

MESD Division Newsletter

Volume 43 Issue 1**October 2013**

Notes from the Chair

Dear MESD Members and Friends,

Welcome to the Fall 2013 Edition of the AIChE MESD Newsletter. As the soon to be outgoing chair of MESD, I would first like to take this opportunity to thank all of you, our MESD members, for supporting MESD through renewal of your membership and participation in various MESD meetings, events, and activities. I would also like to express my gratitude to the hard working MESD members who have served as officers, directors, area chairs, area co-chairs, and session chairs over the past year. The volunteer support our members provide in these roles is the backbone of making MESD programming through AIChE possible. In particular, I would like to thank Effie Kokkoli, our current MESD 1st Vice Chair for all her efforts in programming the MESD portion of the upcoming 2013 AIChE Annual Meeting. For those of you who will attend the 2013 Annual Meeting in San Francisco, I think you are in for a week full of wonderful MESD programming. I would also like to thank Doug Kalika for serving again this past year as our division secretary/treasurer and for agreeing to serve again in those roles this next year.

That brings up an important process that occurs each fall, namely election of new MESD officers. You should have already received an e-mail link to the voting website and may have already voted. If so, thank you. If you have not voted, inside this newsletter you will find short bios on our candidates this year and instructions

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on voting. Please cast your vote for one of the many good candidates for office. I would like to thank those who agreed to run for office, such service to MESD is critical for its success.

I would also like to take this opportunity to highlight our two MESD award winners this year. First, the winner of the 2013 C.M.A. Stine Award is Professor Paula Hammond from the Massachusetts Institute of Technology for her pioneering contributions to directed electrostatic and thermodynamic self-assembly of polyelectrolytes and water-soluble polymers, and their manipulation for biologically responsive and electrochemically active materials. Many of you seasoned AIChE and MESD members will also of course know Paula from her many years of service within MESD and AIChE including her role as a past chair of the MESD division. Congratulations Paula on a well deserved honor. The 2013 Owens Corning Early Career Award is presented to Professor Ali Khademhosseini of Harvard University for his outstanding contributions in applying micro/nanoscale technologies to engineer functional biomaterials for regenerative medicine. Congratulations again to both our winners. They will present their award addresses at the MESD

Notes from the Chair (continued)

Plenary Session on November 6, 2013 at the AIChE Annual Meeting. Please be sure to come out and support MESD at the Plenary Session and hear our award winners if you are at the meeting. Also, for those who would like to nominate candidates for our MESD awards this upcoming year, please be aware of the next deadline for nominations which will be February 15, 2014.

For those of you attending the 2013 Annual Meeting in San Francisco, I think you will find the MESD session offerings as varied and interesting as ever. As just mentioned, MESD will be holding its annual plenary session on Wednesday morning (11/6/2013) from 8:30am until 11am. I encourage all of you to attend this flagship event for MESD, it is always one of the highlights of the meeting. I would also like to highlight the annual MESD Poster Session which will be held on Monday evening (11/4/2013) from 6pm to 8pm. Please stop by and see the roughly 170 posters representing the full spectrum of work going on across the fields represented by MESD. In terms of regular session programming, MESD will be sponsoring or co-sponsoring a total of 79 sessions this year. Area 8A (Polymers) will be sponsoring 22 sessions this year including its annual 2 invited plenary sessions on Emerging Areas in Polymer Science and Engineering on Monday morning. Area 8B-Biomaterials will be sponsoring 19 sessions including two faculty candidate sessions on Monday morning and afternoon. Area 8D (Ceramics) will be sponsoring 9 sessions. Area 8F (Composites) will be sponsoring 7 sessions. Area 8E (Electronic and Photonic Materials) will be sponsoring or co-sponsoring 22 sessions including a pair of sessions dedicated to honoring Professor Klavs Jensen on his 60th birthday this year. I hope to see many of you at these MESD sessions at the Annual Meeting.

