See text for further explanation.)**

Multiple regression analyses were performed to search for what factors are determinative.

Two factors were found to have a significant influence on competence scores:

(1) gender of the applicant; and

(2) affiliation of the applicant with one of the committee members.

See Nature **387,** 341 (1997)
for a Swedish study on
Nepotism and Sexism in Peer-Review

MRC stands for Medical Research Council

Broadening Participation – Race and Ethnic Minority

Workshop: Increasing Minority Undergraduate and Graduate Students in Chemistry

Joint with DOE and NIH

Target Department Chairs to Focus on Undergraduate and Graduate Student Recruitment

Spring 2007

Contact: Celeste Rohlfing, Ty Mitchell

Winning Instrumentation Proposals

- ***Need*** (3-5 major users with prior or analogous results)
- ***Appropriateness*** (right instrument)
- ***Infrastructure***

Chemistry Research Instrumentation and Facilities:

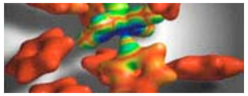
- Departmental Multi-User Instrumentation (6/26/06)
- Instrument Development (1/23/07)
- Cyberinfrastructure and Research Facilities (3/1/06)

Major Research Instrumentation (up to $2M; 1/25/07)

Instrument Development for Bio. Research (8/28/06)

Instrumentation Resources for Bio. Sciences (10/2/06)

Instrumentation for Materials Research (1/11/07)

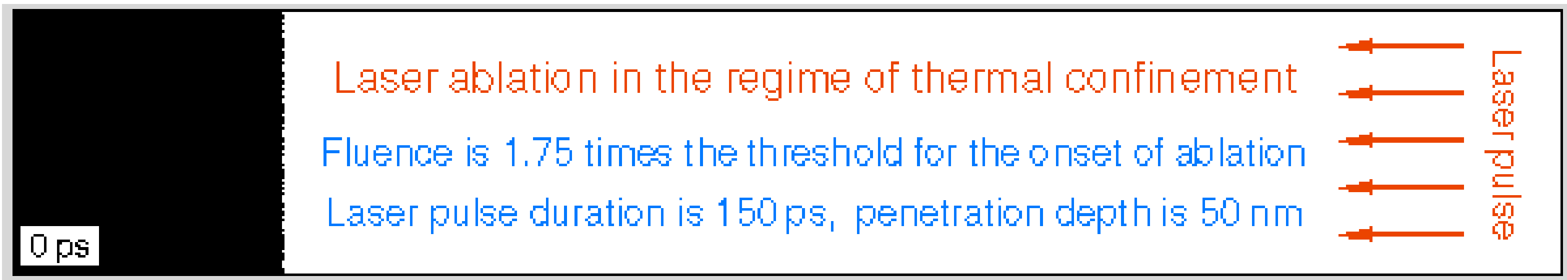


Miniaturized Instrumentation

Miniaturized Mass Spectrometers – Workshop Report
Catherine Fenselau and Michael Ramsey, Organizers

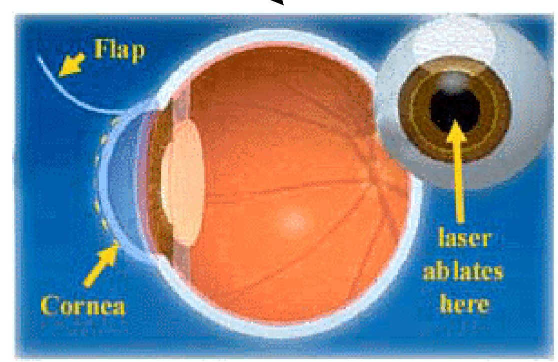
CRIF: Instrumentation Development NSF 04-534

LASIK & Laser Ablation
Barbara J. Garrison, Penn State University
CHE-0071686



The physics of desorption vs. ablation due to pulsed laser irradiation has been clearly elucidated in computer simulations designed by the Barbara Garrison research group at Penn State. These calculations are the first that definitively exhibit the qualitative difference between desorption and ablation. A novel approach for including widespread chemical reactions in the simulation has been developed to examined photochemical effects such as is applicable in LASIK eye surgery. These calculations have applicability in high weight mass spectrometry (matrix assisted laser desorption mass spectrometry – MALDI), thin film growth of materials such as high T_c superconductors, and drilling of holes in ink jet printers. Further information is available on the web, http://galilei.chem.psu.edu/.

