

Adhesion Connection

an update from the society



The Adhesion Society

2023 EDITION

Letter from the President

Dear Adhesion Society Members,

It remains an honor to serve as a President for the Society. I continue to be amazed by the energy, innovation, and excellence within our community. Our meeting in Orlando last February was full of groundbreaking presentations and opportunities for networking.

Amy Peterson, Michael Bortner, and Chelsea Davis worked with the Division Chairs to organize a program that showcased advances in our field. Such a meeting would also not have been possible without the input and contributions from many other volunteers, thank you! For the first time we had two unopposed panels: one on diversity, equity, and inclusion (DEI), and one on Careers for Adhesion Scientists. The DEI panel served in part as a brainstorming session on what the Society could do in terms of outreach, and included a discussion on how to make the meeting a more diverse and inclusive space. The Career panel offered the opportunities to students (and others) to learn about different career paths. The Excellence in Adhesion Science Award, sponsored by 3M was given to Michael Thouless, the Early Career Adhesion Scientist Award, sponsored by the ASC, given to Jonathan Pham and, finally, to Evan Breedlove for the 2022 Distinguished Paper Award, sponsored by Henkel.

Please plan to attend the 2024 meeting! Program Co-Chairs Michael Bortner and Chelsea Davis are working hard along with the Division Chairs to organize another great Annual Meeting in Savannah (February 11-14). The meeting will be preceded by the Short-Course (February 10-11). We will also celebrate the 2024 Award Winners, Timothy Long for the Excellence in Adhesion Award, Katharine Jensen for the Early Career Award, and Michael Bartlett for the Best Paper Award. Please watch out also for excellent presentations by the Peebles Award winners. We are looking to see you in Savannah.

Our short-course, organized by Kevin Turner and David Yarusso is also undergoing some changes this year. We will start the short-course on Saturday and end on Sunday right before the start of the Annual Meeting. We are hoping that bringing the Short Course and the Annual Meeting closer together will make it easier for both attendees and instructors to attend and participate.

Importantly, elections are coming up! We need a new Executive Committee for 2024-2026. Please have a look at the slate of candidates for the various positions. You will receive an email with the ballots in November. It is wonderful to see that we have a healthy and engaged community where members are willing to serve and help the Society remain strong and grow. Please take the time to vote when you receive the ballots, your opinion matters.

Finally, I am looking forward to seeing you at the Adhesion Society meeting.

Joelle Frechette
President, Adhesion Society

Joelle Frechette is currently Professor of Chemical and Biomolecular Engineering at UC Berkeley.



**Joelle Frechette, President,
Adhesion Society**

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Hyun-Joong Chung

University of Alberta

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*Queries can be sent to Malinda Armstrong,
the Adhesion Society Home Office Manager
at adhesionsociety@ascouncil.org.*

3M Award for Excellence in Adhesion Science Presented to Dr. Tim Long

It is our great pleasure to announce Dr. Timothy Long as the 2024 recipient of the Award for Excellence in Adhesion Science sponsored by 3M. Dr. Long currently holds the position of Professor of Chemistry in the School of Molecular Sciences at Arizona State University as well as the Center Director for The ASU Biodesign Center for Sustainable Macromolecular Materials and Manufacturing. He is being recognized for his innovative research in polymer chemistry and design as well as his impactful work manipulating and tailoring adhesion at the molecular level.

Dr. Long received his Ph.D. in Chemistry from Virginia Tech and has since held positions in both industry and academia, winning numerous awards at every level (institutional, state, global) for outstanding research, leadership, and instruction. He served as the Director of the Macromolecules Innovation Institute at Virginia Tech for many years prior to his move to ASU and the Biodesign Center, and he is currently serving as the Editor in Chief of Polymer International Journal. His career to date has been highly prolific, publishing numerous book chapters, well over 350 peer reviewed journal articles, and over 40 issued patents, many of which are for novel adhesive systems. His manuscripts provide a rich library of novel molecules and synthetic routes to functional polymer materials.

Professor Long is highly recognized for his groundbreaking work in the areas of novel polymeric design, functional polymer and adhesive systems, and sustainable materials / processes. A common theme of his contributions is his ability to reach into adjacent fields and create new approaches in polymer science, creatively designing these systems from a molecular level to manipulate functionality such as adhesion, degradation, and many others. Whether it be borrowing from biologically-inspired materials or employing the small molecules and functionalities traditionally used in other sectors of chemistry, he has pioneered areas such as reversible adhesion and new polymer backbones of polyester or silicone urea for their use in adhesives and beyond. Prof. Long's contributions are also significant in the overarching drive towards more sustainable polymer approaches, from additive manufacturing, to syntheses absent of solvent, to reversible crosslinking and de-polymerization, creating a rich library of tools that both draw from and elicit inspiration in academia and industry alike.

Dr. Long's impact goes well beyond his group's research as he is an excellent and prolific educator, not only to his students in academia but also to professionals working all across industry. For decades he has consulted and taught short courses in polymer chemistry and adhesion science at his institutions, conferences, and industrial sites, always willing to spread his knowledge and provide inspiration to so many. In total, Dr. Timothy Long's impressive scientific contributions, expansive legacy of impact, and dedication to his field and calling as an educator are truly incredible and he is extremely deserving of the 2024 Award for Excellence in Adhesion Science.



Dr. Tim Long



Jason Clapper, Chair, Award for Excellence in Adhesion Science Committee (3M)

Award for Excellence in Adhesion Science Committee Chair

Jason Clapper, 3M

Jason Clapper is a Staff Scientist in the Corporate Research Materials Laboratory of 3M where he has spent much of his career working on the development of new technology in the areas of soft materials and adhesives.

Nominations for the next Award for Excellence in Adhesion Science will be accepted through December 31, 2023. Nomination packages should be submitted to Jason Clapper, 3M, jclapper2@mmm.com

Nomination requirements: <https://www.adhesionsociety.org/awards/award-for-excellence/>



Award winners receiving their plaques from left: Michael Thouless (University of Michigan) 2023 Award for Excellence in Adhesion Science, Jon Pham (University of Cincinnati) 2023 Early Career Award, and Evan Breedlove (3M) 2022 Best Paper Award.

