DIVISION OF CHEMISTRY (CHE) $253,650,000
+$19,590,000 / 8.4%

CHE Funding
(Dollars in Millions)

	FY 2012 Actual	FY 2012 Enacted/ Annualized FY 2013 CR	FY 2014 Request	Change Over FY 2012 Enacted Amount	Change Over FY 2012 Enacted Percent
Total, CHE	**$234.03**	**$234.06**	**$253.65**	**$19.59**	**8.4%**
Research	**218.94**	**224.07**	**235.95**	**11.88**	**5.3%**
CAREER	24.33	21.38	23.00	1.62	7.6%
Centers Funding (total)	27.58	24.15	33.40	9.25	38.3%
Centers for Chemical Innovation	26.03	24.00	33.25	9.25	38.5%
Nanoscale Science & Engineering Centers	1.55	0.15	0.15	-	-
Education	**10.30**	**6.95**	**6.65**	**-0.30**	**-4.3%**
Infrastructure	**4.79**	**3.04**	**11.05**	**8.01**	**263.5%**
NHMFL	1.50	1.50	1.75	0.25	16.7%
NNIN	0.40	0.40	0.30	-0.10	-25.0%
Research Resources	2.89	1.14	9.00	7.86	689.5%

Totals may not add due to rounding.

CHE supports a large and vibrant research community engaged in fundamental research linked to key national priorities. Basic research supported by CHE will enable research in sustainability in general, and sustainable chemistry in particular, providing new molecules that are essential to our economy and well-being. CHE strongly supports research at the interface of biology and chemistry. CHE's programs invite research in catalysis for energy capture and storage as well as to enable the formation of new chemical bonds, appreciation of and insight into the chemistry of life processes, new nanochemistry advances that will revolutionize electronics and photonics, and better awareness of how nanosized aerosols and particles impact our environment. In addition, CHE supports curiosity-driven research that leads to increased understanding of molecules and their chemical transformations and the development of new instrumentation to study and detect molecules.

Approximately 87 percent of CHE's budget is used to support individuals and small groups of researchers, while about 13 percent of the budget goes to centers and facilities. There are currently eight Phase I and six Phase II Centers supported in the Centers for Chemical Innovation (CCI) program. In general, 60 percent of CHE's portfolio is available for new research grants. The remaining 40 percent funds continuing grants made in previous years.

FY 2014 Summary

All funding decreases/increases represent change over the FY 2012 Enacted level.

Research

- CAREER (+$1.62 million to a total of $23.0 million): At this level, funding rates for CAREER proposals are increased (>20 percent) consistent with CHE objectives for CAREER support.
- Chemistry Centers (+$9.25 million to a total of $33.25 million): Center co-funding by NASA has ended, so resources from CHE are increasing in FY 2014. (See the Centers narrative in the NSF-Wide Investments chapter for more details).
- Cognitive Science and Neuroscience ($400,000): Funding supports cross-Foundation fundamental research relevant to cognitive science and neuroscience.

- Changes in NSF-wide investments are accommodated through strategic investments through CHE core programs, accompanied by small reductions to programs not receiving proposals in these areas. These NSF-wide investments include:
  - BioMaPS (+$2.23 million to a total of $4.15 million): Support will strengthen research in advanced spectroscopic and imaging techniques for biomolecules and biosystems, metal speciation, coordination and function, chemical studies of enzyme and ribozyme catalysis, and other studies at the chemistry-biology frontier.
  - CEMMSS (+$15.80 million to a total of $29.0 million): CEMMSS is comprised of two components in MPS:
    - Advanced Manufacturing (+$6.80 million to a total of $20.0 million): This is closely entwined with the chemical enterprise for new and more efficient chemical production.
    - DMREF (+$9.0 million to a total of $9.0 million): This contributes to the Administration's Materials Genome Initiative (MGI).
  - CIF21 (+$1.73 million to a total of $3.48 million): Investment in CIF21 is targeted at Scientific Software Elements (SSE) and Scientific Software Integration (SSI).
  - Clean Energy (+$20.20 million to a total of $81.70 million). The CHE portfolio includes chemical research in Clean Energy Technology such as solar energy conversion, biomass conversion, energy storage, and photocatalysis.
  - SEES (+$11.83 million to a total of $19.33 million): Funding for programs supporting SEES, including activities in Sustainable Chemistry, Engineering, and Materials (SusChEM), will be achieved by refocusing existing programs, such as Centers for Chemical Innovation (CCI), International Collaboration in Chemistry (ICC), and individual investigator awards. Under the SEES umbrella, CHE is also investing in a postdoctoral fellows program and Sustainable Energy Pathways (SEP). CHE will also use a small amount of core funding plus some SEES funding to initiate community-building activities such as workshops, research coordination networks, and exploration of alternative programs to advance fundamental research in food and water security.

Education

- Research Experiences for Undergraduates Site and Supplements program (+$1.28 million to a total of $5.78 million): $640,000 of this additional funding will support enhanced research experiences for students in their first two years of college, as recommended by the President's Council of Advisors on Science and Technology (PCAST) in their report, *Engage to Excel: Producing One Million Additional College Graduates with Degrees in Science, Technology, Engineering, and Mathematics.* The remaining $640,000 million will support REU Site proposals with a specific focus on broadening participation.
- Integrative Graduate Education and Research Traineeship program (IGERT) (-$1.58 million to zero): All final funding increments in this program are consolidated into OMA. IGERT will sunset in FY 2014 with the initiation of the NSF Research Traineeships (NRT) program.

Infrastructure

- NHFML (+$250,000 to a total of $1.75 million): Funding supports the Fourier Transform Ion Cyclotron Resonance (FTICR) Laboratory at NHMFL. This request will allow the facility to continue operations, focus on magnet development, and strengthen education, training, user support, and in-house research, consistent with prior levels for this activity.
- NNIN (-$100,000 to a total of $300,000): Support decreases because the research needs of the chemistry community are better served by the chemistry infrastructure programs. CHE supports a growing fraction of the nanoscience community research through the macromolecular, supramolecular, and nanochemistry (MSN) program.
- Research Resources (+$7.86 million up to a total of $9.0 million): Added funding is for the Chemistry Research Instrumentation and Facilities (CRIF) program, suspended in FY 2012.