

MESD Division Newsletter

Volume 50 Issue 1

October 2019

Notes from the Chair

Dear MESD Members and Friends,

On behalf of MESD, I would like to thank you all for your contributions, hard work and participation in our division and our field. Your engagement makes MESD one the strongest and most dynamic divisions in AIChE. We have an exciting meeting planned for Orlando. We had a strong slate of nominees for our Division awards that will be presented on Wednesday, November 13, in our Division plenary session at 8 am.

The Braskem Award for Excellence in Materials Engineering and Science will be presented to Prof. Yushan Yan (University of Delaware) for "the discovery of novel polymer materials for selective molecular ionic transport." Prof. Bradley Olsen (MIT) will receive the Owens Corning Early Career Award for "advances in the design, synthesis, engineering and characterization of protein-based materials and protein-polymer hybrids for broad applications." We appreciate the service of Prof. John Ekerdt (University of Texas at Austin) and Prof. Chris Ellison (University of Minnesota) in leading these award committees. The Division plenary will also feature talks by Prof. Sharon Glotzer (University of Michigan), Prof. Raymond Gorte (University of Pennsylvania), and Prof. Orlin Velev (North Carolina State University).

In addition, many MESD Areas have plenary and graduate student award sessions, as well as sessions featuring industry speakers. These continual improvements to broaden and further strengthen our programming, while under tight space constraints, are a result of the hard work of our Area chairs and co-chairs; we appreciate them putting together great sessions and raising funds to support these efforts.

I would like to especially thank our 1st vice chair, Prof. Jodie Lutkenhaus (Texas A&M University), for her excellent work on MESD programming in Orlando. Her leadership has brought together an exciting program that highlights cutting-edge research across all of MESD. In addition, MESD has continued to follow the lead of AIChE in increasing the quality and visibility of poster presentations. Many thanks to MESD directors Prof. Julianne Holloway (Arizona State University) and Prof. Amy Peterson (University of Massachusetts

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Lowell) who took charge of organizing the poster session and judging. *This year, the MESD poster session is on Monday, November 10, from 3:30-5:00 p.m. Refreshments will be provided and I hope that you will join us there!*

The MESD election is currently ongoing. Please cast your vote! Biographies and statements are included in the ballot and in this newsletter. I appreciate all who are running in the election and are willing to serve MESD. Thanks to MESD director Prof. Bryan Boudouris (Purdue University), who led the efforts of the nominating committee.

We are always looking for MESD members to contribute to the division and our field through multiple avenues (see page 10). If you will be at the fall meeting, please *attend your Area's business meeting on Tuesday, November 12, from 6-7 p.m. to give input into future programming and elect Area leaders.* In addition, the MESD Executive Committee is actively looking at ways to engage and provide value to members throughout the year. One resource that we are working with AIChE to provide as a benefit to MESD members is subject-matter webinars; if you have a passion for organizing or providing webinars, please let me know. We are particularly seeking members from industry.

In closing, I want to thank the MESD Executive Council and Area chairs and co-chairs. I have enjoyed working with all of you these past few years, and I am confident Prof. Jodie Lutkenhaus and Prof. Bradley Olsen will continue to improve MESD programming and operations. I look forward to seeing you in Orlando!

Elizabeth Lipke
 Chair, MESD 2018-2019
 Associate Professor,
 Dept. of Chemical Engineering, Auburn University

MESD Plenary and Poster Awards

At the 2018 MESD Plenary, Prof. Zhen-Gang Wang (California Institute of Technology) received the Braskem Award for Excellence in Materials Engineering and Science, and Prof. Christopher Jewell (University of Maryland) received the Owens Corning Early Career Award.



Presentation of the Braskem Award for Excellence in Materials Engineering and Science. Prof. John Ekerdt (University of Texas at Austin, Braskem Award chair) (left) and Dr. Joel Carr (Braskem America) (right) present the award to Prof. Zhen-Gang Wang (middle).



Presentation of the Owens Corning Early Career Award. Prof. Chris Ellison (University of Minnesota, Owens Corning Early Career Award chair) (right) and Prof. Joe Elabd (left) present the award to Prof. Christopher Jewell (middle).

