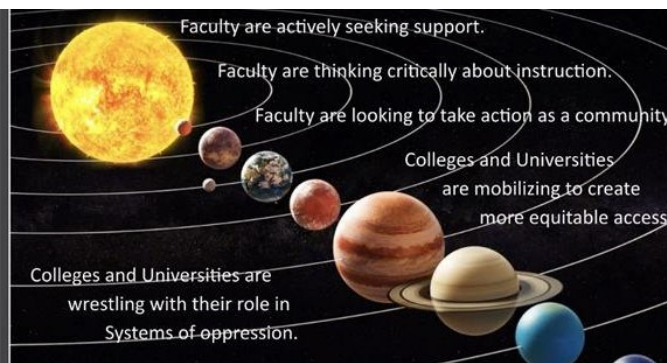


Cottrell Scholar Conference July 8-10, 2020



Progress so far...

9 new/updated Wikipedia articles

Welcome from the President



Welcome to the annual, but certainly an unusual, Cottrell Scholar Conference. In the midst of the pandemic we meet virtually for the first time. After the hard work of the planning committee identifying speakers and discussion topics around incorporating entrepreneurship into science education programs, we have pivoted from that original theme to focus instead on what seems to be the more pressing need for faculty today — sharing best practices and developing new approaches to online education.

We expect that through this conference and the resultant collaborative projects, Cottrell Scholars will continue to play a leading role in how teaching by faculty and learning by students (and vice versa!) can be carried out most successfully. Universities and colleges across the country are struggling with how to deliver quality education online, how to create experiences that can replace in-person laboratory exercises, how to evaluate student progress, and how to foster inclusion so that all students participate fully in discussion, study groups, and office hours.

Universities and colleges are also dealing with dramatic revenue reductions. Simply throwing new money into course production, technical staff salaries, and expansion of the faculty (both to de-densify the classroom and to add expertise with online tools) is clearly not an option in the near term. In this financially constrained time, will faculty consider new approaches that result in more sharing of courses across institutions at the introductory level, freeing up many faculty to teach smaller, specialized courses within their departments? Will faculty move toward a shared repository for the most effective online modules for teaching challenging topics? Will faculty make every effort to showcase the diverse array of scientists who contribute new discoveries, making clear to students of all backgrounds that they are absolutely welcome as full members of the scientific community and that we as faculty are committed to their success and are ready to champion them as they strive to achieve their goals? Creative approaches are needed, and for that we look to the Cottrell Scholar community!

I wish you a most successful conference.

Dan Linzer
President, RCSA

Agenda

2020 Virtual Cottrell Scholar Conference – Challenges and Opportunities with Online Education

All times are PDT

Wednesday, July 8

Celebrating the CS Community

- | | |
|---------------------|---|
| 11:00 am - 11:30 am | Welcome and Introductory Remarks (Silvia Ronco (CS Program Director), Dan Linzer (RCSA President)) |
| 11:30 am — 12:15 pm | Introductions — 2020 CS class — lightning talks (1-2 min/each)
(Who are you? What do you do? What is your dream goal in research and education?)

Two-minute videos from 2020 CS class members will be available in Google drive throughout the conference |
| 12:15 pm — 12:30 pm | Break |
| 12:30pm — 1:30 pm | Cottrell Plus Award Presentation — Sarah Reisman (FRED, Caltech), Helen Blackwell (STAR, U Wisconsin-Madison), Julio De Paula (STAR, Lewis and Clark College), Rigoberto Hernandez (IMPACT, Johns Hopkins U) (15 min each) |
| 1:30 pm — 2:30 pm | Mixer and Networking |
| 4:00 pm — 6:00 pm | Informal virtual lounge (Bring your own drink!) |

Thursday, July 9

Cottrell Scholar Collaborative and Facilitated Breakouts

- | | |
|--------------------|---|
| 7:00 am — 8:00 am | Informal virtual breakfast/coffee break |
| 8:00 am — 8:15 am | Reconvening; planning the day |
| 8:15 am — 9:30 am | Panel Discussion (start, goals, accomplishments, dreams) with Cottrell Scholar Collaborative team leaders (ongoing projects)
Keivan Stassun (Vanderbilt U), Penny Beuning (Northeastern U), Grace Stokes (Santa Clara U), Jen Heemstra (Emory U)
Q&A

Videos of active CSC projects are available throughout the conference |
| 9:30 am — 10:15 am | Online Education Presentation (30 min, 15 min Q&A)
Jordan Gerton, Center for Science And Mathematics Education
and Physics Department, University of Utah |

