



# CHE NEWSLETTER

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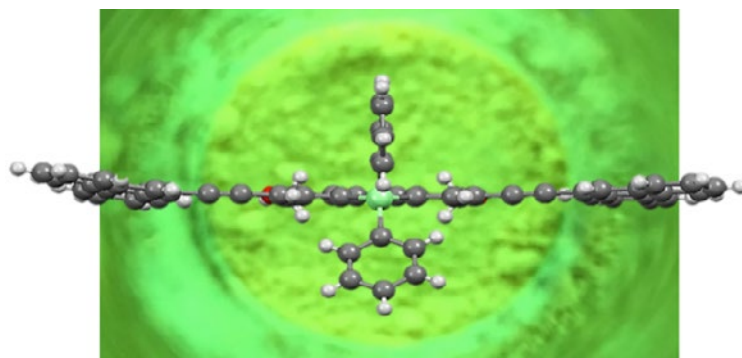
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*Janet Braddock-Wilking, University of Missouri-St. Louis, CHE-1362431, Luminescent Group 14 Metalloles*

## COMPOUNDS SHOW HIGH THERMAL STABILITY

JANET BRADDOCK-WILKING

A series of highly luminescent ring-shaped compounds containing carbon atoms and a silicon or germanium center have been prepared and structurally characterized. The new ring compounds are classified as sila- and germafluorenes and have intense fluorescence both when in solution or in the solid-state. The solution fluorescence color is in the blue region of visible light. In the solid-state these new molecules show a blue to blue-green fluorescent color. These compounds show high thermal stability and may be excellent candidates for emitting layers in organic light emitting diode devices (OLEDs) used in digital displays such as TVs, computer monitors, and cell phones.



## CHE COMMUNICATION LISTSERV SIGN-UP

Stay informed with the latest news and topics of interest from the NSF Division of Chemistry: sign up for our mailing list by sending an email message with the subject line, 'Subscribe to CHE', to: [cheminfo@nsf.gov](mailto:cheminfo@nsf.gov). Please share this information with your colleagues!



## LETTER FROM THE ACTING DIVISION DIRECTOR

CAROL A. BESSEL

Happy New Year!

As I write to you, the Chemistry Division staff is working very hard to make recommendations on ~220 CAREER proposals and to enlist reviewers and panelists for the ~1300 single investigator and small team proposals that arrived in our September and October windows. We will need lots of input from the chemistry community in order to make good decisions and hope you will be able to serve the Foundation as a reviewer, if asked.

We are very much looking forward to having our new Division Director, Dr. Angela Wilson, on board. Angela will join us on March 7, 2016 after a very brief stint at Michigan State University and, prior to that, at the University of North Texas. I hope you will join us in welcoming her to NSF!

The New Year is a time for looking ahead, and thus, this Newsletter contains important information on upcoming proposal deadlines for the NSF-wide Innovations at the Nexus of Food, Energy and Water Systems (INFEWS), and Major Research Instrumentation (MRI) Programs as well as the Designing Materials to Revolutionize and Engineer our Future (DMREF) Program. We hope that we will be able to meet you in person at our outreach events currently scheduled at the American Chemical Society (ACS) Middle Atlantic Regional Meeting (MARM) Meeting in Riverdale, NY in June, the ACS National Meeting in Philadelphia, in August, the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCCChE) meeting, and the Advancing Chicanos/Hispanics & Native Americans in Science (SACNAS) Meeting. We welcome our new AAAS Science & Technology Policy Fellow, Stephanie Albin and welcome back Illinois "Irma" Johnson from her detail in the MPS Office of the Assistant Director.

I especially call your attention to the 2016 Chemistry Early Career Investigator Workshop organized by Professor Malika Jefferies-El, Boston University and Professor Jeffery Moore, University of Illinois at Urbana-Champaign. This workshop is aimed at pre-tenure faculty and senior postdocs interested in academic careers and will explore developing research proposal topics, grant writing and reviewing (especially with regard to the CAREER program). NSF staff will be joined by other federal funders to answer questions of the attendees.

As the New Year is also a time for reflection, we thank several departing staff members for their excellent service to the Division – specifically, Linda Peteanu, who will return to her home institution of Carnegie Mellon University and C. Renee Wilkerson, who has accepted a new position at the Department of Justice. We also include links to several workshop reports and outreach presentations that may be helpful in informing you about ongoing divisional activities and potential funding opportunities. Finally, we point to our efforts to expand our communication toolkit and to the Science Nation, a weekly program highlighting research efforts from the Chemistry Division, Mathematical and Physical Sciences Directorate, and National Science Foundation.

