

# THE CAMILLE & HENRY DREYFUS FOUNDATION



*2014 in Review*





## *Letter from the President, Henry C. Walter*



**A** rewarding aspect of serving at the Camille and Henry Dreyfus Foundation is to be continually reminded of the many varied ways in which the chemical sciences evolve and make a positive impact on humanity. For example, last year Graham Cooks of Purdue University was recognized with the Dreyfus Prize for his development of both new ionization techniques and a handheld inexpensive mass spectrometer. The new techniques are being validated at hospitals in cancer surgery, and the portable unit has potential applications across a range of areas that include health care, food safety, and airport security. Thus we continue to strive to fulfill Camille Dreyfus's founding charter, to advance the science of chemistry, chemical engineering, and related sciences as a means of improving human relations and circumstances throughout the world through our awards programs, our symposia, and the Dreyfus Prize.

One of the most enlightening ways in which the significance of these developments is made clear is through hearing directly from the chemical scientists who are making these important discoveries. To this end, the Foundation presented or supported three truly outstanding symposia this year. Further details on some of these events are provided in the body of this report, but I'd like to offer some brief observations.

The first symposium of 2014 was focused on chemical instrumentation, the topic of the 2013 Dreyfus Prize, and was held at the spring national meeting of the American Chemical Society. The Foundation was pleased to again spotlight the role of chemical instrumentation, as it is often a pivotal yet overlooked facet of many of the most groundbreaking and far-reaching discoveries in chemistry.

In October, the third biennial symposium for recent Camille and Henry Dreyfus Teacher-Scholars was held at the New York Academy of Sciences. Each of these gatherings has been a stimulating event, as it includes talks from preeminent senior Teacher-Scholars, as well as poster sessions in which the current Teacher-Scholars present their latest research. Esteemed chemists, who continue to have a deep impact on the field, interact with emerging young faculty and make these gatherings particularly lively. It is especially rewarding to see the growing community of many of the nation's top chemists, who all share a common connection with the Dreyfus Foundation.

Finally, the Foundation also contributed to a symposium in organic chemistry at Yale University that honored the memory of Harry Wasserman. Harry served on the Dreyfus Board of Directors and was a valued advisor and friend to the Foundation for more than 40 years. His contributions to the growth, reputation, and success of the Foundation were immense, so we were glad to join in paying tribute to his legacy. Videos of the symposium and many wonderful remembrances and photos of Harry are online at <http://chem.yale.edu/HHW/>.

We wish you the best for 2015. *Henry C. Walter*



## 2014 Teacher-Scholar Symposium

The third biennial symposium for recent Camille and Henry Dreyfus Teacher-Scholars was held at the New York Academy of Sciences on Friday, October 24. Approximately 40 of the most recent Teacher-Scholars presented posters of their research, bracketed by talks from four renowned senior Teacher-Scholars and a preeminent digital learning expert. This year's talks, videos of which are available on the Foundation Web site, were (in sequence):



### Stephen Lippard

Arthur Amos Noyes Professor, Massachusetts Institute of Technology: *Cancer Treatment with Platinum and Other Metal Complexes*



### David Oxtoby

President, Pomona College:  
*A Teacher-Scholar Looks at Climate Change*



### Leroy Hood

President and Cofounder, Institute for Systems Biology: *The Emergence of Systems Medicine and Proactive P4 Medicine: Catalyzing the Transformation of Healthcare*



### Sanjay Sarma

Director of Digital Learning, Massachusetts Institute of Technology:  
*Lessons in Digital Learning*



### Emily Carter

Founding Director, Andlinger Center for Energy and the Environment, Princeton University: *Building a Sustainable Energy and Environmental Future*

In addition to presenting research posters, the recent Teacher-Scholars provided brief teaching statements that were compiled and distributed at the Symposium. These statements are also available online, in the Symposia section of the Dreyfus Web site.



"The symposium gave us the opportunity to get valuable new perspectives about different areas of chemistry, and to explore connections among them," observed Adam Wasserman of Purdue University. Stephen Maldonado of the University of Michigan said the symposium "helped seed a new collaboration that probably would never have happened otherwise."



## 2015 Dreyfus Prize Topic Announced

The Foundation has selected Making Molecules and Materials as the topic of the 2015 Dreyfus Prize in the Chemical Sciences. "Making molecules and materials is at the core of chemistry," said Marye Anne Fox, chair of the Dreyfus Scientific Affairs Committee. "The syntheses of new organic, inorganic, and solid state matter with sought after or novel properties have greatly improved the quality of life."