From the 2024 Program Chairs

Next year's meeting will be held **February 11 to February 14, 2024 in Savannah, GA**. The meeting will include sessions from our three Divisions: Structural Adhesives, Soft Adhesives and Bioadhesion/Bioadhesives. Sessions will cover a wide range of adhesion science including:

Structural Adhesives

- Fracture Mechanics
- Adhesives in Transportation, Electric Vehicles and E-mobility
- Contamination by Ice, Water and Insects

Soft Adhesives

- Pressure Sensitive Adhesives, Laminate Adhesives, and Viscoelasticity
- Elastocapillarity and Wetting
- Gels, Elastomers and Hybrids
- Contact Mechanics
- Soft Robotics and Electronics

Bioadhesion and Bioadhesives

- Biomedical and underwater adhesives
- Organismal and biomimetic adhesives
- Bio-sourced adhesives and bio-degradation
- Underwater adhesion and testing

Joint Sessions

- Reversible, Smart, Switchable Adhesives
- Sustainability and Adhesion
- Tools and Methods for Characterization
- High Throughput Analysis and Machine Learning
- Challenges in 3D Printing
- Adhesion and Fracture in Extreme Environments: Wind, Extraterrestrial, etc.

Please send an email to Michael Bortner (mbortner@vt.edu) or Chelsea Davis (chelsead@udel.edu) if you have any questions regarding the meeting next year.

2024 Program Chair

Michael Bortner, Virginia Polytechnic Institute and State University

Michael J. Bortner is associate professor in the Department of Chemical Engineering at Virginia Tech with a decade of industry experience prior to his academic position. His research efforts are focused on process-structure-property relationships in polymer and composite materials for advanced manufacturing.

2024 Program Co-Chair

Chelsea Davis, University of Delaware

Chelsea Davis is an Associate Professor of Mechanical Engineering at the University of Delaware. Her research group focuses on the development of micromechanical characterization tools to investigate the interfacial and surface properties of soft materials.



Michael Bortner, 2024 Program co-Chair (Virginia Polytechnic Institute and State University)



Chelsea Davis, 2024 Program co-Chair (University of Delaware)

Bioadhesion Division

The Bioadhesion Division's 2023 meeting focused on Biomedical adhesives, Underwater Adhesion and Testing, Sustainability, as well as a special session on Complex Coacervates. Our co-contributed session in Bioadhesion and Sustainability was well attended, as well as the Underwater Adhesion and Testing session which spanned topics from bioinspired materials to industrial solutions. New for our Division, we had an excellent session focused on the challenges and applications of Complex Coacervates. The keynote contributions by Prof. Marleen Kamperman (University of Groningen), Prof. Hongbo Zeng (University of Alberta), and Prof. Jonathan Wilker (Purdue University), were greatly appreciated by the audience.



Christopher So, Chair,
(U.S. Naval Research Laboratory)

The business meeting was held on Monday and very well attended, where we thanked the previous Division chair, Dr. Mehdi Vahdati (University of Strasbourg), for his excellent leadership and organization, as well as all the Division members and the session chairs for their hard work and their substantial input. We had a fruitful discussion of how to best organize our topics to reflect the changing landscape of attendees and interests of the community. We then welcomed Dr. Christopher So (Naval Research Laboratory) and Dr. Alex Nyarko (Avery-Dennison) as the 2024 Division chair and vice-chair, respectively.

The 2024 meeting will continue to capture the rich intersection between adhesion science and bioinspired systems, including the use of new bio-sourced materials. For this next meeting, we have redefined our topic areas to more broadly capture the interests of the division. This will consist of underwater adhesion and testing, organismal and biomimetic adhesives, biomedical and underwater adhesives, as well as a new session on bio-sourced adhesives and bio-degradation. The Division equally seeks to address new challenges and topics in the characterization of living systems, using bioinspired approaches to overcome challenges in adhesives, and developing new bio-sourced adhesives or understanding bio-degradation (New Session). If you would like to be a part of this Division or to help organize future meetings, please reach out to us at christopher.so@nrl.navy.mil and alex.nyarko@averydennison.com. We look forward to seeing everyone in Savannah in 2024 for another fruitful meeting.

Chair – Bioadhesion Division

Christopher So, U.S. Naval Research Laboratory

Dr. So has been a Materials Research Scientist at the Naval Research Laboratory in Washington, DC for 8 years, where he also held a National Research Council postdoctoral fellowship. In 2012, he finished his PhD at the University of Washington, where he held a T32 NIH Ruth L. Kirschstein National Research Service Award. After receiving his Ph.D. in Materials Science with Prof. Mehmet Sarikaya, he accepted a National Research Council postdoctoral fellowship with Dr. Kathryn Wahl at the Naval Research Laboratory to study the natural adhesive produced by barnacles. More recently, underwater adhesives produced from abundant protein sources out of Dr. So's lab have been funded for applied development by ONR. His research interests are focused on biophysical techniques, bioinspired materials in extreme environments, underwater adhesion, and peptide/protein design. Dr. So has received a number of prestigious awards and honors, such as an AVS Early Career Award, ONR early career research grants, NRL publication awards and journal covers, as well as his work being selected as the late breaking talk at the Science of Adhesion GRC in 2019.

Structural Adhesives Division

The Structural Adhesives Division had another year of well-attended annual meeting in 2023. Presenters and attendees included representatives from academia, national labs, and industry. The Division hosted four independent focus sessions: Fracture Mechanics of Structural Adhesives; Formulation, Processing and Surface Preparation for Adhesion; Adhesives in Transportation; and Addressing Adhesion and Fracture in Additive Manufacturing. In addition, the Division also co-hosted three joint sessions with the Soft Adhesives Division: Novel tools and methods for Characterization; Reversible, Smart or Switchable Adhesives; and Underwater Adhesion and Testing. Overall, the sessions had about 66 talks and 3 keynote presentations, with most sessions attracting at least 40-50 attendees! The Division thanks all the Session Chairs who kept the concurrent sessions on time and running smoothly. Special thanks to the previous Chair, Joseph Dennis (Army Research Laboratory) for his excellent mentorship and leadership.