The Chemistry staff wishes you a happy and healthy New Year!

Sincerely,

**Carol A. Bessel**

Acting Division Director



## UPDATE FROM THE INCOMING DIVISION DIRECTOR

ANGELA WILSON

Dear Colleagues,

I am delighted to have been selected as the next Director of the Chemistry Division, and look forward to serving in this role, which I will begin on March 7, 2016. To tell you a little bit about myself, I am a theoretical physical chemist with broad research interests from the development of ab initio approaches and basis sets to research in areas including catalysis, thermochemistry of transition metals and heavy elements, protein modeling, and mechanical properties of materials. Before I transition to NSF, however, I will be undergoing another transition – I will be joining the faculty of Michigan State University as the John A. Hannah Distinguished Professor of Chemistry at Michigan State University in early 2016. I will be moving from my current positions as Regents Professor of Chemistry, Director of the Center for Advanced Scientific Computing and Modeling, and Associate Vice Provost for Faculty at the University of North Texas, where I have been since 2000.

I thank Carol Bessel, who has been Acting Division Director and Timothy Patten, who has been Acting Division Deputy Director, for their leadership of the Division, and look forward to working with them, as well as the many talented and dedicated Chemistry Division staff. I look forward to my new roles in 2016.

**Angela Wilson**

<http://www2.chemistry.msu.edu/faculty/wilson>

## DIVISION OF CHEMISTRY STAFFING

### WELCOME OUR NEW AAAS SCIENCE & TECHNOLOGY POLICY FELLOW



Dr. Stephanie Albin joins MPS/CHE from Howard Hughes Medical Institute (HHMI) Janelia Research Campus where she studied the neuronal circuitry that encodes for hunger state and its effects on behavior using *Drosophila*. Stephanie will be helping CHE to collect and analyze data and information related to brain research and to develop a community based activity that would identify the important areas of research at the intersection of chemistry and brain research.

### WELCOME BACK IRMA TO CHEMISTRY

The Division would like to warmly welcome back Ms. Illinois “Irma” Johnson from a professional development (detail) opportunity as the Staff Associate in the Mathematical and Physical Sciences (MPS) Office of the Assistant Director. Irma will continue to work with the Chemical Structure, Dynamics and Mechanisms-A and -B (CSDM-A and CSDM-B) Programs.

## SAYING GOOD-BYE TO LINDA PETEANU



The Division says a fond good-bye and thank you to Program Director, Dr. Linda Peteanu for her dedication and hard work in the Macromolecular, Supramolecular and Nanochemistry (MSN) and Chemical Structure, Dynamics and Mechanisms-A (CSDM-A) Programs. Dr. Peteanu will return to Carnegie Mellon University as the new Department Chair. Congratulations and best wishes!

## FAREWELL TO RENEE WILKERSON

The Division wishes a warm farewell to C. Renee Wilkerson as she continues her career in the federal grants community at the Department of Justice. Renee served CHE for over nine years, first as a Science Assistant and then as a Program Analyst. We recognize her important contributions in outreach, communications, and for overall programmatic support to CHE and the broader chemistry community.

## DIVISION OF CHEMISTRY OUTREACH UPDATE

## CHE OUTREACH COMMITTEE

We're off to a great start planning for the 2016 CHE outreach activities for the chemistry community. CHE sponsors a variety of events to acquaint investigators and students from a diverse group of institutions and regions to our research and education programs. It is our pleasure to engage the chemistry community about current funding opportunities, policies and procedures, and helping investigators submit more competitive proposals for funding. Our efforts at these events include presentations and posters from NSF staff, informational displays at exhibit booths/tables, and personal interactions with researchers at all levels. We hope you can join us at one of our upcoming outreach activities.

Contact us ([cheminfo@nsf.gov](mailto:cheminfo@nsf.gov)) for additional information or to schedule a 'cyber-visit' between CHE and your institution or organization.

