

UMassAmherst

Polymer Science  
and Engineering



# ALUMNI NEWSLETTER

Winter | 2024

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## Remarks from our Chair

*Dear Alumni and Friends,*



I hope this newsletter finds you well and off to a great beginning of 2024. One of the wonderful aspects of being a part of a university and the Polymer Science & Engineering community is being a part of change. Change is never easy; however, when you're part of an amazing group of leaders and people working together to have a positive impact it's always exciting and worth celebrating. Our department and the entire university have gone through many transitions over the past year, and we're excited to share with you highlights of recent accomplishments that are setting the pace and the path for new transformations that lie ahead in 2024.

As many of you are aware, I was fortunate enough to be given the opportunity to serve as the new Department Head of PSE, beginning my term in fall 2023. I, and the entire PSE community, benefited greatly from the many years of dedicated service and leadership of Professor Dave Hoagland, who served as Department Head for more than ten years. I presented Dave with a ceremonial walking stick (since I knew he owned many "real" hiking poles!) at our opening fall department celebration. This walking stick symbolizes the many peaks and valleys that Dave fearlessly led PSE through and the steady guidance that he will continue to provide in the years ahead. Beyond transitions in leadership within PSE, UMass Amherst welcomed a new Dean, Michael Fox; an interim Provost, Michael Malone; and a new Chancellor, Javier Reyes. I'm inspired by my interactions with these leaders this past fall, and I'm excited for their leadership through changes that lie ahead. One of my favorite quotes from Chancellor Reyes this past fall is "Best idea wins." As you'll see in this newsletter, PSE has amazing ideas and great people to make those ideas reality!

Change has come not only at the administrative level but also, most importantly, across the PSE faculty, students, postdocs and staff. We welcomed two new faculty members, Robert K. Barrett Professor Steve Granick and Assistant Professor Melody Morris, in 2023. Steve and Melody are already having a large impact, and I'm excited to watch their accolades and highlights roll in over the years ahead. You can read more about their exceptional backgrounds and the experiences that they bring to the PSE community within this newsletter.

The most rewarding and inspiring changes come with the rhythmic waves of new students and postdocs as they are welcomed into PSE and grow and transition into successful alumni. I hope you enjoy learning about some of their highlights and achievements, and ways that your contributions have helped us to recognize them.

I am so proud of PSE, and I thank you for taking the time to learn about the fantastic happenings across our community. You can always learn more by looking at our latest updates on the web and in social media—including a wonderful series of new videos featuring our students, faculty, and staff. Enjoy, and feel free to reach out to me with any ideas for change or just to say hello!

— Al Crosby



# Fellowships and Awards 2022–24

## PSE Alumni and Industrial Fellowship Awardees



**Alexandra Grinevich**  
Dr. David Lipp Fellowship  
in Polymer Science and  
Engineering



**Elizabeth Haljun**  
Kleiner Family Foundation



**Elijah Kellner**  
Dr. David Lipp Fellowship  
in Polymer Science and  
Engineering



**Yasuhiko Komatsu**  
Polymer Science and  
Engineering Endowment  
Fellowship



**Miriam Lee**  
PSE 55 Alumni Fellowship



**David Schechter**  
William J. Macknight  
Fellowship



**Daniel Seyedebrahimi**  
Professor Richard J. Farris  
Graduate Scholarship



**Michelle Gross**  
Dr. David Lipp Fellowship  
in Polymer Science and  
Engineering



**Kyoungwon Lee**  
Robert W. Lenz Memorial  
Endowment



**Jennifer Quigley**  
Polymer Science and  
Engineering Endowment  
Fellowship



**Karan Sagar**  
PSE55 Alumni Fellowship



**Jordan Varma**  
PSE55 Alumni Fellowship



**Alexandra Weinhofer**  
Dr. David Lipp Fellowship  
in Polymer Science and  
Engineering



**Connor Witt**  
Kleiner Family Foundation



**Carolyn Telfer**  
William J. Macknight  
Fellowship



**Yeseul Lee**  
PPG Distinguished  
Fellowship



**Ching Hsien Ho**  
PPG Foundation  
Fellowship



**Yuhui Du**  
PPG Foundation  
Fellowship

## Faculty Awards

**Al Crosby** ESPCI ParisTech Visiting Professor, 2022

**Reika Katsumata** ACS PMSE Early Stage Investigator Award 2023; PRESTO Award 2023; 3M Non-Tenured Faculty Award; AFOSR YIP Award 2023

