

# Separations Division of AIChE

American Institute of Chemical Engineers

## *Highlights from the Annual Awards Banquet San Francisco, November 14, 2016*

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The 2016 AIChE Separations Division Awards Banquet was held November 14 at the Parc 55 Hilton in San Francisco. Above, Division members are shown getting ready for the program to begin. See pages 4 - 11 for more photos.

### *Words from the Chair...*

Since being founded in 1990, the Separations Division has provided a focal point for AIChE members with interests in separation science and technology. A primary objective of the Division continues to be the development of technical programming for the AIChE Spring and Annual meetings that seeks a balanced coverage of a variety of currently used and novel methods of separation. At the Spring 2016 Meeting in Houston, the Division sponsored or co-sponsored 10 oral presentation sessions associated with a Topical Distillation Symposium. At the Fall 2016 Annual Meeting in San Francisco, the Division sponsored or co-sponsored 86 oral presentation sessions. It is clear from these robust numbers that member interest in separations research, development, and commercial practice continues to be strong! Vital to the success of these programming efforts are the Division's eight area chairs: Dan Summers, Marina Tsianou, George Goff, Jeff McCutcheon, Matthias Thommes, Isaac Gamwo, Stephen Thiel, and Steve Richie. I would like to thank each of these individuals for their service and efforts to develop relevant programming for Division members.

In addition to the regular oral presentation sessions, the Division hosted several poster sessions and a rapid-fire oral presentation session. The TED-SEP Rapid Fire Session featured 19 participants who each give a 5-minute pitch of their work to a live audience and a panel of 6 judges. Presentations were taped and will be uploaded to the Division's YouTube channel. Cash prizes were given to the top presenters. I would like to thank John Pellegrino and Paul Scovazzo for organizing and chairing this special session and for creating the official YouTube channel for the Separations Division to broadcast the rapid-fire presentations.

Another important objective of the Division is to recognize achievements of members through awards. Awards presented at the San Francisco meeting included:

*Clarence Gerhold Award*, sponsored by UOP, for outstanding contributions to research, development, or application of separations technology: Dan Summers

*FRI/John G. Kunesh Award*, sponsored by Fractionation Research, Inc., for outstanding contributions by an individual under the age of 40: Krista Walton

*Founders Award*, for outstanding service to the Separations Division: Mark Pilling

*Graduate Student Research Awards*, sponsored in part by Air Products and Chevron: Christine Duval, Daniel Griffin, Jinsong He, Jovan Kamcev, Katy Olafson, Jian Ren, Mansi Shah, George Weeden

I would like to thank everyone involved in the nomination and selection of these awards. Special thanks are in order to Anand Vennavelli, who did an excellent job as Awards Director, and Roger Whitley, who handled the arrangements for a very enjoyable awards dinner.

As you can see, the Separations Division thrives largely due to the dedicated efforts of its hard-working volunteer members. We are truly indebted to Neil Yeoman, our Treasurer, and Atanas Serbezov, our Secretary, for their long-term service that maintains continuity and preserves institutional memory for the Division. I have benefited greatly from the guidance and advice provided by Past Chair Tim Frank over the past year. I thank 1<sup>st</sup> Vice Chair Mark Davis, 2<sup>nd</sup> Vice Chair Roger Whitley, and our ten Directors for their many ideas, insightful comments and opinions on a variety of Division issues. Special thanks go to Megan Donaldson for a job well done managing the Division website, and Marcus Mello who continues to build a strong and engaging LinkedIn group for

Division members. I also wish to thank Sharon Robinson for her continuing long-term service as the Division liaison to the Chemical Engineering Technology Operating Council.

As we look forward to another successful year for the Division, we welcome our newly elected officers for 2017. Our new Directors are Isaac Gamwo and Marina Tsianou. Both Isaac and Marina begin their new roles after serving terms as Area Chairs. Our new 2<sup>nd</sup> Vice Chair is Marcus Mello. Prior to this role, Marcus served as a Director for 5 years and was responsible for creating, maintaining, and growing our LinkedIn group. We are delighted that Neil Yeoman and Atanas Serbezov have been re-elected as Treasurer and Secretary. Tarun Poddar will continue his role as Assistant Treasurer. Please join me in congratulating these individuals and thanking them for their tireless service to the Division.

