SPRING 2015 NEWSLETTER

Leonard Brillson
Editor, INTERSECTIONS
Member, Government Affairs Committee

WELCOME TO OUR SPRING 2015 NEWSLETTER!

This has already been an eventful season both for Congressional legislation to support science and technology as well as within the Government Affairs Committee (GAC). The GAC aims to understand the dramatically changing policy environment and its impact on materials research. Our MRS Washington DC Director of Government Affairs, Damon Dozier, describes the significance of these events—discussing in detail the proposed impact of COMPETES legislation to authorize support within federal research agencies, the latest on federal employee travel restrictions, and our efforts to harness social media to highlight the importance of continued support for U.S. science and technology.

In this issue, Boris Dyatkin describes the unintended economic, scientific, and human costs of the federal employee travel restrictions. Outgoing GAC Chair, Nabil Bassim, reflects on the accomplishments of GAC during his tenure and welcomes his successor, Kevin Whittlesey. Grassroots Chair Brent Carey describes the record-breaking success of our Spring Materials Voice kiosk letter writing and the importance of letters to our representatives to increase federal R&D funding. In his capacity as Congressional Science & Engineering Fellows Subcommittee Chair, Kevin Whittlesey provides an update on the selection of the new Congressional Fellows and experiences of our current Fellows. Linda Olafsen describes the GAC visits to legislative offices this spring during Congressional Visits Day and the substantive discussions on issues of importance to MRS members. David Norton describes the successful Government Agencies Forum at this year’s MRS Spring Meeting, the inclusion of new agencies, and topics of high interest to each agency. Finally, Max Lagally’s INTERSECTIONS article on value-added materials science features yet another success story, highlighting how investments in materials science paid off in ways that the general public and especially our elected officials can relate to.

MRS is working hard to make sure that the materials research community is being heard and that it has input in developing effective government policy for support of materials science. Here is the latest news.

CHANGE IN GOVERNMENT AFFAIRS COMMITTEE LEADERSHIP

Nabil Bassim
Chair, Government Affairs Committee

Due to term limits and the natural cycle of turnover and infusion of new ideas into MRS volunteer leadership, I will step down on July 1, 2015 as the Chair of the Government Affairs Committee after serving in that role for three and a half years. I’ve found during my tenure MRS’s continued growth in degree and breadth of advocacy—from our core missions focused on funding of basic research, to weighing in on disparate science policy issues, such as the federal employee travel, open data and data policy, critical minerals and elements. I am particularly proud that the Policy Subcommittee was founded, which takes a considered look at science policy issues that face our society and provides timely advice and research to the MRS Board of Directors and other volunteer leadership. Other initiatives include expanded congressional visits, grassroots outreach on social media, and establishment of an increased, full-time advocacy presence in Washington, DC. I would like to thank all of the volunteers, subcommittee Chairs, and MRS Staff that I have worked with over the years and countless MRS members who have participated in our programs. The passion and commitment shown by all is truly awe-inspiring, and I am grateful for the chance to advocate in common cause.

Succeeding me for leadership of this committee is Kevin Whittlesey from the California Institute for Regenerative Medicine. Kevin has been a member of the GAC for five years and has spent the last three years heading the Congressional Fellows Subcommittee, which is responsible for recruiting and
vetting high quality Fellows in Congress. During his tenure, the level of outreach for prospective candidates and outreach to former Fellows has increased tremendously, as has the quality of the interview process. To all the MRS members, we are in very good hands, as Kevin is a former Congressional Fellow and is very familiar with science policy in a way that many of us scientists are not. Kevin—welcome aboard! We are delighted you will be our new Chair!

**GREETINGS FROM INCOMING GAC CHAIR**

*Kevin Whittlesey*  
*Incoming Chair, Government Affairs Committee*

It is with great enthusiasm that I greet you as the incoming chair of the GAC, taking effect this summer. I am very excited at the opportunity to lead such an active and dedicated group of volunteers doing work I am very passionate about. Prior to my selection as the 2006-2007 MRS/OSA Congressional Fellow, I had little interaction with MRS and no understanding of the Society’s advocacy efforts. During my fellowship year, MRS did an excellent job of providing me with opportunities to learn about many of the strong MRS programs and in particular the outstanding advocacy work the Society does. I was so impressed by the quality of the work, the Society’s reputation on Capitol Hill, and the commitment of the volunteers that I sought opportunities to participate and have been volunteering for GAC ever since. I have been honored to have been involved with the Congressional Fellows Subcommittee, first as a member and then as chair, since 2009. I am very passionate about science advocacy and look forward to continuing to leverage my background in biomaterials and experience in policy and government relations to serve the materials research community as the GAC chair.