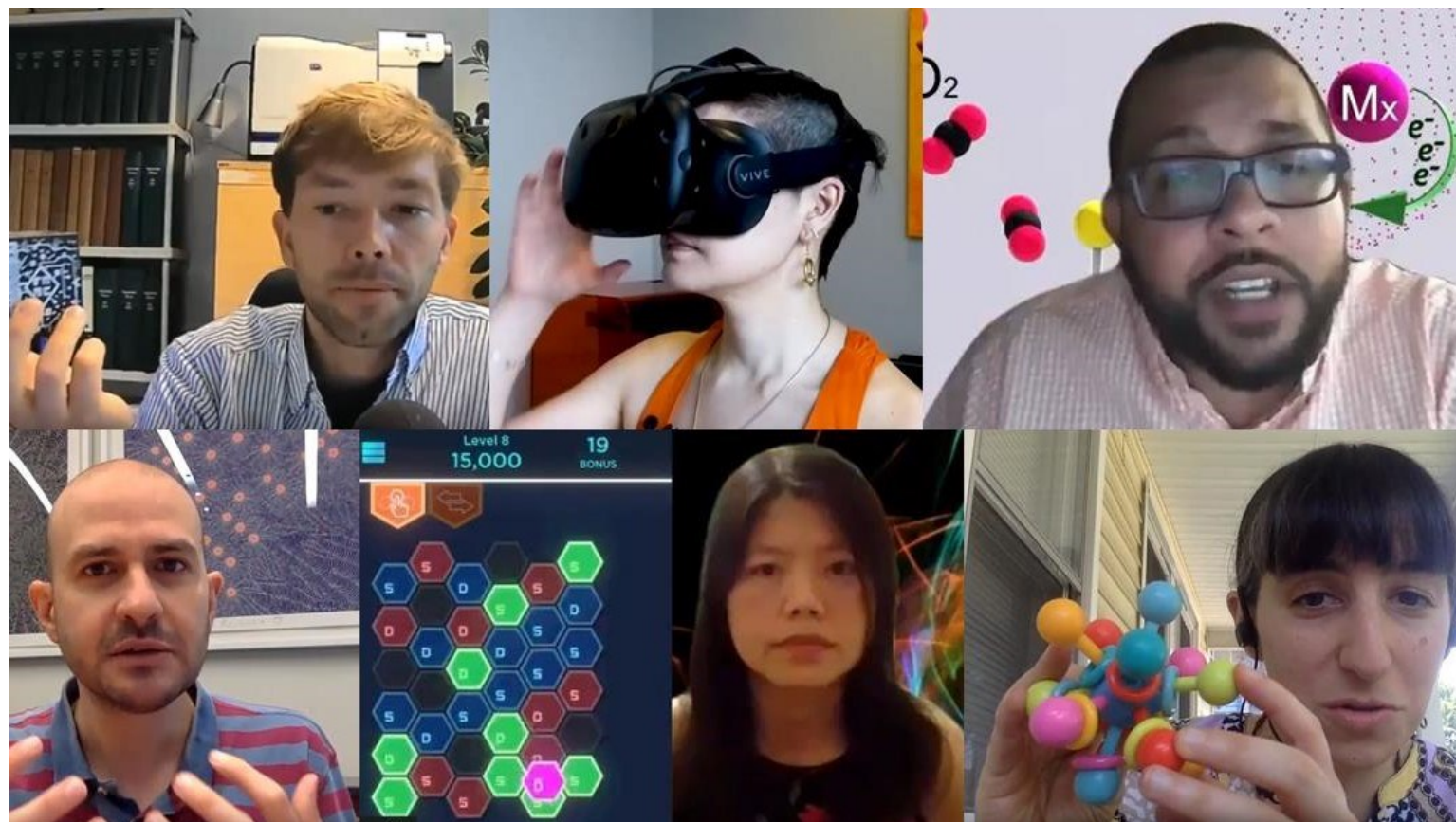
Agenda – continued

10:15 am – 10:30 am	Break
10:30 am – 11:30 am	Facilitated Breakout 1 (online education; small rooms) Virtual Classrooms, Virtual Laboratories, Student Engagement, Assessment, PUI Undergraduate Research
11:30 am – noon	Groups Report Out Start planning collective action (team forming; emerging themes)
4:00 pm – 6:00 pm	Informal virtual lounge (Bring your own drink!)