Graduate Student Poster Award and MESD Undergraduate Student Poster Award winners were announced. Both competitions gather contributions from all five areas of the division: polymers, biomaterials, inorganic materials, electronic and photonic materials, and composites.

Graduate Student Poster Award Winners:

- 1st place: **Kurt Ristroph**, Princeton University
 Title: *Formulation of Peptide and Protein Therapeutics into Nanoparticles for Prolonged Activity and Improved Delivery.*
 Advisor: Robert K. Prud'homme
- 2nd place: **Aseem Chawla**, University of Houston
 Title: *Dual Role of Surfactants Towards a Rational Design of Zeolite Catalysts.*
 Advisor: Jeffrey D. Rimer.
- 3rd place: **Ricardo Sosa**, University of Houston
 Title: *Designing Inhibitors for Mineral Scale: A New Platform Based on Microfluidics*
 Advisor: Jeffrey D. Rimer.



Recognition of the Graduate Student Poster Awards. Pictured (from left to right) are Kurt Ristroph, Ricardo Sosa, and Prof. Joe Elabd.

Undergraduate Student Poster Award Winners:

- 1st place: **Grace Rhoades**, Bucknell University
 Title: *Optimizing the Synthesis of Imine-Linked 3D Covalent Organic Frameworks.*
- 2nd place: **Jenny Wang**, United States Military Academy
 Title: *Electronic Deposition of Noble Metals on Silk Films for Biosensor Applications.*
- 3rd place: **Adam Erlichman**, Case Western Reserve University
 Title: *Non-Flammable Thiazole-Functional Monobenzoxazines: Synthesis, Polymerization, Thermal and Thermomechanical Properties, and Flammability Studies.*

Area 8A Polymers: Plenary, Graduate Student and Rising Stars in Industry Symposiums

2018 Chair: Prof. Daniel Hallinan (Florida A&M University-Florida State University)

Co-Chair: Prof. Simon Sindee (Texas Tech University)

MESD Area 8A (Polymers) had an exciting program at the 2018 AIChE National Meeting. Of particular interest was the AIChE Excellence in Polymers Graduate Research Symposium which was organized by Megan Robertson (University of Houston) and Muzhou Wang (Mitchell) Wang (Northwestern). The field was extremely competitive this year, with thirty applications. The ten finalists gave very high quality talks with lively Q&A and a full audience. The success of this session speaks to the continued health of our Area and the future of polymers research. First place went to Thomas Gartner III (Delaware), second place to Yuwei Gu (MIT), and third place to Victoria Lee (Princeton) – kudos to all! Special thanks goes to the Journal of Polymer Science: Part B: Polymer Physics for their support of the graduate student symposium and awards.



8A Excellence in Graduate Polymer Research Symposium. Students participating in the symposium included (left to right) Victoria Lee (3rd place), Carolyn Mills, Bailey Risteen, Thomas Gartner III (1st place), Ryan Poling-Skutvik, Gang Fan, and Kyle Diederichsen, along with at far right, symposium organizers Prof. Muzhou Wang and Prof. Megan Robertson. Yuwei Gu (2nd place) in the photo.

Area 8A's program at the annual meeting also included eight speakers from academic, industrial, and government research in the Emerging Topics in Polymer Science and Engineering Plenary Symposium. The session began with a contribution from Nicholas Peppas (University of Texas at Austin), AIChE Fellow and Recipient of the AIChE Founders Award. Other speakers included Chris Arges (Louisiana State), Ying Diao (University of Illinois),

Margarita Herrera-Alonso (Colorado State), Julianne Holloway (Arizona State), Nathan Mehl (Milliken & Company), Jonathan Seppala (NIST), and Joseph Stanzione (Rowan University). Topics included polymer biomaterials, additive manufacturing, semiconductor printing, polymer self-assembly, and polymer processing. The symposium was organized by Julie Albert (Delaware) and Allie Obermeyer (Columbia). Thanks to session sponsors Bruker Nano, Dixie Chemical, INEOS, Scientific Reports, Macromolecules, and VWR.



8A Excellence in Graduate Polymer Research Symposium winner. Thomas Gartner III (left), along with symposium organizers Prof. Muzhou Wang (middle) and Prof. Megan Robertson (right).