**Uzodinma (Uzo) Okoroanyanwu** SPIE Fellow — International Society for Optics and Photonics 2022

**Thomas Russell** ACS Honorary Symposium 2022; S.T. Li Foundation Award, 2023

## Student and Post Doc Awards

**Serena Birnbaum** National Physical Science Consortium Fellowship, 2023-2026

**Deborah Cassaro-Snyder** MIT Poymer Day 2nd Place Poster, 2023

**Brandon Clarke** Summer UMass/Mainz German Exchange (DFG) Fellowship, 2023: MIT Poymer Day 3rd Place Poster, 2023

**Juan Correa Ruiz** #LatinXChem Engineering 1st Place Poster, 2023

**Benjamin Greenvall** NSF GRFP Graduate Research Fellowship 2023-2026

**Roshni John Chethalen** CNS Diversity Travel Grant, 2023

**Yeseul Lee** Santos Go Award, 2022-2023

**Autumn Mineo** ACS Grad Student Travel Grant, 2023

**Gabriela Moreira Lana** Dr. Eduard-Martin Prize, Saarland University, 2023

**Imani Page** Spaulding-Smith Fellowship, 2023-24

**Karan Sagar** Santos Go Award, 2023-2024

**Hong-Gyu Seong** ACS PMSE Best Poster Award, 2023

**Meredith Taghon** Peebles Award, Adhesion Society, 2023



*Al Crosby presents Karan Sagar with the 2023 Santos Go Award*

## Graduate School Fellowships

Alexandra Grinevich • Siddhant Iyer • Dupyo Jeon • Yasuhiko Komatsu • Daniel Seyedebrahimi Rejoy Mathew • Isha Farook • Xuchen Gan • Michelle Gross • Kyoungwon Lee • Karan Sagar Ancy Usha • Jordan Varma • Connor Witt • Xiaona Xu • Carolyn Telfer

# SILVIO O. CONTE NATIONAL CENTER FOR POLYMER RESEARCH



## PSE Graduates

**Demi Moed** (Crosby) 12/14/23 — *Untangling the Morphology and Mechanical Properties of Flexible, Filamentous Mesoscale Polymer Ribbon Arrays*

**Weiyue Xin** (Santore) 12/11/2023 — *Elastic Controlled Positioning of Solid Colloidal Micro-plates on Curved 2-D Fluid Phospholipid Membrane*

**Walter Young** (Katsumata) 10/13/23 — *Effects of Polymer-Nanoparticle Interactions on the Dynamics of Attractive Polyhedral Oligomeric Silsesquioxane Nanocomposites*

**Ayush Bhardwaj** (Watkins) 9/7/23 — *Developing Nanostructured Carbonaceous Materials (Porous Carbon and Graphene) from Polymers for Energy Storage Devices*

**Jerred Wassgren** (Carter) 7/27/23 — *Harnessing Nanocellulose for Sustainable Carbon Capture: Synthesis, Processing, and Performance Evaluation*

**Siao Fong Li** (Muthukumar) 7/19/23 — *Phase Transitions and Self-Assembly of Charged Polymer Solutions*

**Hantao Zhou** (Hayward) 5/11/23 — *Synthesis and Characterization of Semicrystalline Poly(azobenzene)s for Next Generation Photomechanical Effects*