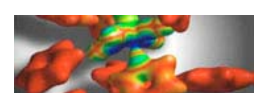
LASIK involves laser ablation



Emory Vision Correction Center

http://www.inviewvision.com/vcsurgery.html

National Science Foundation
WHERE DISCOVERIES BEGIN



Chemistry (CHE)

Rapid Trace Detection of the Notorious Explosive TATP by (DESI-MS)

R. Graham Cooks, Purdue University

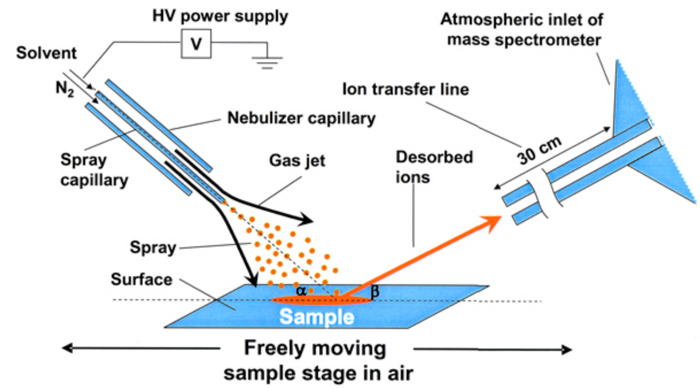
CHE-041278

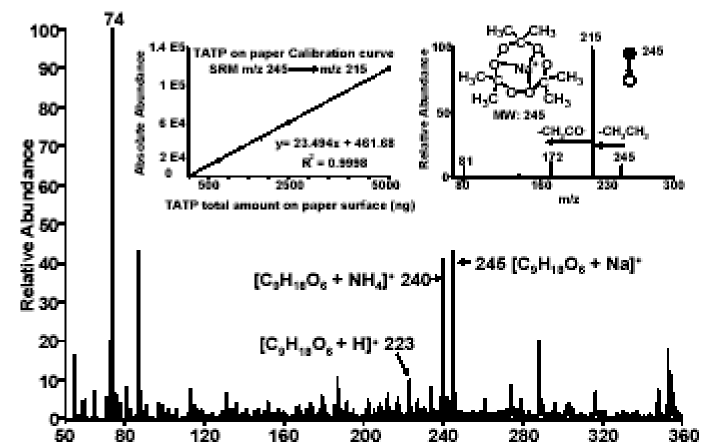
Desorption electrospray ionization mass spectrometry (DESI-MS) is used for the rapid, specific and sensitive detection of trace amounts of the explosive called triacetone triperoxide (TATP), when it is present on paper, brick, and metal surfaces.

TATP is an easy-to-make but hard-to-detect explosive that was used by terrorists for numerous suicide bombings, including the bombing of London subway trains in the summer of 2005.

The detection by DESI-MS is fast (no sample pretreatment is needed, and less than 5 seconds is required to obtain spectra), highly selective, and gives highly sensitive (low nanogram) detection limits in all cases studied.

This work was also funded by the Office of Naval Research.





Positive ion DESI spectrum of 10 ng TATP deposited on 1 cm2 of paper.

Chemical Communications, in press

For a review on Ambient Mass Spectrometry, see Science, v. 311, 1566 (2006)

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Chemistry (CHE)

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Key: C Crosscutting | N NSF-wide

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- Chemical Bonding Centers Phase II
- Chemistry Research Instrumentation and Facilities
- Chemistry Research Instrumentation and Facilities: Departmental Multi-User Instrumentation
- Chemistry Research Instrumentation and Facilities: Instrument Development
- Chemistry Research Instrumentation and Facilities:Cyberinfrastructure and Research Facilities
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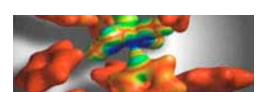
- Organic and Macromolecular Chemistry
- Physical Chemistry
- Undergraduate Research Collaboratives



Career Awards

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Funding

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- Guide to Programs/Browse Funding Opportunities
- Recent Funding Opportunities
- Upcoming Due Dates

How to Prepare Your Proposal

- Grant Proposal Guide
- Frequently Asked Questions
- Other Types of Proposals
- Regional Grants Conferences

How to Manage Your Award

- Grant Policy Manual
- Grant General Conditions
- Cooperative Agreement Conditions
- Special Conditions
- Federal Demonstration Partnership

Crosscutting/NSF-wide

Faculty Early Career Development (CAREER) Program

CAREER Resources

Frequently Asked Questions (FAQs) about the Faculty Early Career Development (CAREER) Program For Fiscal Years 2006, 2007, and 2008: HTML, PDF, TXT

CAREER Submission Requirements Checklist

Note to Reviewers of CAREER Proposals

Each year NSF selects nominees for Presidential Early Career Awards for Scientists and Engineers (PECASE) from among the most meritorious new CAREER awardees. The PECASE program recognizes outstanding scientists and engineers who, early in their careers, show exceptional potential for leadership at the frontiers of knowledge. This Presidential Award is the highest honor bestowed by the United States Government on scientists and engineers beginning their independent careers.

CAREER Award Resources: Press Releases - Awards - Reporting Requirements

CONTACTS

- Division CAREER contacts listed on the CAREER Web page, at http://www.nsf.gov/crssprgm/career/contacts.jsp.

