

FOUNDATIONS

Newsletter of the Geo2YC division of the National Association of Geoscience Teachers
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Geoscience resources for today's 2YC faculty and students

by Ashanti Johnson, Allyson Fauver, & Lois Ricciardi
Institute for Broadening Participation

Are you a faculty member looking for resources and search tools to help your students succeed in their geoscience educational and career ambitions? Do you want information on best practices for mentoring geoscience students? Are you interested in pointing your students to academic research or professional development opportunities & funding?

www.PathwaysToScience.org makes it easy for students to access the resources they need to succeed, and for faculty and administrators to access resources that can assist them in their efforts to reduce barriers to participation, create environments rich in the positive factors that support student success on the STEM pathway, and conduct outreach to underserved communities and underrepresented groups.

If so, www.pathwaystoscience.org is a site ripe with resources and information that can help faculty guide students through a successful pathway in the geosciences. The site offers search tools to find contacts and information for over **1700** educational and career training and funding opportunities in Science, Technology, Engineering and Mathematics (STEM), currently including over **370** geoscience related opportunities from K-12 to postdoc.

Faculty and administrators can post eligible STEM opportunities, and students can use advanced searches to find opportunities that meet their interests and academic level by discipline, keyword, institution or geographic area.

The site is maintained by the Institute for Broadening Participation (IBP). IBP's mission is to increase diversity in the Science, Technology, Engineering and Mathematics (STEM) workforce. We design and implement strategies to increase access to STEM education, funding, and careers, with special emphasis on reaching underserved communities and diverse underrepresented groups.

IBP conducts year-round outreach to underrepresented students publicizing the opportunities and resources posted on www.pathwaystoscience.org. Post eligible STEM opportunities using the online form at





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www.pathwaystoscience.org/programform.asp. If you have questions or other ideas about how we can help, then write us at: contactus@ibparticipation.org.

IBP's [Online Mentoring Manual](#) helps faculty increase their basic understanding of the role of mentoring and how it impacts them and their students. The Manual addresses areas of mentoring best practices such as: [responsibility for the mentoring environment](#), [calibrating your mentoring to meet mentee needs](#), [balancing challenge and support](#), [virtual mentoring](#), and [maintaining a long term relationship](#) with your mentee. Contributors to the manual include PAESMEM (Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring) awardees, industry leaders, and experienced educators who have made the study and practice of mentoring an integral part of their professional lives.

IBP also welcomes the submission of inspiring STEM leader and student [profiles](#) to the site, as well as faculty participation in an ongoing cycle of peer discussion and improvement to the [Online Mentoring Manual](#). Contribute feedback and

content to the manual via a link on the manual's homepage. Access the manual and other resources, such as "[Designing for Success: Positive Factors that Support Student Success in STEM](#)," or "[Using Social Media to Build Diversity in Your REU](#)," at the Resource Library at www.pathwaystoscience.org/library.asp.

IBP's *National Student Directory* has over 48,000 current and former students. Encourage your students to sign up online to receive information about programs and opportunities targeted to their interests and level of study. IBP works with NSF, NASA and other funded programs around the nation to recruit eligible students. Through IBP's *National Student Directory*, students will find programs that are compatible with their interests. In addition, IBP will share student contact information with faculty and staff in NSF and NASA programs who are seeking to recruit students like them. To have your students join IBP's *National Student Directory* and receive two to four e-updates per year, go to: <http://www.pathwaystoscience.org/form.asp>.