A new award symposium was added to the MESD Area 8A program in 2018, "Rising Stars in Polymer Industry Awards." The session, which was organized by Prof. Blair Brettmann (Georgia Tech) and Dr. Ibrahim El-Hedok (3M), honored young professionals who were less than 10 years from their PhD, who have made significant contributions in the polymer industry. The session also provided an industrial perspective and role models for chemical engineering graduate students interested in that career path. The 2018 awardees included:

- Dr. Alaaeddin Alsbaiee, Electronics and Imaging Division, The Dow Chemical Company
- Dr. Alpesh Patel, Tissuegen, Inc
- Dr. Ida Chen, Industrial Solutions R&D, The Dow Chemical Company
- Dr. Hao Sun, Rheology Control Platform, PPG Industries
- Dr. Bryan McCulloch, Dow Coatings Materials, The Dow Chemical Company

All 8A members are encouraged to nominate polymer industrial leaders for future awards by sending an email to blair.brettmann@mse.gatech.edu.



8A Rising Stars in Industry Award Symposium.

From left to right, organizer Prof. Blair Brettmann, awardees Drs. Bryan McCulloch, Hao Sun, Alaaeddin Alsbaiee, Ida Chen, Alpesh Patel, and co-organizer Dr. Ibrahim El-Hedok.

Area 8B Biomaterials: Plenary, Graduate Student, Industry and the Clinic Symposiums

2018 Chair: Prof. Cole DeForest (U. Washington)

Vice-Chair: Prof. Bret Ulery (University of Missouri)

Co-V-Chair: Prof. Julianne Holloway (Arizona State U.)

At the 2018 Annual AIChE Meeting, MESD Area 8B organized 15 oral presentation symposiums on a wide variety of biomaterials-related topics, a poster session to facilitate individual discussion regarding science, a graduate award session to honor outstanding up-and-coming researchers, a faculty candidates session designed to help applicants secure independent tenure-track positions, and a plenary session where leaders in the field spoke about exciting breakthroughs in the field. Keynote lectures were given by Profs. David Kaplan, Jennifer Elisseeff, and Theresa Reineke.

In the Biomaterials: Graduate Student Award Session, we awarded prizes to the top three oral presentations: 1st place—Ziye Dong (Texas Tech); 2nd place (tie)—Lauren Russell (U. Virginia) and Nicholas Lamson (Carnegie Mellon U.); and 3rd place—Soheila Aliakbarighavimi (U. Missouri).

Due to generous sponsorship from RSC Journal of Materials Chemistry B, we also awarded three 8B poster awards: 1st place - Ehsan Shirzaei Sani (Northeastern U.); 2nd place - Bibifatima Kaupbayeva (Carnegie Mellon U.); and 3rd place - Stephanie Haag (U. Idaho).

In hopes of further enhancing interactions between academia and industry at AIChE, 8B introduced a popular new “Biomaterials in Industry and the Clinic”

session. This session lies at the nexus of academia and industry bringing together leaders in translational aspects of biomaterials and will be continued in 2019. Exciting talks include research being conducted on campus, at start-up companies, and within large biomedically-focused corporations.

In 2018, 8B co-sponsored several sessions with other areas including 15D/E (Engineering Fundamentals in Life Science). In addition, 8B organized a Sunday evening networking event for session chairs, invited plenary speakers, and sponsor representatives (roughly 40 people in total).

The Biomaterials program especially thanks ACS Biomaterials Science and Engineering, Allevi, the Center for Dialysis Innovation, RSC Biomaterials Science, RSC Journal of Materials Chemistry B, RSC Molecular Systems Design & Engineering, and the University of Washington’s Department of Chemical Engineering for funding support.



8B Biomaterials: Graduate Student Award

Winners. Left to right: Kyle Lampe, session co-chair; 1st place – Ziye Dong, (Texas Tech); 2nd place (tie) – Lauren Russell (U. Virginia); 3rd place – Soheila Aliakbarighavimi (U. Missouri); 2nd place (tie) Nicholas Lamson (Carnegie Mellon U.); Gulden Camci-Unal, session co-chair.

