

2022 in Review



Participants and speakers at the 2022 Dreyfus Foundation Teacher-Scholar Symposium

Letter from the President, H. Scott Walter



I hope this letter finds you well. 2022 was an outstanding year for the Foundation, filled with new insights and collaborations.

After the events of the past several years,

it was wonderful to meet again with grantees and colleagues in person. In the spring, we gathered at the American Chemical Society (ACS) National Meeting to host a full-day Symposium on Environmental Chemistry. At that meeting we also celebrated the winners of two Foundation-sponsored ACS Awards promoting underrepresented groups in the chemical sciences.

In the fall, a ceremony was held at Harvard University to honor 2021 Dreyfus Prize winner James G. Anderson for his seminal contributions to Environmental Chemistry. Shortly after, we convened with Teacher-Scholar awardees in NYC for the restart of our biennial Teacher-Scholar Symposium, a day of stimulating talks, poster sessions, and peer networking.

Our flagship Teacher-Scholar program, now in its 53rd year, conferred 26 awards in 2022 to outstanding young faculty in the Chemical Sciences, providing support for their work in research and education. After a cumulative 23 grants and \$2.4 million awarded, the Foundation sunsetted its seed grant program in Machine Learning in the Chemical Sciences and Engineering. We look forward to the continued success of our awardees, and now turn our attention to identifying new areas of chemical science where future seed funding programs can be impactful.

The Foundation saw a number of changes to its Board, Advisors, and staff this year. Edward

A. Reilly retired from the Board after 36 years of dedicated service, Louis Brus of Columbia University completed his eight year term as an Advisor, and staff member Adam Lore, after 22 years, has moved on to pursue other long-standing interests. On behalf of the Dreyfus Foundation, I want to sincerely thank these individuals for their dedicated service to the Foundation and the broader chemical sciences community.

I would also like to extend the warmest welcome to our two new Board members, Zhenan Bao of Stanford University, and Milan Mrksich of Northwestern University, as well as to our new Advisor, Melanie Sanford of The University of Michigan. We are also delighted to have two new staff members join the Foundation in 2022, Ali Chunovic, Program Manager, and Chloe Rickert, Administrative Assistant.

Looking ahead to 2023, we are excited to continue our flagship award and lecture programs, and eagerly anticipate the May announcement of the 2023 Dreyfus Prize winner. This biennial Prize, conferred in 2023 on the topic of “Imaging in the Chemical Sciences,” recognizes an individual who has advanced the field in a major way.

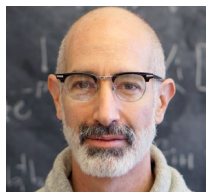
Thank you and best wishes to all for a healthy and productive 2023!

A handwritten signature in dark ink that reads "H. S. Walter". The signature is fluid and cursive, with a long horizontal line extending from the end.

2022 Teacher-Scholar Symposium

After a two-year postponement, the Foundation resumed the biennial [Teacher-Scholar Symposium](#) with an in-person meeting in October 2022. Sixty distinguished guests, including four cohorts of Teacher-Scholars, gathered in New York City. Participants spent the day attending lectures by accomplished speakers, sharing their work in poster sessions, and networking with colleagues from across

the country. The esteemed speakers were: **Andrew Hamilton**, New York University; **David Reichman**, Columbia University; **Frank Gupton**, Virginia Commonwealth University; **Rodney Priestley**, Princeton University; and **Melanie Cooper**, Michigan State University. A selection of talks from the day's proceedings are available to watch via the Foundation's [YouTube channel](#).



Left to right: Hamilton, Reichman, Gupton, Priestley, and Cooper

Dreyfus Prize Event Honors Dr. James G. Anderson

In September 2022, the Foundation hosted a lecture and ceremony at Harvard University to celebrate 2021 Dreyfus Prize winner [James G. Anderson](#). Nearly 100 faculty, students, and other distinguished guests gathered to hear Anderson give a talk on his life and prize-winning work in environmental chemistry, the topic of the 2021 Dreyfus Prize. After the lecture, guests gathered at the Harvard Faculty Club for a reception and celebratory dinner. The lecture and a short film featuring Dr. Anderson and his groundbreaking work can both be viewed on the Foundation's [YouTube channel](#).



Anderson receives his award from Foundation President H. Scott Walter
(Photo credit: junvalenciaphotography.com)

Dreyfus Lectureship at the University of Basel



Hoffmann at the 2022 Basel Lectureship (Photo credit: University of Basel)

After a two-year hiatus, the **Camille and Henry Dreyfus Lectureship at the University of Basel** resumed with a visit from Nobel Laureate **Roald Hoffmann**, Cornell University, in May 2022. This annual Lectureship honors the legacy of Camille and Henry Dreyfus, the groundbreaking scientist-entrepreneur brothers who were awarded their doctorates in Organic Chemistry at the University of Basel. A special travel grant was also awarded to Peter Chen, ETH Zurich, for students from his organic chemistry course to attend the lecture. Chen's course focuses on physical organic chemistry primarily through the lens of pericyclic reactions, for which the Woodward-Hoffmann rules are of paramount importance.

