

2012 SPRING NEWSLETTER



*Leonard Brillson, Editor, INTERSECTIONS and
Member of the Government Affairs Committee*

Welcome to our 2012 Spring Newsletter! During the past three months, Congress began its legislative budget process with both Presidential and Congressional campaigns underway, as well as powerful forces at work to constrain federal spending. The decisions made during the next few months will shape the national economy and federal support for science for years to come. The Materials Research Society (MRS) Government Affairs Committee (GAC) aims to understand the changing policy environment and its impact on materials research. This quarter, the Committee continued to monitor changes affecting research and development policies, organized and facilitated federal government agency presentations at the 2012 MRS Spring Meeting in San Francisco, and coordinated a letter-writing campaign both at the Meeting and online. Other recent activities included selecting the latest round of competition for Congressional Science and Engineering Fellows. MRS is working hard to make sure that the materials research community is being heard and has input in developing effective government policy for support of materials science. Here is the latest news.

WHAT'S HAPPENING IN WASHINGTON

Ronald L. Kelley, MRS Washington Consultant



In February, President Obama's Administration released the FY2013 budget proposal for all discretionary federal spending and provided priority support for research funding at the National Science Foundation (NSF), National Institute of Standards and Technology (NIST) and Department of Energy Office of Science (DOE SC). Many other budget categories in the President's proposal received reductions when compared to the current fiscal year. The specific investments proposed by the Administration include a 4.8% increase for NSF; a 2.4% increase for DOE SC; a 15% increase for NIST; and a 0.2% increase for Defense Research. MRS advocates for these four categories, which are all significant to physical sciences research as the budget and appropriations for next year are debated on Capitol Hill. The Administration's proposed budget emphasizes the importance of materials, manufacturing and materials by design in many federal agencies.

The initial Appropriations Subcommittee mark-ups are an indication of the difficulty of achieving even these moderate increases in funding from Congress. Two of the major bills that have been considered in the committees of jurisdiction have passed at the committee level, with slightly reduced budget numbers from those proposed by President Obama for FY2013. Many of the major bills will proceed through the legislative process from March – September, in both chambers of Congress. Our MRS advocacy, both directly (Congressional Visits Day and Materials Voice letters) and indirectly with our science coalition partners, will continue to receive the highest priority of the Government Affairs Committee.

We know that the budget challenges and differences of opinion by both parties, combined with the reality that this is a Presidential election year, will most likely delay any final decisions on major appropriations until after November 6. As a practical matter, this means a lot of the core bills will be produced by the Appropriations Committees but not completed as finished legislation. We expect a bundling of the appropriations bills in the later part of the year, in some form of omnibus. In addition, last year's budget resolution debate left a legislative hurdle that is referred to as "sequestration,"

which will force funding reductions on January 1, 2013. The impact will be on all federal discretionary funding, including defense, and will result in approximately 7-10% reductions in the FY2013 numbers. Most committees in Congress are looking for ways to adjust or change this automatic action, but a legislative solution has not yet been accepted by either party.

Your personal involvement with your Members (Representatives and Senators) of Congress, expressing your desire to see sustained and predictable appropriations for the coming year, could never be more important. If you would like to know more about the materials research budgets in the Administration's FY2013 proposal, please go to the MRS Advocacy website under [Issues](#). If you would like to personally express your voice on these important issues, the Committee has provided a series of letters of support that you can write and modify to express your own view. They can be found on the MRS Advocacy website under [Materials Voice](#).

MRS CONGRESSIONAL SCIENCE AND ENGINEERING FELLOWSHIP UPDATE

Kevin Whittlesey, Chair, Fellowship Subcommittee

In March, the MRS Congressional Fellowship Selection Committee met in Washington, DC to interview finalists for the 2012-13 MRS/OSA and MRS/TMS Congressional Fellowships. After two intense days of interviewing a number of outstanding candidates, we selected our two new fellows. The 2012-13 MRS/OSA Congressional Fellow will be Mirvat Abdelhaq. Abdelhaq is in the process of completing her PhD in Physical Chemistry at the University of Colorado Boulder. The 2012-13 MRS/TMS Congressional Fellow will be Andrew Steigerwald. Steigerwald is currently a Postdoctoral Research Associate at Vanderbilt University, where he also completed his PhD in Interdisciplinary Materials Science. Full bios of Abdelhaq and Steigerwald will be posted to the MRS website soon, so stay tuned and look forward to the opportunity to meet them both in person at the 2012 MRS Fall Meeting in Boston.