Area 8D Inorganic Materials: New Graduate Student Research Award Session

2018 Chair: Agrawal Kumar Varoon (L'Ecole Polytechnique Fédérale de Lausanne)

Co-Chair: Wei Fan (University of Massachusetts at Amherst)

In 2018 the Inorganic Materials area (8D) initiated a new Graduate Student Award Session chaired by Prof. Kumar Varoon Agrawal and co-chaired by Prof. Xueyi Zhang. The session goal is to identify and honor

graduate students with a significant research achievement in the broad area of inorganic materials with the applications in catalysis, separation and other emerging applications, demonstrating a high level of excellence. Awardees were selected from the student speakers in the area. Area 8D is the only area in AIChE annual meeting focusing on inorganic material synthesis and development. There are typically 60 oral presentations and 30 poster presentations each year. The award is visible globally with awardees publicized at the AIChE web platform as well as on its social media handles (Twitter, Facebook, and Linked In).

The graduate student award winners from 2018 meeting were as follows:

1st place: **Albert Liu**, Massachusetts Institute of Technology

Title: *Electrical Energy Generation via Reversible Chemical Doping on Transition Metal Dichalcogenide Thin Films – A Wearable H₂O Voltage Generator*

Advisor: Prof. Michael S. Strano

2nd place: **Aseem Chawla**, University of Texas at Austin

Title: *Dual Role of Surfactants in Zeolite Synthesis and Catalyst Optimization*

Advisor: Prof. Jeffrey D. Rimer

3rd place: **Vivek Vattipalli**, University of Massachusetts, Amherst

Title: *Broadening the scope of fluoride-free siliceous zeolite synthesis*

Advisor: Prof. Wei Fan.



8D Inorganic Materials: 2018 Graduate Student Award Winners. Pictured with session co-chairs Prof. Xueyi Zhang and Dr. Guangwei He are (left to right) 1st place – Albert Liu (Massachusetts Institute of Technology), 2nd place – Aseem Chawla (University of Houston), and 3rd place – Vivek Vattipalli (University of Massachusetts, Amherst).

Area 8E Electronic & Photonic Materials: Inaugural Industrial/Academic Plenary

2018 Chair: Prof. Aaron Fafarman (Drexel University)

Co-Chair: James Dorman (Louisiana State University)

Co-Co-Chair: Letian Dou (Purdue University)

Area 8E hosted its inaugural Industry/Academia Plenary, consisting of invited talks for the purpose of cross-pollination of ideas and networking between industrial and academic researchers at the National Meeting in Pittsburgh on the topic of electronic and photonic materials. Respected industrial scientists Richard Haight from IBM, Bill Huber from First Solar and Claudio Canizares from Alta Devices accepted the invitation, as well as senior academic invitees Yueh-Lin Loo, Rakesh Agarwal, Brian Korgel and Hugh Hillhouse.

Sustainable Impact: There are currently surprisingly few industrial speakers who participate in the Electronic and Photonics Area at the fall AIChE Annual Meeting. This successful, high-profile event, helped to raise the visibility of our program to industrial researchers and demonstrate the value of attending the meeting in the future. The attendance of high profile academics and scientists from exciting start-ups has imparted some prestige to the plenary that will impact future sessions.

In the 8E: Graduate Student Award Session, the winners were:

1st place: **Brian Voigt**, University of Minnesota

Title: *Reviving Pyrite FeS₂ as a Photovoltaic Material*

Advisor: Chris Leighton

2nd place: **Hyunjoon (Tim) Chung** (UIUC)

Title: *Molecular Design of Cooperative Transition for Shape Memory Electronics*

Advisor: Ying Diao

3rd place: **Scott McClary** (Purdue University)

Title: *Evaluating Novel Semiconducting Materials for Photovoltaic Applications: A Case Study of Copper Arsenic Sulfide (Cu₃AsS₄)*

Advisor: Rakesh Agrawa



8E Electronic & Photonic Materials: 2018 Graduate Student Award Winners. Left to right: Aaron Fafarman (session co-chair, Drexel), Hyunjoon (Tim) Chung (2nd place, UIUC), Scott McClary (3rd place, Purdue), Brian Voigt (1st place, Minnesota), James Dorman (session co-chair, LSU), Claudio Canizares (judging organizer, Alta Devices).