PROGRAM GUIDELINES

05-579 Solicitation

DUE DATES

Full Proposal Deadline Date: July 17, 2007
BIO, CISE, and EHR
Full Proposal Deadline Date: July 18, 2007
ENG
Full Proposal Deadline Date: July 19, 2007
GEO, MPS, SBE, and OPP

Fellowships

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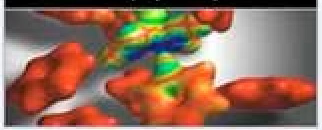

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Specialized Information for

Postdoctoral Fellows

The following programs provide either direct (i.e., from NSF) or indirect (i.e., from an awardee institution) funding for students at this level or identify programs that focus on educational developments for this group such as curricula development, training or retention.

- NSF-Navy Civilian Service Fellowship-Scholarship Program
- Arctic Research Opportunities
- Cross-Directorate Activities
- Cultural Anthropology Scholars Awards
- Discovery Corps Fellowships
- International Research and Education: Planning Visits and Workshops
- International Research Fellowship Program
- Minority Postdoctoral Research Fellowships and Supporting Activities
- NSF Astronomy and Astrophysics Postdoctoral Fellowships
- Pan-American Advanced Studies Institutes Program
- Partnerships for International Research and Education
- Postdoctoral Fellowships in Polar Regions Research
- Postdoctoral Research Fellowships in Biological Informatics
- Presidential Awards for Excellence in Science, Mathematics and Engineering Mentoring
- Undergraduate Research Collaboratives

- Marshall Scholarships

Fellowships

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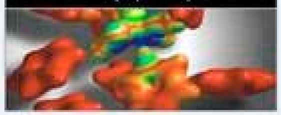

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Specialized Information for
Graduate Students

The following programs provide either direct (i.e., from NSF) or indirect (i.e., from an awardee institution) funding for students at this level or identify programs that focus on educational developments for this group such as curricula development, training or retention.

- NSF-Navy Civilian Service Fellowship-Scholarship Program
- Arctic Research Opportunities
- Collaboration in Mathematical Geosciences
- Cross-Directorate Activities
- Developing Global Scientists and Engineers
- Doctoral Dissertation Improvement Grants in the Directorate for Biological Sciences
- Dynamics of Coupled Natural and Human Systems
- East Asia and Pacific Summer Institutes for U.S. Graduate Students
- Ethics Education in Science and Engineering
- Federal Cyber Service: Scholarship for Service
- Graduate Research Fellowship Program
- Integrative Graduate Education and Research Traineeship Program
- International Polar Year
- International Research and Education: Planning Visits and Workshops
- National Science, Technology, Engineering, and Mathematics Education Digital Library
- NSF Astronomy and Astrophysics Postdoctoral Fellowships
- NSF GRADUATE TEACHING FELLOWS IN K-12 EDUCATION
- Pan-American Advanced Studies Institutes Program
- Partnerships for International Research and Education
- Postdoctoral Fellowships in Polar Regions Research
- Presidential Awards for Excellence in Science, Mathematics and Engineering Mentoring
- Undergraduate Research Collaboratives

Discovery Core Fellowships

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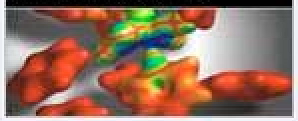

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MPS Organizations

Astronomical Sciences (AST)

Discovery Corps Fellowships (DCF)

CONTACTS

Name	Email	Phone	Room
Katharine J. Covert	kcovert@nsf.gov	(703) 292-4950	1055 S
Ronald Christensen	rchriste@nsf.gov	(703) 292-4970	

PROGRAM GUIDELINES

07-516 Solicitation

DUE DATES

Full Proposal Deadline Date: February 5, 2007

SYNOPSIS

The Discovery Corps Fellowship Program is an extended pilot program seeking new postdoctoral and professional development models that combine research with service-oriented projects. Discovery Corps Fellows develop integrated plans that incorporate an ambitious research project with other activities that address areas of national need (including enhanced research capacity and infrastructure, workforce development and job creation, and innovative linkages between chemistry and other fields). For this extended pilot program, successful Fellows will propose research projects in areas supported by the NSF Division of Chemistry. The Discovery Corps Fellowship Program comprises two categories of awards: recent doctoral recipients serve as Discovery Corps Postdoctoral Fellows; and mid-career professionals serve as Discovery Corps Senior Fellows.

EDUCATIONAL OPPORTUNITY

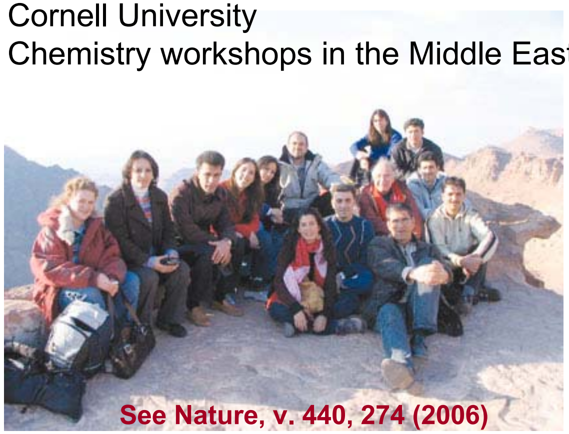
This program provides educational opportunities for Postdoctoral Fellows. Individuals