**2009**

**George Whitesides**

Harvard University, Materials Chemistry, for revolutionizing the chemistry of soft materials



**2011**

**Tobin Marks**

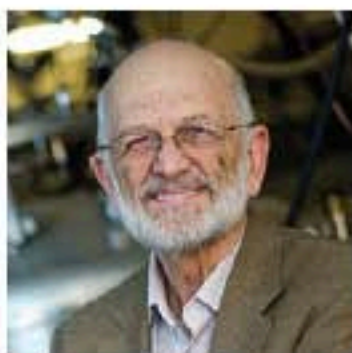
Northwestern University, Catalysis, for the development of major new industrial catalysts and the fundamental understanding of their chemical structures and mechanisms of action



**2013**

**Graham Cooks**

Purdue University, Chemical Instrumentation, for his groundbreaking innovations in mass spectrometry that have profoundly enriched analytical chemistry

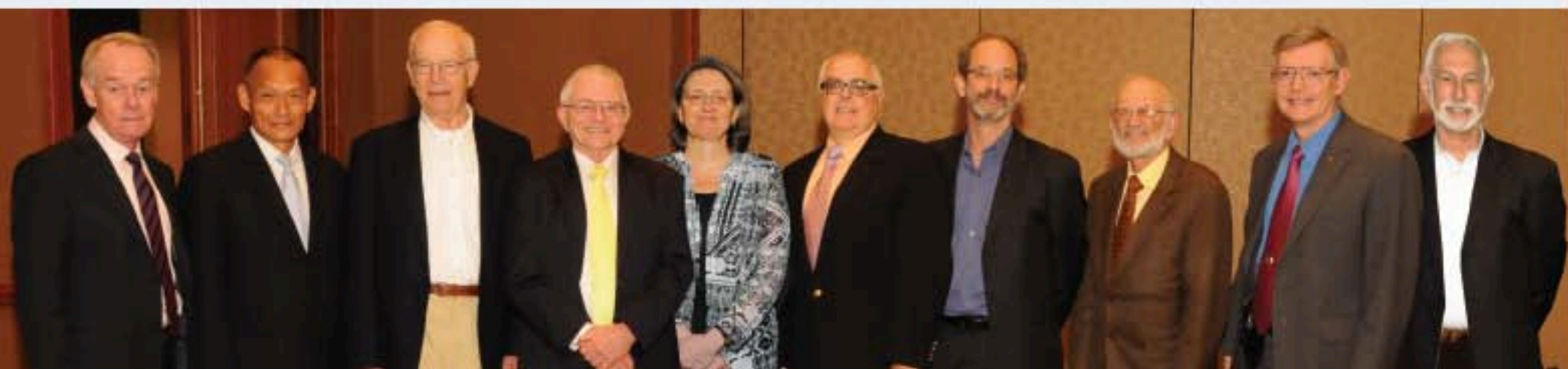


The Dreyfus Prize, awarded biennially and open to international nominations, recognizes an individual for exceptional and original research in a selected area of chemistry that has advanced the field in a major way. The prize consists of a monetary award of \$250,000, a medal, and a citation.

The deadline for nominations is March 2, 2015, with the prize recipient to be announced in May 2015. Further information on the Prize and details on the nomination procedure are available on the Foundation Web site.

## ACS–Dreyfus Symposium

Leaders in the field of chemical instrumentation presented details of their recent accomplishments at a Presidential Symposium in Chemical Instrumentation at the national meeting of the American Chemical Society in Dallas on March 18. The Dreyfus Foundation is pleased to have supported this symposium, which featured: David Chandler (Sandia National Laboratory), R. Graham Cooks (Purdue University), Michael Fayer (Stanford University), Wayne Hendrickson (Columbia University), Wilson Ho (University of California, Irvine), Ann McDermott (Columbia University), W. E. Moerner (Stanford University), and Lloyd Smith (University of Wisconsin-Madison).



Pictured (l. to r.): Wayne Hendrickson, Wilson Ho, Henry C. Walter (Dreyfus Foundation, President), Thomas Barton (ACS, President), Ann McDermott, David Chandler, Lloyd Smith, R. Graham Cooks, W. E. Moerner, and Michael Fayer.



## ACS Awards



In 2014, the Foundation presented Sandra C. Greer, Mills College, with the American Chemical Society's Award for Encouraging Women into Careers in the

Chemical Sciences. Rigoberto Hernandez, Georgia Institute of Technology, was the recipient of the ACS Award for Encouraging Disadvantaged Students into Careers in the Chemical Sciences.

Sponsored by the Foundation and administered by the ACS, the awards consist of \$5,000 to the awardee and a grant of \$10,000 to an eligible non-profit institution, designated by the recipient, to strengthen its activities in meeting the objectives of the award. Greer directed her grant to support undergraduate research at Mills College. Hernandez's grant has been applied to the Open Chemistry Collaborative in Diversity Equity (OXIDE), a collaborative venture of Georgia Tech and MIT that Hernandez co-founded and serves as Director.

