

CHEMISTRY**\$238,600,000**
+27,250,000 / 12.9%**Chemistry Funding**

(Dollars in Millions)

| | FY 2009 | | FY 2009 | | Change Over | |
|--|-----------------|-----------------|-----------------|-----------------|----------------|--------------|
| | FY 2008 | Current | ARRA | FY 2010 | FY 2009 Plan | |
| | Actual | Plan | Estimate | Request | Amount | Percent |
| Total, CHE | \$194.62 | \$211.35 | \$103.00 | \$238.60 | \$27.25 | 12.9% |
| Major Components: | 194.62 | | | | | |
| Research and Education Grants | 165.89 | 180.47 | 73.25 | 195.10 | 14.63 | 8.1% |
| Instrumentation | 13.44 | 7.97 | 14.75 | 14.75 | 6.78 | 85.1% |
| Centers | 13.79 | 21.01 | - | 26.85 | 5.84 | 27.8% |
| <i>Centers for Chemical Innovation</i> | 7.87 | 15.50 | - | 24.00 | 8.50 | 54.8% |
| <i>Science & Technology Centers</i> | 3.32 | 2.66 | - | - | -2.66 | -100.0% |
| <i>Nanoscale Science & Engr. Centers</i> | 2.60 | 2.85 | - | 2.85 | - | - |
| Facilities | 1.50 | 1.90 | 15.00 | 1.90 | - | - |
| <i>Nat'l High Magnetic Field Lab.</i> | 1.50 | 1.50 | - | 1.50 | - | - |
| <i>Nat'l Nanofabrication Infra. Network</i> | - | 0.40 | - | 0.40 | - | - |

Chemistry is a bold and creative science that finds efficient ways to prepare nature's compounds and to make ones that have never existed. Investment in basic molecular sciences is a major contributor to the \$637.0 billion U.S. chemical industry. Approximately one third of the industrial output of the U.S. derives from the chemical industry, which in turn requires more than 2,000 PhD graduates per year to operate efficiently. The NSF Division of Chemistry (CHE) plays a crucial role in the vitality of the basic research enterprise, especially in academic laboratories, and needs increased resources to sustain, expand, and improve the community's ability to perform transformative and translational research. In general, about 37 percent of CHE's portfolio is available for new research grants. The remaining 63 percent funds continuing grants made in previous years.

Changes by Activity

Research and Education Grants (+\$14.63 million, to a total of \$195.10 million).

This will fund the expected increase in the number of unsolicited proposals in basic research and education in chemistry due to a realignment of the Division's disciplinary programs, expected to take place starting in FY 2010. Advances in fundamental science and education that will impact national priorities in areas such as the environmental health and safety of nanomaterials, basic research that underpins improvement in climate models, catalysis enabling sustainability and energy research, the link between chemistry and the life sciences, and cyberinfrastructure. FY 2010 support includes:

- *Molecular electronics and Science and Engineering Beyond Moore's Law (+\$3.0 million, to a total of \$6.08 million).*
- *Cyber-enabled Discovery and Innovation (+\$1.25 million, to a total of \$2.45 million).*
- *Climate Research program (total of +\$5.0 million).*
- *CAREER program (+\$300,000, to a total of \$20.80 million).*

- *American Competitiveness in Chemistry Fellowship Program (total of \$2.0 million).* This program provides consistent bridges to the top ranked young talent in chemistry as they progress to the professoriate.
- *Discovery Corps Fellowship Program (total of \$1.50 million).* This program will be adapted in FY 2010 to address public education about global chemistry issues.
- *Graduate Research Fellowship Program (total of \$1.59 million).*
- *NSTC Priorities* – the National Nanotechnology Initiative, Networking and Information Technology Research and Development, and Climate Change Technology Program – will see increased support from CHE.
- The *Environmental Molecular Science Institutes* will be completely phased out in FY 2010. A new program, Environmental Chemical Sciences, will be initiated to provide continuity in this important area.

Instrumentation and Instrument Development (+\$6.78 million, to a total of \$14.75 million).
In FY 2010, facility funding will be maintained but no increases are requested.

Centers (+\$5.84 million, to a total of \$26.85 million. This includes:

- *Centers for Chemical Innovation (+\$8.50 million, to a total of \$24.0 million).* This program is designed to inspire research on strategic, transformative “big questions” in basic chemical research. This funding reflects the establishment of two additional Phase II Centers (for a total of five) and four new Phase I Centers (for a total of eleven).
- *Center for Environmentally Responsible Solvents and Processes.* Funding for this Science and Technology Center ends as ten-year support sunsets as planned in FY 2010.