**James Pagaduan** (Emrick; Katsumata) 4/28/23 — *Designer Functional Hybrid Materials: Zwitterist and Freeze-Burn*

**Yu-Lin (Cynthia) Wang** (Muthukumar) 3/14/23 — *Dynamics of Polyelectrolyte Transport in Oppositely Charged Hydrogels*

**Ipek Sacligil** (Tew) 12/15/22 — *Controlling Mechanical Properties of Well-Defined Polymer Networks*

**Ria Ghosh** (Coughlin) 12/5/22 *Effect of Chemical Identity and Morphology on Water Transport in Amphiphilic-Zwitterionic Block Copolymer Membranes*

**Heather Hamilton** (Bradley) 10/27/22 — *Bottom-up Morphological Control of Biphasic Polymer Particles via Heterogeneous Polymerization*

**Sravya Nuguri** (Watkins) 10/27/22 — *Hybrid Nanostructured Materials from Functional Polymers: Design, Fabrication and Performance*

**Robert Enright** (Bradley; Crosby) 9/22/22 — *Vapor Deposition of Self-Wrinkling Polymer Films*

**Hsin-Jung (Hanna) Yu** (Carter; Watkins) 9/7/22 — *Rational Design of Porous Material from Fundamental to Applications*

**Douglas Hall** (Grason) 8/29/22 — *Self-Limiting Morphologies in Geometrically Frustrated Assemblies*

**Vincent Einck** (Watkins) 8/26/22 — *Enabling Nanoimprint Lithography Techniques Across Multiple Manufacturing Platforms*

**Le Zhou** (Emrick) 8/26/22 — *Merging Synthetic and Natural Components into Functional Polymer Zwitterions*

**Xiaoshuang (June) Wei** (Bradley) 7/29/22 — *Synthesis and Assembly of Polymer Materials at Interfaces*

**Marcel Brown** (Emrick) 7/8/22 — *Expanding the Polymer Zwitterion Library — Novel Phosphonium-based Polymer Zwitterions and Analogous Structures*

**Khatcher Margossian** (Muthukumar) 7/6/22 — *Frontiers in the self-assembly of charged macromolecules*

**Hongbo Fu** (Crosby) 6/16/22 — *Quantifying Elasto-Adhesion and Fluid-Elastic Dynamics for Ultra-soft Hydrogel Interfaces*

**Cynthia Bukowski** (Crosby) 5/6/22 — *Ultrathin Polymer Film Mechanics: The Role of Entanglements and Morphology*

**Hazel Davis** (Tew) 4/8/22 — *Designing Polymer-Protein Complexes for Intracellular Delivery*

**Christian Steinmetz** (Coughlin) 3/28/22 — *Synthesis of Next-Generation Block Copolymer Architectures*

**David Limberg** (Hayward) 2/24/22 — *Additive Manufacturing of Sub-micron Features and Mechanical Linkages*

**Minjung Lee** (Hayward) 1/14/22 — *Tuning Complexation of Polymerized Ionic Liquids via Solvent Environment, Counterion Injection, and Nanostructured Interfaces*

**Yao Wu** (Russell) 12/14/21 — *Organic Photovoltaic Devices: Active Layers, Transport Layers and Morphology*

**Yan Cong** (McCarthy) 12/9/21 — *New Isomeric Silicones: Synthesis, Compositions and Surface Properties*

# ASCENDS Prepares for its Fourth Year of Diversifying Polymer Science Research through Industrial Partnership

Advancing Science & Engineering with Diverse Scholars (ASCENDS) is preparing for its fourth summer research educational experience for undergraduates starting in June 2024. An industry supported educational program, ASCENDS seeks to broaden participation in the polymer field by providing students the educational opportunity to come to UMass and work on summer research projects in conjunction with faculty and graduate student mentors. To date, PSE and Chemical Engineering faculty members at UMass have spearheaded mentoring of ASCENDS students, which now comprises 14 ASCENDS alumni including several from HBCU institutions. ASCENDS alumni include current PSE graduate students Imani Page and Jordan Varma, UPenn graduate student Sydni Wilson, and numerous others who are advancing in their undergraduate, graduate, and industrial careers.