Geological Society of America Tackles Diversity at 2013 Annual Meeting

by Marjorie A. Chan

2012-2013 GSA diversity in the Geosciences Committee Chair, OTF Co-Chair

Why does diversity matter to GSA? The Geological Society of America, our professional Society has a stated vision to be the premier geological society, with a mission to advance the geosciences profession. GSA has an official position statement on diversity (www.geosociety.org/positions/position15.htm), and a strategic plan that specifically includes the goal to **develop and foster a robust, diverse, and sustainable professional geoscience community**. In order to achieve these goals, GSA must be a diverse society that encompasses variety in race and ethnicity, gender (including gender identity or expression), religion, physical and mental abilities, age, sexual orientation or marital status, national origin or ancestry, education, or class. The only way

GSA will truly advance the geoscience profession is to include many perspectives from the best scientists of diverse backgrounds. We particularly need students from diverse populations to address the most pressing and complex issues of Earth and our society, as only geoscientists can.


What is GSA actively doing about diversity?

Diverse participation can be encouraged by positive, engaging experiences. The GSA Diversity Committee put forth an “*On To the Future*” (OTF) initiative that will be implemented this October 2013. The goal is to bring 125 students from underrepresented groups to the 125th Anniversary Annual meeting in Denver. GSA members were challenged to identify and to support OTF students to attend their first annual meeting where students will: 1) experience the richness of our professional meetings and interactions, and 2) receive recognition, meeting registration, and partial support for travel, food, and lodging expenses. In just a few short months, GSA staff and supporting members have gotten OTF off the ground!



What are the *OTF* details? With the help of the GSA Foundation, we surpassed our goal of raising \$50,000 to help bring 125 underrepresented students to the annual GSA meeting. GSA has already accepted 125 undergraduate and graduate students and is committed to helping fund their Denver meeting experience. *OTF* students are from areas across North America (representing all regional sections of GSA) and as far away as Puerto Rico. Details of this *OTF* initiative are at <http://community.geosociety.org/OTF>. **YOU** can still help spread the word, add more donation support, and encourage and welcome *OTF* students you see at the national meeting. Consider serving on GSA's diversity committee to propose new initiatives for the future.




Moving Forward! The *OTF* initiative will be a pivotal culture shift for GSA and you should notice a difference at this year's annual meeting. A diverse membership with students is absolutely essential and is the future lifeblood of GSA. Please support and celebrate this *OTF* initiative during Oct. 27-30, 2013. More diverse students will move GSA "On To the Future" for the next 125 years! 

ANNOUNCEMENT

Funding for faculty who teach 2YC oceanography can attend the Ocean Sciences meeting in Honolulu

Jan Hodder (University of Oregon's Institute of Marine Biology) and Allison Beauregard, (Northwest Florida State College) have received funding from the National Science Foundation to support two year college faculty who teach oceanography or other ocean science focused courses to attend the upcoming Ocean Sciences meeting, February 23-28, 2014 in Honolulu, Hawaii. The meeting is co-sponsored by the [Association for the Sciences of Limnology and Oceanography](#) (ASLO), [The Oceanography Society](#) (TOS), and the [American Geophysical Union](#) (AGU) and is a wonderful opportunity to network, learn about current ocean science, and share experiences with colleagues. Details of the meeting are available at: <http://www.sgmeet.com/osm2014/>.

NSF funds will cover airfare, housing/meals and conference registration and we anticipate being able to support 16-20 people. We are planning an all day workshop on Sunday Feb 23 for 2YC faculty that will focus on oceanography teaching resources and practices. It is expected that all recipients of the NSF funds will attend the workshop. In addition there will be a number of paper/poster sessions to which 2YC faculty may wish to contribute papers/posters. We are sponsoring a session: **Undergraduate ocean science education in the 21st century: an exploration of successful practices**, to which we encourage you to consider an abstract submission. Priority for the NSF funds will be given to authors presenting at this or other sessions. The meeting web site has information on all of the sessions that are being offered: <http://www.sgmeet.com/osm2014/sessionlist.asp>. We welcome applications from adjunct as well as full-time faculty. Abstract submission opens August 15 and abstracts are due by October 4. We will also host a social activity during the conference to provide an additional opportunity for networking.

Applications for this opportunity are at <http://www.surveymonkey.com/s/OceanScience2014> Deadline is September 15. Please share this opportunity! 

