



# CHEMISTRY

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## NSF Town Hall at the National Meeting of the American Chemical Society in Boston to Focus on NSF Division of Chemistry Strategic Directions

We invite you to meet and speak with National Science Foundation (NSF) staff members at the NSF Town Hall to be held at the National Meeting and Exposition of the American Chemical Society (ACS) in Boston, Monday, August 20, 2007, from 4:00 – 6:30 p.m. in the Boston Convention and Exhibition Center, Room 105. The following NSF staff members will be available to meet with you informally at the Town Hall: Carol Bessel, Michael Clarke, Kelsey Cook, Katharine Covert, Luis Echegoyen, Joan Frye, Fred Heineken, Janice Hicks, George Kenyon, Raima Larter, Luigi Marzilli, Cynthia (Cyd) McClure, Khaleelah Po Rome, Hal Richtol, Zeev Rosenzweig, Wade Sisk, Pratibha Varma-Nelson, and C. Renee Wilkerson. Refreshments will be available.



Photo taken by Ian Howard, 2005, Boston, MA.

The tri-annual Division of Chemistry (CHE) Committee of Visitors (COV) meeting was held at NSF in February 2007. In their report, the COV urged CHE to develop and implement a strategic plan that would include broad participation from the chemistry community. The 2007 CHE COV Report and the Response to the CHE COV Report are available at <http://www.nsf.gov/mps/advisory/cov.jsp>.



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The focus of the 2007 NSF Town Hall is to collect input for the development of CHE Strategic Directions. Dr. Luis Echegoyen, Director of the NSF Division of Chemistry, is the featured speaker at 5:00 p.m. All members of the chemistry community are invited to attend the Town Hall and participate in a lively discussion on how to best develop NSF CHE Strategic Directions. Town Hall attendees are asked to submit their written comments and advice using bulletin boards that will be available at the meeting. Members of the community may also respond by email at [chemplans@nsf.gov](mailto:chemplans@nsf.gov). Feedback collected at the Town Hall will be utilized by CHE in the development of their Strategic Directions.

The vision for the CHE Strategic Directions document is broad and includes discovery as well as workforce development, tool development and organizational excellence. In addition to discussing CHE Strategic Directions, the Town Hall is an excellent opportunity to share information and perspectives on developments in the chemistry community and at NSF. We look forward to seeing you there.

### **Division of Chemistry 2007 Committee of Visitors Report Available**

The Division of Chemistry COV met February 7-9, 2007, to review actions taken on proposals handled by CHE during the three year period of 2004-2006 and to review the outputs and outcomes of past and current CHE investments. To review proposal actions, COV sub-panel members studied a representative sample of proposals from the previous three years. The COV was comprised of 30 members from the scientific community chosen for their scientific expertise and awareness of developments in their respective fields of the chemical sciences. COV Chair was Professor Geraldine Richmond of the University of Oregon. The Division extends a sincere thank you to Chair Richmond and members of the COV for their hard work and participation. The 2007 NSF CHE COV Report and CHE Response are available at <http://www.nsf.gov/mps/advisory/cov.jsp>.

### **High-impact and Agile, First Phase II Chemical Bonding Center Established**

The Center for Enabling New Transformations through Catalysis (CENTC) at the University of Washington is the first Phase II center to be funded through the Division of Chemistry's Chemical Bonding Centers (CBC) Program. The Center is supported with a five-year \$15 million grant. Karen Goldberg is the Center's Director leading a team of 15 investigators from 11 institutions.

Center investigators will collaborate in the development of efficient, inexpensive and environmentally friendly methods of synthesizing organic materials through activation of strong bonds. Investigators will utilize transformative research methods to develop new tandem catalysis systems that selectively activate and functionalize strong bonds.

Research conducted by CENTC on new processes for upgrading low number hydrocarbon chains to higher number hydrocarbon chains via the Fischer-Tropsch (F-T) process and metathesis of alkanes exemplifies the goals of the American Competitiveness Initiative and may lead to an increased use of F-T diesel, a more environmentally benign fuel than conventional diesel or gasoline, and to a decreased dependence on imported energy. Potential applications of CENTC's research include the synthesis of organic materials using hydrocarbon resources ranging in complexity from simple hydrocarbon chains to complex biological molecules, which could have a profound impact on the petrochemicals, agrochemical, plastics and pharmaceutical industries.



## Chemistry Centers Program to Offer Phase I Competition in FY 2008

With the announcement of the first CBC Phase II award (see previous article), the Chemistry Centers Program is entering an exciting expansion phase. During this time, NSF will support the formation of centers that can address major, long-term basic chemical research problems that are high-risk but potentially high-impact because they will attract broad scientific and public interest. Center teams may include researchers from other disciplines and from academia, industry, government laboratories and international organizations. Funded centers will be agile structures that can respond rapidly to emerging opportunities and make full use of cyber infrastructure to enhance collaborations.