Under Nabil’s leadership, the GAC has continued to build on what was an already solid foundation of activities. MRS has a significant footprint in the physical science advocacy realm, due to the hard work of MRS headquarters, the MRS Washington Office, and the many dedicated volunteers who have contributed to GAC programs over the years. The GAC’s efforts helped realize legislation that was enacted into law to address issues surrounding the national helium supply, and the newly formed Policy Subcommittee will be working to identify new policy study topics important to the MRS membership. These are but a few of the clear indicators of the momentum that GAC continues to develop as we expand our scope of activities and see tangible and impressive results.

GAC volunteers are vital, but relationship between the GAC and the broader MRS membership is also critical. The Materials Voice booth at the 2015 MRS Spring Meeting logged by far the greatest number of letters sent to Congress of any MRS Meeting since the inception of the Materials Voice booth. That clearly demonstrates a rising level of interest in science advocacy among our membership. I am excited to harness that enthusiasm to continue to build on the great work that GAC is already doing and expand our reach even further. Moreover, there needs to be a renewed effort at outreach by GAC to the MRS membership to inform them about GAC’s efforts and help them learn about opportunities to engage in science advocacy and how to be effective advocates for science.

These are challenging times for science. Federal funding levels have been essentially flat, while the pace of research continues to accelerate with technological innovation. Advocacy for science will be more important than ever. I look forward to leading the GAC’s efforts at a time when I expect its mission, scope, and importance to the MRS membership will grow.

**WHAT’S HAPPENING IN WASHINGTON**

*Damon Dozier*  
*MRS Director of Government Affairs*

**BREAKING NEWS**

In early May of this year, the U.S. Office of Personnel Management (OPM) announced that it would no longer review conference attendance requests for federal agency employees. This action is seen by many as a positive step towards loosening the administrative burden limiting the ability of many U.S. government employees to attend scientific and technical conferences. With this action, OPM is now allowing the federal agencies themselves to make the determination that attendance at these meetings is crucial to agency mission and provides an educational opportunity for the attendee. MRS has been active in recent years in advocating for an easier approval process for federal employees to attend conferences—at the most recent MRS Spring Meeting, over 800 letters were sent by members to U.S. Congress and the Administration asking that current limitations on travel be eased or removed.

On Wednesday, April 15, Chairman Lamar Smith of the House Committee on Science, Space and Technology introduced HR 1806, the America COMPETES Reauthorization Act of 2015. The legislation, among other things, is the authorizing document for the federal agency activities of the National Science Foundation (NSF), the National Institutes of Standards and Technology (NIST) and the Department of Energy Office of Science (DoES). The bill is designed to provide for technological innovation through the prioritization of federal investment in basic research, fundamental scientific discovery, and development to improve the competitiveness of the United States.

Many in the advocacy community, including MRS, are concerned that the legislation contains low authorization levels for the agencies listed above. Authorization levels are the
maximum funding levels Congress can appropriate for each agency or activity. In the case of the NSF, the agency would be funded at 7.59 billion, a 3.4 percent increase over FY 2015 appropriated levels. Within that number are increases for several NSF directorates, including Biological Sciences (14.2 percent increase from FY 2015), Computer and Information Science and Engineering (13.9 percent increase from FY 2015), and Mathematical and Physical Sciences (12.2 percent increase from FY2015).

Unfortunately, two directorates would see major funding cuts if the bill were enacted, including Geosciences (8 percent decrease from FY 2015) and Social, Behavioral and Economic Sciences (44.9 percent decrease from FY2015). Also concerning are proposed decreases to several accounts within the DoES, including the Office of Energy Efficiency and Renewable Energy (EERE), which would see a 29.3 percent decrease from last year’s funding and Advanced Research Projects Agency - Energy (ARPA-E) which would see a 50 percent decrease from FY 2015. The DoES would see a reduction of 4.4 percent overall as compared to last year.

MRS took a very active role in meeting with both House Republican and Democratic staff to offer perspectives on the bill. America COMPETES was voted out of the House Science Committee on April 22 and has not yet been scheduled for a vote by the entire House of Representatives. The Senate has not yet produced its version of the bill but is expected to do so by the beginning of summer.