President's Column

by Lynsey LeMay

Thomas Nelson Community College

I'm writing this just a few days after the first official start of the semester, and the night before my little one is officially a Kindergartner. Yikes! That means summer is over, and boy did it fly by. I hope you had a fun, relaxing, and geologically interesting summer. As I mentioned in the last newsletter, summer is workshop time, and I was able to attend the SAGE2YC workshop in Williamsburg, VA in July and connect with many colleagues while there. Student success was the focus of the workshop. We learned ways to help all students, from working with students on geology related content and math deficiencies to assisting




*Geo2YC President
Lynsey LeMay*

students on the autism spectrum. I left with a long list of action items, and lots of enthusiasm and motivation. I'm implementing some of the techniques this semester, and am excited to try new teaching tools and more student reflection activities.

GSA is right around the corner. I'm looking forward to connecting with many of you in Denver. Even if you are not presenting, this year will be an exciting year to attend, as GSA celebrates 125 years, and Geo2YC celebrates 2 years! Geo2YC is sponsoring three sessions, T117, T119, and T137, and we've had excellent response to these sessions based on abstract submittals. Geo2YC will also be hosting a division meeting Sunday evening during GSA from 5-6, giving us all a chance to meet face to face, learn more about what has been going on in the last year, and also get an opportunity to hear from you. Come with ideas as to how the division can best serve you. The Geoscience Educators reception will immediately follow the division meeting.

I would also like to take this opportunity to thank you all for your support this year! This will be my last newsletter article as President. I've enjoyed the opportunity to serve you this year, and am excited about the continued work of the division, and to see to this organization grow. Our division is now almost 160 members strong! I would also like to congratulate Ben Wolfe, who will be taking over the VP reigns when Merry Wilson steps up as President.

Have a great semester!

-Lynsey 

SAGE 2YC workshops bring 2YC geoscience faculty together from coast to coast

by Bob Blodgett

Austin Community College

In the past year, the Supporting and Advancing Geoscience Education at Two-year College (SAGE 2YC) program has brought together hundreds of geoscience faculty from two-year colleges (2YCs) in 36 states. With 10 workshops in 9 states in the first year, the program plans additional workshops and webinars in 2013-2014. This past year's first series of workshops discussed issues and strategies for preparing 2YC students for the workforce and for transfer as geoscience majors. These workshops included geoscience employers and four-year college and university faculty, and took place at national professional meetings and in local and regional settings. The workshop series built on a national *Preparing Students in Two-year Colleges for Geoscience Degrees and Careers* held in Tacoma in summer, 2012.

Two workshops at national professional meetings, one led by Eric Baer and Bob Blodgett on *Best Practices for Preparing Workforce and Transfer Students in Two-year Colleges for Geoscience Careers* at the Geological Society of America Annual Meeting in Charlotte, North Carolina, and the other facilitated by Jan Hodder and Allison



Texas regional workshop participants discuss including career information in student assignments.

Beauregard on *Best Practices for Preparing Workforce and Transfer Students in Two-year Colleges for Ocean Science Careers* at the Association for the Sciences of Limnology and Oceanography (ASLO) meeting in New Orleans, Louisiana attracted over 60 participants. Contributions from participants at these workshops added to a compilation of best practices for preparing 2YC geoscience students for careers and transfer.

A regional workshop, *Best Practices for Preparing Two-year College Students for a Geoscience Career and Transfer*, convened by Bob Blodgett in Austin, brought together 34 geoscience faculty from Texas and Arkansas. Participants included teachers from four of the five largest U.S. community colleges – a fact that was evident during introductions when groups of professors from the same college met for the first time, and when two participants first

learned from a presenter that a workforce program at their college was offering petroleum geology!