Discovery Corps Fellowships

Service-oriented projects that leverage research expertise

3 competitions have resulted in a total of 22 awards to date

Roald Hoffmann
Cornell University
Chemistry workshops in the Middle East



See Nature, v. 440, 274 (2006)

Postdoctoral Fellowships

Within two years of the PhD

Two-year awards

Senior Fellowships

At least ten years after PhD/postdoctoral

One-year award

Geoff Bothun, PD, CERSP and NC A&T

Development of Marine and Seawater
Pollution Database Across Continents
Omowunmi Sadik,
SUNY-Binghamton

GOALI

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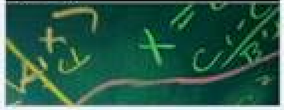

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- Chemistry (CHE)
- Materials Research (DMR)

Grant Opportunities for Academic Liaison with Industry (GOALI)

CONTACTS

Name	Dir/Div	Name	Dir/Div
Donald Senich	ENG/IIP	Henry Blount	MPS/OAD
John Cherniavsky	EHR/OAD	Leonard Johnson	GEO/EAR
Jeanne Hudson	OD/OISE	Rita Koch	
Glenn Larsen	ENG/OAD	Jacqueline Meszaros	
Sonia Ortega	EHR/DGE	Diane Jofuku Okamuro	BIO/DBI
Douglas MacTaggart	EHR/EPSCoR		

PROGRAM GUIDELINES

07-522 Solicitation

DUE DATES

Full Proposal Accepted Anytime

Full proposals are only accepted within specific periods established by the directorates and their participating programs for unsolicited proposals. Check the NSF website or with the program office for acceptable submission periods.

Supplement Accepted Anytime

Investigators should discuss supplemental funding with their NSF program officer prior to submission.

Proposals are accepted throughout the year according to the review process established in each disciplinary program. Note that several divisions have deadlines, windows, or target dates for unsolicited proposals. For a list of deadlines and target dates, refer to the "Upcoming Due Dates" link on the NSF home page at http://www.nsf.gov or contact the appropriate disciplinary program. No additional deadline is required by GOALI.

International Cooperative Activities in Chemistry between U.S. and German Investigators (DFG-NSF)- FY 2006

- 60 inquiries
- 30 proposals submitted to NSF via Fastlane
- 5 proposals were funded

NSF Investment - $2,128,999

DFG Investment - $1,100,000

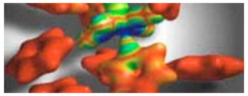
Coherent Control and Coherence Spectroscopies in Complex Systems
Northwestern University- Free University of Berlin

Using Marine Natural Product Psymberin as a Discovery Template for Biosynthethic Engineering and Biosynthetic Product Investigation- University of California, Santa Cruz - University of Bonn

Excited State Dynamics of DNA Base-Pairs
Univ. of California at Santa Barbara- Technical University of Munich

Computationally Guided Design of Catalysts for Fluoroolefin Polymerization
University of Delaware - Universität Hamburg

Optical Methods for EE Analysis of Simple Carboxylic Acids
University of Texas at Austin - Technical University of Munich



Undergraduate Research Collaboratives in Chemistry

Research in college years 1 and 2

“Go to where the (diverse) students are”

Three competitions have resulted in 5 awards to date, each roughly $2.5M/5 years.

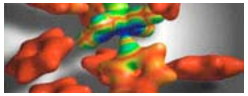
Purdue University (PI Gabriella Weaver) with a consortium of 2- and 4-year institutions in Indiana and Illinois, including MSIs. Includes remote instrumentation network.