The issue of federal employee conference travel continues to be a concern of MRS members and Government Affairs staff has participated in a number of meetings with Congress and federal agency officials with the goal of loosening restrictions in place. Currently, the ability of federal government employees to travel to meetings is severely restricted by federal law that requires burdensome levels of review and authorization before travel can take place, and in many cases, travel is not approved until days before conferences are scheduled to begin. MRS hopes to work with its partners to convince Congress that an exemption to existing law should be made for individuals who attend scientific and technical conferences.

Finally, the GAC is proud to announce that MRS had added two social media accounts to provide members with up-to-date information on what is happened in the domestic and international policy sphere. You can track policy news on Twitter by following the @MaterialsSciPol account and “like” us at Facebook on our Materials Science Policy page.

KICKING OFF A NEW YEAR IN MATERIALS ADVOCACY

Brent Carey
Chair, Grassroots Subcommittee

With spring setting in, the Grassroots Subcommittee has been busy driving materials advocacy! A large volume of letters was sent by MRS members to their elected officials from the 2015 MRS Spring Meeting in San Francisco. In sum, 2,778 letters were sent to Representatives, Senators, and the President on the topics of 1) maintaining funding for basic research, 2) supporting legislation to ease restrictions on travel for government-funded scientists, and 3) support for the American Innovation Act (S.747). The success of our kiosk would not be possible without the help of our student volunteers to encourage participation, so many thanks to them: Evelyn Ren (Drexel University), Sunny Aggarwal (City University of NY), Srilok Srinivasan (Iowa St. University), Yu Hao Liu (University of Illinois), and Evangeline Wong (University of California, Irvine).

These letters address important topics, and legislators only know to stay engaged if we keep them current. If you haven’t already, I would encourage you to visit our Materials Voice website and send your letters—it’s not too late and only takes a minute!

TRAVEL RESTRICTIONS FOR FEDERAL EMPLOYEES—ECONOMIC, SCIENTIFIC, AND HUMAN COSTS

Boris Dyatkin
Member, Grassroots Subcommittee
Ph.D. candidate, Drexel University

The success of MRS Meetings, as well as similar regular gatherings of other professional societies, is in no small part attributed to contributions from U.S. government researchers. Over the past six years, they have represented over 5,300 of the total 72,500 attendees of MRS Spring and MRS Fall Meetings. These scientists work in U.S. national laboratories all over the country: numerous DOD and DOE researchers, along with representatives from NIST, NSF, NIH, and almost all other agencies, have presented research at these meetings, organized symposia, and contributed to discussion forums and committee work. However, their ability to engage with peers from academia and industry has decreased in recent meetings. Although over 1,000 federal scientists attended the 2011 MRS Meetings, this number declined to 730 (just 5 percent of total attendees) last year.

This decline can be primarily attributed to restrictions that the Office of Management and Budget (OMB), which operates
under the Executive Branch of the United States Federal Government, placed on federal travel. The rules limited the number of conference attendees and enacted extensive review procedures for each travel request. These followed a recent trend of overall budget reductions, such as those implemented by the 2011 Budget Control Act (“sequestration”).

Now that several years of this policy have passed, analyses of its impacts suggest that the restrictions may have accomplished the exact opposite of their intended cost-savings objective. The travel request process has created an extraordinarily large financial burden for the agencies. A recent Government Accountability Office (GAO) report highlights a case where such expenditures jumped from $0.2 million to $1.6 million for a DOE laboratory. These administrative burdens are even higher for Department of Defense researchers, whose travel request reviews are more rigorous. As highlighted in a recent Washington Post article, such expenditures resonate through all federal agencies, which employ over 120,000 scientists nationwide. Approval for researchers from some national laboratories is contingent on their roles as either symposium organizers or deliverers of limited keynote or invited talks.

Even researchers who receive approval face new logistical hurdles that preclude their involvement in national conferences. The extended review procedures have delayed approval notification times, with scientists receiving decisions mere weeks before their scheduled travel time. This leads to last-minute scrambles for expensive flights, sold-out hotels, and, at times, late fees for conference registrations. The resulting trips end up costing the government more—the Washington Post article highlights a researcher from LANL whose domestic airfare bill soared to over $1,400 solely because of the protracted review process.