Centers are selected through a multi-stage peer-reviewed process. Phase I awards are \$500,000 per year for 3 years and allow a team to explore new research ideas and to develop a convincing case for a much larger effort. Successful Phase I awards may compete for Phase II funding, which is estimated at \$3 to \$4 million per year for 5 to 10 years.

The Chemistry Centers Program ran a Phase I competition in spring of 2007 and is planning another Phase I competition in FY 2008. If you are interested in learning more about this program, contact the cognizant Program Officers: Katharine Covert at (703) 292-4950, [kcovert@nsf.gov](mailto:kcovert@nsf.gov) or Raima Larter at (703) 292-5344, [rlarter@nsf.gov](mailto:rlarter@nsf.gov).

## Looking for Principal Investigators Who Have Succeeded in Obtaining Patents, Forming Startups, Selling Licenses or Otherwise Advancing Their Discoveries Toward Economic Impact

The need to accelerate the return on basic research investments was a major finding of the “*Sustaining America’s Competitive Edge: Enhancing Innovation and Competitiveness Through Investments in Fundamental Research*” workshop cosponsored by NSF CHE, NIST, and NIBIB. The workshop report is available at <http://enhancinginnovation.wustl.edu/>. Related material from the Council for Chemical Research may be viewed at [http://www.ccrhq.org/docs/CCR\\_Study\\_Phase\\_II\\_Measure\\_for\\_Measure\\_PPT.ppt](http://www.ccrhq.org/docs/CCR_Study_Phase_II_Measure_for_Measure_PPT.ppt).

Because of the workshop’s findings, the Division of Chemistry would like to hear about Principal Investigator (PI) success in obtaining patents, forming startups, selling licenses or otherwise advancing PI discoveries toward economic impact. We especially want to be informed of results from NSF Chemistry grants, even if they have long expired and/or the connection is indirect. Information about the success timeline is also useful. PIs are asked to use the best practices for writing and formatting highlights, available at <http://www.nsf.gov/mps/che/nuggets/nuggets.jsp>, to describe their economic impact successes. PIs should submit highlight(s) to their CHE Program Officer or to Janice Hicks, CHE Executive Officer, [jhicks@nsf.gov](mailto:jhicks@nsf.gov).

The American Competitiveness Initiative (ACI) document has a graphic showing the basic research that went into inventing the iPod. The graphic is available at <http://www.whitehouse.gov/news/releases/2006/05/20060519-2.html>, American Competitiveness Initiative, ACI Full PDF Document, page 11. The Division of Chemistry challenges PIs to develop and submit to CHE a comparable graphic for some prominent piece of chemical technology such as an antidepressant drug, fuel additive, new material, or a forensic analyzer. PIs should submit an ACI-related graphic to their CHE Program Officer or to Janice Hicks, CHE Executive Officer, [jhicks@nsf.gov](mailto:jhicks@nsf.gov).

## Personnel Changes and Availability of Positions within the Division of Chemistry

The Division of Chemistry congratulates several staff members who have been appointed as permanent Program Directors. Appointees include Carol Bessel of the Inorganic, Bioinorganic and Organometallic (IBO) Chemistry Program; Tingyu Li of the Organic and Macromolecular (OMC) Chemistry Program; and Zeev Rosenzweig of the Analytical and Surface Chemistry (ASC) Program.

The Division welcomes Luigi Marzilli as a rotator. Luigi is from Louisiana State University and is assisting the IBO Chemistry Program. The Division welcomes the following rotators who will be joining CHE soon: Wilfredo Colon, Gerald Hammond, Stuart Licht, Carlos Murillo, and Philip Shevlin. Wilfredo will assist the Chemistry Education Programs and comes to the Division from the Rensselaer Polytechnic Institute. Gerald is based at the University of Louisville and will join the OMC Chemistry Program. Stuart is from the University of Massachusetts Boston and will work with the Physical Chemistry (PC) Program. Carlos will assist the Chemistry Instrumentation Program and is from Texas A&M University. Philip is an emeritus faculty at Auburn University and will be joining the OMC Chemistry Program.

For their distinguished service, the Division of Chemistry bids a fond thank you and farewell to four of its long-term off-site rotators: Ken Doxsee of the OMC Chemistry Program (11 yrs.), John Gilje of the IBO Chemistry Program (12 yrs.), Joyce Guest of the PC Program (7 yrs.), and Steven Bernasek of the ASC Program (14 yrs.). Ken will remain at the University of Oregon where he has been appointed as the Associate Vice Provost. Both John and Steven will resume full-time duties as Professors of Chemistry at James Madison University and Princeton University, respectively. Over the years, the Division of Chemistry and the chemistry community have benefited greatly from the contributions of these rotators.