The SAGE 2YC program coordinators were especially delighted that 11 2YC geoscience faculty volunteered to convene local dissemination workshops in Alaska, Illinois, Georgia, Los Angeles, and Virginia. We would like to thank the following conveners for their efforts:

Best Practices for Preparing Two- Year College (2YC) Students for Geoscience Degrees in Georgia at the University of North Georgia (UNG) in Gainesville, GA led by Katayoun Mobasher and Joel Aquino, UNG.

Forging Professional Opportunities between Community Colleges and the Workforce at Thomas Nelson Community College (TNCC) in Hampton, VA led by Peter Berquist and Lynsey LeMay, TNCC.

Geoscience Careers for Today's 2YC Students at Mt. San Antonio College in Walnut, CA led by Becca Walker, Mt. San Antonio College, and Elizabeth Nagy-Shadman, Pasadena City College.

Preparing Students in Two-Year Colleges for Geoscience Degrees and Careers at Joliet Junior College in Joliet, IL led by David Voorhees, Waubensee Community College, and Cheryl Resnick, Illinois Central College.

Western Alaska Interdisciplinary Science 2013 at the Northwest Campus of the University of Alaska-Fairbanks (UAF) in Nome, AK led by Todd Radenbaugh, UAF Bristol Bay Campus; Claudia




SAGE 2YC regional workshop held at the University of Texas at Austin Institute for Geophysics.

Ihl, UAF Northwest Campus, and Tara Borland, UAF College of Rural and Community Development.

Have these workshops helped build our community and disseminate the latest research on geoscience education? Follow-up surveys and network analysis by our external program evaluator indicate that the answer is yes – there has been significant growth of the 2YC geoscience professional network and most participants reported post-workshop discussions of geoscience education and workshop topics, such as geoscience careers, workforce preparation, and transfer, with their colleagues. As one participant told us after several SAGE 2YC workshops, “I’m beginning to feel like I ‘belong’...it’s great to see familiar faces and know who I can connect with when I need help from a ‘local expert’...or some help/advice with a particular teaching technique.”

Did you miss these workshops or would like to learn more? The SAGE 2YC program has built <http://serc.carleton.edu/sage2yc/workforce/careers.html>, a website with information about geoscience careers, employer perspectives (including the workshop presentations), and with links to the career pages of most U.S.-based geoscience professional societies and federal agencies.

In the next issue of *Foundations*, we’ll summarize this past summer’s workshop on *Supporting Student Success in Geoscience at Two-year Colleges*. If you’d like to know more now, check out the program page with links to the workshop presentations at: <http://serc.carleton.edu/sage2yc/studentsuccess/workshop2013/program.html>.

The SAGE 2YC program is supported by the National Science Foundation (NSF) Division of Undergraduate Education through grants DUE 1122592, 1122640, 1122660, and 1122737. Opinions, findings and conclusions in this article do not necessarily reflect the views of the NSF. 

New Dottie Stout grant recipients

by Erica Zweifel

National Association of Geoscience Teachers

Here are the five latest recipients of the Dorothy Stout Professional Development Grants. More information about this popular NAGT program can be found at: <http://nagt.org/nagt/programs/stout.html>

Annette Calabretta, The Classical Academy, Colorado Springs, CO

The Dorothy Stout Professional Development grant will allow Annette, a teacher at The Classical Academy in Colorado Springs, to attend the intensive "All About Mining" course at the Colorado School of Mines. As denizens of Colorado, Annette's students will be facing questions on future gas and oil exploration and mining-related environmental issues in their state, and she has found that incorporating real-world applications into her earth science curriculum greatly stimulates student participation and learning. As a strong proponent of inquiry-based learning and labs, she hopes to better engage her students in the mining process and help them become informed citizens in the environmental policy debate and savvy consumers of the ubiquitous products of mining in daily life.