Friday, July 10

Facilitated Breakout and Team Work

7:00 am – 8:00 am	Informal virtual breakfast/coffee break
8:00 am – 8:15 am	Reconvening; planning the day
8:15 am – 9:15 am	Facilitated Breakout 2 (online education, small rooms) Virtual Classrooms, Virtual Laboratories, Student Engagement, Assessment, PUI Undergraduate Research
9:15 am – 9:45 am	Groups Report Out Collective action (team forming; emerging themes)
9:45 am – 10:00 am	Break
10:00 am – 10:30 am	Team Formation – encouragement to coalesce in a platform of their choice after the meeting ends
10:30 am – 11:15 am	Future of higher education discussion; online education/hybrid/other (Facilitated by Andrew Feig)
11:30 am – noon	Conference wrapup; proposal guidelines; ideas for virtual engagement throughout the year.



Cottrell Scholars Class of 2020

Carlos R. Baiz, chemistry, University of Texas at Austin — Molecular Dynamics at Heterogeneous Oil-Water Interfaces and a New Approach to Addressing the Mental Health Needs of Graduate Students

Kateri H. DuBay, chemistry, University of Virginia — Teaching Entropy and Modeling the Sequence-Determinants of Surface-Initiated Copolymerizations

Keary M. Engle, chemistry, Scripps Research Institute — Catalytic Difunctionalization of Alkenes Using Transient Directing Groups

Pengfei Huo, chemistry, University of Rochester — Enabling New Chemical Reactivities Through Polariton Photochemistry

Catherine Kealhofer, physics, Williams College — Nonequilibrium Phonon Dynamics in Two-dimensional Materials

Elena F. Koslover, physics, University of California, San Diego — Physics of Cellular Distribution Networks: Morphology and Transport in the Endoplasmic Reticulum

Kristin S. Koutmou, chemistry, University of Michigan — Chemical Modifications to mRNA Nucleosides: A New Frontier in Gene Regulation

Kah Chun Lau, physics, California State University, Northridge — Data-Driven Solubility Model Development of Concentrated Non-aqueous Electrolytes

Frank A. Leibfarth, chemistry, University of North Carolina at Chapel Hill — Organocatalytic Kinetic Resolution Polymerization of Lactones

Huey-Wen Lin, physics, Michigan State University — Unveiling the Three-Dimensional Structure of Nucleons

Song Lin, chemistry, Cornell University — New Catalytic Methods for Enantioselective Electrosynthesis and Introducing Electrosynthesis to College and Graduate Curricula

Britt F. Lundgren, astronomy, University of North Carolina Asheville — Shedding Light on Star Formation Driven Galaxy Outflows across Cosmic Time

Elisabetta Matsumoto, physics, Georgia Institute of Technology — Knotty Knits: Using Topological Constraints to Program Geometry and Elastic Response in Knitted Textiles with Lattice Defects

Sharon R. Neufeldt, chemistry, Montana State University — Combined Experimental and Computational Approach to Improving Nickel and Palladium-Catalyzed Cross-Couplings

Glen D. O'Neil, chemistry, Montclair State University — Neurotransmitter Detection using Light-Addressable Electrochemical Sensors: Investigating the Role of Metal Morphology and Coverage on Sensor Response using Scanning Electrochemical Methods

Peter P. Orth, physics, Iowa State University — Probing Fractionalization and Entanglement in Quantum Spin Liquids: Theory of Two-dimensional Spectroscopy

Cedric Owens, chemistry, Chapman University — Constructing a Better Nitrogenase by Uncovering Protein-protein Interactions That Protect the Enzyme and Expand its Chemistry

Dennis V. Perepelitsa, physics, University of Colorado Boulder — Next-Generation Experimental Probes of Hot and Dense Nuclear Matter

Leslie A. Rogers, astronomy, University of Chicago — Searching for Water in Distant Worlds: Connecting the Atmospheric and Bulk Compositions of Sub-Neptune-Size Planets

Brenda M. Rubenstein, chemistry, Brown University — Advancing Chemistry through Data Science: Catalyst Design via Data-Enabled Quantum Chemistry and Integrating Data Science into the Chemistry Curriculum

Lorenzo Sironi, astronomy, Columbia University — To B or Not to B: The Birth and Death of Magnetic Fields in the Universe

David A. Strubbe, physics, University of California, Merced — Light-induced Structural Dynamics in Materials: New Theoretical Insight into Ultrafast Phenomena

Claire P. Till, chemistry, Humboldt State University — Scandium and Iron: Parallels in Chemical Reactivity, and Reducing the Opportunity Gap in the HSU Chemistry Department and Beyond

Jesus M. Velazquez, chemistry, University of California, Davis — Achieving Energy Conversion Functionality Through Compositional Modification: The Role of Metal Promotion in Chalcogenide Frameworks

Jessica K. Werk, astronomy, University of Washington — The Observational Signatures of Cosmic Gas Flows in a Hydrodynamic Framework