Moving forward, MESD is also currently exploring new ways to add more value for our MESD members and to broaden the impact of the division. One of our initiatives is that MESD is becoming an active sponsor of the Materials Engineering and Sciences category of the annual AIChE Undergraduate Research Poster Session that is held on the Monday morning of the AIChE Annual Meeting each year. For those of you who have not visited this exciting event, I invite you to stop by on Monday morning (11/4/2013) between 10am and noon while it is running and see the roughly 60 undergraduate posters in the MESD category and in general browse more than 270 posters representing undergraduate work in all of the divisions of AIChE. I will also note that AIChE and the chairs of the poster session are still seeking volunteers to judge the undergraduate posters, and if you are available and interested please send an e-mail to the poster session chair (victor.breedveld@chbe.gatech.edu). MESD is also exploring the opportunity to offer additional continuing education and subject matter enrichment opportunities for our members through short courses, on-line learning, and other related programs. If you have suggestions or ideas about either content of such offerings that you would find valuable or methods by which you would like to see such information delivered, please contact either myself or one of our officers.

In closing, it has been my pleasure to serve MESD this past year as Chair of the division. I look forward to serving again this next year in the role of past-chair, and in that role I plan to help MESD continue to attempt to build member value and strengthening member engagement.



Clifford L. Henderson
Professor
School of Chemical & Biomolecular Engineering
Georgia Institute of Technology

Candidates for MESD Director (Vote for 2)

Chris Ellison – The University of Texas at Austin



Christopher J. Ellison is an Assistant Professor, the Frank A. Liddell, Jr. Centennial Faculty Fellow and William H. Tonn Faculty Fellow in the McKetta Department of Chemical Engineering at The University of Texas at Austin. He is also affiliated with the Texas Materials Institute, the materials science and engineering program at The University of Texas at Austin. Chris earned a B.S. in Chemical Engineering from Iowa State University in 2000. He received his Ph.D. in Chemical Engineering from Northwestern University in 2005 with John Torkelson where he studied physical aging and the glass transition in nanoconfined polymer thin films. From 2006-2008, he conducted postdoctoral research in the Department of Chemical Engineering and Materials Science at the University of Minnesota with Frank Bates where he studied the phase behavior of polydisperse block copolymers and nanofiber manufacturing methods. His group's current research interests include block copolymer self-assembly in thin films, structure and dynamics of nanoconfined polymers, and light-activated chemistries for thin film patterning and fiber manufacturing. Chris is recipient of the National Science Foundation's CAREER Award, DuPont Young Professor Award and the 3M Nontenured Faculty Award. He has been active in AIChE since 2002 and regularly organizes sessions at AIChE Annual Meetings through the Materials Engineering & Science Division. Chris has also

served as the AIChE Student Chapter Advisor at UT-Austin since 2008.

As a Director in MESD, Chris would seek out new opportunities for MESD to add value for its members through new programming and member service initiatives. For example, he would hope to expand some of the initiatives piloted by individual areas within MESD across the other areas such that a best practices philosophy is adopted within MESD operations. One example of this is set of invited plenary sessions on Emerging Frontiers in Polymer Science within Area 8A-Polymers that were initiated several years ago and which have been very well received and attended. He would like to see such programming efforts expanded across other areas as well to provide a more impactful and valuable Annual Meeting experience.

Elizabeth Lipke – Auburn University



Elizabeth Lipke received her B.S. in Biomedical Engineering from Johns Hopkins University and her Ph.D. in Chemical Engineering in 2005 from Rice University, where she studied under Jennifer West. She was a postdoctoral fellow at Johns Hopkins School of Medicine with Leslie Tung. In 2008, Elizabeth joined the faculty in the Department of Chemical Engineering at Auburn University. Elizabeth's research focuses on designing materials for directing stem cell differentiation and tissue engineering applications.