Industrial support that launched ASCENDS in 2021 has been crucial for starting and sustaining the program, with sponsorship from *DuPont, Eastman Chemical, E-Ink, PPG, Saint-Gobain, Solvay, and 3M.*

The ASCENDS program is technically oriented with emphasis on professional development — in addition to research efforts, ASCENDS students participate in weekly lunch/seminar gatherings with the broader group of summer undergraduate researchers at UMass. At summer's end, a technical symposium and industry panel provides a forum for the students to showcase their growth as researchers during the course of the summer, and for industry experts to provide feedback, advice, and mentorship of their own. As we recruit students for the ASCENDS summer 2024 class, we encourage PSE alumni to consider participating through sponsorship and spreading the word about this important educational opportunity in PSE!

For information about ASCENDS recruiting, organization, and sponsorship, please contact Professors Todd Emrick ([tsemrick@mail.pse.umass.edu](mailto:tsemrick@mail.pse.umass.edu)) and David Waldman ([dwaldman@mail.pse.umass.edu](mailto:dwaldman@mail.pse.umass.edu)).



## Class of 2022

*Madelyn Bennett,  
University of Kansas*

*Sydni Wilson,  
Jackson State University*

*Jasney Combs,  
Ball State University*

*Imani Page,  
Spelman College*

*Taina Turner,  
Alcorn State University*



## Class of 2023

*Chantae Blackwood,  
Jackson State University*

*Micah Wilkerson,  
Spelman College*

*Casey Burdett,  
University of North Georgia*

*Jordan Gray,  
Howard University*

*April Haines,  
UMass Amherst*

# Research Highlights

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## Blazing a Trail for Massachusetts in Advanced Metaoptics

What do virtual reality smart glasses, automobile LIDAR, and facial recognition have in common? All are technologies dramatically improved by metalenses—extremely thin optical structures that combine multiple functions of traditional optics into an ultracompact package. Massachusetts has long been a leader in optics research and manufacturing, both through work at the state’s higher education institutions and in industry. Now, development and adoption of these technologies is poised to accelerate thanks to a \$5 million award from the Massachusetts Technology Collaborative (MassTech). The grant will enable UMass Amherst to establish an open-access advanced optics fabrication and characterization facility on its campus that will be available to industry partners and researchers across the state. The MassTech grant also funds a major expansion of industry partner Electro Magnetic Applications Inc’s test and characterization capabilities which will be available at the Berkshire Innovation Center in Pittsfield.

### An Optics Revolution

Traditional lenses, which are curved and bulky, have been in use for hundreds of years. Over the past decade, scientists have developed flat ultrathin metalenses. These new lenses can deliver advanced capabilities and better performance, often doing things that could only previously be accomplished by large optical “trains” of four to six traditional lenses. “They allow for much higher performance in a much smaller package,” says **James Watkins**, Professor of Polymer Science and Engineering.

“In addition to replacing individual lenses and optical components, metalenses can offer novel functionalities and enable miniature on-chip optical systems such as cameras, microscopes, spectrometers, lidars, etc.,” said **Amir Arbabi**, UMass Amherst Assistant Professor of Electrical and Computer Engineering. Arbabi is a pioneer in the field of metaoptics and holds more than 40 patents. “Such fully integrated optical systems can be fabricated using metaoptics technology at a low cost because of the elimination of the costs associated with alignment and assembly.” Traditionally, metalenses have been manufactured in semiconductor foundries, which are expensive to construct, and use a subtractive manufacturing process—essentially, carving out patterns in a layer of material. The new optics fabrication and characterization facility at UMass utilizes an additive manufacturing process studied in the Watkins research group.



### A Track Record of Leadership

UMass has a long track record of leadership in scalable nanomanufacturing. In 2006, it established the Center for Hierarchical Manufacturing (CHM), led by Watkins, with a 10-year, \$36 million award from the National Science Foundation. The center was succeeded by the Institute for Hierarchical Manufacturing (IHM), also directed by Watkins and still active today, with annual funding exceeding \$5 million. Thanks to the support from MassTech, this leadership will continue. “New tech is often risky. Facilities like these—which enable companies, small and large, to work with emerging technology and to develop prototypes—reduce the risk of adapting new approaches,” said Watkins. “That is crucial to unlock the investments required for companies to move forward, bringing new tech out of academic laboratories.”