2020 Fulbright-Cottrell Scholars

Ann-Christin Pöppler, chemistry, Julius-Maximilians-Universität Würzburg — Complementary Tools for the Characterization of Complex Solid Materials

Günther Thiele, chemistry, Freie Universität Berlin's Institute for Chemistry and Biochemistry — Structural Chemistry 2.0: Augmented Reality Meets Solid State Research

2019 FRED Award

Sarah Reisman

Professor of Chemistry, California Institute of Technology



How Caltech's AI for Science Class is Connecting Students Across Disciplines: A Case Study

During the Winter of 2019, I volunteered to contribute an organic chemistry project for a new Caltech course: CMS 273, Frontiers in Computing and Mathematical Sciences. The purpose of this course is to explore applications of tools from Computing and Mathematical Sciences to new problem domains (in my case, organic chemistry). Two graduate students from my laboratory enrolled in the class, and were teamed up with one undergraduate and two graduate students in computer science to develop a machine learning solution to our chemistry problem. In my presentation, I'll describe how this classroom-based experience has initiated new research directions in my group, which are supported by the RCSA Cottrell Scholar FRED award.

Professor Sarah Reisman was born and raised in Bar Harbor, Maine. She earned a BA in Chemistry from Connecticut College in New London, CT, where she became interested in organic synthesis working in the laboratory of Prof. Timo Ovaska. In 2006, Sarah earned her Ph.D. in chemistry from Yale University, conducting research with Prof. John L. Wood in the area of natural product total synthesis. As an NIH post-doctoral fellow, Sarah pursued studies in the field of asymmetric catalysis working with Prof. Eric Jacobsen at Harvard University. In 2008, Sarah joined the faculty at the California Institute of Technology where she is now a Professor of Chemistry and a Heritage Medical Research Institute Investigator. Research in the Reisman laboratory seeks to advance the science of chemical synthesis, through synergistic contributions in both strategy design for natural product synthesis and reaction development. Reisman is recognized as a leader in the area of natural product synthesis, where her group has contributed new strategy-driven approaches a number of complex highly oxidized natural products. In addition, Reisman has made impactful contributions to the rapidly advancing field of Ni-catalysis, with an emphasis on asymmetric reductive cross-coupling reactions. Reisman is an Associate Editor at *Organic Letters* and an editorial board member at *Organic Syntheses*. Reisman has been recognized with a number of awards for teaching and research, including an Alfred P. Sloan Research Fellowship, a Cottrell Scholar Award, the Arthur C. Cope Scholar Award, the Tetrahedron Young Investigator Award, the Margaret Faul Women in Chemistry award, and the ACS Elias J. Corey Award.

2020 STAR Award

Helen E. Blackwell

CS 2005, Norman C. Craig Professor of Chemistry, University of Wisconsin-Madison



From bacterial communication to science communication and back again

The overarching goal of my research lab is to understand the role of chemical signals in bacterial interactions, infectious disease, and broader host-microbe relations. Over the past 18 years, we have developed a range of synthetic compounds and chemical strategies that allow us to intercept a key cell-cell communication pathway in bacteria called “quorum sensing.” These molecules provide a novel approach to study bacterial behavior with both spatial and temporal control in a range of settings. In this very short talk, I first will briefly introduce quorum sensing and highlight a few of our recent results.

As a second part of this talk, and building on the theme of communication, I will give a short overview of a collaborative science communication project. Developing effective ways to communicate about science with the public can be challenging for the non-specialist. In the past six years, I have forged a collaboration with the internationally recognized “bio-artist” Sonja Bäuml to start to personally confront this challenge in a new way, by translating fundamental discoveries stemming from my lab into art work that can inform society of the relevance and presence of microbes on themselves and in society. Bäuml’s art work focuses on challenging the borders between the human and the microbial body, and through our interactions, she has become particularly interested in how abstract concepts like the human microbiome and bacterial cell-cell communication can be translated into a more tangible and immediate experience. With support from the NSF, we are collaborating to create bioart forms, a dance performance, a website, and a physical book that translate the concept and importance of bacterial signaling to the viewer. This work has inspired my lab’s basic research and significantly changed my approach to science communication with the general public.

Helen Blackwell is a native of Shaker Heights, OH. She attended Oberlin College in Ohio for her undergraduate studies in Chemistry (B.A., 1994), pursued her graduate studies in organic chemistry at the California Institute of Technology (Ph.D., 1999 with Robert Grubbs), and performed postdoctoral research in chemical biology at Harvard University (Jane Coffin Childs Postdoctoral Fellowship, 1999–2002, with Stuart Schreiber). She has been a faculty member at The University of Wisconsin–Madison since 2002, where she is currently the Norman C. Craig Professor of Chemistry and Associate Chair of the Graduate Program. Blackwell leads a research program at the very interface of organic chemistry and bacteriology.