A key objective for the Congressional Fellowship Subcommittee over the next six months is to expand outreach and communication efforts to better publicize the program and enhance dialogue between our current and former fellows, the Government Affairs Committee (GAC), and other MRS Leadership. A good start in this direction was a social gathering in San Francisco at the 2012 MRS Spring Meeting where former fellows living in the San Francisco area met current and former fellows and GAC members attending the conference. I am pleased to state that we currently have 20 former MRS Fellows, so look for more Fellowship alumni activities and opportunities to engage the valuable resource of their collective expertise. After a fruitful discussion with the MRS communications and media team at the 2012 MRS Spring Meeting, look for updates to the MRS website and new marketing materials on the Fellowship program in the coming months.



Pictured (clockwise from left):

Ashley White (2010-11 MRS/OSA Congressional Fellow);
Laura Povlich (2011-12 MRS/OSA Congressional Fellow);
Jennifer Nekuda-Malik (2011-12 MRS/TMS Congressional Fellow);
Ron Kelley (GAC); Kelly Kirkpatrick (1995-96 MRS/OSA Congressional Fellow);
Ben Gross (2005-06 MRS/OSA Congressional Fellow); Alan Hurd (GAC and former MRS President);
Kevin Whittlesey (2006-07 MRS/OSA Congressional Fellow and GAC); Josh Caldwell (GAC)

ENGAGING WITH CONGRESS

Laura Povlich, MRS/OSA 2011-12 Congressional Fellow



After working in a Congressional office for a short time, it's hard to imagine that less than a year ago, I was finishing up graduate school. I am grateful for this opportunity to work for a member of Congress—to walk by the Capitol building every day and to be involved in processes that shape the future of the country. To put it simply, the experience is really cool.

One of the most significant things that I have learned in my short time in the Fellowship is just how essential it is that scientists engage with the political community. There have been a number of bills introduced this year that would directly affect grant writing, scientific publishing, intellectual property and even the peer review process for grants. Scientists need to have their voices heard on issues that will affect their work. In addition, the yearly budget process determines the amount of funding that government agencies receive, and, thus, the funding that is available for competitive grants. In tough budgetary and economic times, we must emphasize the impact of scientific research on our country's health, economy, security, and global leadership in order to continue to ensure that this funding is at least adequate.

However, it's important that scientists understand how to effectively communicate with staff members in Congress. Rather than coming to Capitol Hill to lecture staffers about a field of study, scientists must be willing to start a dialogue with offices. Since the number of groups that come to Congress with specific requests is overwhelming, relationships are often the drivers of action, and thus forming a good relationship is key. Also, it is crucial for scientists to try to help out when possible by offering to provide data or reports that support their arguments and assist staff members in their jobs.

In light of my largely positive experience in Congress and the importance of increased engagement between scientists and politicians, I also want to encourage other scientists to make the transition to Congress or the Executive Branch. It's apparent that we can have a large influence over the laws and policies of the U.S. government, and we are vital ambassadors to our scientific fields. Even if a scientist chooses to return to academia after a year or two in government, the knowledge that they will bring back with them will be extremely valuable to their career and institution. Better communication skills will assist in the grant and paper writing process and an overall broader scope on science policy and the budget will help scientists navigate the funding process more effectively.

