

Division of Chemistry (CHE)

Mission

The mission of the Division of Chemistry is to support innovative research in the chemical sciences, integrated with education, through strategic investment in a globally engaged U.S. chemistry workforce reflecting the diversity of America. Modes of support include single investigator and multi-investigator awards, as well as funding for shared instrumentation, instrumentation development, and educational projects that leverage the division's research investments to build research capacity. The Division supports research in all areas of chemistry and in multidisciplinary fields that draw upon the chemical sciences. Projects that help build infrastructure and workforce and partnerships that advance the chemical sciences are also supported.

Funding Modalities

The Division is sensitive to the chemistry community's concern about preserving the single investigator method of research but is also receptive to an increasing number of investigators who favor research work in small and large groups. The Division's plan is to continue to offer the chemistry community the possibility of submitting their best scientific research ideas through one of three modalities: as single investigators, as small groups (collaboratives) and as larger groups (centers).

Establishing interdisciplinary centers for chemical research is important as centers offer a means to increase funding and visibility for Chemistry, facilitate strong scientific synergism, and achieve the goals of the America COMPETES Act.

Workforce Development and Broadening Participation

In March 2007, the Division approved an aggressive and ambitious broadening participation plan with the ultimate goal of having the face of America represented internally at NSF and externally in the chemistry community. The plan can be viewed on the CHE web site.

Contact Information

Division Director

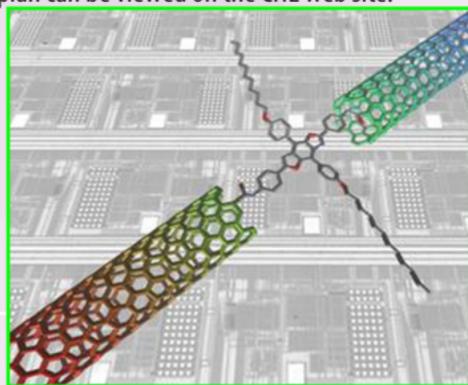
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A nanotube electrode developed for directly measuring the conductance of single molecules. Credit: the Center for Electron Transport in Molecular Nanostructures, a Nanoscience and Engineering Center directed by James Yardley of Columbia University.

Credit: Support for this work was provided by the Nanoscale Science and Engineering Initiative of the NSF under Grant No. CHE-0117752 and by the New York State Office of Science, Technology, and Academic Research (NYSTAR).

Programs in Chemistry

Individual Investigator Programs

Analytical and Surface Chemistry

Inorganic, Bioinorganic, and Organometallic Chemistry

Organic and Macromolecular Chemistry: Organic Dynamics; Synthesis

Physical Chemistry: Experimental Physical Chemistry; Theoretical and Computational Chemistry

Integrative Chemistry Activities

Centers for Chemical Innovation

Chemical Research Instrumentation and Facilities

Research Experiences for Undergraduates

American Competitiveness in Chemistry Fellowships

Undergraduate Research Collaboratives

A Guide to Programs / Browse Funding Opportunities is available at http://www.nsf.gov/funding/browse_all_funding.jsp.

The **Centers for Chemical Innovation (CCI)** Program supports centers that address major, long-term basic chemical research problems. Appropriate research problems are high-risk but potentially high-impact and will attract broad scientific and public interest. Center teams may be connected through cyberinfrastructure, will respond rapidly to emerging opportunities and may include researchers from academia, industry, government laboratories and international organizations.

Centers are selected through a multi-stage peer-reviewed process. Phase I awards are \$1.5 million for 3 years. Successful Phase I awards may compete for Phase II funding, which is approximately \$3 to \$4 million per year for 5 to 10 years.

The American Competitiveness in Chemistry Fellowship (ACC-F) program supports postdoctoral associates in chemistry, for two years of postgraduate study. The ACC-F programs seeks to (1) build ties between academic and industrial, and/or national laboratory, and/or Chemistry Division-funded center researchers (partners) and (2) involve beginning scientists in efforts to broaden participation in chemistry. Fellows must propose a well-integrated, synergistic research plan with their chosen affiliate as well as an effective outreach plan that will broaden participation by underrepresented groups in chemistry. In the first funding cycle four postdoctoral associates were awarded \$200,000 for a total of two years through the ACC-F program.

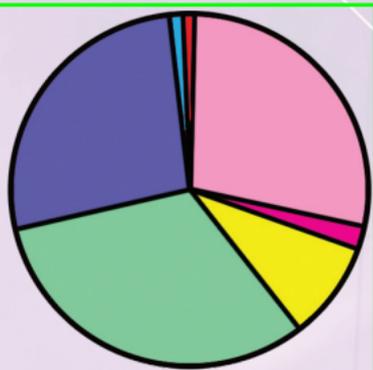
Chemistry and the Global Community

The International Collaboration in Chemistry between US Investigators and their Counterparts Abroad (ICC) is a successful partnership with the German Research Foundation, the Austrian Science Fund, the Engineering and Physical Sciences Research Council of the United Kingdom, the National Natural Science Foundation of China, and the National Research Agency of France. Relationships with other countries are being explored.