Ngon Tran, Chair
(DEVCOM ARL Central)

At our annual division meeting, we had another engaging discussion and feedback from our volunteers and attendees on improving the Structural Adhesives Division. We also elected our new Vice-Chair, Joann Hilman (BTG Labs), and Symposium Chair, Arit Das (Virginia Tech), who have been enthusiastically helping with the planning and organization of the Annual meeting in 2024. Based on discussions during the Division meeting, we are continuing to strengthen our existing program portfolio, maintaining our core competencies in fracture, processing, and interfacial adhesion. We proposed renaming some session titles to minimize confusions about research relevancies, such as including "thermally conductive mobility (EV)" in the session that is currently entitled as Adhesives for Transportation. We invited keynote speakers who have strong backgrounds in fracture mechanics, formulations, and/or transportation. Finally, don't forget to attend the Structural Adhesives Division meeting during the 2024 conference to voice your interests and shape our Division's future. We are looking forward to an exciting Annual Meeting in 2024 and thank you all for your support during the 2023 meeting!

Chair – Structural Adhesives Division

Ngon Tran, DEVCOM ARL Central

Ngon Tran is a staff scientist at DEVCOM Army Research Laboratory in Maryland. Her research focuses on surface science and formulation to improve the durability of structural adhesives in underwater environments and to improve mechanical properties in composites.

Soft Adhesives Division

As always, we had an exciting scientific gathering in the 2023 Annual Meeting of the Adhesion Society. The Soft Adhesives Division had another successful year with well-represented programming filled with exciting talks, poster session, and lively discussions throughout. The Soft Adhesives Division featured fundamental topics of PSAs and Viscoelasticity, Soft Tribology, and Contact Mechanics, Elasticity, Capillarity and Wetting, as well as applied topics of Gels, Elastomers, and Hybrids, Reversible, Smart, Switchable Adhesives, and Soft Technologies (including Soft Robotics). All sessions attracted large audiences thanks to the outstanding lineup of speakers, including the three keynote speakers, Kari Dalnoki-Veress (McMaster U.), Yuhang Hu (Georgia Tech), and Rebecca Kramer-Bottiglio (Yale U.).



Hyun-Joong Chung Chair
(University of Alberta)

In our annual Division meeting, 36 colleagues discussed ideas and plans for the upcoming 2024 Annual Meeting and elected new leadership. To reflect the expansion of the application fields which traditionally have been considered as soft adhesives, interdisciplinary topics such as Reversible, Smart, and Switchable Adhesives will become joint sessions between divisions in 2024. Our three confirmed keynote speakers, Jan Genzer (NCSU), Emanuela Del Gado (Georgetown Univ), and Hyun-Joong Kim (Seoul National U.), will bring broad perspectives to understand and apply soft adhesives, ranging from the role of water-ion structuring under confinement to the technological application of PSA for flexible displays. For our upcoming leadership, Gabriel Sanoja (U. Texas – Austin) was elected to serve as the Vice-Chair of the Soft Adhesives Division. Congratulations Gabriel!

Finally, we wish to remind you about the Memorial Scholarship Fund and the Memorial Session dedicated to late Daniel R. King, our former division chair and friend. Dan's contribution to the division and the Adhesion Society will be with us forever.

Chair - Soft Adhesives Division

Hyun-Joong Chung, University of Alberta

Hyun-Joong Chung is a Professor of Chemical and Materials Engineering at the University of Alberta. He leads a research program on understanding properties of gels and elastomers with or without functional additives and reinforcements, as well as on translating the fundamental understanding to sensors, actuators, smart textiles, and biomedical device applications. Prior to his faculty position, he studied on studying the role of jamming nanoparticles in phase-separating polymer blends (PhD @ U. Pennsylvania), contributed in prototyping large-area OLED TVs by developing zinc oxide based thin film transistors (Senior Engineer @ Samsung Displays), and developed stretchable bioelectronics for epidermal and cardiovascular applications (Post-doc @ U. Illinois).

Secretary's Report on the 2023 Meeting

It has been a hot summer in Maryland, USA and I realize this is my final Secretary's report. I want to thank everyone from students to the Executive Committee for that great experience. I realized in compiling the survey I can do a better job meeting our diverse membership. If you see me in 2024, stop and say hello. In 2023, attendance was roughly 260 participants, and this was up 30 % from last year. The survey response rate was a bit off at 33 %. I would ask that we try to participate in the survey as members. Your responses really help the Executive



Aaron Forster, Secretary
(National Institute of Standards and Technology)

Committee understand how we are doing and what we can do better. The meeting membership dominated by Academia (53 %) and Industry (40 %) last year. The Academic group was evenly split between Teachers and Learners. The government attendance was down compared to past years. There were strong opinions on the food and beverage and the initiatives in equity and sustainability are strongly supported. Geographically, the meeting was dominated by attendees from the United States (82 %) followed by Europe (10 %), Canada (4 %), and Asia (4 %). I look forward to sharing more with everyone in 2024.

Secretary

Aaron Forster, National Institute of Standards and Technology

Aaron Forster is a staff scientist in the Material Measurement Laboratory at NIST in Gaithersburg, MD. His research program investigates the role of molecular topology and viscoelasticity in the design of higher stronger and tougher protective materials. He develops measurement techniques to link molecular processes to meso-scale energy dissipation measurements. Protective materials of interest include high strength fibers, composites, and elastomers. Recently, his group has focused on democratizing measurements of the dynamic properties of materials via the distribution of material data frameworks that adhere to FAIR data principles.

From the Treasurer

The 2022-2023 fiscal year saw a return to break-even for the year, with an estimated net income of \$3,528.94 for the year. This came through diligently managing costs at the 2023 Adhesion Society Meeting in Orlando, Florida through a reduction in food and beverage offerings and through the diligent negotiating skills of Malinda Armstrong.



Chris Campbell, Treasurer (3M)

Based on the feedback from surveys and continuing to set the costs on conferences at a breakeven of 90% of our historical attendance for full paying attendees, we will raise costs for 2024 to provide a better offering of food and beverage and also to reflect the rising costs of conference sites:

Annual Meeting Registration Fees:

Standard Registration:	\$900
Standard Registration after January 15:	\$1,080
Fellow Registration:	\$525
Retiree:	\$300
Student & Postdoc Registration:	\$350
Student & Postdoc Registration after January 15:	\$480
Regular One-Day Registration:	\$350
Student One-Day Registration:	\$225
Guest Registration:	\$300

This will continue to provide access to the short course and conference for students and postdocs that covers their variable costs of attendance, while ensuring a reasonable cost of attendance for the other attendees for the conference.