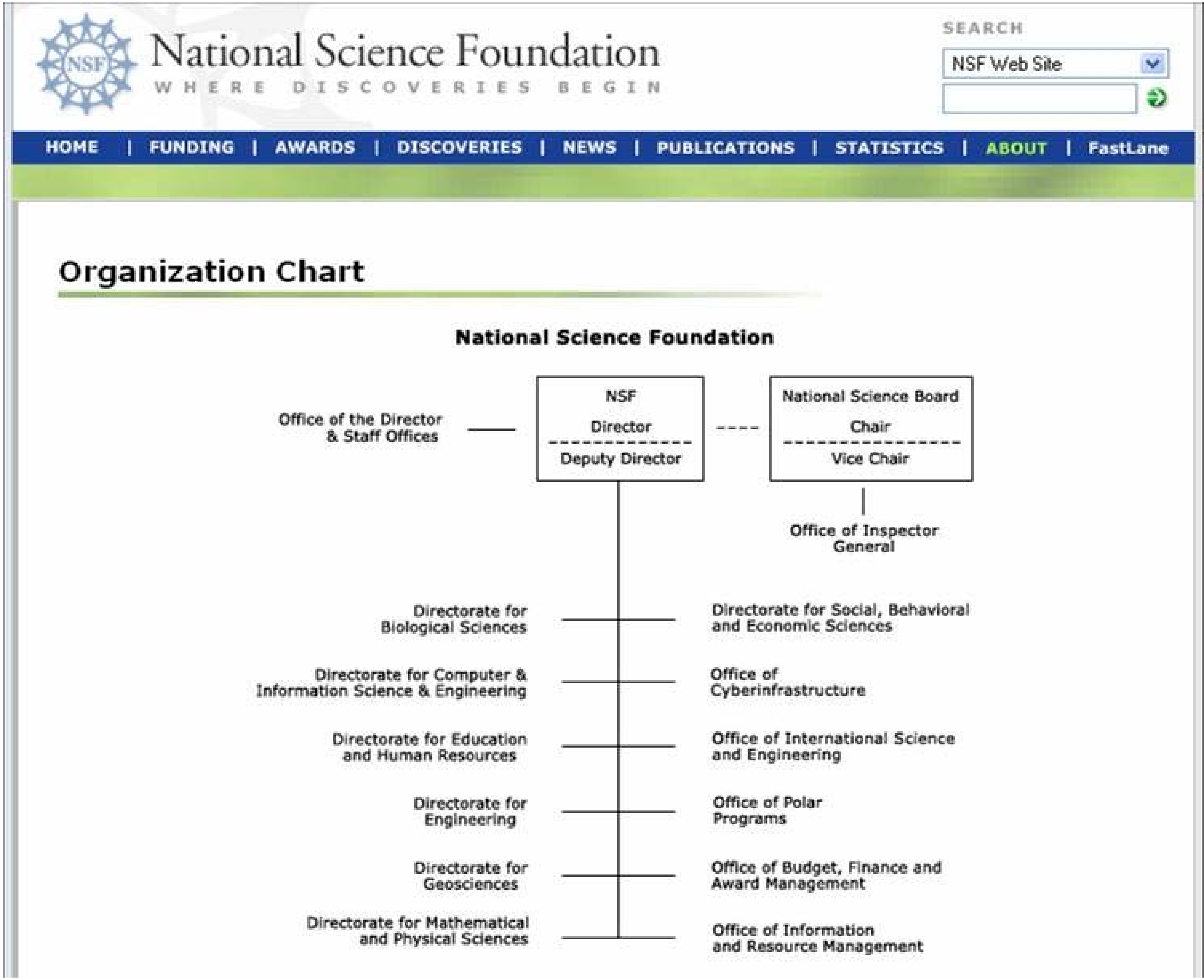
Ohio State University (PI Prabir Dutta) with a consortium of all (~14) of the public universities in Ohio plus Columbus Community College. Will impact ~15,000 students.

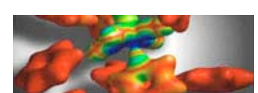
South Dakota University (PI, Mary Berry)- regional cluster includes community and tribal colleges

University of Texas Austin (PI, Mary Rankin) integrates 1st and 2nd year laboratory program (will involve ~ 25% of UT intro chemistry students/50% minority students) with ongoing chemistry and biochemistry research programs at a large RI institution

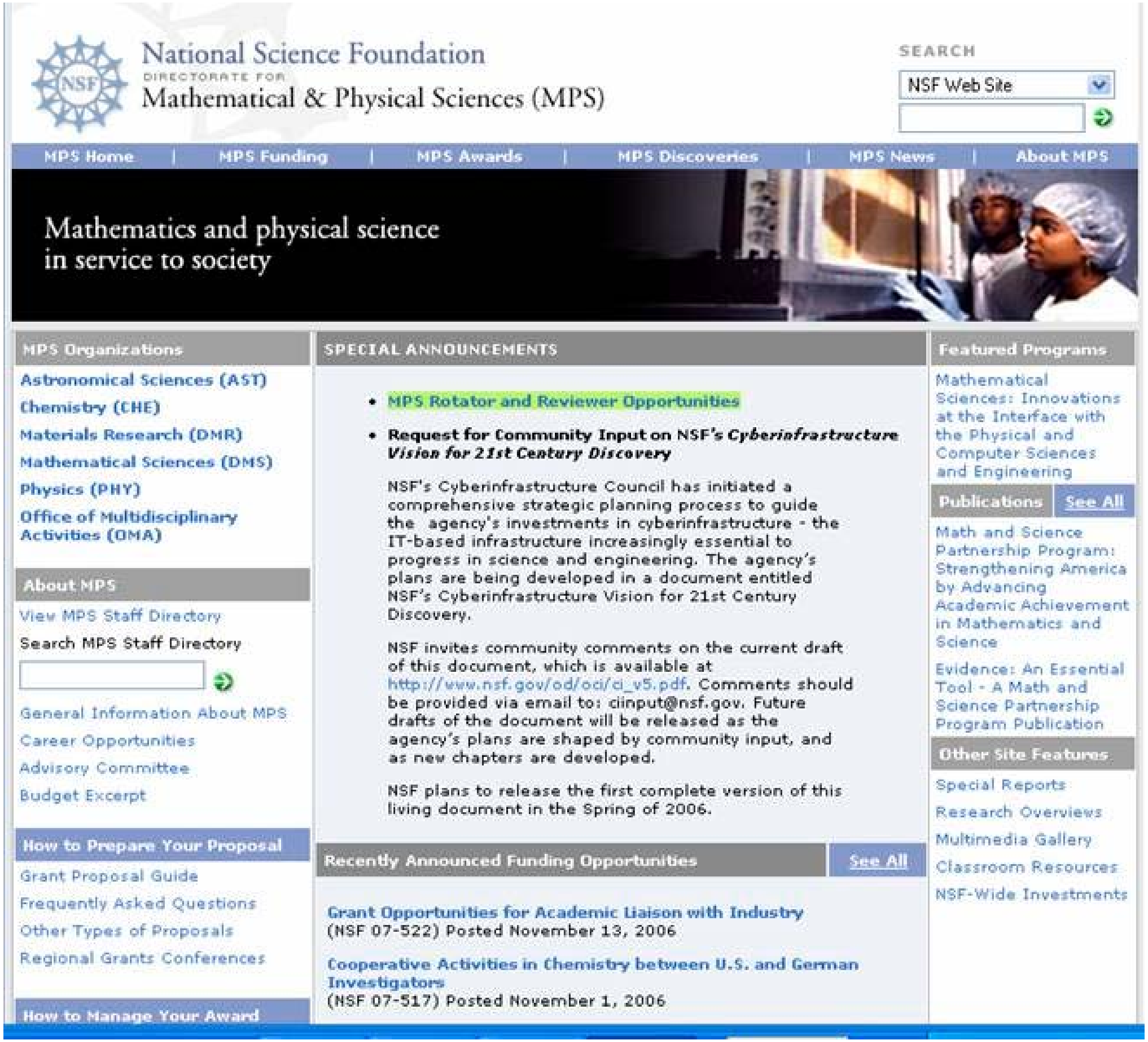
City Colleges of Chicago (PI, Tom Higgins)- primarily African American population; will determine factors that encourage 2YC students to continue in science via traditional student/mentor research and partnering with four year institutions for summer research.