Area 8F Composites

2018 Chair: Prof. Evan Wujcik (University of Alabama)

Co-Chair: John Guo (U. of Tennessee Knoxville)

Co-Chair: Jiahua (Jack) Zhu (University of Akron)

Area 8F had sessions on topic ranging from *3D printing of Composites* and *Characterization of Composites to Multifunctional Composites* and *Composites for Environmental Applications to Graphene and Carbon Nanotubes: Characterization, Functionalization, and Dispersion I* and *2D Nanocomposites*.

Elabd Recognized for Service to MESD

At the conclusion of the 2018 Executive Council meeting, we thanked Joe Elabd for his service to MESD as chair (2017-2018), vice chair (2016-2017), and 2nd vice chair (2015-2016).



Recognition of Service to MESD. Prof. Elizabeth Lipke (right, 1st Vice Chair, 2017-2018) presents a plaque commemorating Prof. Joe Elabd's (left, Chair 2017-2018) service to MESD.

Biographical Sketches and Statements of Nominees

CANDIDATES FOR 2ND VICE CHAIR (VOTE FOR 1)

Julie Champion, Georgia Institute of Technology



JULIE CHAMPION is currently an associate professor of Chemical & Biomolecular Engineering at Georgia Tech. She earned her B.S. in Chemical Engineering from University of Michigan, and Ph.D. in Chemical Engineering from University of California Santa Barbara. Julie was an

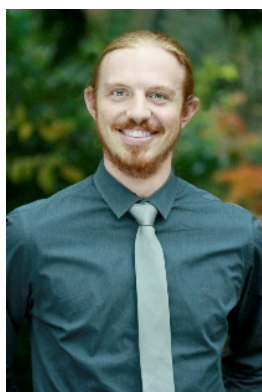
NIH postdoctoral fellow in the Division of Chemistry and Chemical Engineering at Cal Tech. Her current research focuses on design and self-assembly of functional materials made from engineered proteins for applications in immunology, cancer, and more recently, biocatalysis. Julie received a BRIGE award from the National Science Foundation, an Innovator award from the Rainin Foundation, the Georgia Tech Women in Engineering Faculty Award for Excellence in Teaching, and the Georgia Tech BioEngineering Program Outstanding Advisor Award.

Julie has been a member of AIChE since 2005. From 2009 to 2011 she served as chair or co-chair of 8b oral sessions and invited speakers to increase the visibility and attendance of the sessions. She also served as a poster judge for both undergraduate and MESD poster sessions. In 2010 she was co-chair, and from 2011-2014 held the role of chair of 22b, the Bionanotechnology section of the Nanoscale Science and Engineering Forum. In this role, Julie and her co-chairs created well attended plenary sessions and grew the graduate student award session. She was also responsible for all 22b session programming organization and communication with session chairs. Julie again served MESD as an elected director from 2014 to 2016. She also has other organizational experience, including co-chair of the AIChE sponsored 2018 International Conference on Biomolecular Engineering in Singapore and the 2021 Gordon Research Conference on Preclinical Form and Formulation.

Julie looks forward to using her experience and ideas from chairing 22b and as an MESD director to

serve as 2nd vice chair of MESD. MESD areas have a history of innovative ideas, which have enhanced their membership, programming and fundraising. Julie would work to spread these more broadly across MESD and take advantage of scale. Other goals will be to increase informal interactions amongst materials researchers from across different experience levels (faculty, industry, student) and across the different MESD areas at the annual meeting, and to take advantage of co-sponsored sessions, beyond just in name, to reduce overlap and scheduling conflicts between divisions/forums and maintain quality materials programming as AIChE programming constraints increase.