We appreciate the over \$15,000 in industrial donations that support the Society's awards, as well as sponsor student and postdoctoral attendance through the Peeble's Award and Diversity & Inclusion Scholarships. Please feel free to reach out if your company or organization would be interested in sponsoring additional portions of the Society, as well as any questions you may have.

Treasurer

Chris Campbell, 3M

Chris Campbell is the Global Laboratory Leader for Optically Clear Adhesives in the Display Materials and Systems Division at 3M. He leads a team of product developers and application engineers for display bonding with pressure sensitive adhesives and liquid adhesives for consumer electronics and automotive applications. Chris and his family live in Burnsville, Minnesota with their two pugs, Buttercup and Rhubarb.

Short Course in 2024

The Adhesion Society Short Course will return again in 2024! It will be held immediately prior to the Annual Meeting and will run from the morning of Saturday, February 10, to midday on Sunday, February 11. This 1.5-day short course will provide a comprehensive introduction to the fundamentals of adhesion science and technology for anyone new to the field. Topics to be covered include chemistry and mechanics of adhesion, structural and pressure-sensitive adhesives, characterization, and more.

Dave Yarusso, *Yarusso Consulting, Short Course Chair*

Kevin Turner, *University of Pennsylvania Short Course vice-Chair*

Diversity, Equity, and Inclusion Update

Kim Felix currently serves as the Diversity, Equity, and Inclusion officer for the Adhesion Society. In her role at MII at Virginia Tech, she works closely with students, staff, and faculty sharing detailed knowledge and guidance about the Macromolecular Science and Engineering PhD degree program. As the director of the Research Experiences for Undergraduates program, she orchestrates events and career development opportunities. As a career servant in academia, she strives to aid the underrepresented gain access to the wealth of resources available that further amplify pro-equity environments.



Kim Felix (Virginia Tech)

The 2023 meeting featured a DEI session to discuss ideas of how to make the society more inclusive and how to engage with communities around our meeting locations. The society is also collecting more demographic data to better understand and make visible the diversity in our membership.

AS
Adhesion Science and Technology
SHORT COURSE
February 10-11, 2024
HYATT REGENCY • SAVANNAH, GEORGIA
www.AdhesionSociety.org

2023 Peebles Awards Sponsored by Henkel Corporation

This year we had seven recipients of the Peebles Award for Graduate Student Research in Adhesion Science, sponsored by Henkel. The selection of awardees was based on abstracts submitted as contributions to the Annual Meeting. These awardees received partial support to attend the meeting and present their papers at an oral symposium. These presentations formed the basis for choosing the winner of the Alan Gent Distinguished Student Paper Award. In addition to this support, registration fees for the short course and the meeting were waived. Congratulations to the recipients of the Peebles Award: Brandon Clarke (University of Texas Austin), Zhara Azimi Dijvejin (University of British Columbia), Zvikomborero Machikiti (NC State University), Mitchell Maw (University of North Carolina), Abigail Nolin (University of Delaware), Meredith Taghon (University of Massachusetts Amherst), and Zhen Yang (McGill University).



2023 Eric Silverberg (right) with 2023 Peebles Award winners from left to right: Meredith Taghon (University of Massachusetts Amherst), Mitchell Maw (University of North Carolina), Abigail Nolin (University of Delaware), Brandon Clarke (University of Texas Austin), Zvikomborero Machikiti (NC State University), and Zhen Yang (McGill University). Not pictured: Zhara Azimi Dijvejin (University of British Columbia).

Alan Gent Distinguished Student Paper Award Sponsored by Henkel Corporation

Congratulations to Brandon Clarke (University of Texas Austin) for winning the 2023 Alan Gent Distinguished Paper Award for his paper "Characterizing the adhesive behavior of photo-switchable adhesives." Abigail Nolin (University of Delaware) was the runner-up with her paper "Controlling fine touch sensations with polymer tacticity and crystallinity." Both were awarded a cash prize each in addition to the remuneration associated with being a Peebles Award winner.

About the Student Awards: Two student awards are given every year, the Peebles Award for Graduate Student Research in Adhesion Science and the Alan Gent Distinguished Student Paper Award. Both awards are sponsored by Henkel Corporation. Any student who is past their first year of graduate study, will be enrolled in graduate school at the time of the Annual Meeting, and has not received a student award previously is eligible to compete. The deadline for submitting the long abstracts and the remainder of the application package for Peebles candidates is significantly earlier than the standard deadline. Award guidelines can be found at <https://www.adhesionsociety.org/student-awards>. The Alan Gent Distinguished Student Paper Award winner is selected from the Peebles winners based on their presentations by a judging committee which typically includes the Vice President, Eric Silverberg from Henkel, and other members. **Link to guidelines:** <http://www.adhesionsociety.org/student-awards>

2023 Best Poster Award

This award is presented to the best poster and poster presentation as judged during the annual meeting poster session. This award is sponsored by Avery Dennison and typically has a member from this company as the session chair and part of the judging panel. Link to nomination requirements: <http://www.adhesionsociety.org/awards/best-poster-award/>

2023 Best Poster award winners were Arianna Avellan Jaramillo (University of California, Berkeley), Katie Nath (Williams College), and Jackson Fuller (United States Naval Academy).

Robert L. Patrick Fellow of the Adhesion Society

Elevation of a member to Fellow of the Society is a formal recognition of outstanding members. The award also commemorates the lifelong contributions made to the Adhesion community by the late Robert L. Patrick in recognition of his extensive contributions to wetting, adhesion science, and the Society. The nominee must have provided outstanding contributions to the field of adhesion over a sustained period. Such contributions can be in the form of service to the adhesion community, broad and productive research and/or teaching, or other conspicuous achievements in the field of adhesion. Nominees shall have been members of the Adhesion Society for five years at the time of nomination. Guidelines for nominations can be found at <https://www.adhesionsociety.org/robert-l-patrick-fellowship>. Any member of the Society may submit a nomination to the President by October 30th and are encouraged to do so.