Dreyfus/ACS Symposium on Environmental Chemistry

The Foundation held a [one-day symposium on Environmental Chemistry](#), the topic of the 2021 Dreyfus Prize, at the Spring ACS national meeting in San Diego in March 2022. The Symposium featured distinguished speakers in the field: **Barbara Finlayson-Pitts**, University of California, Irvine; **Vicki Grassian**, University of California, San Diego; **John Seinfeld**, California Institute of Technology; **Dustin Schroeder**, Stanford University; **François Morel**, Princeton University; **Paul Anastas**, Yale University; **Frank Keutsch**, Harvard University; and winner of the 2021 Dreyfus Prize **James G. Anderson**, Harvard University.



*Symposium Chair Matthew V. Tirrell, University of Chicago
(Photo credit: Nam Thai, EPNAC)*

Machine Learning Program

Given the tremendous growth in machine learning research and funding opportunities, the Foundation has decided to discontinue its award program for Machine Learning in the Chemical Sciences and Engineering.

Since the program was first announced in 2019, the Foundation has awarded over 20 grants totaling \$2.4M to research investigators developing new approaches for

machine learning in the chemical sciences. Research funded by this work has resulted in more than three dozen publications and supported the training of 20 students and postdocs. Importantly, more than a dozen investigators have applied for follow-on funding from other sources, and several have already received such funding. In many cases, this program facilitated cross-functional and cross-departmental collaborations that might not otherwise have occurred.

Dreyfus-Sponsored ACS Awards and Scholarships

Since 1995, the Foundation has sponsored two annual National Awards that are administered by the American Chemical Society: the awards for [Encouraging Women into Careers in the Chemical Sciences](#) and for [Encouraging Underrepresented and Economically Disadvantaged Students into Careers in the Chemical Sciences](#). In 2022, these awards were made to **Mindy Levine**, Ariel University, and **Kimberly M. Jackson**, Spelman College, respectively.

Each award consists of \$5,000 to the awardee, \$1,500 in travel funds, and a grant of \$10,000 to an eligible non-profit institution, designated by the recipient, to strengthen the objectives of their

award. Dr. Levine directed her award to support a summer chemistry camp for girls. Dr. Jackson's grant supports Pink STEM's efforts to advance equity in STEM.

In 2022 the Foundation committed to a multi-year renewal of its long-standing support for the [ACS Scholars Program](#), a project that for more than 25 years has provided scholarships and mentoring to talented undergraduates from historically underrepresented groups in the chemical sciences. The impact of this program over the years has been truly outstanding, and we are proud to continue our support as one of its longest serving and most significant funders.



*Levine receiving her award from
Foundation President H. Scott Walter
(Photo credit: American
Chemical Society)*



*Jackson receiving her award from
Chair of the Foundation's Scientific Affairs
Committee Matthew V. Tirrell (Photo
credit: American Chemical Society)*

New Films from *Chemistry Shorts*

The *Chemistry Shorts*[™] series is an inspiring collection of short films sponsored by the Foundation and funded in part by our partners at The Gordon and Betty Moore Foundation. Each film spotlights the positive impact that chemists and chemical engineers have on modern life as they work to solve important problems and create new opportunities that benefit humanity. The films are accompanied by a lesson plan for use in high school and early college classrooms. Both the films and lesson plans are available to students, educators, and others completely free-of-charge via chemistryshorts.org.

“[Untapped Potential](#),” the fourth film in the series, launched in early 2022. It focuses on new ways that chemists and chemical engineers are ensuring that water is both safe to drink and available. The film features appearances from three prominent experts: **Meagan Mauter**, Stanford University; **David Sedlak**, University of California, Berkeley; and **William Tarpeh**, Stanford University.

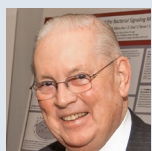
Our fifth film, “[Driving Reactions](#)” explores the power



A behind the scenes shot from the directed evolution film. (Photo credit: Day's Edge)

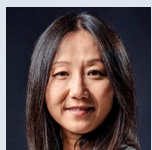
of harnessing nature's own innovations to solve problems. Featured scientists **Hal Alper**, University of Texas at Austin, and Nobel Laureate **Frances Arnold**, California Institute of Technology, use directed evolution to design enzymes that work as molecular machines, helping create a more sustainable world using the power of chemistry. The film, launched in January 2023, focuses on Dr. Alper's innovative work to design an enzyme that can efficiently degrade PET, one of the most common plastics found in water bottles and other everyday objects, into more easily recyclable and reusable products.

News of the Board, Advisors, and Staff



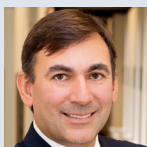
Edward A. Reilly retired from the Board after 36 years of service, which included leadership positions as Audit Committee Member, Secretary-Treasurer, Secretary, and Compensation Committee Member.

Outside of the Foundation, Mr. Reilly has a long and distinguished career as an attorney and as a faculty member at Duke University Law School.