Nadine Evans, Community College of Rhode Island, RI



The Dorothy Stout Grant for Professional Development for community college students will allow Nadine to attend the annual Geological Society of America meeting

in Denver, Colorado. This fall, Nadine will be transferring from the Community College of Rhode

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Island to the University of Rhode Island to double major in Geology and German. She has been working on a scientific study on conceptions students have when learning new material in Geology, and she hopes to present her findings at the 2013 GSA meeting. This exciting opportunity to present original research to a respected scientific community, a rare prospect at the community college level, will give Nadine the skills and experiences to fulfill her aspiration of becoming a geologist. This grant will afford her the opportunity to share personal and professional perspectives with scientists from around the world.

Rebecca Perloth, Santa Rosa Junior College, CA



The Dorothy Stout Grant will enable Rebecca, an instructor at Santa Rosa Junior College, to attend two Chautauqua courses in the extraordinary geological setting of Alaska. She will be able

to see and experience the glacial features that she teaches about every semester, which will add a personal touch, physical detail, and depth of knowledge to her lectures. She hopes to be able to relate the glacial features visible in her native California to active glaciers in Alaska. In another course, Rebecca will learn about the history of, reaction to, and recovery from the 1964 Alaska earthquake and tsunami which also devastated Crescent City, CA, and therefore will help to complete the story of Rebecca's Californian geology course.

Laura Branch, Ernest Righetti High School, CA



By enabling Laura to purchase an interactive acrylic groundwater model, the Dorothy Stout Grant will help in making Laura's classroom more hands-on and will give her students a heightened


awareness of their environment. Laura believes that "eating, drinking, and living geology is the best way to learn about it", and she incorporates this

philosophy into her science classrooms by encouraging and enabling her students to experience and discuss the science around them. The purchase of this groundwater model is especially important in an agricultural area where pesticides are used on crops and will allow students at all levels to better understand groundwater movement and contamination, leading to higher-level discussions on the impact of groundwater in the local area.

Robin Rohrback-Schiavone, Northern Virginia Community College, VA



The Dorothy Stout Grant will raise productivity and efficiency to new heights in Robin's work in the creation of cutting-edge geoscience education classroom resources. As a student at

Northern Virginia Community College, Robin works on the Mid-Atlantic Geo-Image Collection, a growing repository of extremely high-resolution geologic imagery, currently being prepared for use in online lab exercises and virtual field trips. This imagery allows for examination of geological features at a level of detail comparable to being in the field or the lab at every level of magnification. The technology makes a high-quality geoscience education tool freely accessible to everyone, from physically handicapped geoscientists who are unable to perform fieldwork to those under significant financial constraints. The effort requires considerable computing power, and the grant will allow Robin to purchase a new laptop computer to effectively double the current output of these GigaPan images for the benefit of the entire geoscience community, from amateur enthusiasts to professional researchers 

Nominate an outstanding adjunct faculty member in your department for recognition with the Geo2YC Division's **Outstanding Adjunct Faculty award.** Submit your nomination at this link: <http://nagt.org/nagt/divisions/2yc/oafa.html>

Outstanding adjunct faculty award goes to Rick Nixon

by Kaatje Kraft and Alison Beauregard
Mesa Community College and Northwest Florida State College

We are proud to announce the Fall 2013 awardee of the Outstanding Adjunct Faculty award for the Geo2YC division of NAGT. Dr. Rick Nixon, dedicated adjunct faculty at Georgia Perimeter College.

Rick was nominated by Dr. Pamela Gore, and she writes, “Dr. Rick Nixon has been teaching Geology classes part-time for us at Georgia Perimeter College since 2007. When I have observed his classes, he has consistently had high quality presentations which have kept students interested and involved. He keeps his classes fun and entertaining for the students. He relates Geology topics to the students' lives, such as pointing out clues to geologic hazards to look for when they look for a home to purchase. He also treats the students with respect and works to find the approach with each student that meets their needs and maximizes their success in the class. Rick also teaches the students how to study, and designs his courses to build in repetition to help students retain certain facts and principles. He also designs exercises that require students to use basic geologic principles that they have learned in class. I have been impressed that Dr. Nixon has taken the initiative to suggest improvements to our labs, and that he uses his own money to purchase supplemental lab specimens and to photocopy packets of helpful handouts for students to use in lab each week. His handouts are so good that I have adopted some of them to use with my own classes. Dr. Nixon loves teaching Geology so much that he spares no expense or effort to make his classes the best possible. Dr. Nixon teaches both on-campus and online lectures and laboratory sections. He is very cooperative and will do everything he can to help us. He is the ideal adjunct instructor and I highly recommend him for this award.”