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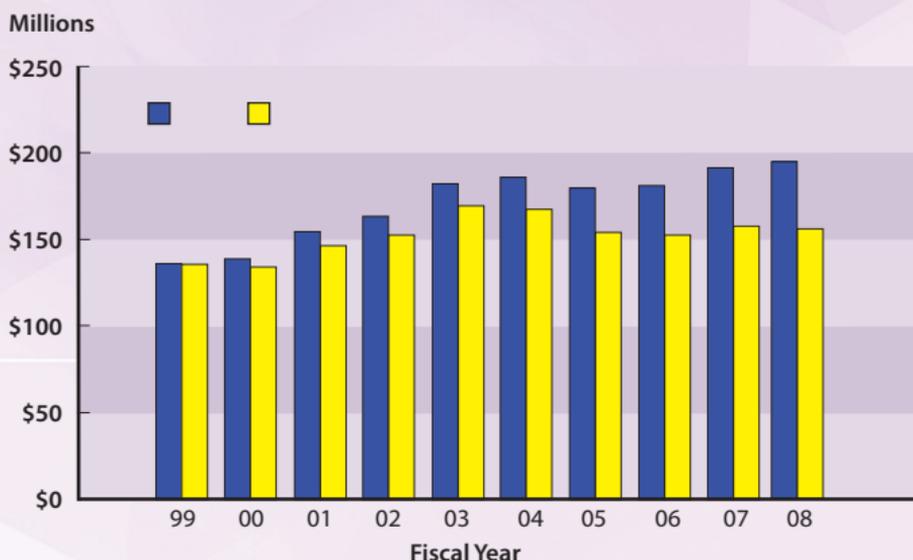
Human Resources FY 2008

Pie chart showing total number of people involved in CHE.



Totals may not add due to rounding.

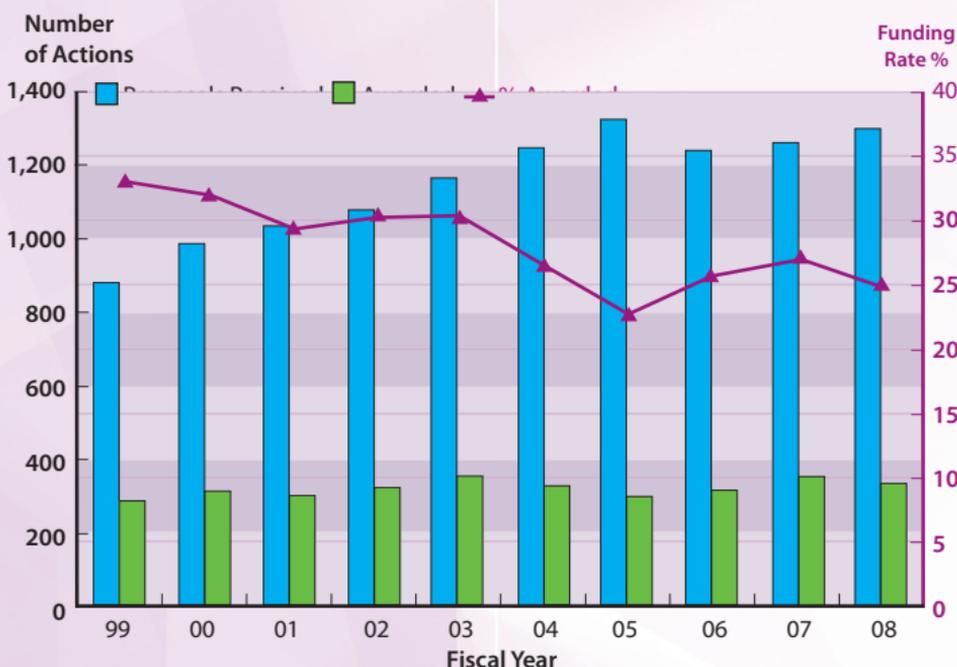
Budget in Actual and Constant FY 1999 Dollars



CHE annual budgets in actual and constant FY 1999 dollars. Constant dollars show the purchasing power of the CHE budget. Over this 10-year period, the constant dollar budget for CHE has increased 16%.

Data provided from FY 1999 to 2009 NSF Budget Requests to Congress,
<http://www.nsf.gov/about/budget/>.

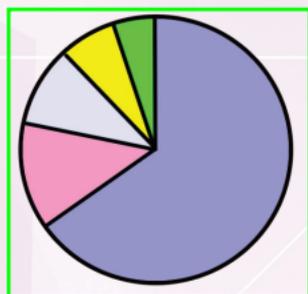
Success Rates and Number of Actions



Graph shows number of proposals submitted versus awarded for Research Grants as defined by NSF and resultant success rates. Success rate is defined as the number of new or renewal proposals awarded funding divided by the total number of proposals received.

Note: the distribution of success rates reflects the average for the Chemistry Division and may not represent success rates in individual programs.

Modes of Support FY 2008



- Individual Investigator Awards with 1 or 2 Investigators - 65%
- Shared Instrumentation - 13%
- Collaborative Awards and Individual Investigator Awards with 3 or more Investigators - 10%
- Centers - 7%
- Research Experiences for Undergraduates and Chemistry Education Programs - 5%

Totals may not add due to rounding.