Chemistry (CHE)



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Mathematics and physical science
in service to society

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How to Prepare Your Proposal

- Grant Proposal Guide
- Frequently Asked Questions
- Other Types of Proposals
- Regional Grants Conferences

How to Manage Your Award

SPECIAL ANNOUNCEMENTS

- MPS Rotator and Reviewer Opportunities
- **Request for Community Input on NSF's *Cyberinfrastructure Vision for 21st Century Discovery***

NSF's Cyberinfrastructure Council has initiated a comprehensive strategic planning process to guide the agency's investments in cyberinfrastructure - the IT-based infrastructure increasingly essential to progress in science and engineering. The agency's plans are being developed in a document entitled NSF's Cyberinfrastructure Vision for 21st Century Discovery.

NSF invites community comments on the current draft of this document, which is available at http://www.nsf.gov/od/oci/ci_v5.pdf. Comments should be provided via email to: ciinput@nsf.gov. Future drafts of the document will be released as the agency's plans are shaped by community input, and as new chapters are developed.

NSF plans to release the first complete version of this living document in the Spring of 2006.

Recently Announced Funding Opportunities See All

Grant Opportunities for Academic Liaison with Industry
(NSF 07-522) Posted November 13, 2006

Cooperative Activities in Chemistry between U.S. and German Investigators
(NSF 07-517) Posted November 1, 2006