The Division thanks Ron Christensen, Bob Kuczkowski, and Martin Pomerantz for their service as rotators. Ron served in the PC and Chemistry Education Programs and returns to Bowdoin College. Bob assisted the Chemistry Instrumentation Program and resumes his duties at the University of Michigan. Martin worked for

the OMC Chemistry Program and returns to the University of Texas - Arlington. The Division also thanks Robert Cruz for serving as a Program Assistant on detail from the Division of Mathematical Sciences. His assistance during the CHE COV was particularly valuable. A complete listing of current staff may be found at [http://www.nsf.gov/staff/staff\\_list.jsp?org=CHE](http://www.nsf.gov/staff/staff_list.jsp?org=CHE).

The Division of Chemistry asks you to consider serving as a Program Officer should your circumstances permit it, and to help us identify other individuals who might serve in this capacity. Rotators (Program Officers) are responsible for planning, coordinating, and managing programs that support research, education, and human resource development in the chemical sciences. Applicants should have a Ph.D. or equivalent training in the chemical sciences, extensive knowledge of one or more chemistry subfields, and at least six years of successful independent research activity. Applicants should be familiar with the chemistry community and have administrative experience. Other important attributes are strong verbal and written communication skills, organizational skills, facility in using technology tools, and the ability to work effectively on a team. If you are interested in serving as a rotator, please see <http://www.nsf.gov/pubs/2006/nsf06056/nsf06056.jsp>.

The majority of the Chemistry Division's 23 Program Officers are rotators, and they bring fresh insights to CHE's work at NSF. Rotators can maintain their research programs while working at the Foundation. NSF provides time, travel resources, and use of technology to enable rotators to stay in touch with co-workers at their home institutions. Rotator positions are typically held for one or two years, but other arrangements are possible. Rotators not only serve the community and help to shape chemistry, but they also have excellent opportunities for professional development and establishment of new research directions upon returning to their laboratories. Applicants interested in rotational positions should send an email describing their interest and CV to the Chemistry Division Director, Luis Echegoyen, at [lechegoy@nsf.gov](mailto:lechegoy@nsf.gov). NSF is an equal opportunity employer committed to employing a highly qualified staff that reflects the diversity of our nation.

## Significant Change to Chemistry's Unsolicited Proposal Submission Window

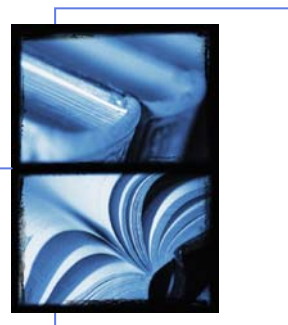
In order to ensure the timely handling of proposals and fairness in comparing competing requests for funding, the Directorate for Mathematical and Physical Sciences (MPS) Division of Chemistry has changed its proposal submission window for unsolicited proposals from the single long window used in past years (second Monday in July until the second Friday in January) to *two shorter windows; one between July 1 and July 31 and another between November 1 and November 30*. The window changes are effective immediately. The end date of each submission window converts to and follows the same policies as a deadline date.

This action follows a recommendation from the 2004 Committee of Visitors Report, <http://www.nsf.gov/od/oia/activities/cov/mps/2004/CHEcov.pdf>, and consultation throughout the NSF and the community. The new windows will provide increased opportunities of co-review and co-funding of awards with other divisions within NSF. PIs may submit their proposal in either window. However, PIs should consider submitting their proposal in July if the proposal is bio-oriented or in November if it is materials research-oriented in order to enhance co-funding opportunities.

If you have questions regarding the new proposal submission windows, please email your questions to [proposalsubmissionwindow@nsf.gov](mailto:proposalsubmissionwindow@nsf.gov). The Dear Colleague Letter regarding the submission window change is available for viewing at <http://www.nsf.gov/pubs/2007/nsf07139/nsf07139.jsp>.

## Request for Qualified Reviewers

The Division of Chemistry seeks to enhance its pool of qualified reviewers of proposals. We invite researchers in the chemical sciences who have not previously reviewed for the Division of Chemistry but are interested in providing this service to contact us by visiting our website at [http://www.nsf.gov/mps/che/reviewer/reviewer\\_info.jsp](http://www.nsf.gov/mps/che/reviewer/reviewer_info.jsp) and completing the online registration form. Be sure to indicate that you are "willing to travel," if you are interested in serving as a panelist. We welcome qualified reviewers from academic, industrial, and government employment, as well as from other countries. It is important to recognize that the NSF reserves the right to choose reviewers. While we are unable to assure individuals that they will be asked to review proposals, we do attempt to call upon as many qualified reviewers as possible, and we try to limit the number of requests that we make to any single individual, recognizing the many demands on our reviewers' time.



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