Cole DeForest, University of Washington



COLE DEFOREST is the Dan Evans Career Development Assistant Professor in the Department of Chemical Engineering at the University of Washington, where he began in 2014. He received his B.S.E. degree from Princeton University in 2006, majoring in Chemical Engineering and minoring in Material Science Engineering and Bioengineering. He obtained

his Ph.D. under the guidance of Dr. Kristi Anseth from the University of Colorado in Chemical and Biological Engineering with an additional certificate in Molecular Biophysics. His postdoctoral research was performed with Dr. David Tirrell in the Divisions of Chemistry and Chemical Engineering at the California Institute of Technology. He has authored ~45 articles in peer-reviewed journals including Nature Materials, Nature Chemistry, Advanced Materials, and Angewandte Chemie. Cole has received numerous research and teaching awards, most recently including the Safeway Early Career Award (2018), AIChE 35 Under 35 Award (2017), NSF CAREER Award (2017), and the ACS PMSE Young Investigator Award (2017). Notably, he has also been recognized for excellence in teaching and was awarded the UW Presidential Distinguished Teaching Award (2016), given annually to a single Assistant Professor across all of the UW. His research on designing user-programmable materials to direct 4D stem cell differentiation has been supported through fellowships and grants from the National Science Foundation, the National Institutes of Health, and the US Department of Education.

Cole has been involved as an active member and ambassador for AIChE for the past 14 years. Building on his undergraduate experience as the Vice President

of the Princeton AIChE student chapter, he has gone on to chair numerous MESD sessions, present or co-author ~15 AIChE talks, and serve as one of the faculty advisors for the University of Washington's AIChE student chapter. Within the Institute, Cole has served as the MESD Area 8B Vice Chair for 2016 and 2017, as well as the Area 8B Chair for 2018. In this role, Cole and his co-Chairs helped increase 8B abstract submissions and session numbers by 30%, organize a successful new member meet-and-greet, fundraise approximately \$10k in sponsorship, and establish a fruitful collaboration with the newly formed Regenerative Engineering Society. Beyond AIChE, he established the "Young Biomaterial Scientist" group within the Society for Biomaterials and has planned several symposia for the American Chemical Society. If elected as 2nd Vice Chair, Cole will seek to standardize opportunities and coordinate efforts within MESD, improve communication amongst its different Areas, and decrease programming redundancy and scheduling conflicts between divisions through expanded session co-sponsorship. By establishing new graduate student presentation awards and career development-associated programming, Cole will help strengthen AIChE's continued institutional appeal to the next generation of Chemical Engineers. As an active participant with AIChE since 2005 and at the MESD Executive Council meetings since 2016, Cole is well-prepared to advance the goals of the MESD.

CANDIDATES FOR DIRECTOR (VOTE FOR 2)

James Dorman, Louisiana State University

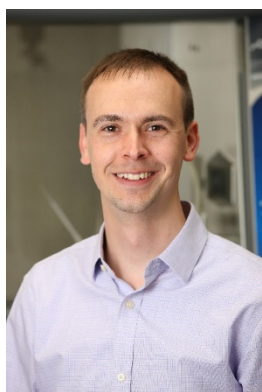


I am excited to run for one of the AIChE MESD Division 8 Director positions this fall. I have been part of the MESD division since 2012, where I have chaired multiple sessions. This year I am the chair of electronic and photonic materials area 8E and organizing the industrial and academia plenary session. Finding a home in MESD has been crucial during the past years as I started my career at LSU, especially in building a professional network. Having been an area chair gives me insight into the challenges of organizing these conferences. If elected as a director of MESD, I will work to build networks between new and established members. One such effort will be the establishment of a joint faculty candidate session to highlight those new

members in our field and allow for more flexibility for session chairs as the conference is organized. I look forward to working with MESD in the future and appreciate your consideration.

JAMES DORMAN is an Assistant Professor in the Cain Department of Chemical Engineering at Louisiana State University. His research group studies nanostructured metal oxides and the relationship between composition/ surface chemistries and their optoelectronic properties for the utilization of electromagnetic energy. James received his Ph.D. from UCLA, where he worked with Jane P. Chang as an NSF-IGERT research fellow. Before joining LSU in 2015, James was an Alexander von Humboldt research fellow at Konstanz University from with Lukas Schmidt-Mende working on hybrid solar cells.