2020 STAR Award

Julio de Paula

CS 1994, Professor of Chemistry, Lewis & Clark College



Light + Color = Chemistry + Archaeology

Atomic and molecular spectroscopy techniques familiar to physicists and chemists can be deployed in the field to provide useful information about objects recovered from archaeological sites or manuscripts and paintings housed in churches and museums. The first part of this presentation will describe investigations of a 16th century Book of Hours housed at Lewis & Clark College and several 15th century paintings housed in the museum of the Church of Sant Jaume in Alcúdia, Spain. The focus is on the analysis by X-ray fluorescence and Raman spectroscopy of pigments used in the paintings and the manuscript's illustrations. We found evidence of undocumented restoration of some of the paintings, whereas the manuscript appears to be in its original condition. The second part of the presentation will describe an educational project related to our research activities: a free suite of online resources on analytical spectroscopy consisting of a textbook, video tutorials, and an inexpensive laboratory program in English, Portuguese, and Spanish.

Julio de Paula is a native of São Paulo, Brazil. He received a BA in Chemistry from Rutgers, The State University of New Jersey (New Brunswick), and a Ph.D. in Biophysical Chemistry from Yale University, under the direction of Prof. Gary Brudvig. After a National Institutes of Health Postdoctoral Fellowship at Michigan State University (under the direction of the late Prof. Gerald Babcock), he joined the faculty of Haverford College, where he rose to the rank of Professor of Chemistry and Director of the Marian E. Koshland Integrated Natural Sciences Center. In 2005 he moved to Lewis & Clark College, where he is a Professor of Chemistry and has held the posts of Dean of the College of Arts & Sciences and Associate Vice President & Director of Special Projects. While on professional leave from 2010 to 2012, he was a Program Director in the Chemistry Division of the National Science Foundation. With Prof. Paulette Bierzychudek, he currently co-directs the Pathways to Success in STEM Program at Lewis & Clark.

2020 IMPACT Award

Rigoberto Hernandez

CS 1999, Gompf Family Professor of Chemistry Johns Hopkins University



Leading Inclusive Excellence

The Open Chemistry Collaborative in Diversity Equity (OXIDE) started 10 years ago with the goal of engaging department chairs in chemistry in advancing inclusive excellence. We define diversity broadly, including representation from women, from minoritized groups, in gender identity and orientation, with unique abilities and disabilities, and at their intersection. Through staging five (and counting!) National Diversity Equity Workshops (NDEWs), we discovered how barriers to diversity equity were being manifested in academic chemistry departments, and possible programs and policies to mitigate them. We will report some of these solutions, and provide guidance for how to lead a department with a healthy and inclusive climate.

Dr. Rigoberto Hernandez is the Gompf Family Professor in the Department of Chemistry at the Johns Hopkins University and the Director of the Open Chemistry Collaborative in Diversity Equity (OXIDE). Before Hopkins, he was a Professor in the School of Chemistry and Biochemistry at Georgia Tech, and Co-Director of the Center for Computational Molecular Science and Technology he co-founded. He was born in Havana, Cuba and is a U.S. Citizen by birthright. He holds a B.S.E. in Chemical Engineering and Mathematics from Princeton University (1989), and a Ph.D. in Chemistry from the University of California, Berkeley (1993). His research area can be broadly classified as the theoretical and computational chemistry of systems far from equilibrium. His current projects involve questions pertaining to the diffusion of mesogens in colloidal suspensions and liquid crystals, fundamental advances in transition state theory, design principles for sustainable nanotechnologies and the dynamics of protein folding and rearrangement, and the design of autonomous computing machines. This work is supported by the NSF through a single-investigator grant, the CCI Center for Sustainable Nanomaterials, and a collaborative HDR Big Idea grant. The OXIDE effort is presently supported by the Sloan Foundation.