Early Career Award

Congratulations to Katharine Jensen for winning the 2023 Adhesion Society Early Career Scientist Award, sponsored by the ASC, for her contributions to adhesion science.

This award recognizes an early career scientist who has contributed in an outstanding, innovative, and interdisciplinary way to the progress of the field of adhesion science research and/or technology. The award is sponsored by the Adhesive and Sealant Council. This award is typically coordinated by two of the previous past Presidents of the Society and voted on by the Executive Committee. A part of the Society's DEI efforts, the eligibility criteria for this award are being updated. **Guidelines for nominations and updated criteria can be found at:** <https://www.adhesion-society.org/early-career-award>



Women's Networking Event



The 9th Annual Women's Networking Event was held on Tuesday February 21, 2023 organized by Kate Jensen (Williams College). This event continues to grow and foster connections across the community.

47TH ANNUAL MEETING
The Adhesion Society
FEBRUARY 11-14, 2024
 HAYATT REGENCY • SAVANNAH, GEORGIA

JOIN YOUR PEERS IN SAVANNAH, GEORGIA!

Annual Meeting (Technical Program) – February 11-14, 2024

The 47th Annual Meeting is a four day event featuring a strong technical program of education sessions PLUS a two-day short course, poster session, exhibition, student award symposium and concurrent technical sessions. Our goal is to welcome 200 global adhesion professionals.

Exhibition – February 11-12, 2024

The vendor exhibition is integrated with the president's reception, coffee breaks and poster session, providing high visibility for the entire meeting to all attendees. The exhibition is designed to help establish and strengthen ties between all attendees and exhibitors.

Adhesion Science & Technology Short Course – February 9-10, 2024

This two day event provides an introduction and overview to a variety of critically important topics in the field of adhesion. Each subject is presented by a scientist who is a world leader in that area. This gives the attendees the opportunity to learn from and interact with scientists whose expertise provides a unique view into the history, science and relevance of their topic. For additional information and to register, visit www.adhesionsociety.org under events.

Presentations (Abstracts) for the meeting are solicited for all areas of adhesion science and technology.

For questions contact: Malinda Armstrong, Home Office Manager (301)986-9700 x1106 or adhesionsociety@ascouncil.org

Hotel Accommodations:

HYATT REGENCY SAVANNAH
 Two Bay Street
 Savannah, Georgia 31401
 Phone: 877-803-7534

Register today and save!

Registration for the Annual Meeting includes attendance at the technical meeting, all receptions and breaks, meeting proceedings and **membership** to the Adhesion Society.



WWW.ADHESIONSOCIETY.ORG



Daniel R. King Memorial Travel Scholarship Fund

The Adhesion Society and the family of Dr. Daniel R. King have established the **Daniel R. King Memorial Travel Scholarship** to commemorate the contributions made to the Adhesion community by the late Daniel R. King in recognition of his extensive contributions to soft materials, adhesion science, and the Society, especially his open and welcoming approach to making science globally inclusive and fun.

The **Daniel R. King Memorial Travel Scholarship** will be awarded annually to students and early career researchers to support their attendance at the Annual Meeting of the Adhesion Society. Dan loved bringing people together to share and grow science. This scholarship is a wonderful way to commemorate his life and his contributions to the entire soft materials community. The Scholarship fund and selection process will be managed by the Executive Committee. All donations are tax deductible. Please consider donating to this fund.

On May 1, 2022, the adhesion and soft materials science communities mourned the sudden passing of Dr. Daniel R. King, a member of the Adhesion Society since 2012, Chair of the Soft Adhesives Division in 2022, and Peebles Award winner.

Dan was a tenure-track Assistant Professor at Hokkaido University in Japan, a position he held since 2015. As an Assistant Professor, Dan performed cutting-edge research while training a large number of students and working with an extensive team of colleagues and collaborators. He, his students, and his colleagues at Hokkaido University published an extensive list of high impact papers on ultra-strong, ultra-tough hydrogel composites and their structure-property relationships. His work has inspired numerous research advances around the world.

Dan received his Ph.D. in Polymer Science & Engineering from the University of Massachusetts Amherst in 2015 for research focused on the adhesion and mechanics of biological and bioinspired materials, working in the research group of Professor Alfred J. Crosby. He published numerous papers in high impact journals

and was a co-inventor on 7 patents, including the foundational patents related to the Geckskin technology, based on his doctoral research. Following his Ph.D., Dan accepted a postdoctoral position with Professor Jian Ping Gong in Hokkaido University. As a postdoc, Dan continued to have a large impact on the soft materials research community through his innovative work on hierarchical hydrogel-fabric composites.

Dan's scientific impact and accomplishments were extensive, and Dan's influence on this world went far beyond science and engineering. Dan's love for life was infectious. He was always smiling, laughing, listening, planning, and connecting. He was best friends with everyone, and his network spanned the globe. Dan loved new adventures and lived his life to the fullest, taking advantage of exciting and interesting opportunities whenever he had the chance. He will be remembered as a great storyteller, the life of the party, and a dear and caring friend. He is missed beyond measure.



Call for Executive Committee Nominations!

It's time to elect our next Executive Committee for the term 2024-2026 In preparation for the upcoming election, the Nominating Committee has developed an initial list of nominated candidates for each of the Executive Committee. Each of the committee positions and current nominations can be found below. In addition, all members of the Adhesion Society are invited to nominate additional candidates. In order to nominate a person, the nomination must be submitted as a petition signed by at least 15 members and sent to Aaron Forster, Secretary at aaron.forster@nist.gov. This general nomination period will be open for 45 days beginning on the date of release of this newsletter. Once all nominations are received, we will distribute a final ballot of candidates for all positions, and subsequently call for votes. The description of the Executive Committee positions, as well as the election procedures, can be found in the Constitution of the Adhesion Society on the website. Thank you to everyone who is running to serve on the Executive Committee. The strength of the Society depends on the great membership and its willingness to serve in so many ways!