“The economic impacts of this project cannot be overstated,” said **Justin McKennon**, principal scientist at EMA, noting that EMA will create six to eight new jobs in Pittsfield as a result of the project. “We believe that this project will introduce hundreds of people, including many students, to this new area. We’ll be creating not just industry-leading manufacturing and characterization capabilities within the commonwealth, but also establishing a trained and educated workforce.”

<https://www.umass.edu/gateway/research/stories/advanced-manufacturing-metaoptics>

<https://www.umass.edu/news/article/myriads-optics-founded-umass-amherst-faculty-member-secures-3-million-seed-investment>

## The Path to Commercialization

UMass Amherst's strength in nanomanufacturing is particularly focused on designing and producing parts well-positioned for commercialization. "In our lab, we tend to focus on pathways that lend themselves to scalability," said Watkins. "In other words, we want to choose a path that enables us to make not just one of something that demonstrates an advance or something new, but rather a path that can ultimately be transferred to manufacturing." As a result of this focus, in 2021, Watkins was awarded a National Science Foundation "Partnerships for Innovation" grant, which aims to assist researchers in accelerating the development of breakthrough technologies. With this support, together with his students and post-docs, Watkins founded a start-up called Myrias Optics which performs additive manufacturing of metalenses and waveguides. In October 2023, Myrias announced it had received more than \$2.8 million in funding from a strategic partner and venture capital.



"Our group developed and patented the core technology over a number of years and now we have identified applications and markets where it will have a significant impact in terms of delivering new levels of performance and reducing cost," said Watkins. "Practical application and manufacturability are critical for making a paradigm-shifting technology like metaoptics a commercial reality," said **Vince Einck**, Myrias chief technology officer and a former graduate student and post-doc in the Watkins research group. "We expect our platform technology to revolutionize optics across a breadth of industries and bring true value to our customers and society."



Learn more about Vince Einck's PhD journey:

<https://youtu.be/wuzXq0-rWbo?si=98uiKlXdNnreclb>

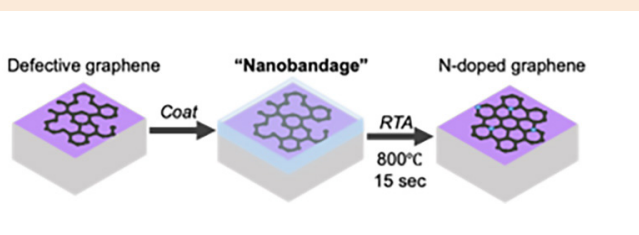
Visit the PSE Youtube Channel:

[https://www.youtube.com/channel/UC64tgxlaRRYGQCWyo1R3w\\_A](https://www.youtube.com/channel/UC64tgxlaRRYGQCWyo1R3w_A)

## Explore More Trail-Blazing PSE Research

Mesoscale Polymer Surfactants: Photolithographic Production and Localization at Droplet Interfaces <https://doi.org/10.1021/jacs.2c09346>

Defect Healing in Graphene via Rapid Thermal Annealing with Polymeric "Nanobandage" <https://doi.org/10.1002/sml.202206295>

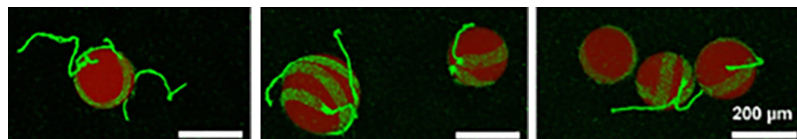


Using Grazing-Incidence Small-Angle Neutron Scattering to Study the Orientation of Block Copolymer Morphologies in Thin Films <https://doi.org/10.1021/acs.macromol.2c02415>

Building blocks of non-Euclidean ribbons: size-controlled self-assembly via discrete frustrated particles <https://doi.org/10.1039/D2SM01371A>