It has been an honor to serve as Chair of the Separations Division in 2016. I have found my own experiences serving the Division to be most rewarding, and I encourage all members to become more involved. If you attend the spring or fall meetings to present papers and posters, please consider volunteering as a session chair or a judge for the TED-SEP rapid fire session. If you are unable to attend these meetings, then consider joining the Division's LinkedIn group to connect with other members and be the catalyst that starts a new conversation. If you are looking for greater involvement in the Division, additional opportunities include service as an Area Chair or Director. Let us know how you would like to make a difference for the Division!

Finally, please join me in welcoming Mark Davis as Division Chair for 2017. Mark has served the Division since 2006 as an Area Chair for Adsorption & Ion Exchange, a Director, and most recently as 1<sup>st</sup> Vice Chair. I know that Mark will do an excellent job in his new role leading the Division.

All the best,

*Scott Husson*

Separations Division Chair, 2016



## Scenes from the Annual Awards Banquet

Photos by Megan Donaldson

The Annual Separations Division Awards Banquet was held Monday, November 14, 2016 at the Parc 55 (Hilton Hotel) during the AIChE Fall Meeting in San Francisco. Scott Husson, 2016 Chair of the Division, presided over the evening's activities. Anand Vennavelli served as the Awards Program Coordinator in charge of planning for the awards, and Roger Whitley, in line to serve as Chair in 2018, made the banquet arrangements. The following is a collection of photos from the evening.



The meeting began as Scott Husson asked everyone for their attention.



Scott Husson thanked Anand Vennavelli for his work in organizing the Awards Program (above).



Paul Steacy of UOP presented Dan Summers with the 2016 Clarence Gerhold Award. Dan (above, left) is Technology Manager at Sulzer Chemtech and an internationally recognized expert in distillation tray design. The Clarence Gerhold Award, sponsored by UOP, LLC (A Honeywell Company), recognizes outstanding contributions in research, development, or in the application of chemical separations technology. For more information about Dan's accomplishments and the Gerhold Award, see page 13.



The John Kunesh Award was presented to Krista Walton by Ken McCarley, Technical Director of Fractionation Research, Inc. (FRI). Dr. Walton is Professor of Chemical and Biological Engineering at the Georgia Institute of Technology and an expert in adsorption materials and related process technology. This award, sponsored by FRI, recognizes outstanding contributions to the academic, scientific, technological, industrial, or service areas involving separations technologies by an individual under the age of 40. For more information about Krista's accomplishments and the Kunesh Award, see page 15.



Scott Husson presented Mark Pilling with the 2016 Founders Award for his many years of service to the Separations Division. Mark is Manager of Technology for Sulzer Chemtech USA where he oversees mass transfer equipment development and specializes in engineered applications for various process technologies. The Founders Award recognizes outstanding service to the Division above and beyond expectations. Read about Mark's contributions on page 12.

The Separations Division also recognized seven graduate students for their accomplishments in separations research. This award highlights outstanding research in distillation and absorption, crystallization and evaporation, extraction, membrane-based separations, adsorption and ion exchange, fluid-particle separations, and bio-separations. For more information, see page 18.



Roger Whitley congratulated Mansi Shah, Ph.D. candidate at the University of Minnesota, on receiving an award for research in Adsorption & Ion Exchange (Area 2e). Her research, with Advisors Michael Tsapatsis and Ilja Siepmann, identified promising zeolite structures that will be instrumental in the design of next-generation gas sweetening technologies.



Marcus Mello congratulated Jovan Kamcev (above, right), Ph.D. candidate at the University of Texas at Austin, for research in Membrane-Based Separations (Area 2d). His research, with Adviser Benny Freeman, involved synthesis and characterization of ion-exchange membranes for water desalination applications, including fundamental studies of ion and water transport properties in ion-exchange membranes. The work is aimed at developing structure/property relationships to help guide the preparation of high performance polymer-based materials for water purification.