CONGRESSIONAL VISIT, SPRING 2012

Bart Sheinberg, Chair, CVD Subcommittee



As part of our advocacy program, MRS has provided an opportunity for its members to meet with their respective congressional representatives to reinforce continuing support for materials science basic research and ensure that Congressional members and their staff are aware of the numerous and well-documented scientific and commercial benefits which have been generated through these research dollars. This year the MRS Congressional Visits Day (CVD) team emphasized the challenges facing Congressional appropriations committees during FY2013 and asked each Representative, Senator and staff member to continue to support continued funding at the National Science Foundation, Department of Energy Office of Science, National Institute of Standards and Technology and Department of Defense Basic Research. The MRS members who participated in this year's CVD on April 25, 2012, visited congressional offices in Arkansas, New Mexico, Ohio, Texas, Maryland, Pennsylvania, Georgia, New Jersey, New York, Michigan,

Minnesota, Illinois and District of Columbia.

Many thanks to the MRS members who participated in the CVD event, Ron Kelley, who serves as the MRS Washington, DC consultant, and Linda Olafsen, Vice-Chair of the CVD subcommittee.



Pictured (left to right):

Front row: Cristin Moran, Carolyn Duran, Linda Olafsen, Orlando Auciello, Ashley White, Todd Osman, Nabil Bassim

Back row: Ron Kelley, Terry Aselage, Susan Davis Allen, Len Brillson, Marcus Shute, Bill Hammetter, and Bart Sheinberg. Not shown are Tabbetha Dobbins and Rick Garfunkel.

For more information about the CVD Subcommittee, the GAC and the Materials Research Society, please contact Bart Sheinberg at bart.sheinberg@hccs.edu.

GOVERNMENT AGENCY SESSIONS AT 2012 MRS SPRING MEETING

Joshua D. Caldwell, Chair, Government Agency Subcommittee

As in the past, the Government Agency subcommittee organized six invited talks from representatives of the various funding agencies invested in materials science and technology research. These sessions are traditionally held at the MRS Fall and Spring Meetings from 6:00 - 8:15 p.m. on Tuesday and Thursday evenings. Each talk is slotted for 45 minutes total, for a total of three talks each night, with an overview talk followed by an open Q&A session. While these talks have historically focused on the primary federal agencies such as NSF, DOE SC and the several Department of Defense (DOD) funding agencies, this year saw expansions in two directions: including private foundations and some of the various agencies involved more in applied sessions. This was in addition to the inclusion of foreign research funding with the Office of Naval Research Global (ONRG) this past fall. These changes have been undertaken in an effort to meet the growing expertise, demographics of MRS membership and in these times of tight federal budgets, highlight additional funding sources.

The Tuesday-night session began with a round table discussion with representatives from four different private foundations with current portfolios that include materials science and technology research. The discussion started with a 5-10 minute overview of the various foundations, starting with Miyong Chin of the Kavli Foundation, Henai Parthasarthy of the Thiel Foundation, Maria Pellegrini of the W.M. Keck Foundation and Richard C. Powell of the Research Corporation for Science Advancement. This was a completely new addition to the Government Agency Sessions and highlighted some extremely exciting opportunities for the materials science and technology community. It was interesting to see the significant differences between the funding directives and opportunities of the various foundations. The [Kavli Foundation](#) discussed their three-fold approach, focusing on research programs, communication forums and public outreach, with an emphasis on four research areas: astrophysics, theoretical physics, nanoscience and neuroscience. Perhaps one of their most widely known contributions is the Kavli Prize, which is given to researchers within these disciplines to recognize outstanding research and honor highly creative scientists. In contrast, the Thiel Foundation discussed their funding efforts, which are designed to assist scientists wanting to create startup companies with a high risk/reward that might not qualify for support through traditional government agency efforts, but aren't quite ready to approach venture capitalists. This support is provided through competitive grants through their [Breakout Labs program](#). The [W.M. Keck Foundation](#) discussed their approach towards funding, which could be recognized as something more closely approaching the methods of the federal funding agencies. However, it was stated that their focus is upon funding highly innovative, transformative research with high risk/reward similar to the methods embodied by the namesake for the foundation. Finally, the discussion moved to the [Research Corporation for Science](#)

[Advancement](#), who just celebrated their 100th anniversary, making them the oldest of the funding agencies. They discussed their approach, which is heavily focused on providing support for young and early-career scientists and engineers. This is provided through several programs, such as the Cottrell College Science Award, which funds research at undergraduate institutions, and Scialog, which improve dialog between researchers to hopefully identify and defeat bottlenecks in research. It was refreshing to see the degree of support available through alternative sources and how well these foundations have situated themselves to complement the various federal agency research portfolios.