Featured Programs

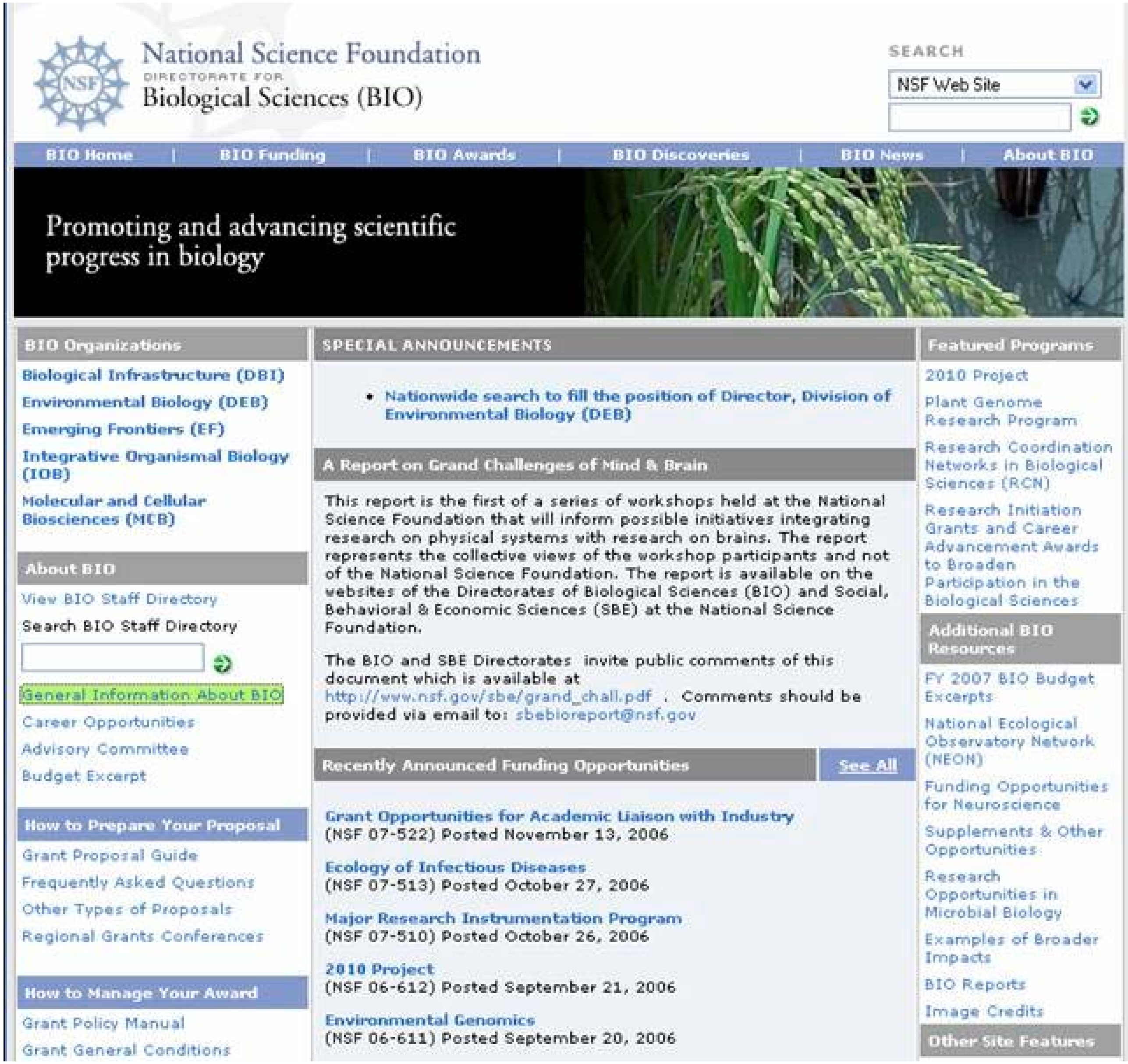
- Mathematical Sciences: Innovations at the Interface with the Physical and Computer Sciences and Engineering

Publications See All

- Math and Science Partnership Program: Strengthening America by Advancing Academic Achievement in Mathematics and Science
- Evidence: An Essential Tool - A Math and Science Partnership Program Publication

Other Site Features

- Special Reports
- Research Overviews
- Multimedia Gallery
- Classroom Resources
- NSF-Wide Investments



National Science Foundation
DIRECTORATE FOR
Biological Sciences (BIO)

SEARCH
NSF Web Site

BIO Home | BIO Funding | BIO Awards | BIO Discoveries | BIO News | About BIO

Promoting and advancing scientific progress in biology

BIO Organizations

Biological Infrastructure (DBI)
Environmental Biology (DEB)
Emerging Frontiers (EF)
Integrative Organismal Biology (IOB)
Molecular and Cellular Biosciences (MCB)

About BIO

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General Information About BIO
Career Opportunities
Advisory Committee
Budget Excerpt

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Grant Policy Manual
Grant General Conditions

SPECIAL ANNOUNCEMENTS

- Nationwide search to fill the position of Director, Division of Environmental Biology (DEB)

A Report on Grand Challenges of Mind & Brain

This report is the first of a series of workshops held at the National Science Foundation that will inform possible initiatives integrating research on physical systems with research on brains. The report represents the collective views of the workshop participants and not of the National Science Foundation. The report is available on the websites of the Directorates of Biological Sciences (BIO) and Social, Behavioral & Economic Sciences (SBE) at the National Science Foundation.

The BIO and SBE Directorates invite public comments of this document which is available at http://www.nsf.gov/sbe/grand_chall.pdf . Comments should be provided via email to: sbebioreport@nsf.gov

Recently Announced Funding Opportunities See All

Grant Opportunities for Academic Liaison with Industry
(NSF 07-522) Posted November 13, 2006