*Rick Nixon,
Georgia Perimeter
College*

Rick responded saying, “This would not have been possible without the outstanding support from Dr. Carl McAllister, my Chair, and Dr. Pam Gore, my good friend and mentor. Working with students at Perimeter College is challenging and rewarding. Earlier this year, I was greeted by a student from several years ago. He had a good job, and his life was headed for more good things. That I may have had a small part in his success was a personal reminder of the importance of a good education.”

Congratulations to Rick from all of us at the executive council of Geo2YC. Our programs wouldn't be what they are without our part-time faculty and we're glad to be able to recognize Rick in the amazing efforts he has contributed toward his department. We are pleased to award Rick with an honorary membership to the Geo2YC division of NAGT for 2014 and he will be in the pool to be our annual outstanding adjunct faculty awardee to be announced at GSA 2014. (If you know of one of your adjunct faculty who deserves recognition, please nominate them at:

http://nagt.org/nagt/divisions/2yc/oafa_nomination.html)



The evolving landscape of STEM funding: a dynamic state of affairs

by **Jill Karsten**

National Science Foundation

The geosciences community is very familiar with the concept of “change over time.” We also understand that many integrated systems operate with very non-linear, even chaotic, behavior. Knowing this, we are well-prepared to understand, if not weather, the currently evolving landscape of federal funding for STEM research and education. In this instance, the “system” at play involves the complex interaction between the Executive Branch, which has the responsibility for dictating policy, and the Legislative Branch, which gets to make the rules and appropriate the funds that to support government activities. As we know, the Founders wisely and purposefully set up tension between our three-branch government system, in order to have the “checks and balances” that help to keep things close to equilibrium. But, as we also know, “equilibrium” is a dynamic, not a static, state of being; there are times like now when the various forces at play tug and pull in many directions. Under such circumstances, prediction is a dangerous task to attempt!

With less than a month to go before the start of the new fiscal year (FY 2014) on October 1st, there are still many uncertainties regarding federal budgets for agencies that support geoscience research and education; the uncertainty is a clear manifestation of this dynamic tug of war. The President’s proposed budget for FY 2014 clearly reflects his view that STEM education and research are a priority for the Nation, whereas Congress’s concerns with growing federal deficits and a desire to reduce the size of government are driving an appropriations process that seeks to reduce overall spending. Both the House and Senate have “mark-up” versions of their appropriations bills for the major science agencies, including NSF, NASA, and NOAA, and there are

some important differences between the two versions. But how the differences between those bills will be reconciled, whether the mandatory across-the-board reductions known as sequestration will continue to impact the agency budgets, whether Congress will pass a short-term Continuing Resolution (CR) to keep the government open after October 1, or allow the stalemate to shut down the federal government are questions that have not been answered at this time. Notice that the possibility of passing a sensible, compromise set of spending bills before the end of the current fiscal year on September 30th wasn’t identified as a likely option! That’s because Congress has been on a 5-week recess and will have to make these important budgetary decisions in the last two weeks of September or live with a CR. Only after the budget has been passed will we have a clearer picture of agency funding levels, which in turn translates into specific funding opportunities for the research and education communities.



The confusion is even more acute within the realm of federal STEM education programs. President Obama’s FY 2014 budget proposal outlines major restructuring and realignment of the STEM education programs offered by the science agencies.