The Tuesday evening sessions continued with Linda Horton of the Department of Energy Basic Energy Sciences Division (DOE/BES). Horton provided the traditional overview that our membership has come to expect and appreciate and highlighted some recent initiatives focusing on advanced manufacturing and the compilation of 'big data.' Within these efforts came a discussion of the Materials Genome Initiative (MGI), which is a collaborative effort among NSF, DOE, NIST and members of the DOD funding communities. Horton discussed the role that DOE/BES plays in the federal funding profile, which is to "understand, predict and ultimately control matter and energy flow at electronic, atomic and molecular levels." This effort is broken down into several focus areas in the materials science and technology field, including condensed matter, materials discovery, sub-atomic particle scattering and instrumentation sciences.

Following Horton's talk, an overview of the SunShot initiative was given by Ramesh Ramamoorthy of the Energy Efficiency and Renewable Energy division of DOE. This was one of the first presentations MRS has invited to highlight the large investment portfolio in more applied and manufacturing sciences of distinct interest to our membership. The discussion began with the highlights of the SunShot program, which is to harken back to the motivation of the moon shot challenge from President Kennedy in the early 1960's with the primary goal to attain solar power at affordable prices without the need for government subsidies. This implies cutting the price of solar power by 75% by the end of the decade. This effort is focused on advancing material systems, enhancing device efficiencies and improving solar power forecasting. A heavy focus was also discussed highlighting the importance of assuring the U.S. position in global competitiveness in the clean, renewable energy market.

The Thursday session began with Ian Robertson's session highlighting the materials science and technology research portfolio of the National Science Foundation Division of Materials Research (NSF/DMR). Robertson provided an excellent overview of the NSF/DMR funding profile, the various funding programs and provided some examples of on-going efforts. He also provided some very insightful pointers on best practices for getting your proposal through to peer review, as well as having it rated highly at that stage. This kind of information is one reason why these sessions were initiated for the MRS membership. Following this, a second talk focused on applied funding opportunities was provided by Richard Vaia of the Air Force Research Laboratory (AFRL). Vaia began by describing the general mission of AFRL and its connection with the Air Force Office of Scientific Research (AFOSR), who was represented by Hugh DeLong for the final talk for the night. It was discussed that AFRL provides a dual role. First, AFRL provides the U.S. Air Force with several laboratories of staff scientists, with the aim of performing the basic and applied research of importance to the USAF. The second mission is one of funding—providing limited support for applied research for both the scientists at the various AFRL laboratories, as well as at various academic institutions. While AFRL maintains the applied research funding portfolio, the basic science funding is provided through AFOSR. DeLong mentioned several of the various research areas of interest, while also mentioning a current restructuring exercise that is underway in an effort to streamline the research efforts of the U.S. Air Force.

The experience was enhanced a great deal by MRS members in attendance who provided a wide array of insightful questions. The program managers were extremely generous with their time, remaining after the completion of the question and answer sessions to fully address the questions from those in the audience. These government agency sessions are just one more way MRS illustrates their strong dedication to providing its membership with direct contact with the various program managers and funding agencies to ensure that the best science is promoted and funded and the materials science and technology fields are advanced. These sessions will continue at the upcoming 2012 MRS Fall Meeting in Boston.

Joshua Caldwell is the current chair of the Government Agency Subcommittee and Organizer for the Government Agency Sessions at the MRS Spring and Fall Meetings. He is currently a staff scientist at the Naval Research Laboratory in Washington, DC, and can be reached at caldwell.joshuad@gmail.com.