The impacts of these rules resonate well beyond economic costs to U.S. taxpayers. Due to unwieldy review timeframes—some of which take over nine months—some attendees choose to either withdraw their abstracts or refuse to submit them altogether. As a result, taxpayer-funded research does not get prominently presented and highlighted at national meetings, and federal researchers find fewer opportunities to exchange ideas and advance their work. Although the restrictions have impacted some agencies more severely than others, all conference attendees—student, faculty, and federal researchers—have sadly reflected on some decreases of high-impact talks and reduced overall research exchanges at national meetings. Early-career scientists, including students and post-docs, have fewer opportunities to learn about research and career opportunities at national laboratories. The absence of hundreds of researchers from national meetings is felt by scientists in academia and industry well beyond each conference.

These expenditures, along with basic R&D funding, represent just a small fraction of the total budget; however, they have fallen under the same discretionary funding cuts that the U.S. House and Senate have imposed in recent years. Although the OMB travel restrictions constitute an executive branch action, the office has indicated that it will not alleviate the existing limitations without Congressional action. Members of Congress, however, have introduced legislation to impose even tighter restrictions and funding caps on travel for federal researchers. The recent GAO report has outlined inherent inefficiencies and economic drawbacks of the existing approach and has called for reforms in their implementation.

Although the economic drawbacks of this policy are becoming evident, its negative impacts on scientific progress and human capital costs have not been properly brought to light. As a result, MRS, along with other professional organizations, has taken it up as one of our core advocacy issues. Letters to members of Congress are sent out at each MRS Meeting from the Materials Voice kiosk. Representatives of MRS discuss this issue with legislators and their staffs each year during Congressional Visitation Days. And MRS is collaborating with other professional engineering and scientific societies to discuss the issue broadly in Washington, DC. The entire scientific community is united in a reasonable solution to current budgetary issues. Federally funded researchers in academia and national laboratories are committed to minimizing costs and allocating funds towards efficient, impactful research, and they are counting on the ability to showcase their findings and exchange their knowledge at conferences, trade shows, and similar scientific meetings worldwide.

Additional resource documents may be viewed at www.mrs.org/advocacy-issues-archives.
MRS CONGRESSIONAL SCIENCE & ENGINEERING FELLOWSHIP CORNER

Kevin Whittlesey  
Chair, Congressional Fellows Subcommittee

The MRS Congressional Fellows Subcommittee has just completed another successful selection process and confirmed our Fellows for the 2015-2016 term. Three representatives from MRS joined panelists from our partner societies, OSA and TMS, to screen applications earlier this year and conduct in-person interviews in Washington, DC. We were all very impressed by the high quality of the finalists. Stay tuned for details about our new fellows in the next issue of INTERSECTIONS!

The 2015 MRS Spring Meeting featured, once again, an informational session for potential applicants to learn about the MRS Congressional Science and Engineering Fellowships program. Ashley White (2010-2011 MRS/OSA Congressional Fellow) joined me in hosting the session to share some of her experiences and how the Fellowship has benefitted her career. Finalists for the Fellowship in recent years have identified either one of these information sessions, or announcements made at the MRS University Chapter Representative’s Luncheon at one of the MRS Meetings, as how they first learned about the program, clearly demonstrating the value of these and other outreach efforts to potential applicants.

Meanwhile, our 2014-2015 Fellows both report that they are having excellent experiences in their placement offices. As a reminder, Jimmy O’Dea (2014-2015 MRS/OSA Fellow) is in the office of Senator Brian Schatz (D-HI) working on climate and energy policy while Adria Wilson (2014-2015 MRS/TMS Fellow) is in the office of Senator Bernie Sanders (I-VT) working on energy and environmental issues. Jimmy and Adria joined a number of other former MRS Congressional Fellows, Fellowship Selection Committee members, and other GAC members in March for happy hour to kick off the fellowship finalists’ interview weekend. Look for updates in the fall from Jimmy and Adria as to where their career paths take them after completing their respective fellowships.

CONGRESSIONAL VISITS DAY, BROADER IMPACT

Linda J. Olafsen  
Chair, Congressional Visits Day Subcommittee

A team of 19 MRS members and staff traveled to Washington, DC for Congressional Visits Day (CVD) on March 10, 2015. Participants visited representatives and senators from the states of Alabama, Connecticut, Iowa, Maryland, Missouri, Nebraska, New Hampshire, New Mexico, North Dakota, Pennsylvania, South Dakota, Tennessee, Texas, Virginia, Washington, West Virginia, and Wisconsin. The Iowa-New Mexico delegation also had the opportunity of visiting the current MRS/OSA Congressional Fellow, Jimmy O’Dea, who is serving in Senator Brian Schatz’s office, as well as MRS/TMS Congressional Fellow, Adria Wilson, who is serving in Senator Bernie Sanders’ office. The New Hampshire-Texas-Washington team met with Ariel Marshall, the current OSA/SPIE/AAAS Congressional Science and Technology Fellow in Senator Jeanne Shaheen’s office.