Also check out the NSF Events page to find out about upcoming NSF Days, Grants Conferences, and other related events: <http://www.nsf.gov/events>

## Look for us at these upcoming scientific meetings:



American Chemical Society Mid-Atlantic Regional Meeting (ACS MARM)  
June 9-12, 2016, Riverdale, New York

American Chemical Society National Meeting & Exposition (ACS National)  
"Meet the Federal Funders and Speed Coaching Session"  
August 21-25, 2016, Philadelphia, Pennsylvania



National Organization for the Professional Advancement of Blacks in Chemists and Chemical Engineers (NOBCCChE)  
Dates and Location: TBD



Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS)  
October 13-15, 2016, Long Beach, California

# PROMOTING YOUR RESEARCH: THE NEW NSF SCIENCE COMMUNICATION TOOLKIT

STEPHANIE ALBIN

Communicating your research results is an important part of doing science, especially when doing science with the public's money. One way NSF-funded researchers can both educate the public about the progress of their science and inform the legislature about the importance of funding scientific research is by effective scientific communication.

To assist in the effective communication of your research and its broader technical and educational/outreach impacts, NSF has developed a new resource: the Science Communication Toolkit for Principal Investigators. While at first the toolkit may look simply like a presentation, it is actually an interactive and user-friendly resource that contains:

- 1 — **A statement about the importance of science communication**, especially from an NSF perspective
- 2 — **Specific suggestions** for effective science communication
- 3 — **A process for communication involving NSF-funded researchers**, Public Information Officers (PIOs) at universities and institutions, NSF Program Directors, and the NSF Office of Legislative and Public Affairs (OLPA)
- 4 — **All of NSF's communications channels** (e.g. online print, video, social media) with descriptions, examples, and clickable links

"These resources were created to provide NSF Principal Investigators with more information about how to communicate their federally funded activities with help from NSF's Office of Legislative and Public Affairs (OLPA) - both their research and their broader impact activities," said the toolkit's creator, former AAAS Science & Technology Fellow Gregory Mack.

Remember, communicating your science is important! We need the public to understand what science is and why we need it. Let your organizations Public Information Officer and NSF's Office of Legislative and Public Affairs help you!

**The toolkit is available as an interactive Prezi presentation or text-only pdf on the NSF & Congress Toolkit webpage:**  
<http://nsf.gov/about/congress/toolkit.jsp>

## WORKSHOP REPORTS

Recently posted workshop reports are available on the Chemistry website. CHE is deeply indebted to the workshop organizers, steering committees, and participants - thank you all for your efforts to provide valuable perspectives for consideration by the entire chemistry community.

**NSF FEW Workshop on Closing the Human Phosphorus Cycle | June 8-9, 2015**

[http://www.nsf.gov/mps/che/workshops/phosphorus\\_cycle\\_report\\_final.pdf](http://www.nsf.gov/mps/che/workshops/phosphorus_cycle_report_final.pdf)

**Partnerships: A Workshop on Collaborations between the NSF/MPS & Private Foundations | May 28-29, 2015**

[http://www.nsf.gov/mps/che/workshops/final\\_partnerships\\_collaborations\\_between\\_nsf\\_mps\\_and\\_private\\_foundations.pdf](http://www.nsf.gov/mps/che/workshops/final_partnerships_collaborations_between_nsf_mps_and_private_foundations.pdf)

**Mass Spectrometry Informatics Big Data to Knowledge | May 11-12, 2015**

[http://www.nsf.gov/mps/che/workshops/mass\\_spectrometry\\_big\\_data\\_knowledge.pdf](http://www.nsf.gov/mps/che/workshops/mass_spectrometry_big_data_knowledge.pdf)

**NSF FEW Workshop: Enabling Resiliency in Energy, Water and Food Systems for Society | April 15-17, 2015**

[http://www.nsf.gov/mps/che/workshops/uarizona\\_few\\_nexus\\_workshop\\_report\\_final.pdf](http://www.nsf.gov/mps/che/workshops/uarizona_few_nexus_workshop_report_final.pdf)

## 2016 CHEMISTRY EARLY CAREER INVESTIGATOR WORKSHOP

The 2016 Chemistry Early Career Investigator workshop is a two-day event scheduled for March 10 and 11, 2016 in Arlington, VA. The workshop will offer insights into how to design and prepare competitive research proposals for NSF and other federal agencies, how to review proposals for both ad hoc review and panel review, and how to make the most of reviewer feedback. The close proximity of this event to NSF headquarters will enable the participation of many NSF CHE program officers, and also provide attendees with the opportunity to visit the NSF and follow up with specific program directors before or after the event.