The intent of this realignment – which would establish “lead” agencies that work in collaboration with partnering agencies – is to foster much greater coherence among STEM education programs currently offered, improve the consistency of how those programs are evaluated, and reduce the number of programs from 226 to 110 in order to avoid duplication of effort and inefficiencies. Under the President’s proposed plan, NSF would be the lead agency for undergraduate and graduate STEM education programs, the Department of Education (ED) would be the lead agency for K-12 STEM education, and the Smithsonian Institution would be the lead organization for informal STEM education efforts. Although both houses of Congress endorse the intent of the proposed consolidations, they have indicated their strong dislike for the President’s mechanisms for achieving those reductions in the language attached to their respective, pending appropriations bills. This raises doubts about how much of the President’s proposed consolidation will actually materialize during FY

2014, and uncertainties about how the appropriations process will constrain specific funding opportunities at federal agencies.

Although it probably seems arcane to those “outside the beltway”, understanding the origin of the President’s budget request for STEM education can help the research and education community anticipate where all of this may end up. The Office of the President, which includes the Office of



Science and Technology Policy (OSTP), obtains advice regarding STEM research and education through two channels. OSTP oversees both the National Science and Technology Council (NSTC), comprised of high ranking federal managers in the STEM agencies, and the President’s

Council of Advisors on Science and Technology (PCAST), comprised of leading scientists, engineers, and educators from outside the government. In the past three years, both PCAST and the NSTC Committee on STEM Education (referred to as either Co-STEM or FC-STEM) have developed documents outlining what they perceive as the strategic priorities for the country and administration. All of these reports are available at the OSTP web site (ostp.eop.gov) under the respective committee links.

In May 2013, the NSTC released the “[Federal Science, Technology, Engineering, and Mathematics \(STEM\) Education 5-Year Strategic Plan](#)” report produced by Co-STEM. For those pursuing federal funding to support STEM education, this is an important document to read. The report lays out the rationale for specific federal

priorities, and the types of responses expected to address those priorities. It articulates an ambitious agenda and because the federal science agencies are in the Executive Branch, it is reasonable to assume that all funding opportunities offered in the next few years will be heavily informed by this strategic plan, even if the specific programs or re-alignments outlined in the President’s budget request to Congress do not materialize.

A good example of the legacy effect of the Co-STEM strategic plan can be found at NSF. The President proposed a major consolidation of undergraduate STEM education programs for FY 2014, with the creation of a new Catalyzing Advances in Undergraduate STEM Education (CAUSE) initiative. As proposed, CAUSE would have merged the Transforming Undergraduate Education in STEM (TUES), STEM Talent Expansion Program (STEP), and Widening Implementation and Demonstration of Evidence-based Reforms (WIDER) programs in the Education and Human Resources (EHR) Directorate and incorporated other smaller programs currently managed by the research directorates. More details about this proposal are available at:


http://www.nsf.gov/about/budget/fy2014/pdf/40_fy2014.pdf and

http://www.nsf.gov/about/budget/fy2014/pdf/11_fy2014.pdf.

Although the appropriations bills working their way through Congress do not endorse creation of CAUSE, NSF continues internal discussions about how to achieve the goals that underpin the President’s proposal, i.e., getting greater coherence and consistency for the undergraduate STEM education programs at NSF. These discussions are at an early stage, but are likely to lead to new undergraduate STEM education program solicitations, revised versions of the TUES, STEP, and WIDER solicitations and/or Dear Colleague Letters giving guidance to the PI community about NSF priorities and expectations related to undergraduate STEM education. The role of the Research Experiences for Undergraduate (REU) program is also being considered as part of this larger framework discussion, although it is not expected that REU will be significantly modified as a result.