Dr. Hernandez is the recipient of a National Science Foundation (NSF) CAREER Award (1997), Research Corporation Cottrell Scholar Award (1999), the Alfred P. Sloan Fellow Award (2000), a Humboldt Research Fellowship (2006-07), the ACS Award for Encouraging Disadvantaged Students into Careers in the Chemical Sciences (2014), the CCR Diversity Award (2015), the RCSA Transformative Research and Exceptional Education (TREE) Award (2016), the Herty Medal (2017), the Stanley C. Israel Regional Award for Advancing Diversity in the Chemical Sciences (2018), and RCSA IMPACT Award (2020). He is a Fellow of the American Association for the Advancement of Science (AAAS, 2004), the American Chemical Society (ACS, 2010), the American Physical Society (APS, 2011), and the Royal Society of chemistry (FRSC, 2020). He was a Phi Beta Kappa Visiting Scholar in 2015-2016. He previously served as the District IV Director on the American Chemical Society Board of Directors (2014-2019).

Keynote Presentation

Jordan Gerton

CS 2007

Director, Center for Science and Mathematics Education,
and Associate Professor of Physics, University of Utah



This is the Moment to Remake (STEM) Education

The COVID-19 pandemic has rapidly destabilized our educational system, creating significant challenges and massive opportunities for meaningful change. As faculty scramble to move instruction online, traditional notions of effective educational delivery are being questioned, creating a strong impetus for faculty to engage in conversation, reflection, and community building around instructional practices and the inequities inherent in our educational system. I will offer perspectives gleaned from an ongoing series of faculty workshops and conversations that I have helped lead on my campus over the last couple months with the hope that these will help frame subsequent discussion. While we engage in this work together, I believe it is important to acknowledge the role universities play in creating and sustaining systems of oppression, and the need for faculty to help dismantle them. As embedded agents of change connected in a vibrant collaborative community, Cottrell Scholars are ideally positioned to disrupt convention and lead efforts to remake STEM education into a more equitable and inclusive enterprise. This is our moment — we must seize it!

I received my Bachelor's degree in Engineering Physics from the University of Arizona, and my Master's and PhD in Physics from Rice University where I researched Bose-Einstein condensation in low-temperature lithium gases. I spent my postdoctoral years at the California Institute of Technology where I developed a research program in nanophotonics. I came to the University of Utah in 2004, and became a Cottrell Scholar in 2007. Being a member of the Cottrell Scholar community has provided amazing opportunities to collaborate with colleagues from across the US, and has empowered me to help lead institutional change efforts. In late 2014, I was appointed Director of the Center for Science and Mathematics Education at Utah, where I lead a dedicated staff of 10 committed to building more equitable STEM education.

Conference Participants

Name	CS Class	Institution	Department
Aaron Leconte	CS 2016	Claremont McKenna College	Keck Science
Abigail Vieregg	CS 2018	University of Chicago	Physics
Adam Leibovich	CS 2006	University of Pittsburgh	Physics and Astronomy
Adam Urbach	CS 2005	Trinity University	Chemistry
Alexander Spokoyny	CS 2018	UCLA	Chemistry and Biochemistry
Amanda Hargrove	CS 2017	Duke University	Chemistry
Amanda Wolfe	CS 2017	UNC Asheville	Chemistry
Amelia Fuller	CS 2010	Santa Clara University	Chemistry & Biochemistry
Andrew Feig	CS 2002	RCSA	Program Director
Ann-Christin Pöppler	FCS 2020	University of Würzburg	Chemistry and Pharmacy
Antonella Badia	CS 2002	Université de Montréal	Chemistry
Ashleigh Baber	CS 2018	James Madison University	Chemistry & Biochemistry
Ashley Donovan		American Chemical Society	ACS Education
Brad Smith	CS 1994	University of Notre Dame	Chemistry and Biochemistry
Brenda Rubenstein	CS 2020	Brown University	Chemistry
Britt Lundgren	CS 2020	University of North Carolina	Physics and Astronomy
Carla Frohlich	CS 2014	North Carolina State University	Physics
Carlos Baiz	CS 2020	University of Texas at Austin	Chemistry
Casey H. Londergan	CS 2008	Haverford College	Chemistry
Catherine Grimes	CS 2015	University of Delaware	Chemistry and Biochemistry
Catherine Kealhofer	CS 2020	Williams College	Physics
Cathy Murphy	CS 1996	University of Illinois	Chemistry, RCSA Board
Cedric Owens	CS 2020	Chapman University	Chemistry
Chad Risko	CS 2018	University of Kentucky	Chemistry
Charles McCrory	CS 2019	University of Michigan	Chemistry