Fluorinated Zwitterionic Polymers as Dynamic Surface Coatings <https://doi.org/10.1039/D2PY01197B>

The Impact of Polymerization Chemistry on the Mechanical Properties of Poly(dimethylsiloxane) Bottlebrush Elastomers <https://doi.org/10.1021/acs.macromol.2c01332>



# New Faculty Hires

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## Melody Morris

Before joining the PSE Department, Professor Melody Morris was a postdoctoral research associate in Bradley Olsen's laboratory at the Massachusetts Institute of Technology (MIT), where she developed high-throughput tools for protein-based systems. Previously, she earned her B.S. degree in Chemical Engineering from the California Institute of Technology in 2013, where she did research with Bradley D. Olsen and Robert H. Grubbs. She later received her Ph.D. in Chemical Engineering from the University of Delaware in 2019. Under the supervision of Thomas H. Epps, III, her graduate research focused on nanostructured polymer electrolytes for lithium-ion batteries. Outside of the lab, Professor Morris is an avid bassoonist, rock climber, and coffee consumer. She is excited to join PSE because of the incredible community of enthusiastic students, excellent researchers, brilliant fellow faculty, and proud alumni.



The overarching goal of the Morris group will be to engineer sustainable macromolecular materials via automated and high-throughput tool development combined with multiscale physical characterization. Initial thrusts of the Morris group will focus on (1) designing synthetic polymer end-of-life and (2) developing new protein-based materials. For the first, by harnessing automation, polymer degradation mechanisms will be elucidated so that new processes for polymer upcycling and recycling can be developed. For the second design area, the Morris group will develop low-cost, automated strategies for protein and protein-polymer materials.

Morris Group video: <https://youtu.be/s53RL5yw168?si=jGPuQzK1R3BkXgZO>

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## Steve Granick

Steve Granick joined the PSE Department during summer, 2023. He holds the Robert K. Barrett Chair of Polymer Science and Engineering, an endowed chair made possible by the Barrett Family Foundation. Granick is a member of the U.S. National Academy of Sciences and has received the national APS Polymer Physics Award. To join PSE, he left his position as Director of the IBS Center for Soft and Living Matter, a blue-sky research institute that is the Korean version of a Max-Planck Institute. Earlier, he rose from assistant professor to become full professor at the University of Illinois.



We interviewed him for this newsletter:

- **The biggest challenge facing polymer science and engineering** is positioning ourselves for the future when AI and robotics will probably replace much of what we do today.
- **The most exciting thing about my research** is that it never fails to surprise me by going in unexpected directions.
- **Currently my group's research interests** range from active materials to the chemistry and physics of visualized biopolymers and living materials.
- **I advise my students** to believe in themselves.
- **My favorite thing about my lab group** is that they are my second family.
- **My biggest inspiration** is my postdoc advisor Pierre-Gilles de Gennes.
- **My favorite hobby** is to think like a molecule.
- **My reason to join PSE** is to participate in the best place in the world to do cutting-edge polymer science and engineering.
- **My biggest surprises at UMass** are the beauty and safety of the university.

Granick Group video: <https://youtu.be/ZMS6gLJyDqg?si=ED4rkwo02svM0dDT>



## Lisa McNamara Retirement

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A UMass employee for 38 years, Lisa came to PSE as Personnel Coordinator in early 2008, and since then, she has been a part of the fabric and glue holding PSE together. Over 16 years, Lisa has onboarded close to 200 post docs, five faculty members, several staff members, innumerable student workers and outside scholars, and many summer researchers. Lisa has assisted faculty members with special projects such as giving workplace advice, navigating UMass bureaucracy, and gaining certifications. Along the way, whenever needed, she served as PSE acting office manager, graduate program assistant, and finance manager. Lisa knows more than anyone else in PSE about the rules, policies, and people that keep UMass running. On top of her everyday workload, she volunteered as chair of the PSE Workplace Climate Committee, created the PSE POST, and organized an exiting program for postdocs and faculty. During COVID, she kept the Conte family safe by communicating UMass policies and answering questions.