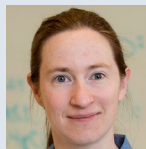


This year the Board welcomed new members, **Zhenan Bao**, K.K. Lee Professor in Chemical Engineering and Department Chair at Stanford University, and **Milan Mrksich**, Vice President

for Research and the Henry Wade Rogers Professor with appointments in Chemistry, Biomedical Engineering, and Cell & Developmental Biology at Northwestern University.



Louis Brus, Special Research Scientist and Samuel Latham Mitchell Professor Emeritus at Columbia University, completed his eight-year term as an Advisor to the Foundation.



Melanie Sanford, Moses Gomberg Distinguished University Professor of Chemistry, Arthur F. Thurnau Professor, and Professor of Chemistry at the University of Michigan, was appointed as an Advisor to the Foundation.

Staff changes in 2022: **Adam Lore** departed the Foundation after 22 years of distinguished service, and we welcomed two new staff members: **Ali Chunovic**, Program Manager, who joins us from the Alfred P. Sloan Foundation and **Chloe Rickert**, Administrative Assistant, who joins us from the CPR Institute.

2022 Awards

Camille Dreyfus Teacher-Scholar Awards

Justin Caram, *University of California, Los Angeles*
Jefferson Chan, *University of Illinois at Urbana-Champaign*
Sujit Datta, *Princeton University*
Christopher Hendon, *University of Oregon*
Lilian Hsiao, *North Carolina State University*
Weiyang Li, *Dartmouth College*
Brian Liao, *Harvard University*
Mark Levin, *University of Chicago*
Steven Lopez, *Northeastern University*
Maxwell Robb, *California Institute of Technology*
Sandeep Sharma, *University of Colorado Boulder*
Daniel Suess, *Massachusetts Institute of Technology*
William Tarpeh, *Stanford University*
Ashleigh Theberge, *University of Washington*
V. Sara Thoi, *Johns Hopkins University*
Jesús Velázquez, *University of California, Davis*
Lauren Zarzar, *The Pennsylvania State University*
Mingjiang Zhong, *Yale University*

Henry Dreyfus Teacher-Scholar Awards

Jeffrey Cannon, *Occidental College*
Dennis Cao, *Macalester College*
Jesse Carrick, *Tennessee Technological University*
Kelly Chacón, *Reed College*
Misty Kuhn, *San Francisco State University*
Andres Martinez, *California Polytechnic State University,
San Luis Obispo*
Maosheng Miao, *California State University, Northridge*
Paul Raston, *James Madison University*

Machine Learning in the Chemical Sciences and Engineering

Connor G. Bischak, *University of Utah*
Stephen Leffler Buchwald, *Massachusetts Institute
of Technology*
Robert A. DiStasio Jr., *Cornell University*
Julia Dshemuchadse, *Cornell University*
Boris Kozinsky, *Harvard University*
Wenhao Sun, *University of Michigan*
Mark E. Tuckerman, *New York University*
Gregory A. Voth, *University of Chicago*

Jean Dreyfus Lectureship for Undergraduate Institutions

Christopher Newport University
Eastern Illinois University
Fordham University
Ithaca College
Texas Woman's University
Trinity University
University of Colorado Denver

Dreyfus Foundation-Sponsored Awards at ACS

ACS Award for Encouraging Women into Careers in the Chemical Sciences

Mindy Levine, *Ariel University*

ACS Award for Encouraging Underrepresented and Economically Disadvantaged Students into Careers in the Chemical Sciences

Kimberly M. Jackson, *Spelman College*

Award Programs and 2023 Deadlines

The Dreyfus Prize in the Chemical Sciences,

awarded biennially, consists of a monetary award of \$250,000, a medal, and a certificate. 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 recipient of the 2023 Prize, which is conferred in Imaging in the Chemical Sciences, will be announced in May 2023.

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 \$100,000.

Deadline: February 1, 2023

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 \$75,000.

Deadline: August 3, 2023

The Jean Dreyfus 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, at least one of which is promoted and accessible to the general public. 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: August 3, 2023

The ACS/Dreyfus Awards for Encouraging Underrepresented and Economically

Disadvantaged Students into Careers in the Chemical Sciences and Encouraging Women into Careers in the Chemical Sciences, sponsored by the Camille and Henry Dreyfus Foundation, recognize significant accomplishments by individuals in stimulating these students to choose careers in the chemical sciences and engineering. Each award consists of \$5,000, \$1,500 in travel funds, a certificate, 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. See the American Chemical Society's website for additional information: <http://www.acs.org>

The ACS Scholars Program, supported by the Camille and Henry Dreyfus Foundation, provides for multi-year scholarships, along with mentoring, to support talented undergraduate students that come from ethnic and racial groups that have been historically underrepresented in the chemical sciences. Awardees are eligible to receive up to \$5,000 in scholarship funding per year. See the American Chemical Society's website for additional information: <http://www.acs.org>

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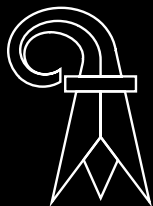
Ali Chunovic

Program Manager

Chloe Rickert

Administrative Assistant

The purpose of the Camille and Henry Dreyfus Foundation, Inc., 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 through a series of programs and awards.



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