Charlie Doret	CS 2017	Williams College	Physics
Chenfeng Ke	CS 2019	Dartmouth College	Chemistry
Christina Vizcarra	CS 2019	Barnard College	Chemistry
Cindy Regal	CS 2014	University of Colorado	Physics
Claire Till	CS 2020	Humboldt State University	Chemistry
Claude-André Faucher-Giguère	CS 2018	Northwestern University	Physics & Astronomy
David Ginger	CS 2006	University of Washington	Chemistry
David Strubbe	CS 2020	University of California, Merced	Physics
Dennis V. Perepelitsa	CS 2020	University of Colorado Boulder	Physics
Dinah Loerke	CS 2014	University of Denver	Physics & Astronomy
Dominik Munz	FCS 2019	Saarland University	Inorganic Chemistry
Donald Watson	CS 2013	University of Delaware	Chemistry and Biochemistry
Duncan Brown	CS 2010	Syracuse University	Physics
Duncan Lorimer	CS 2009	West Virginia University	Physics and Astronomy
Eduardo Rozo	CS 2018	University of Arizona	Physics
Eileen Spain	CS 1995	Occidental College	Chemistry
Elena Koslover	CS 2020	UC San Diego	Physics
Elisabetta Matsumoto	CS 2020	Georgia Tech	Physics
Ellen Matson	CS 2019	University of Rochester	Chemistry
Emily Levesque	CS 2019	University of Washington	Astronomy
Emily Miller		AAU	Associate Vice President for Policy
Emily Rauscher	CS 2019	University of Michigan	Astronomy
Erin Carlson	CS 2006	University of Minnesota	Chemistry
Eva-Maria Collins	CS 2016	Swarthmore College	Biology
Fadi Bou-Abdallah	CS 2008	SUNY Potsdam	Chemistry
Frank Leibfarth	CS 2020	UNC Chapel Hill	Chemistry
Geoffrey Hutchison	CS 2012	University of Pittsburgh	Chemistry

George Shields	CS 1994	Furman University	Chemistry
Gina MacDonald	CS 1997	James Madison University	Chemistry and Biochemistry
Glen O'Neil	CS 2020	Montclair State University	Chemistry and Biochemistry
Gordon Berman	CS 2019	Emory University	Biology
Grace Stokes	CS 2018	Santa Clara University	Chemistry & Biochemistry
Greg O'Neil	CS 2008	Western Washington University	Chemistry
Günther Thiele	FCS 2020	Freie Universität Berlin	Inorganic Chemistry
Hai Lin	CS 2006	university of colorado denver	chemistry
Helen E. Blackwell	CS 2005	University of Wisconsin-Madison	Chemistry
Hongbin Zhang	FCS 2019	TU Darmstadt (Germany)	Materials Science
Huey-Wen Lin	CS 2020	Michigan State University	Physics
Jamie Moore		Fulbright Germany	Project Officer
Jason G. Gillmore	CS 2006	Hope College	Chemistry
Jeffery Byers	CS 2015	Boston College	Chemistry
Jen Heemstra	CS 2015	Emory University	Chemistry
Jennifer Prescher	CS 2014	UC Irvine	Chemistry
Jennifer Ross	CS 2012	Syracuse University	Physics
Jessica Werk	CS 2020	University of Washington	Astronomy
Jesus M. Velazquez	CS 2020	University of California - Davis	Chemistry
John Gilbertson	CS 2009	Western Washington University	Chemistry
Jonathan Foley	CS 2019	William Paterson University	Chemistry
Jordan Gerton	CS 2007	University of Utah	Physics & Astronomy
Julio de Paula	CS 1994	Lewis & Clark College	Chemistry
Justin Wilson	CS 2019	Cornell University	Chemistry and Chemical Biology
Kah Chun Lau	CS 2020	California State University	Physics & Astronomy
Kana Takematsu	CS 2019	Bowdoin College	Chemistry
Karl Mueller	CS 1996	Pacific Northwest National Laboratory	Physical and Computational Sciences

Kateri H. DuBay	CS 2020	University of Virginia	Chemistry
Katherine Mirica	CS 2019	Dartmouth College	Chemistry
Kathryn Haas	CS 2016	Saint Mary's College	Chemistry & Physics
Kathy Aidala	CS 2009	Mount Holyoke College	Physics
Katie Mouzakis	CS 2017	Loyola Marymount Univarsity	Chemistry and Biochemistry
Keary Engle	CS 2020	The Scripps Research Institute	Chemistry
Keivan Stassun	CS 2006	Vanderbilt University	Physics & Astronomy
Kelling Donald	CS 2008	University of Richmond	Chemistry
Kerstin Nordstrom	CS 2018	Mount Holyoke College	Physics
Kristin Koutmou	CS 2020	University of Michigan	Chemistry
Laura Chomiuk	CS 2017	Michigan State University	Physics and Astronomy
Lauren Waters	CS 2016	University of Wisconsin Oshkosh	Chemistry
Leslie Rogers	CS 2020	University of Chicago	Astronomy & Astrophysics
Linda Columbus	CS 2010	University of Virginia	Chemistry
Lisa Ryno	CS 2018	Oberlin College	Chemistry and Biochemistry
Lorenzo Sironi	CS 2020	Columbia University	Astronomy
Lou Charkoudian	CS 2018	Haverford College	Chemistry
Luis M. Campos	CS 2015	Columbia University	Chemistry
Luisa Whittaker-Brooks	CS 2018	University of Utah	Chemistry
Maiken Mikkelsen	CS 2016	Duke University	Physics/ECE
Mario Affatigato	CS 1996	Coe College	Physics
Mark Bussell	CS 1994	Western Washington University	Chemistry
Mark Moldwin	CS 1997	University of Michigan	Climate and Space/Applied Physics
Martin Gruebele	CS 1995	University of Illinois	Chemistry & Physics
Mats Selen	CS 1996	University of Illinois	Physics
Maura McLaughlin	CS 2009	West Virginia University	Physics and Astronomy
Meredith Hughes	CS 2018	Wesleyan University	Astronomy