With all of the uncertainty about the FY 2014 federal STEM research and education budget, it is reasonable to assume that we know even less about the post-FY 2014 scenario. But, we do have some

tea leaves to read. Each year, OSTP issues a Priorities Memo that outlines guidance to federal agencies regarding their budget requests under development. The [FY 2015 Priorities Memo](#) released July 26, 2013 gives some indication of where future funding opportunities might lie. The good news for our community is that several of the priorities outlined in that memo incorporate geoscience-relevant topics, including: clean energy, global climate change; and, R&D for informed policy-making and management – particularly in areas related to health, safety and environmental impacts. STEM education continues to be a priority for the administration in FY 2015, with an emphasis on implementation of the 5-year Strategic Plan and a focus on: “improving STEM instruction and learning; increasing and sustaining youth and public

engagement in STEM; enhancing the STEM experience of undergraduate students; providing STEM learning opportunities to groups historically underrepresented in STEM fields; and designing graduate education for tomorrow’s STEM workforce.” There is also a commitment to using evidence-based strategies and designing appropriate metrics to measure program outcomes in the memo, so it is not unreasonable to assume that these guiding principles will continue to be incorporated into future funding opportunities developed to address these priority areas. The devil is, of course, in the details that emerge and the level of funding that Congress provides to support the President’s agenda. So, watch this space for updates as they become known....

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 (4:30pm PDT; 5:30pm MDT; 6:30pm CDT; 7:30pm EDT)

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Noyce grant program prepares future STEM teachers across 2YC-4YC transition

by **Mary Nelson**
George Mason University

In Fall 2012, Northern Virginia Community College (NOVA) and George Mason University were awarded a Robert Noyce grant by the National Science Foundation. The grant provides NOVA \$250,000 over five years to hire and mentor learning assistants who will serve as peer tutors. The program is geared primarily to students who are interested in learning more about secondary STEM (Science, Mathematics, Engineering and Technology) teaching. The NOVA LAs work under the close supervision of a faculty member. They help with outside tutoring, lab and recitation sessions, and guide student learning in help rooms.



Past PolarTREC grants were funded by the National Science Foundation. Final selection and program implementation is contingent on funding approval for 2014-15 field season.


Learning assistants (LAs) work 10 hours a week and are paid \$1500 a semester. The educational benefits, however, far out-weigh the financial benefits. LAs typically work in classes in their major, and consequently have the opportunity to deepen their understanding of the important concepts that form the foundation of their major course work, improving their chances of retaining in their major. Learning assistants improve the learning experience of students with whom they work, helping them to negotiate meaning and make important connections, improving their learning experience.

In 2012-13, there were 10 NOVA students who were learning assistants and NOVA plans to have 11 LAs this fall. Learning assistants must all be STEM majors from the mathematics, biology, geology, chemistry or physics departments. Each of the departments has a faculty member who is a senior personnel member of the Noyce grant. They make the final decisions on which students will become LAs and in which courses they will serve. They are mentors to the learning assistants and coordinate with Mason faculty to ease the transition of LAs transferring to the university. NOVA students are identified for the LA pathway based on (1) their interest in teaching as a career, (2) their demonstrated aptitude in a science or math subject, (3) their intention to transfer to a four-year university, and (4) their interpersonal skills which demonstrate their potential to tutor other students using oral assessment techniques.

The learning assistant program strives to make the transition to the university smoother for those who transfer to George Mason. NOVA learning assistants are given priority for LA positions at Mason, and should they decide to pursue secondary licensure are eligible for a Noyce scholarship. These scholarships provide \$10,000 a year to help students whose career goal is to become a secondary STEM teacher.

For NOVA students to receive Noyce Scholarship funding, they will need to successfully complete one semester at Mason in the College of Science (COS) with a GPA of 3.0 or more, be an LA at Mason for one semester, and continue to make adequate progress in the education concentration that is part of the student's four-year degree requirements. To complete their education

concentration, NVCC students will need to be admitted to the College of Education and Human Development (for the concentration, not a degree) during their first year at Mason.

The learning assistant program is a win-win-win proposition. LAs become stronger majors, other NVCC students receive additional help in mastering their course material and instructors have additional help in reaching all of their students. 

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