Scott Husson congratulated Katy Olafson, Ph.D. candidate at the University of Houston, for research in Crystallization and Evaporation (Area 2b). Working with faculty Advisors Jeffrey Rimer and Peter Vekilov, her research focused on malaria pathophysiology from the aspect of hematin crystallization; specifically, how anti-malarial drugs affect the crystallization in an effort to contribute to the development of new drugs to treat the disease.



Scott Husson congratulated Daniel Griffin, Ph.D. candidate at Georgia Institute of Technology, for research in Crystallization and Evaporation (Area 2b). His research focused on the use of crystallization to remove non-radioactive salts from legacy nuclear waste under the guidance of joint Advisors Yoshiaki Kawajiri, Martha Grover, and Ronald Rousseau. This involved the development of modern data visualization, machine learning, and dynamic programming techniques to better understand and control batch cooling crystallization.





Scott Husson congratulated George Weeden, Jr., Ph.D. candidate at Purdue University, for research in Extraction (Area 2c). His research, with Advisor Linda Wang, focused on extraction and simulated moving bed methods for efficient recovery of high-purity polycarbonates and flame retardants from polymer wastes.



Scott Husson congratulated Jian Ren, Ph.D. candidate at the University of Connecticut, for research in Membrane-Based Separations (Area 2d). Her research, with Adviser Jeffrey McCutcheon, involved developing and optimizing hollow fiber membranes for osmotic processes using experimental and computational methods. She built a hollow fiber spinning system and developed thin film composite hollow fibers to enable their use in forward osmosis (FO). She also built a computational model to simulate FO processes in hollow fiber modules to optimize the design.



Scott Husson congratulated Christine Duval, Ph.D. candidate at Clemson University, on receiving an award for research in Adsorption & Ion Exchange (Area 2e). Her research, with Scott serving as Advisor, involved development of uranium-selective polymers for use in portable radiation detection devices.

The Dibakar Bhattacharyya Graduate Student Research Award was given to Jinsong He, Ph.D. candidate at the National University of Singapore (not shown). Her work, with Advisor Paul Chen, focused on the development of adsorption and membrane technologies for water treatment. She developed two types of membranes for removal of toxic heavy metals from aqueous solutions.

As the program continued, Scott Husson recognized Marcus Mello (below) and Roger Whitley (next page) for their service as Directors of the Separations Division.





And Anand Vennavelli thanked Scott Husson for his leadership as Chair of the Division (below).



## Meet the Award Winners



**Mark W. Pilling**  
**Recipient of the 2016 Separations Division Founders Award**

This award recognizes outstanding service to the Separations Division. The recipient must have a considerable record of service to the Separations Division and the separations area, performed above and beyond the expected duties, and participated extensively in a variety of Division activities with documented evidence of sustained service over time.

This year, the AIChE Separations Division is pleased to recognize Mark Pilling of Sulzer Chemtech USA for outstanding and long-lasting leadership, dedication and commitment to the mission of the Division.

Mark Pilling is Manager of Technology for Sulzer Chemtech USA where he oversees mass transfer equipment development and specializes in engineered applications for various process technologies. He is an active member of Fractionation Research, Inc. and serves as the Chair of the Long Range Planning Committee. He is an AIChE Fellow and is currently the Chair of the Separations Division Advisory Council. He is a Past Chair and also served as a Director of the Separations Division.

Mark is a registered professional engineer and holds a B.S. degree in Chemical Engineering from University of Oklahoma. He holds several patents in the area of mass transfer technology.

### Separations Division Founders Award Recipients

2010 – Neil Yeoman	2014 – André R. Da Costa
2011 – Atanas Serbezov	2015 – Paul F. Bryan
2012 – Jimmy L. Humphrey	2016 – Mark W. Pilling
2012 – C. Judson King	



**Daniel R. Summers**  
**Recipient of the 2016 Clarence Gerhold Award**

The Clarence Gerhold Award is sponsored by UOP, LLC (A Honeywell Company). It recognizes an individual's outstanding contribution in research, development, or in the application of chemical separations technology.

The AIChE Separations Division is pleased to announce Daniel R. Summers, P. E. (Sulzer Chemtech, USA) as the recipient of the 2016 Clarence G. Gerhold Award for outstanding contributions to Separations in the area of Practical Application of Distillation.