Elizabeth has been a member of AIChE since 2004 and has actively served Area 8b since 2008 in various roles, including Area Vice-Chair, Area

Chair, and oral session chair. Since 2009, Elizabeth has worked extensively with AIChE as the Vice-chair, Chair, and immediate Past Chair of the Women's Initiatives Committee (WIC), organizing full-day professional development workshops for women undergraduates, graduate students, and assistant professors on the Sunday before the Annual Meeting each year, as well as the networking luncheon and mixer. During her term as chair, Elizabeth also guided WIC through the formation of subcommittees which were critical in enabling the committee to incorporate more volunteers and increase their impact. Elizabeth is also an active member of the Society for Biomaterials (SFB) and the Biomedical Engineering Society (BMES) and has served as a SFB Special Interest Group officer (2011-2013) and organized multiple sessions and symposia for both SFB and BMES Annual Meetings.

As a Director of MESD, Elizabeth's goals will be to create new opportunities for interactions between members across the range of MESD research areas and to promote participation of early-career chemical engineers from both industry and academia. Through her prior service on other committees, Elizabeth has a good working knowledge of how to get things done within AIChE, including workshop planning, which is an area MESD has identified as a potential mechanism to increase member value and promote participation. As a Director, Elizabeth will move forward the goals of MESD, including fundraising initiatives, to create new opportunities for active involvement in MESD.

Pete Ludovice – Georgia Institute of Technology



Pete Ludovice is currently Associate Professor of Chemical & Biomolecular Engineering and Director of the Center for Academic Enrichment the office of the Vice Provost for Undergraduate Education at the Georgia Institute of Technology in Atlanta, GA. After receiving his B.S. and Ph.D. degrees in chemical engineering from the University of Illinois, and M.I.T respectively, he did postdoctoral work at IBM, NASA, the ETH-Zürich, and worked as the director of polymer products at Molecular Simulations Inc. (now Accelrys). For a number of years he has served the MESD division as both webmaster and the chair of the MESD student poster session. He also served as co-instructor of two MESD short courses on materials modeling and has chaired or co-chaired numerous area 8A sessions. His research interests include the development of molecular simulation protocols and their application to the simulation of synthetic and biological macromolecular modeling. He also studies the use of humor to improve technical communication, education and innovation, which is currently funded by the National Science Foundation. Pete is a member of the AIChE Speaker's Corner and has spoken at numerous local, regional and national AIChE meetings and conferences. He engages in significant outreach for STEM education and lectures on the use of humor to improve technical education and innovation at various events from NSF seminars and professional societies to various universities and the U.S.A. Science and Engineering Festival. This outreach also manifests itself in various media outlets including a weekly podcast on the

intersection of science and the humanities, and a weekly radio show on science and technology whose motto is “Science, only funnier.” Pete looks forward to serving MESD as a director and using his experience to better engage the AIChE membership in new programming experiences that appeal generally to the membership, including programs for the student conference that highlight the value of careers in materials research and multidisciplinary sessions that explore the interface between various areas of materials research.

Candidates for 2nd Vice-Chair (Vote for 1)

S. Michael Kilbey II – University of Tennessee-Knoxville



Mike Kilbey is a Professor of Chemistry and of Chemical and Biomolecular Engineering at the University of Tennessee-Knoxville. He earned his B.S. degree in Chemical Engineering from the University of Wisconsin-Madison and his Ph.D. in Chemical Engineering from the University of Minnesota. Before moving to Tennessee, he spent 11 years on the faculty of the Department of Chemical and Biomolecular Engineering at Clemson University. From 2008 - 2012 and as a joint faculty member, he led the Macromolecular Nanomaterials group at the Center for Nanophase Materials Sciences at Oak Ridge National Laboratory to national significance. Mike has been active in MESD, organizing a variety of symposia in Area 8a (Polymers) and

serving as Area Chair in 2010-2011 (and prior to that, serving as Vice Chair). His research interests include self-assembly of polymers in solution, adaptive and responsive polymer-modified interfaces, and thin films for energy conversion technology. As an officer of MESD, Mike is interested in promoting opportunities for graduate students and for young faculty and working to ensure that the division remains relevant in its programming across the sub-areas, as well as connected as a division.