VICE-PRESIDENT

CHRISTOPHER SO

Over the years, I've come to call this my home society because it is like no other society I've encountered. The Adhesion Society offers a unique balance of caliber, size, and multi-disciplinary topics that is rare among venues. I have always been impressed with the continual engagement over many years from this community and the resulting strong networks that have formed, a force that keeps everyone "stuck" together. I felt this back when I came to my first meeting eight years ago- while larger venues often lose intimacy, the culture in this



Society led to some of my closest professional relationships that still endure today. Being from government, I would as vice president aim to ensure that the Society continues to pull in a healthy mix of industry, academia, and government. I would also add my biological and bioinspired adhesive background to broaden the expertise in the executive committee. One of my goals would be to foster more synergy between the bioadhesion division and the rest of the divisions, by building bridges within the society and to new research groups and industry that would be benefited—as I have—by exposure to this community. Incorporating new frontiers in synthetic biology, bio-sourced, biomedical, and bioinspired adhesive materials are critical in ensuring that Adhesion Society stays relevant and that knowledge is spread to such new frontiers. My experience working in some of these fields, collaborating and getting to know these communities through ONR/NRL research programs, would be useful in growing the Society in this direction. I am currently serving as chair of the Bioadhesion division with this goal in mind.

Dr. So has been a Materials Research Scientist at the Naval Research Laboratory in Washington, DC for 8 years, where he also held a National Research Council post-doctoral fellowship. In 2012, he finished his PhD at the University of Washington, where he held a T32 NIH Ruth L. Kirschstein National Research Service Award. After receiving his Ph.D. in Materials Science with Prof. Mehmet Sarikaya, he accepted a National Research Council post-doctoral fellowship with Dr. Kathryn Wahl at the Naval Research Laboratory to study the natural adhesive produced by barnacles. More recently, underwater adhesives produced from abundant protein sources out of Dr. So's lab have been funded for applied development by ONR. His research interests are focused on biophysical techniques, bioinspired materials in extreme environments, underwater adhesion, and peptide/protein design. Dr. So has received a number of prestigious awards and honors, such as an AVS Early Career Award, ONR early career research grants, NRL publication awards and journal covers, as well as his work being selected as the late breaking talk at the Science of Adhesion GRC in 2019.

KEVIN TURNER

I am excited about the opportunity to serve the Adhesion Society as Vice President. I have actively participated in the Adhesion Society for over 15 years and regularly participate in the Annual Meeting. I have taught in the Adhesion Society Short Course for many years and previously served on the Executive Committee as a Member-at-Large. As Vice President, I would work with the Executive Committee to ensure that the Society remains vibrant through a diverse and growing membership with interests in all aspects of adhesion science and engineering. It is an exciting time in adhesion science with significant research and development in soft, structural, bio, and sustainable adhesion. I'm committed to ensuring that the Annual Meeting remains the place for industry and academic researchers (including students) to gather and discuss the latest advances in these areas.



Kevin T. Turner is Professor and Department Chair of Mechanical Engineering and Applied Mechanics at the University of Pennsylvania. Professor Turner also holds a secondary appointment in the Department of Material Science and Engineering and serves as the site director for the NSF-funded Engineering Research Center for Internet of Things for Precision Agriculture (IoT4Ag). In 2023, he served as chair of the Gordon Research Conference on the Science of Adhesion. Turner received his BS from the Johns Hopkins University and SM and PhD from MIT. Prior to joining the University of Pennsylvania in 2011, he was on the faculty of the University Wisconsin-Madison. He has received numerous awards, including the Lindback Award for Distinguished Teaching, ASME Sia Nemat-Nasser Early Career Award, SME Outstanding Young Manufacturing Engineer Award, Adhesion Society Young Adhesion Scientist Award, and NSF Career Award. He has published more than 180 peer-reviewed articles. Turner's research is at the nexus of mechanics, manufacturing, and materials. Ongoing research efforts in Turner's group include structured materials with tunable adhesion and fracture properties, soft robotic grasping, design of heterogeneous and additively manufactured materials, and manufacturing of flexible hybrid electronics and sensors.

TREASURER

CHRIS CAMPBELL

It gives me great pleasure to run again for the Adhesion Society Treasurer. As Treasurer the past four years, we have navigated through COVID as well as increased hospitality costs while ensuring that we continue to deliver the level of conference and service that we have had through the Society over the years. We have maintained the conference breakeven at 90%, resulting in modest increases in conference rates while continuing to offer the conferences at variable costs for students and post-docs to ensure accessibility and inclusivity in their participation.



Looking forward, I hope to continue to serve as a financial steward for the Society, while hoping to expand our offerings for student and post-doctoral sponsorship. Please feel free to reach out if you have any questions

Dr. Chris Campbell joined 3M in 2007, after obtaining his PhD in Chemical Engineering from Northwestern University. Chris started in the Corporate Research Materials Laboratory, working on structural adhesive technology development. In 2011, Chris joined the Electronics Markets Materials Division and subsequently the Display Materials and Systems Division as a Product Developer for eBonding liquid adhesives, and both liquid and film optically clear adhesives. Chris Campbell is currently the Global Laboratory Leader in the Display Materials and Systems Division, leading a team of product developers and application engineers that create optical bonding solutions in consumer electronics and automotive display applications. Chris is the inventor on 12 patents and recipient of two 3M Corporate Circle of Technical Excellence and Innovation Awards. Outside of the lab, Chris enjoys spending time traveling with his family—including an eight-week adventure of his entire family living in Seoul, South Korea—and as well as their pug, Rhubarb.

SECRETARY

JOE DENNIS

After enjoying my time as Structural Division chair, I look forward to continuing my support of the Adhesion Society as Secretary. I hope to continue building the excellent foundation laid by Aaron and others and will work toward making the transition as smooth as possible.

Dr. Dennis is a polymer chemist stationed in Chicago as part of ARL Central within the US Army Research Laboratory. He is currently engaged with several universities in the Chicagoland area, focused on discovering and operationalizing adaptive polymer glasses for soldier, vehicle and weapon applications. His current role is actively collaborating with the external community and steering research to accelerate the discovery, innovation, and transition of technology to the Army. Dr. Dennis graduated from the Macromolecules Innovation Institute at Virginia Tech in 2017 under the guidance of Professor Timothy E. Long, where he identified the delicate interplay between polymer topology and macroscopic properties in engineering thermoplastics. He then transitioned to a postdoctoral research position with IBM, focused on novel material designs for industrial applications ranging from microelectronics



to sea floor piping. In some cases, he led interdisciplinary teams in collaborative projects as principal investigator with the group's success evidenced in technology transfer through patents, and external recognition in peer-reviewed articles. Dr. Dennis' current research focus is in understanding and exploiting adaptive polymer networks. This relatively untapped area of material discovery presents challenging opportunities to understand the structure-property-response nexus and uncover rapidly-responding, adaptable materials for active armor, recyclable structural adhesives, and robotic technologies.