Research Assoc. Prof. Steve Smith (South Dakota School of Mines) with Senator John Thune (South Dakota)

Prof. Ulrike Wegst (Dartmouth College) with Senator Jeanne Shaheen (New Hampshire)

Many of the CVD participants live in districts with members who serve on key science or appropriations committee. Another priority, particularly given the new Congress, was to visit new members and introduce them both to MRS and the need to sustain and grow federally-funded research. While most meetings were between MRS members and congressional staff, a few teams had the privilege of speaking with their senators, including Senator Joni Ernst (Iowa) and Senator Jeanne Shaheen (New Hampshire).

MRS Director of Government Affairs, Damon Dozier, has had various opportunities to follow up on the March 10 visits, as MRS volunteers continued relationships that have been built with a number of offices and sought to establish contacts and relationships with new members of Congress and key members in science and appropriations.

The CVD Subcommittee has begun planning for Fall Congressional Visits with members of the MRS Board, as well as pursuing other opportunities both in Washington, DC and in home districts in between the CVD events to continue presenting the important messages about the critical impact of federal funding for research.

The group had the benefit and privilege of Ron Kelley’s participation in advance of his retirement. The CVD Subcommittee is very grateful for Ron and his professionalism.
and impact, particularly regarding the development of training, organization, and strategy for Congressional visits. We wish him the happiest of retirements.

**2015 MRS SPRING MEETING:**
**FUNDING OPPORTUNITIES FOR MATERIALS RESEARCH FROM GOVERNMENT AGENCIES**

David P. Norton  
*Chair, Government Agency Subcommittee*

At this year's MRS Spring Meeting in April, the Government Agency Forum featured invited speakers describing research programs of significant interest to the materials research community. Presentations were scheduled the evenings of Tuesday and Thursday so as to be accessible to MRS attendees who would otherwise be attending the daytime scheduled technical sessions.

The Government Agency Forum presentations were very well attended. Harriet Kung from Department of Energy (DOE) Basic Energy Sciences (BES) described the various fundamental research programs that support the DOE’s missions in energy, environment, and national security. Her talk included specific efforts in materials, chemical sciences, biosciences, and geosciences, emphasizing the importance of understanding, predicting and controlling matter and energy at electronic, atomic and molecular levels. Kung described the various programs that support the core BES mission which is to support fundamental research to understand, predict, and ultimately control matter and energy at the electronic, atomic, and molecular levels; provide the foundations for new energy technologies to support DOE’s missions in energy, environment, and national security; and plan, construct, and operate world-leading scientific user facilities for the Nation. She specifically discussed anticipated funding for computational materials science, midscale instrumentation, and the Energy Frontier Research Centers.

Mary Galvin, Director of the Division of Materials Research (DMR) within the National Science Foundation, described DMR’s interest in supporting fundamental research in materials and condensed matter physics. She discussed specific efforts related to experimental research, computational studies, and efforts that couple the two.

Christine Kelley, Director of the Division of Discovery Science & Technology in the National Institute of Biomedical Imaging and Bioengineering (NIBIB) at the National Institute of Health (NIH), reviewed the overall mission of the NIH and NIBIB as the steward of medical and behavioral research for the US. She reviewed the grant mechanisms for NIH funding including training (T’s), career (K’s) and core research (R’s). She pointed out that the NIBIB is somewhat unique in the NIH is that it is not disease specific and very much oriented towards multidisciplinary approaches. She also offered generic advice to researchers, particularly those in the materials research community, in successfully pursuing grant opportunities.

On Thursday, we heard from Theresa Axenson, Program Manager within the National Reconnaissance Office's (NRO) Director's Innovation Initiative. The NRO focuses on the use of satellite platforms to perform reconnaissance for a variety of application needs. She discussed the interest in her office for revolutionary concepts that represent high risk but with the potential for high payoff if successful. She described the various funding mechanisms employed through the NRO, and review projects in the NRO portfolio that are materials centric.