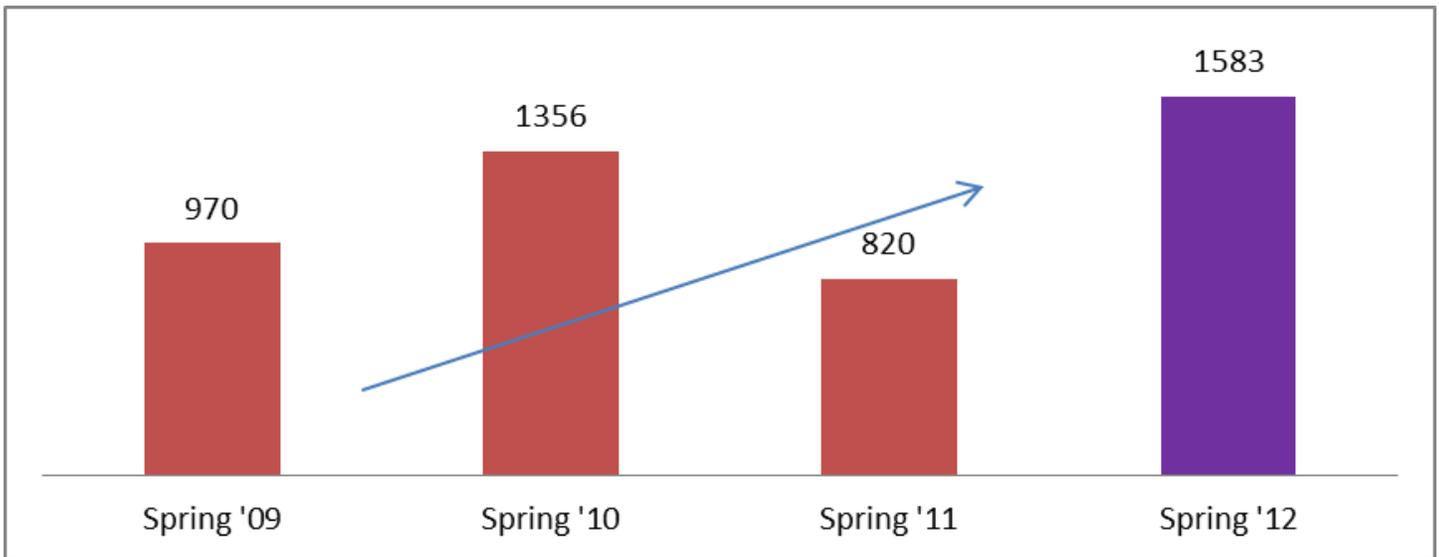
MATERIALS VOICE—YOUR VOICE RESONATING ON CAPITOL HILL

Nabil Bassim, Chair, Grassroots Subcommittee and Government Affairs Committee



Another successful session of the Materials Voice letter-writing campaign (which sends messages to Congress about important public policy issues related to materials research funding) was conducted in San Francisco at the 2012 MRS Spring Meeting. The Grassroots subcommittee continues to make progress in increasing MRS member participation in direct letter writing, with the most letters sent in four years at a Spring Meeting (see figure below). This Spring, MRS members wrote letters supporting Basic Research at NSF, NIST, DOD 6.1 Basic Research and the Department of Energy Office of Science and two specific letters about DOD and DOE research.

As promised, none of the individual participant information was saved, however, we do know that 164 unique MRS members participated by sending nearly 1600 letters to 140 legislators in 28 states. These letters were pre-drafted by MRS committee members. In the future, we need to ensure even broader participation to ensure MRS members are heard all over the U.S. For those of you who did not send letters, they are available on the MRS website at [Materials Voice](#). Please take a moment to visit the site and send a message to Congress!



FEEDBACK

We welcome your feedback and invite you to submit topics for consideration in future issues of this newsletter. Please send your comments to publicaffairs@mrs.org.

Not a current MRS member? It's never too late to [join or renew](#). Remember, MRS membership is included in registration for MRS Meetings.

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