Dan Summers is Tray Technology Manager for Sulzer Chemtech, USA. After graduating from SUNY at Buffalo in 1977, he started his career with Union Carbide's Separations Design Group in West Virginia. He has since worked for Praxair, UOP, Stone & Webster (now Technip), and Nutter Engineering. For the past 39 years, Dan has been involved in the development, design, operation, correlation, and troubleshooting of all forms of tower internals. He is the author of over 60 papers on distillation and is a listed inventor on two US patents. His specialty is high capacity tray devices. Dan is the Chair of FRI's Design Practices Committee and is also the Chair of AIChE's Separations Division Area 2a "Distillation and Absorption". He is a registered professional engineer in both New York and Oklahoma and is a Fellow of AIChE.

The deadline for submitting a nomination package for the next Gerhold Award is May 1, 2017. Starting in 2010 the award is presented in even years to nominees from industry or non academic entities, and in odd years to nominees from academia. Nominees can indicate in which category they want to be considered. The criteria used for selection shall be consistent with the category. For more information, go to <http://www.aiche.org/community/awards/clarence-larry-g-gerhold-award>.

### Gerhold Award Recipients

1992 – C.J. King	1993 – A.D. Randolph
1994 – J.R. Fair	1995 – G.E. Keller
1996 – R.W. Rousseau	1997 – R.T. Yang
1998 – M. Larson	1999 – W.J. Koros
2000 – G. Belfort	2001 – R. Agrawal
2002 – N.N. Li	2003 – H.Z. Kister
2004 – M.F. Doherty	2005 – C. Eckert
2006 – E. Cussler	2007 – W.S. Ho
2008 – K.K. Sirkar	2009 – D. Bhattacharyya
2010 – N. Yeoman	2011 – R.D. Noble
2012 – S. Kulprathipanja	2013 – B.D. Freeman
2014 – T.C. Frank	2015 – A.S. Myerson
2016 – D.R. Summers	



### Clarence G. Gerhold, A Pioneer in Chemical Processes

*“Within three months of his arrival at UOP’s Riverside Laboratory in 1929, Clarence G. “Larry” Gerhold developed a new cracking process, called thermal reforming, that used gasoline, rather than crude oil, as a feedstock. He was also the prime inventor of UOP processes that separate aromatics from other hydrocarbons. These processes contributed to the explosive growth in the aromatic derivatives branch of the petrochemical industry. His work at Riverside was the basis for the ultimate development of the UOP® Sorbex® processes, which provide continuous adsorption separations. Gerhold was appointed manager of the Riverside laboratory in 1945”\**

Clarence “Larry” Gerhold was one of the nation’s outstanding innovators in conceiving and implementing new processes in the petroleum, refining, and petrochemical industries. His 78 patents serve as clear evidence of his technical leadership and innovation. From 1929, when he conceived of thermal reforming, to Simulated Moving Bed (SMB) chromatography and the SORBEX adsorptive separation process, he had always explored the unconventional possibilities instead of simply following evolutionary paths.

Clearly Clarence Gerhold was one of Universal Oil Products’ most prolific people. He had an early vision of modern petroleum processing and for his entire career worked to promote this vision. Importantly, he had the determination to push through developments which at the time were given little hope for commercial acceptance.

An important example of his accomplishments is the Platforming process. There was general skepticism when platinum-promoted catalysts were suggested by UOP's Vladimir Haensel in 1947. Larry took a different approach. He analyzed the possible problems and persuaded the researchers to develop viable solutions. He convinced management of the need for rapid commercialization of the process. He worked with all the process development and design functions to move forward. His efforts were instrumental in the development and implementation of a commercially-successful operation within 2-1/2 years of the first laboratory experiment!

Larry championed many UOP processes: thermal reforming, catalytic polymerization, dehydrogenation, the UDEX extraction process (co-developed by UOP and The Dow Chemical Company), and the UOP SORBEX adsorption separation process including invention of SMB chromatography. His solutions to problems overcame obstacles to commercial realization, and his vision and persistence resulted in new directions for these developing industries.