John T. Prater, Program Manager within the Materials Sciences Division at the Army Research Office, described the various basic materials research topics that his office supports. He also described the mechanism for submitting ideas to the Army Research Office.

Finally, Eric Schiff, program director at the Advanced Research Projects Agency-Energy (ARPA-E), reviewed the history and mission of this relatively new office for funding energy technology research. He emphasized how ARPA-E is focused on disruptive, transformative innovations. He described the process and structure that ARPA-E uses to development programs within the office. For each of the six presentations, attendance was very good with one-on-one interactions with the speakers afforded the attendees following the talk.

**A VALUE-ADDED MATERIALS RESEARCH STORY**

*Formation and Growth of nPoint, Inc.*

Max Lagally  
*Professor, University of Wisconsin - Madison*

For most of my professional life in academia, I have had a desire to start a business. I felt that if someone would actually pay money for a product that sprang out of my research activity that would validate my existence in academia. Whatever one thinks of this reasoning, it drove the development of nPoint, Inc. [www.npoint.com].

The core technology the embryonic company wished to exploit was at the start poorly defined, a common occurrence. My research group had stumbled into scanning tunneling microscopy (STM) years after the early adopters, but we found a niche, the investigation of growth processes at the atom level. For that we needed STMs to move as fast as possible, and so we searched for approaches to move the tip faster and still get useful data. We knew precious little about feedback loops and motion control, but with the help of a mechanical-engineering graduate student with years of real-life experience in industrial...
controls, we developed an approach to speeding up STMs, which we patented and used as the technological driver for starting nPoint. After all, many scanned-probe instruments were coming on the market in the 1990s and 2000s, and they all were scanning pathetically slowly. Surface profilometers, with much poorer spatial resolution, were already on the market for many years, and one could foresee high-speed, high-resolution scanned-probe based profilometers penetrating the market as a metrology tool in the processing and fabrication of next-generation semiconductor and data storage devices. nPoint Inc. could provide the drive and control electronics.

This thinking was naïve, on two levels. One, we quickly learned that the slowness of scanned-probe instruments lay not in the controls but in the piezo-driven nanopositioner that moves the tip or sample, so the company redirected its effort to developing better nanopositioners with higher resonant frequencies and larger scan range. That is the basis of the success of the company to this day—the original patent has never been used, as more conventional control approaches are quite sufficient for what manufacturable nanopositioners can use. The second level of naïveté was that a small company could readily penetrate markets as established as the semiconductor or data storage ones, especially as the company was only building a component and not a complete instrument.

Therefore we chose the safest, but possibly the slowest, way to grow the company, via funding through the Small Business Innovation Research (SBIR) program. A huge advantage is that the government takes no equity in the company and only requires reports and a prototype. We were successful in SBIR proposals and in using the funds—every product nPoint put into the market the first seven years of its existence was developed with SBIR funds. But the reliance on SBIR funds was also almost the downfall of the company. In some cases a cost share is required; the company had an agreement from a major semiconductor equipment manufacturer to provide a significant match to a sizeable DoD contract, then a financial crisis arose and the company reneged on the match and thus the contract could not be awarded.

The company thus had a near-death experience but started anew, developing top-notch nanopositioning products with world-leading technical specifications. nPoint piezo-driven nanopositioners are found in many of the major scanned-probe instruments, in airborne vehicles for dithered imaging used to improve resolution in identifying distant objects, in all manner of optical microscopy, in semiconductor mask inspection tools, in nanoindenters, in fiber alignment, and in the facilities of numerous researchers. The company made “upgrade kits” for old AFMs that allowed many early purchasers of AFMs to enjoy the benefits of advanced instruments. The figure shows an image taken with an AFM with such an upgrade kit.

The connection between materials research and nPoint grows stronger each year, as the need for high-precision and high-speed nanopositioning in processing and characterization is recognized in ever more fields, from polymers to semiconductors to biological materials. The market for nanopositioning products is upwards of $100M annually worldwide. Although nPoint is not the only player in this market it has gained the reputation among new-product designers at nanotechnology companies as being the best.

**FEEDBACK**

We welcome your feedback and invite you to submit topics for consideration in future issues of this newsletter. If you have or know of stories that illustrate how an investment in materials research paid off in real dollar terms, please send your suggestions to INTERSECTIONS Editor, Len Brillson, at brillson.1@osu.edu. Please send your comments to publicaffairs@mrs.org.

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