Joe Elabd – Drexel University



(Joe) Y. A. Elabd is a professor of Chemical and Biological Engineering at Drexel University. He received his PhD and BS both in chemical engineering from Johns Hopkins University (2001) and University of Maryland, Baltimore County (1995), respectively. From 2001-2003, Prof. Elabd served as an NRC postdoctoral fellow at the Army Research Laboratory. He has received the NSF CAREER Award, DuPont Science and Engineering Award, ARO Young Investigator Award, and the NRC Postdoctoral Award. His research interests include polymer science (ionic polymers, block copolymers, polymer membranes, polymer nanofibers, transport and thermodynamics in polymers) and electrochemical energy (fuel cells, batteries, capacitors). He has published over 100 publications (> 60 peer-reviewed journal publications).

Prof. Elabd is a member of AIChE, ACS, APS, ECS, and NAMS. His professional service activities

include serving as a conference organizer and chair (Polymers and Ionic Liquids Conference, 2009), symposium organizer (Materials Research Society, 2007), and chair for many sessions at national conferences (>25). He has also served as the editor of a special issue on “Polymers in Fuel Cells” in *J. Polym. Sci. Polym. Phys.* (2006). He has reviewed many proposals for over 10 different funding agencies (total proposals reviewed: >150) and reviewed many manuscripts for over 30 different scientific journals (total manuscripts reviewed: >120).

Prof. Elabd has been a member of AIChE since 1994. He has chaired over 20 sessions at national AIChE meetings with most of these sessions in MESD, section 8a. With respect to his section 8a experience, Joe has high interest in keeping core sessions (e.g., diffusion in polymers, polymer thermodynamics) strong in participation and attendance, but also is encouraged by the growth of new sessions in nanotechnology and energy. In recent years, Joe has been encouraged by the participation of a significant number of accomplished junior faculty as 8a session chairs. More encouraging is their implementation of invited speaker sessions; this has reinvigorated section 8a. Joe would like to see invited speaker sessions in all sections MESD and strengthen core sessions, while encouraging the continued growth of key elective sessions. Joe is interested in mentoring junior faculty in these areas throughout all sections of MESD.

Candidate for Treasurer/Secretary (Vote for 1)

Douglass Kalika – University of Kentucky



Douglass Kalika is currently Professor and Chair of the Department of Chemical and Materials Engineering at the University of Kentucky in Lexington. Doug holds degrees from M.I.T. and the University of California at Berkeley, and

joined the chemical engineering faculty at Kentucky in 1990. His research has been focused on polymer processing and rheology, and the investigation of structure and dynamics in crystallizable polymers and blends, composites and membranes. Doug has held a number of administrative positions at UK, including Senior Associate Dean and Acting Dean of the Graduate School (1998-2003), and was appointed Department Chair in 2009.

Doug has been active in MESD and AIChE programming for nearly 20 years, having served as Chair of the Materials Poster Session (1993-1996), Vice-Chair and Chair of the Polymers Area (1997-2001), MESD Webmaster (1997-2001), and MESD Director (1999-2001). In addition, he served as Vice-Chair and Chair of the Division from 2001 to 2004. Doug was first elected Secretary/Treasurer in 2007, and looks forward to continuing service in that role.

INSTRUCTIONS FOR VOTING IN MESD ELECTION

The polls for MESD elections will be open from:

October 18th - 30th, 2013

The easiest way to vote is to log into your account at <http://www.aiche.org> and then go to the MESD page (<http://www.aiche.org/community/divisions-forums/mesd>) where you will see the link to vote. If you prefer, the direct link to the voting page is: <http://www3.aiche.org/Elections/Home.aspx?electionId=5841DC4E-7142-4F8D-9177-3FD96CA46228>

but after executing this link you will be asked to login to your AIChE account (if you have not already done so) before it will allow you to vote.

Note: If you have difficulty with your user name and password, you can either use the password reminder function on the website or you can contact AIChE customer service at 800-242-4363 to confirm or change your information.

MESD Sponsors

Charles M. A. Stine Award: DuPont

Owen Corning Early Career Award: Owen Corning

MESD Plenary Session: DuPont

2012-2013 MESD Officers**Chair:**

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