Lisa's dedication, professionalism, hard work, and knowledge earned her the trust and respect of her colleagues in PSE and everywhere else across campus. We wish Lisa all the best in retirement!

## Meet the New PSE Facilities Operations Manager, Glenda Pons

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Born in Puerto Rico, Glenda earned her B.S. in Environmental Science from UMass Amherst before interning in emergency management under a FEMA grant at the Cooley Dickinson Hospital in Northampton. In 2006 she moved to UMass, where for 16 years she worked in the Environmental Health and Safety Department (EHS), where she oversaw chemical inventory, was part of the emergency response team and safety inspector at various times. In March of 2022, Glenda started as the PSE Facility Operations Manager, a multi-faceted position new to the department. A key part of her job is monitoring Conte infrastructure and facilitating building repairs and improvements. This task often focuses on laboratory renovations, for which, depending on the nature of the activity, she coordinates efforts from Facilities, Physical Plant, and Custodial Services. Glenda also coordinates the installation of major new instrumentation and necessary lab modifications. Glenda is particularly passionate about her service as

PSE's Departmental Safety Manager. In this role she assesses the safety of all PSE labs, reviews procedures and protocols for hazards materials and decontaminates labs as needed.

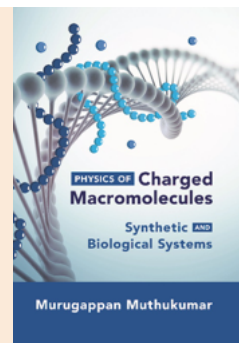
Already at home in the community, Glenda continues to promote safety, teamwork, diversity, and other objectives necessary to support PSE as a world-class environment for polymer education and research.

### Of Note

Murugappan Muthukumar has written a textbook, *Physics of Charged Macromolecules (Synthetic and Biological Systems)*.

"This book represents the first comprehensive pedagogical overview of the field, and even experts can learn much from its treatment." — Tim Lodge, University of Minnesota

<https://www.pse.umass.edu/news/m-muthukumar-publishes-new-textbook-polyelectrolyte-physics>  
<https://doi.org/10.1017/9781139046749>



# UMass Amherst ACS PMSE/POLY Student Chapter

Founded in January 2021, the UMass Amherst Student Chapter of the Polymeric Materials: Science and Engineering (PMSE) and Polymer Chemistry (POLY) Divisions of the American Chemical Society (ACS) aims to provide opportunities for students to facilitate their growth scientifically and professionally. In its first year, the organization was delighted to collaborate with other ACS PMSE/POLY student chapters for the 2021 *Macromolecular Summer Seminar Series* featuring 36 speakers from universities across the country. The Chapter also introduced the *Random Walks from a PhD* seminar series to bring in PMSE/POLY fellows as well as PSE alumni to showcase the diverse range of career paths after a PhD. The chapter also organized social events such as *Apple Picking with PMSE/POLY* and departmental Friendsgiving, and co-hosted a coffee hour with the *Fall 2021 3M Diversity* speaker, Dr. Michelle Gaines (Spelman College). With these efforts, the organization was proud to be recognized as the *PMSE/POLY 2021 Outstanding New Student Chapter* and to receive the third prize for a POLY poster showcasing its activity in 2022.

During the past year, the student chapter curated and created more events that promote the professional development of graduate students, under the leadership of James Pagaduan, Anne Radzanowski, Roshni Chethalen, and Bachir Messikh. They took charge of *Lunch 'n' Learn*, which was previously organized by student volunteers, to allow students and postdocs to share their research and receive feedback. They also launched *Sip 'n' Write* to provide time and space for students to work on their manuscripts. Prof. Darren Lipomi (UCSD) and Prof. Abraham Joy (UAKron) were invited to give talks on "How Do You Know When You Have Enough To Publish?" and "Boost Your Scientific Presentation Skills."

The chapter also hosted Prof. Helen Tran (UToronto) as the student-chosen speaker for the 2023 *Spring PSE Seminar Series*, wherein students had a great opportunity for insightful discussions on academic life.