Michael Dennin	CS 2000	UC Irvine	Physics and Astronomy
Michael Hildreth	CS 2003	University of Notre Dame	Physics
Michelle Hamm	CS 2002	University of Richmond	Chemistry
Moses Lee	CS 1994	Murdock Trust	Chemistry
Nancy Forde	CS 2007	Simon Fraser University	Department of Physics
Nandini Ananth	CS 2016	Cornell University	Chemistry and Chemical Biology
Nathaniel Craig	CS 2018	UC Santa Barbara	Physics
Nicola Pohl	CS 2003	Indiana University	Chemistry
Nicole L. Snyder	CS 2010	Davidson College	Chemistry
Ognjen Miljanic	CS 2013	University of Houston	Chemistry
Olalla Vazquez	FCS 2016	Philipps-Universität Marburg	Chemical Biology
Paul Raston	CS 2019	James Madison University	Chemistry and Biochemistry
Pengfei Huo	CS 2020	University of Rochester	Chemistry
Penny Beuning	CS 2009	Northeastern University	Chemistry and Chemical Biology
Peter Dorhout	CS 1994	Kansas State University	Chemistry, RCSA Board
Peter Orth	CS 2020	Iowa State University	Physics
Rae Anderson	CS 2010	University of San Diego	Physics and Biophysics
Richard Brutchey	CS 2010	University of Southern California	Chemistry
Rigoberto Hernandez	CS 1999	Johns Hopkins University	Chemistry
Rory Waterman	CS 2009	University of Vermont	Chemistry
Ryan McGorty	CS 2019	University of San Diego	Physics and Biophysics
Sara E. Skrabalak	CS 2012	Indiana University	Chemistry
Sarah Reisman	CS 2012	California Institute of Technology	Chemistry
Sarbajit Banerjee	CS 2010	Texas A&M University	Department of Chemistry
Scott K. Shaw	CS 2016	University of Iowa	Chemistry
Sean Roberts	CS 2018	University of Texas at Austin	Chemistry
Sergey Frolov	CS 2016	University of Pittsburgh	Physics

Shahir S. Rizk	CS 2019	Indiana University South Bend	Chemistry and Biochemistry
Shane Ardo	CS 2017	UC Irvine	Chemistry
Shannon Boettcher	CS 2014	University of Oregon	Chemistry and Biochemistry
Sharon Neufeldt	CS 2020	Montana State University	Chemistry and Biochemistry
Song Lin	CS 2020	Cornell University	Chemistry
Stefan Stoll	CS 2015	University of Washington	Chemistry
Stella Offner	CS 2018	University of Texas at Austin	Astronomy
Tamara Bogdanovic	CS 2016	Georgia Institute of Technology	Physics
Tehshik Yoon	CS 2008	University of Wisconsin-Madison	Chemistry
Tim Kowalczyk	CS 2018	Western Washington University	Chemistry
Timothy Atherton	CS 2015	Tufts University	Physics
Tom Solomon	CS 1995	Bucknell University	Physics
Tyler Luchko	CS 2017	California State University,	Physics and Astronomy
Vincent Rotello	CS 1996	University of Massachusetts	Chemistry
Weichao Tu	CS 2019	West Virginia University	Physics and Astronomy
William Pomerantz	CS 2016	University of Minnesota	Chemistry
Yana Vaynzof	FCS 2018	Technical University of Dresden	Physics
Yogesh Surendranath	CS 2017	Massachusetts Institute of Tech-	Chemistry
Zachary Schultz	CS 2013	The Ohio State University	Chemistry and Biochemistry