---

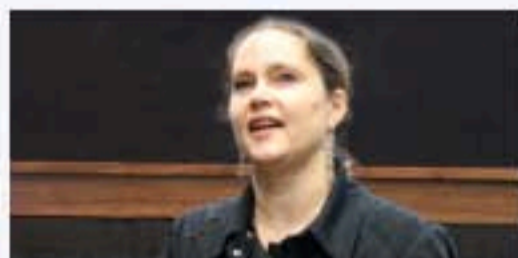
## Jean Dreyfus Boissevain Lectureship

The Jean Dreyfus Boissevain Lectureship for Undergraduate Institutions provides funding to bring a leading researcher to a primarily undergraduate institution to give both public and technical lectures in the chemical sciences, to meet with the students and faculty, and to support two undergraduates in summer research. Since the program's initiation in 2010, the Foundation has made 24 awards in this program.

Last April, Catherine Drennan, professor of chemistry and biology at Massachusetts Institute of Technology, was the Jean Dreyfus Boissevain Lecturer at Willamette University in Salem, Oregon. Her series of talks included a general presentation at a monthly Science Night event at a local brewery, *Is the Classroom Lecture Becoming Extinct or Simply Evolving?*, which drew more than 100 people. The capstone event was

a dinner and a technical talk, *Shake, Rattle, and Roll: Capturing Snapshots of Metalloproteins in Action*.

Drennan also worked with students at Highland Elementary School as part of Willamette's science outreach program that brings undergraduate female science majors into the 5th grade classroom every week. She had lunch with chemistry majors, met with students enrolled in the Graduate School of Education, and met individually with faculty. Charles Williamson of Willamette described the visit as "a tremendous success, and we could not have asked for a more enthusiastic and engaged visitor." Drennan stated, "Willamette set up a fantastic program that benefitted Willamette undergraduate students and faculty, the local non-scientific community, and the Portland area scientific community."



---

## News of the Board of Directors

Paul Voitach was elected to the Board of Directors at the Foundation's annual meeting last April. Voitach is Managing Partner of Pharmaceutical Advisors LLC. He holds an MBA from the William E. Simon School of Business and a BA in Economics from the University of Rochester.

Marye Anne Fox, chair of the Foundation's Scientific Affairs Committee, received the 2014 Clark Kerr Award for Distinguished Leadership in Higher Education. Fox is Chancellor Emerita of the University of California, San Diego, and has been a Director of the Foundation since 2002.



### Board of Directors

Henry C. Walter  
*President*

Dorothy Dinsmoor  
*Vice President and Secretary*

H. Scott Walter  
*Treasurer and Chair,  
Finance and Audit Committee*

Marye Anne Fox  
*Chair, Scientific Affairs Committee*

John R. H. Blum

Edward A. Reilly

John I. Brauman

Richard N. Zare

Matthew V. Tirrell

Paul Woitach

### Honorary Director

H. Marshall Schwarz

### Advisors

Louis E. Brus

David E. Hansen

Francois M. M. Morel

JoAnne Stubbe

### Honorary Advisors

Dudley R. Herschbach

John D. Roberts

### Staff

Mark J. Cardillo  
*Executive Director*

Gerard Brandenstein  
*Associate Director*

Adam Lore  
*Operations Manager*

The mission of the Camille and Henry Dreyfus Foundation is *to advance the science of chemistry, chemical engineering, and related sciences as a means of improving human relations and circumstances throughout the world.* Established in 1946 by chemist, inventor, and businessman Camille Dreyfus as a memorial to his brother Henry, the Foundation became a memorial to both men when Camille Dreyfus died in 1956. Throughout its history the Foundation has sought to take the lead in identifying and addressing needs and opportunities in the chemical sciences.



THE CAMILLE  
& HENRY DREYFUS  
FOUNDATION

555 Madison Avenue  
New York, New York 10022  
T: (212) 753-1760  
F: (212) 593-2256  
[www.dreyfus.org](http://www.dreyfus.org)



## 2014 Awards

### **Camille Dreyfus Teacher-Scholar Awards Program**

Theodor Agapie, *California Institute of Technology*  
Hal Alper, *University of Texas at Austin*  
Paul Dauenhauer, *University of Massachusetts Amherst*  
Nilay Hazari, *Yale University*  
Ramesh Jasti, *Boston University*  
Matthew Kanan, *Stanford University*  
Elizabeth Nolan, *Massachusetts Institute of Technology*  
Rodney Priestley, *Princeton University*  
Khalid Salaita, *Emory University*  
Jordan Schmidt, *University of Wisconsin-Madison*  
Sara Skrabalak, *Indiana University Bloomington*  
Adam Wasserman, *Purdue University*  
Emily Weiss, *Northwestern University*  
Daniel Weix, *University of Rochester*  
Michael Zdilla, *Temple University*