KATE JENSEN

I have been a member of the Adhesion Society since 2015, and previously served as Chair of the Soft Adhesives Division (2022-2023). I look forward to continuing to take an active role in the society, and would be honored to serve as the next Secretary of the Adhesion Society if elected.

Katharine E. Jensen is an Assistant Professor of Physics at Williams College. She earned her A.B. in Physics at Princeton, then spent two years as a researcher at MIT Lincoln Laboratory. She completed her Ph.D. in Physics at Harvard studying structures and defects in soft crystals and glasses. Her post-doctoral research investigating soft interface mechanics started at Yale in the Department of Mechanical Engineering and Materials Science and later moved to the Department of Materials at ETH Zürich. At Williams, her lab's research focuses on the mechanics of soft materials and highly-deformable interfaces, including work with soft adhesive materials, fluid surface instabilities, and the biophysics of plants harnessing energy from water. Her work at Williams and with Williams students has been recognized with major research grants from both the National Science Foundation and the American Chemical Society, as well as the 2023 Outstanding Early Career Adhesion Scientist Award from the Adhesion Society.



MEMBER-AT-LARGE

ALEX NYARKO

My first exposure to the Adhesion Society conference was during my third year in graduate school. Right from day one, I was blown away by the quality of the discussions and openness to share ideas, thoughts and suggestions without any repercussions. Over the course of multiple years attending the conference, I made several friends, acquaintances and collaborators who have influenced and helped me in several areas. To put it more succinctly, the society has had a very deep and profound benefit for both my personal and professional life. As someone who has been invested in, I would also like to give back to the society. I strongly believe the Member-at-Large role will serve as an avenue for me to contribute my quota in helping the society grow and improve. I believe that young and aspiring scientists who attend the conference will continue to be inspired and encouraged just as I was, and I will like to be part of the team that will enable that to keep happening.

Dr. Alex Nyarko is a Senior Research Specialist at Avery Dennison. He is passionate about sustainability and works in the Advanced Materials Solutions team in



Avery Dennison. He currently carries out research involving the design of sustainable adhesives which enable effective recycling of HDPE and PET packaging. He has a MSc in Polymer Materials Science and Engineering from The University of Manchester in 2012, and a PhD in Polymer Science from The University of Akron in 2018, where he worked in Dr. Ali Dhinojwala's group with a focus on underwater bacterial adhesion, biomimicry and surface science. He leads the Black Employees Resource Group on site, in Mill Hall Pennsylvania and runs a podcast which celebrates the work of African Scientists. He served as the co-chair of the Sustainability and Adhesion session at last year's Adhesion Society conference and is the current vice-chair of the Bioadhesion division.

CHARLES DHONG

For me and many others, Adhesion Society has been a source of community and scientific identity. One of the things I appreciate most about interacting with Adhesion Society members is receiving insightful feedback while maintaining a positive, collegial environment. As an executive Member at-Large, I will work to continue this healthy culture for all our members, especially as our membership grows to better reflect the variety of backgrounds and experiences of society. I intend to help the Adhesion Society grow through mentorship programs, especially for trainees looking to establish themselves into their independent careers.



Since 2019, Prof. Charles Dhong is an assistant professor at the University of Delaware in the Department of Materials Science and Engineering and holds a joint appointment in the Department of Biomedical Engineering. He received his BS in Chemical and Biomolecular Engineering at the University of California, Berkeley. He then received a Ph.D. in Chemical and Biomolecular Engineering at Johns Hopkins University under the supervision of Joelle Frechette. He then held a postdoc at the University of California, San Diego with Prof. Darren Lipomi in the department of Nanoengineering. His work studies how mechanical forces inform or diagnose biological systems, ranging from osteoarthritis, fibrosis, to the human sense of touch. His lab is supported through multiple grants from the NIH.

ANNE DUSSAUD

Dr. Anne Dussaud earned her Ph.D. from AgroParisTech (France). After her thesis, she was a Postdoctoral Fellow at Princeton University in the laboratory of Prof. Sandra Troian and at the Benjamin Levich Institute for Physico-Chemical Hydrodynamics (CCNY) under Prof. Andreas Acrivos. She received the Francois Naftali Award from the American Physical Society. She started her industrial career at Unilever where she elucidated the role of the networked microchannels of the skin surface on liquid transport. She has 25 years of industrial research experience in a broad range of areas, including interfacial properties, and polymers. She is currently a principal scientist at Momentive Performance Materials in the Adhesives and Sealants Division, focusing on silane technologies. She has authored more than 15 refereed publications and is an inventor on 20 patents. She is thrilled to work in the pluri-disciplinary field of adhesion.



She served as session chairs in the past three years at the annual meetings of the Adhesion Society and looks forward to serving the Society as a member at large.

JONATHAN PHAM

Jonathan Pham is an associate professor at the University of Cincinnati, with primary and secondary appointments in Chemical Engineering and Materials Science and Engineering. Prior to joining Cincinnati, he was an assistant professor at the University of Kentucky. Jonathan received a BS in Materials Science and Engineering from The Ohio State University and a PhD in Polymer Science and Engineering from the University of Massachusetts Amherst. He has been a Chateaubriand fellow at ESPCI-ParisTech and a Humboldt fellow at the Max Planck Institute for Polymer Research. His research group focuses broadly on soft materials and interfaces, including adhesion, friction, lubrication, wetting, and mechanical properties. Jonathan has been attending the Adhesion Society annual meetings since 2017, and has served as the vice-chair and chair of the soft adhesives division.



MEGAN VALENTINE

It's an honor to be nominated as a Member-at-Large of the Executive Committee of the Adhesion Society and I look forward to the opportunity to further the Society's impact on discovery, education, and innovation. The community and infrastructure of the Adhesion Society are critically important to advancing research and applications in adhesion science and soft materials mechanics in both the academic and industrial spheres. I have personally benefitted from the welcoming nature of the Society and the ease by which its members integrate knowledge and approaches across disciplines to tackle important problems and advance the field. I am excited to contribute to the Adhesion Society's work in identifying opportunities to broaden participation, advance sustainability, and promote workforce development while creating opportunities for members to present their work and grow their professional networks.