Kyle Lampe, University of Virginia



I am honored to be a candidate for MESD Director. My goals as a MESD Director, if so elected, would be to: 1) improve the transparency of MESD organization and decision making; 2) facilitate better communication and interactions between Areas and Divisions; 3) create more significant opportunities for interactions between trainees, faculty, and industry; and 4) increase and diversify recognition opportunities for our members, both formal (i.e. improved distribution of award opportunities) and informal (featuring members in a newsletter or tweet). I have been active in AIChE Areas 8B and 15D for the last eight years, including serving as the 2018 15D Area Chair. As a member of 8B I have co-chaired Graduate Student Award and Faculty Candidate sessions, among others. My research group develops biomaterials from synthetic polymers, engineered proteins, and self-assembling peptides, focusing on drug delivery, tissue engineering, and regenerative medicine for applications in the central nervous system.

KYLE LAMPE is an Assistant Professor of Chemical Engineering at the University of Virginia, with additional appointments in Biomedical Engineering and Neuroscience. He is a member of the steering committee for UVA's Center for Advanced Biomanufacturing (CAAd Bio) and was recently named to the American Society of Engineering Education "20 under 40" list of faculty researchers and educators. In

2017 he was selected as one of the inaugural class of Translational Health Research Institute of Virginia (THRIV) scholars. He was previously a NIH NRSA postdoctoral scholar at Stanford University with Prof. Sarah Heilshorn in the department of Materials Science and Engineering. Kyle completed his Ph.D. (2009) and B.S. (2004) in Chemical Engineering from the University of Colorado, Boulder and the Missouri University of Science and Technology (Rolla, MO), respectively. Having grown up in rural Iowa, he is a proud supporter of engineers from first generation and rural families. Kyle also takes great pleasure in mentoring undergraduate and graduate students in his lab, particularly female engineers which constitute over half his lab.

Matthew G. Panthani, Iowa State University



I am excited to run for a Director position within AIChE, an organization that I have been involved with since 2003. In recent years, I have been involved in the Materials Engineering and Sciences Division. I served as the Area 8E (Electronic and Photonic Materials) Co-Chair in 2015 and as the Area 8E Chair in 2016. As

Area Chair, I successfully acquired seed funding from MESD to support the Area 8E Graduate Student Award Session. I was then able to transition this seed funding to sustained external sponsorship from the Journal of Vacuum Science and Technology, who has supported the 8E Graduate Awards session for the past few years. My current research activities are focused on inorganic and hybrid organic-inorganic materials for optoelectronic applications such as solar cells, light emitting diodes, and photonic computing. My students and I have presented research in MESD in every year since I became a faculty member. If elected as a Director I will promote an environment that is inclusive to diverse backgrounds and experiences, expand efforts to increase participation of industrial and international members at national conferences, and encourage initiatives that enhance the visibility of MESD within AIChE.

MATTHEW PANTHANI is an Assistant Professor and the Herbert L. Stiles Faculty Fellow in the Department of Chemical Engineering at Iowa State University. He obtained a B.S. in Chemical Engineering at Case Western Reserve University and earned a Ph.D. in Chemical Engineering at the University of

Texas at Austin under the direction of Prof. Brian A. Korgel. He has received teaching and mentoring awards at Iowa State, including an “Outstanding Mentorship” Award from the Center for Biorenewable Chemicals Research Experience for Teachers program (2015) and “Best Life Advice” Award from the Iowa State University AIChE Student Chapter (2018). He has published 37 peer-reviewed journal articles holds 3 U.S. patents. His research lab has been recognized with awards such as the Air Force Office of Scientific Research Young Investigator Award (2017) and the National Science Foundation Early CAREER Development Award (2019).

Jessica D. Schiffman, University of Massachusetts Amherst



Jessica has been active within Area 8A since 2011, chairing and co-chairing numerous sessions, as well as raising funds for the plenary session that she co-chaired in 2015. This year, she will be co-chairing the Excellence in Graduate Polymer Research session. In a

director’s role, she would continue to strengthen the excellence of MESD, by improving the inclusion and equity of all participants via a diversified invited speakers list, increasing student advocacy, and brainstorming special interest sessions between MESD and other divisions within AIChE. To compliment this direction, she will continue to grow MESD’s social media presence by highlighting ongoing activities and member accomplishments, and connecting newer members to near-peer and more-senior mentor members. By actively promoting the inclusion of diverse individuals and research areas, we will bring new perspectives, participants and enthusiasm to the division. These efforts are likely to increase the membership and retention of members within MESD and continue to lead with a modern vision of the AIChE community.