### **Henry Dreyfus Teacher-Scholar Awards Program**

Myriam Cotten, *Hamilton College*  
Jason Gillmore, *Hope College*  
Hai Lin, *University of Colorado Denver*  
Gregory O'Neil, *Western Washington University*  
Joshua Schrier, *Haverford College*  
Dwight Stoll, *Gustavus Adolphus College*  
Douglas Vander Griend, *Calvin College*

### **Postdoctoral Program in Environmental Chemistry**

Timothy Bertram, *University of California, San Diego*  
Kyoung-Shin Choi, *University of Wisconsin-Madison*  
Danna Freedman, *Northwestern University*  
Jennifer Lewis, *Harvard University*  
Richard Lunt, *Michigan State University*  
Brian Stoltz, *California Institute of Technology*  
Yogesh Surendranath, *Massachusetts Institute of Technology*  
Peidong Yang, *University of California, Berkeley*

### **Special Grant Program in the Chemical Sciences**

American Chemical Society  
California Institute of Technology  
Fordham University  
Middle Tennessee State University  
The Ohio State University  
Rensselaer Polytechnic Institute  
The Rockefeller University  
Science Friday Initiative  
Smith College  
Tuskegee University  
University of Arkansas  
University of California, Santa Barbara  
University of Nebraska-Lincoln  
The University of North Carolina at Charlotte  
University of Pittsburgh  
Yale University

### **Senior Scientist Mentor Program**

R. Stephen Berry, *The University of Chicago*  
Ronald Danner, *The Pennsylvania State University*  
Roger DeKock, *Calvin College*  
Henry DePhillips, *Trinity College*  
James Dye, *Michigan State University*  
Gamil Guirgis, *College of Charleston*  
Takeshi Oka, *The University of Chicago*  
Albert Padwa, *Emory University*  
Stuart Rice, *The University of Chicago*  
Andrew Streitwieser, *University of California, Berkeley*

### **Jean Dreyfus Boissevain Lectureship for Undergraduate Institutions**

California State University, Fullerton  
Ithaca College  
Southwestern University  
University of Colorado Denver  
University of North Florida



## *Award Programs and 2015 Deadlines*

**The Dreyfus Prize in the Chemical Sciences**, awarded biennially, consists of a monetary award of \$250,000, a medal, and a citation. The prize, which is open to international nominations, is awarded to an individual in a selected area of chemistry to recognize exceptional and original research that has advanced the field in a major way. The 2015 Prize will be awarded in making molecules and materials.  
*Deadline:* March 2, 2015

**The Camille Dreyfus Teacher-Scholar Awards Program** supports the research and teaching careers of talented young faculty in the chemical sciences at Ph.D.-granting institutions. Based on institutional nominations, the program provides discretionary funding to faculty prior to their sixth year of appointment. Criteria for selection include an independent body of scholarship attained as independent researchers, and a demonstrated commitment to education. The award provides an unrestricted research grant of \$75,000.  
*Deadline:* February 10, 2015

**The Henry Dreyfus Teacher-Scholar Awards Program** supports the research and teaching careers of talented young faculty in the chemical sciences at primarily undergraduate institutions. Based on institutional nominations, the program provides discretionary funding to faculty who are within the fourth and twelfth years of their independent academic careers. The award is based on accomplishment in scholarly research with undergraduates, as well as a compelling commitment to teaching. The award provides an unrestricted research grant of \$60,000.  
*Deadline:* May 18, 2015

**The Postdoctoral Program in Environmental Chemistry** is intended to further the development of scientific leadership in the field of environmental chemistry. The award provides a principal investigator with \$120,000 over two years to appoint a postdoctoral fellow in environmental chemistry.  
*Deadline:* August 3, 2015

**The Special Grant Program in the Chemical Sciences** has been suspended.

**The Senior Scientist Mentor Program** supports emeritus faculty who maintain active research programs with undergraduates in the chemical sciences. The award provides \$20,000 over two years for undergraduate stipends and modest research support.  
*Deadline:* September 10, 2015

**The Jean Dreyfus Boissevain Lectureship for Undergraduate Institutions** provides an \$18,500 grant to bring a leading researcher to a primarily undergraduate institution to give a series of lectures in the chemical sciences. The lecturer is expected to substantially interact with undergraduate students and faculty over the period of the visit. The program provides funds to host the speaker and to support summer research opportunities for two undergraduate students.  
*Deadline:* May 18, 2015