The by invitation-only workshop is open to early career investigators and senior postdoctoral fellows considering academic careers in chemistry-related fields. The application consists of an application form (signed by the Department Chair), a two-page NSF-style curriculum vitae, a Project Summary for a research proposal, and a nomination letter from your Department Chair (for faculty members) or Research Mentor (for current postdoctoral fellows). The applicant is expected to cover her/his own travel and lodging costs – there are no registration fees (most meals are included and will be provided to participants). In order to attain a diverse representation of the chemistry community, the number of participants per department is limited to one. A limited number of travel/housing grants are available (please inquire).

Further details can be found at:

<http://www.bu.edu/chemistry/nsf-che-eci-workshop>

## OUTREACH PRESENTATIONS BY THE CHEMISTRY ADMINISTRATIVE TEAM

GLORIA YANCEY

**Videoconference presentation to the 2015 Pathways Conference on "International-Related Activities & Opportunities at NSF"**

Date: Friday, November 6, 2015  
 Time: 9:00 AM  
 Location: Stafford I Room-1295

Presenter: Ms. Margaret-Anne Wampamba  
 Division of Chemistry

**Videoconference presentation: International-Related Activities & Opportunities at NSF**  
 Margaret Anne Wampamba

Visit the following link to check out the presentation:  
<http://www.nsf.gov/pubs/2016/nsf16039/International-RelatedActivitiesPresentation.pdf>

**Presentation on "Broadening Participation and Outreach in Chemistry"**

**NOBCCChE**  
 National Organization for the Professional Advancement of Black Chemists and Chemical Engineers

MPS All Staff Meeting  
 October 19, 2015

Presenter: C. Michelle Jenkins  
 Division of Chemistry

**Presentation on Broadening Participation and Outreach in Chemistry**  
 Michelle Jenkins

Visit the following link to check out the presentation:  
<http://www.nsf.gov/pubs/2016/nsf16039/BroadeningParticipationPresentation.pdf>

## SCIENCE NATION



Science is never out of style-and there's never a "final frontier." In the NSF's Science Nation online magazine, we examine the breakthroughs, and the possibilities for new discoveries about our planet, our universe and ourselves. Topics include: an artificial retina that can help the blind to see; new materials to build things bigger, better, lighter, and stronger; new ways to make our lives better without making the environment worse; and what we can learn from

organisms that can live and thrive in frozen desserts or steaming-hot volcanic vents. Each week, Science Nation takes a dynamic, entertaining look at the research-and the researchers-that will change our lives.

**For more information about Science Nation click on one of the below links:**

[http://www.nsf.gov/news/special\\_reports/science\\_nation/index.jsp](http://www.nsf.gov/news/special_reports/science_nation/index.jsp)

**A focus on the Center for Sustainable Polymers, posted on January 5, 2016**

[http://www.nsf.gov/news/special\\_reports/science\\_nation/sustainablepolymers.jsp](http://www.nsf.gov/news/special_reports/science_nation/sustainablepolymers.jsp)

**There is also a YouTube Channel at**

<https://www.youtube.com/playlist?list=PL833118C47C3E8362>

**This is a great way to see back episodes — they are up to #211!**

## UPCOMING PROPOSAL DEADLINE

### **Innovations at the Nexus of Food, Energy and Water Systems (INFEWS), NSF 16-524**

The overarching goal of INFEWS is to catalyze well-integrated, interdisciplinary research efforts to transform the scientific understanding of the nexus of food, energy and water systems in order to improve system function and management, address system stress, increase resilience, and ensure sustainability. The NSF INFEWS initiative also aims to advance our understanding of the food-energy-water system through quantitative and computational modeling, including support for relevant cyberinfrastructure; to develop real-time, cyber-enabled interfaces that improve understanding of the behavior of FEW systems and increase decision support capability; to enable research that will lead to innovative system and technological solutions to critical FEW problems; and to grow the scientific workforce capable of studying and managing the FEW system, through education and other professional development opportunities. Contact Ty Mitchell ([tmitchel@nsf.gov](mailto:tmitchel@nsf.gov)) or Carol Bessel ([cbessel@nsf.gov](mailto:cbessel@nsf.gov)) with questions.

### **INFEWS Submission Deadline (due by 5 p.m. proposer's local time): March 22, 2016**

For further details please click on one of the following links:

The link to the solicitation is: [http://www.nsf.gov/publications/pub\\_summ.jsp?ods\\_key=nsf16524](http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf16524)

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