JESSICA SCHIFFMAN is an Associate Professor of Chemical Engineering and the Professor James M. Douglas Career Development Faculty Fellow at the University of Massachusetts Amherst. Schiffman received her B.S. in Ceramic and Materials Engineering in 2003 from Rutgers University and an M.Eng. in Materials Science and Engineering in 2004 from Cornell University. After working as an engineer from 2004-2005 in the Research and Development Division of Stryker Orthopedics, she earned her Ph.D

in Materials Science and Engineering in 2009 from Drexel University. From 2009-2011, Schiffman was a postdoctoral associate at Yale University in the Department of Chemical and Environmental Engineering. Since September of 2011, Schiffman has been directing an interdisciplinary and imaginative research group at UMass, which engineers polymer-based materials that address grand challenges in human health by combining concepts and tools from chemical engineering, materials science, and microbiology. Due to the impact of the group’s work, she has been recognized with external awards, including the ACS Applied Materials & Interfaces Young Investigator Award (2019) and support from the National Science Foundation, the Army Research Lab, and numerous industrial partners. For her outstanding record in research, teaching, and service at UMass, she received Barbara H. and Joseph I. Goldstein Outstanding Junior Faculty Award (2017). Currently, she is an ADVANCE Collaboration & Equity (ACE) Faculty Fellow (2019-2020) to promote faculty collaboration and equity across the sciences.

CANDIDATES FOR SECRETARY/TREASURER (VOTE FOR 1)

Ryan Toomey, University of South Florida



RYAN TOOMEY is an Associate Professor in the Department of Chemical and Biomedical Engineering at the University of South Florida (USF). Ryan Toomey received his Bachelor’s degree in Chemical Engineering from the University of California Berkeley in 1995 and his PhD in Chemical

Engineering at the University of Minnesota in 2002, followed by a post-doctoral position at the University of Freiburg in 2003. He joined USF in 2005. His research is in the area of polymers and gels, especially the physics of polymers that deform under external stimuli, including electric, magnetic, and thermal cues. His main technological interest involves the development of polymer coatings that can change properties on command. He is the recipient of a Camille and Henry Dreyfus New Faculty Award and an NSF CAREER Award.

Ryan has been active with AIChE since 2005 and has chaired numerous sessions in Area 8A. He is

currently the 2016-2017 secretary-treasurer of the Materials and Engineering Sciences Division (MESD), chair of the Students Chapter Subcommittee (SCC) of AIChE, and co-organizer of the undergraduate poster competition for the 2016 National AIChE student conference. He has also been the faculty advisor for the AIChE student chapter at USF since 2007, which has received the AIChE Outstanding Chapter Award for the last 5 years in a row.

To cast your vote:

All MESD members should have received an email with voting information. You can cast your vote online [here](#).

If you have any problems accessing the ballot, please contact AIChE Customer Service at the following email address: customerservice@aiiche.org

Election will close: October 16, 2019

2016-2017 MESD Officers**Chair & Newsletter Editor**

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Opportunities to get involved:

1. Industrial Subcommittee. Industrial members or friends are sought to provide guidance to the executive committee and potentially take on their own initiatives. We are looking for input and leadership on ways that MESD can engage and provide value to members working in industry. Initial short-term commitment with potential for longer-term.

2. Bylaws Subcommittee. Bryan Boudouris will be chairing this committee to update our Bylaws. Current language needs a few adjustments. Several volunteers are needed for this short-term project.

3. Organize or provide webinars on MESD related content. AIChE will support our efforts to provide content to our members. Contact AIChE liaison Sean Liu and Jodie Lutkenhaus or Elizabeth Lipke.

4. Area Programming. All areas are seeking assistance from MESD members in program development, session chairing and young professional (YP) and industrial member engagement. Attend your Area's business meeting on Tuesday, November 12, from 6-7 p.m. or contact your Area's current chair (see the [MESD webpage](#) under [Leadership](#)).

5. Other ideas? Come to the MESD Executive Council meeting on Tuesday, November 12th at 10:30 am or reach out to any member of the executive committee.

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