2022-2023 PMSE/POLY Student Chapter Leadership: Bachir Messikh, Roshni Chethalen, Anne Radzanowski, and James Pagaduan (from left to right)

Members of the student chapter attended coffee hours with Dr. Cristina Thomas '92 & Dr. Erika Saffer (3M), Prof. Tim Swager (MIT), and Prof. Arthi Jayaraman (UDelaware). Overall, the student chapter serves as an inter-departmental and inter-university tool for students to make connections with other institutions that conduct polymer and soft materials research, and inspire academic and research collaborations. They hope to continue bringing great events to PSE and the UMass community in the coming years!

## PSE Club

The original and longest running of the PSE student organizations continues to be a mainstay of student life, under the leadership of: Michelle Gross, Jennifer Quigley, Mary Kate Jutze, Claire Senger, Katie O'Donnell and Lucas Verrastro. The club co-organized seasonal events in the fall of 2022 and 2023 including: Apple picking, pumpkin carving, and Friendsgiving. Food centered events, Great Conte Bake-off and a Chili Cook-Offs, brought the community together, as did healthy outdoor (Field Day) and indoor (Game Night & Trivia Night) competitions. The PSE Club hosted a welcome party for the entering classes of first year students, coordinated the Best Teacher and Best TA Awards at the Santos Go Award Banquets, and raised funds to support its activities through the sale of its popular PSE Gear. If you are interested in purchasing any PSE merchandise, please reach out to the PSE Club at [umasspseclub@gmail.com](mailto:umasspseclub@gmail.com)



# Gifts

## Alumni

Beata Abbs '74

Walter W. Adams '84

Naveen Agarwal '98 &  
Elif Gurel

Barbara Wood '82 &  
Steven L. Broitman '82

Andrew A. Bushelman '99

Richard W. Campbell '80 &  
Jeannine Campbell

Bob J. Cembrola '78

Makarand H. Chipalkatti '89 &  
Renu Chipalkatti '87

Hoe H. Chuah '85

Gregory A. Cigal '71

John M. Connolly '90

Larry S. Corley '79 &  
Stephanie R. Corley

Yongping Zha '12 &  
Jun Cui '13

Chad D. DeLong '04 &  
Naomi DeLong '08

Brittany deRonde '16

Robert J. Fleming '95

Joel R. Fried '76

Tzoo-Heng B. Fu '85

Jehuda Greener '78 &  
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## Professor Reika Katsumata Received Four Prestigious Awards to Propel Her Group's Research on Designing Soft/Hard Interfaces



As one of 58 researchers to receive grants from the Air Force Office of Scientific Research (AFOSR), Katsumata has received a three-year YIP Award from AFOSR. This award supports her project, "Confinement Effects on Polymer Degradation in Nanocomposites," which aims to uncover the effects of nanoconfinement on the thermal degradation of polymers in nanocomposites, focusing on thermodynamics and kinetics contributions.

The PRESTO award is among the most prestigious awards for early-career researchers who are Japanese citizens or residents. The award enables unique and challenging basic research to address important problems facing Japan. Katsumata will use her award to develop universal cross-linkers for network polymers that can be reprocessed with ultrasound-mediated bond exchange reactions.

Katsumata has also received 3M's Non-Tenured Faculty Award, which annually recognizes 20 outstanding early career faculty members from across the US. Katsumata was chosen for her work in engineering interfacial stress via dynamic covalent bonds, with results that can be applied to "stress-free" functional coatings and smart extracellular matrices.

Her early-career professional accomplishments in the field of polymer science and engineering have been recognized at the ACS PMSE Early Investigator Symposium. Katsumata gave an award talk entitled "Polymer-Assisted Rapid Thermal Annealing: A New Venue to Functionalize and Template Hard Materials."

Katsumata Group video: [https://youtu.be/NO\\_R1j656uA?si=gChbBjq044KORSdF](https://youtu.be/NO_R1j656uA?si=gChbBjq044KORSdF)

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