Ecology of Infectious Diseases
(NSF 07-513) Posted October 27, 2006

Major Research Instrumentation Program
(NSF 07-510) Posted October 26, 2006

2010 Project
(NSF 06-612) Posted September 21, 2006

Environmental Genomics
(NSF 06-611) Posted September 20, 2006

Featured Programs

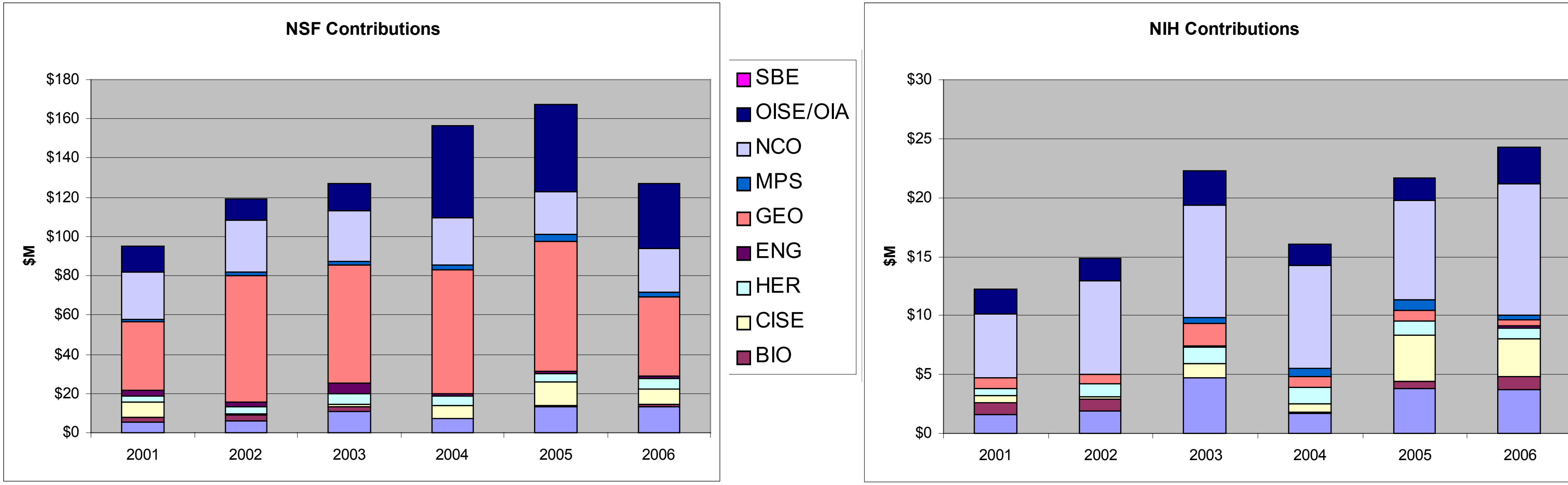
2010 Project
Plant Genome Research Program
Research Coordination Networks in Biological Sciences (RCN)
Research Initiation Grants and Career Advancement Awards to Broaden Participation in the Biological Sciences

Additional BIO Resources

FY 2007 BIO Budget Excerpts
National Ecological Observatory Network (NEON)
Funding Opportunities for Neuroscience
Supplements & Other Opportunities
Research Opportunities in Microbial Biology
Examples of Broader Impacts
BIO Reports
Image Credits

Other Site Features

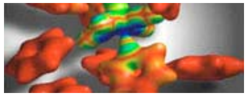
NSF/NIH Co-Funds



	2001	2002	2003	2004	2005	2006
MPS CHE	$132,152	$413,544	$129,772	$424,691	$346,200	$268,195
NIH	$63,169	$206,534	$64,886	$242,152	$119,500	$119,250

NSF Division of Chemistry

Luis Echegoyen, Division Director -
echegoyen@nsf.gov



Division of Chemistry 2007

Office of the Division Director


Luis Echegoyen
(Clemson)


Janice Hicks
Executive Officer


Cynthia Greene
Admin Officer


Paul Spyropoulos
Computer

VACANT
Division Secretary

Program Support Center


Cheryl Edmonds
Lead Program
Assistant


Irma Johnson
Program
Assistant

VACANT
Program
Assistant

VACANT
Financial Op
Specialist

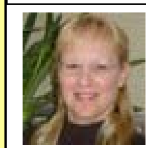
Inorganic, Bioinorganic, & Organometallic Chemistry


Michael Clarke
(Boston College)
Program Director


Carol Bessel
(Villanova Univ)
Program Officer


John Gilje
(James Madison
Univ)
Program Officer *off-site*


Joseph Templeton
(Univ North
Carolina)


Jennifer
Grasswick
Science
Assistant (St.
Cloud Univ)

Organic and Macromolecular Chemistry


Tyrone Mitchell
Program Director
U.)


Cynthia McClure
(Montana State

Program Officer


George Kenyon
(Univ of Michigan)
Program Officer


Martin Pomerantz
(Univ Texas- Arl)
Program Officer


Tingyu Li
(Mississippi State Univ)
Program Officer


Ken Doxsee
(Univ Oregon)
Program Officer
off-site

Physical Chemistry


Raima Larter
Program
Director


Joyce Guest
Program Officer
off-site


Charles Pibel
Program Officer


Jeff Krause
(Univ of
Florida)


C. Renee
Wilkerson
Science
Assistant

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(Univ of New Orleans)
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Steven Bernasek
(Princeton Univ)
Program Officer *off-site*


Kelsey Cook
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(Univ Michigan)
Program Officer
off-site


Wade Sisk
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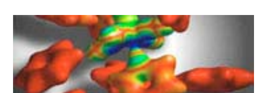
Program Officer


Chantel Sabus
Science Assistant



Questions?

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Analytical and Surface Chemistry
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http://www.nsf.gov/chem