Megan T. Valentine is a Professor of Mechanical Engineering at the University of California, Santa Barbara. She leads an interdisciplinary experimental group pursuing research spanning the broad areas of soft materials design and mechanics, biomaterials, organismal adhesives, and mechanobiology. Megan has substantial experience in research administration and has a strong record of success in marshalling resources and creating infrastructure to enable discovery and innovation. She currently serves as a Co-Director of the California NanoSystems Institute, one of four California Institutes of Science and Innovation created by the State of California to promote research, entrepreneurship and workforce development for the benefit of its citizenry. She is also a Senior Investigator and Thrust Lead in the NSF BioPolymers, Automated Cellular Infrastructure, Flow, and Integrated Chemistry Materials Innovation Platform (BioPACIFIC MIP), which aims to accelerate the discovery and development of high-performance materials by developing national infrastructure for sustainable biomaterials research. Megan's formal education is primarily in materials and biological physics, receiving her B.S. from Lehigh University, M.S. from UPenn and Ph.D. from Harvard. She completed a postdoctoral fellowship at Stanford in the Department of Biological Sciences, where she was the recipient of a Damon Runyon Cancer Research Postdoctoral Fellowship, and a Burroughs Wellcome Career Award at the Scientific Interface. She is a recipient of the NSF CAREER Award for her work on neuron mechanics, and a Fulbright Scholar Award to study adhesion mechanics at ESPCI in Paris,

France. Her contributions to the field have been recognized by her election as a Fellow of the American Physical Society and a Fellow of the American Institute for Medical and Biological Engineering.

GABRIEL SANOJA

I have been attending our Annual Meeting since 2021, and my research on mechanics of soft polymer networks has considerably benefited from our rich scientific discussions, and your genuine support. Hence, if elected for the position, I would aim to preserve and improve our society by promoting collaborations, supporting education and outreach, advocating for innovation, enhancing member engagement, and contributing to strategic planning. Our society is great and, by serving in this 2025-2027 term, I can contribute my two cents for keeping it that way.



I am currently an Assistant Professor in the McKetta Department of Chemical Engineering. I obtained my B.S. in Chemical and Biomolecular Engineering from MIT, and my Ph.D. in Chemical Engineering from UC Berkeley. Since 2008, I have been conducting research in polymer science, working on topics ranging from self-assembly of protein-polymer block copolymers, to ion transport in polymeric ionic liquids and fracture of soft polymer networks. Thanks to my research advisors and career mentors, Brad Olsen, Rachel Segalman, and Costantino Creton, I have developed a strong interest for fundamental science and STEM education. Day-after-day, I embrace this interest to foster a positive, healthy, productive, and creative environment in my laboratory. At a more personal level, I am originally from Caracas, Venezuela and enjoy the everyday pleasures of life. These include that caffeine in my morning coffee, as well as those endorphins in my sunset run. I am evidently curious about STEM, but also passionate about humanities and social sciences. If you have any ideas on how to make this world a better place, feel free to share.

SOCIAL MEDIA / EDITOR

Andrew Croll

Clear communication is the key to thriving in the modern world. This is true of any organization but is particularly poignant for groups such as the Adhesion Society that are focused on science and engineering. We create tools and technologies for the public that are often complex and difficult to understand, yet we rely on public support to fund research and buy products. It is critical for us to find ways to broadly connect in order to build trust and support. As editor I would work diligently to help the Society create and grow our foothold



in the communication spaces available to us. As guidance I reflect often on the Shaw quote “The single biggest problem in communication is the illusion that it has taken place.”. In my mind, this means being cognizant that we are not just communicating in traditions (and formats) we are familiar with but are actively trying to speak in different ways. I am particularly fond of visual expressions as a means to these ends because, as they say, a picture is worth 1000 words.

Andrew B. Croll is a Professor in the Department of Physics and part of the Materials and Nanotechnology Program at North Dakota State University. He received his B.Sc. in Physics from the University of Waterloo in Waterloo Canada, and, in 2009, his Ph.D. in Polymer Physics from McMaster University in Hamilton, Canada. Andrew’s soft condensed matter research focuses on fundamental details connecting elasticity, geometry, and real materials with particular attention to practical outcomes for these systems. His work has often received recognition, most notably through an AFOSR YIP award. Andrew has participated in the Adhesion Society for many years, most recently serving on the executive committee as a “Member at Large”.

DOHGYU HWANG

Dohgyu Hwang has actively participated in the Annual Adhesion Society Meetings since 2018, transitioning from a graduate student to an industrial researcher. Dohgyu’s involvement spans technical presentations (2018–2022), poster session judging (2022–2023), and co-chairing sessions within the Soft Adhesive Division (2021, 2023). Recently, he co-chaired the 2023 Science of Adhesion Gordon Research Seminar (GRS), where 60+ graduate students, post-docs, and mentorship panelists from academia, national labs, and industry actively participated to share their work and network with peers.



Within the Adhesion Society, a rich mixture of diverse fields and talents can be easily found. His vision for the editor role centers on showcasing this diversity, ensuring that everyone’s contributions are celebrated and appreciated, and that their voices are heard. If elected, in addition to fortifying our social media presence as undertaken by previous editors, Dohgyu intends to conduct regular interviews with graduate students and post-docs, who represent the future pillars of our society. His goal is to grasp their aspirations and requirements while also ensuring that their voices resonate through the society.

Dohgyu is a Senior Research Specialist at The Dow Chemical Company. His research interest focuses on silicone pressure sensitive adhesives and release coatings. Before joining Dow in 2022, he earned his PhD in Macromolecular Science and Engineering from Virginia Tech where he studied mechanics of adhesives using a Japanese art of paper cutting known as kirigami. He received the Student Best Poster Award at the 2018 Pressure Sensitive Tape Council, the Peebles Award for Graduate Student Research in Adhesion Science (2021), and the Distinguished Paper Award (2022) from the Adhesion Society for his work on kirigami-inspired adhesives

Adhesion Connection ... an update from the society

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