\*Excerpt taken from "UOP Riverside Laboratory, A National Historic Chemical Landmark" (American Chemical Society (ACS), Division of the History of Chemistry and The Office of Public Outreach, 1995), used with permission of ACS.



**Dr. Krista S. Walton**  
**2016 FRI – John G. Kunesh Award**

This award, sponsored by Fractionation Research, Inc. (FRI) recognizes outstanding contributions to the academic, scientific, technological, industrial, or service areas involving separations technologies for individuals under the age of 40.

This year, the AIChE Separations Division is pleased to recognize Dr. Krista S. Walton (Georgia Tech) for her contributions to the development of structure-property relationships for water adsorption in metal-organic frameworks and design criteria for synthesis of water-stable structures for adsorption separations.

Krista S. Walton is Professor and Marvin R. McClatchey and Ruth McClatchey Cline Faculty Fellow in the School of Chemical and Biomolecular Engineering at Georgia Tech. She received her B.S.E. in chemical engineering from the University of Alabama-Huntsville in 2000 and obtained her Ph.D. in chemical engineering from Vanderbilt University in 2005, working with Prof. M. Douglas LeVan. Prof. Walton completed an ACS PRF Postdoctoral Fellowship at Northwestern University in 2006 under the direction of Prof. Randall Snurr.

Her research program focuses on the design, synthesis, and characterization of functional porous materials for use in adsorption applications including CO<sub>2</sub> capture and air purification. She has published 70 peer-reviewed articles and presented dozens of plenary lectures and invited seminars. Prof. Walton currently serves as an Associate Editor for the ACS Journal Industrial & Engineering Chemistry Research, and is the Director and Lead PI of Georgia Tech's DOE Energy Frontier Research Center, UNCAGE-ME.

Prof. Walton's accomplishments have been recognized by many prestigious awards including the inaugural International Adsorption Society Award for Excellence in Publications by a Young Member of the Society (2013) and the Presidential Early Career Award for Scientists and Engineers (2008).

The deadline for submitting a nomination package for the next Kunesh Award is May 1, 2017. This award is presented in memory of John G. Kunesh, past Separations Division Chairman and Technical Director of Fractionation Research, Inc. (FRI). His dedication to the distillation industry and service to those working in it serve as a model for all those practicing engineering disciplines. John actively challenged, mentored, and encouraged young engineers to succeed.

The Kunesh Award continues this encouragement by recognizing outstanding contributions to the academic, scientific, technological, industrial, or service areas involving separations technologies by individuals under the age of 40. Criteria considered in selecting an awardee include: Significant discoveries, important research, development of new processes and products, introduction of new education concepts, service to the Separations Division, or outstanding service to the separations community. For more information, go to

<http://www.iche.org/community/awards/frjohn-g-kunesh-award>.

#### **Kunesh Award Recipients**

2010 – S.M. Husson	2010 – N.F. Urbanski
2011 – I.C. Escobar	2012 – S. Nair
2013 – M.A. Carreon	2014 – J.R. McCutcheon
2015 – J.E. Bara	2016 – K.S. Walton





### **John G. Kunesh, A Mentor to Chemical Engineers**

Dr. John G. Kunesh mentored and supervised many young chemical engineers. The majority of those engineers are still contributing globally in the Separations field.

John Kunesh received B.S., M.S., and Ph.D. degrees from Carnegie Mellon University, the latter in 1971. His first industry position was with UOP in Des Plaines, Illinois, where he soon became the Manager of twenty engineers within the Design Engineering group of the Process Division. For six years, he led UOP's Training Group for New Design Engineers. He also led UOP's Design Engineering Course for Client Personnel.

In 1976, John left UOP for Hydrocarbon Research, Inc., in New Jersey, where he soon became their Vice President of Process Design. Among his achievements there was management of engineering for a new coal liquefaction plant design. In 1984, John joined Fractionation Research, Inc. (FRI) as their Technical Director, a position which he held for 18 years. John and his FRI group contributed appreciably to global distillation. FRI testing included studies of high-capacity trays, packing distributors, structured packing, high-capacity structured packing, and high-performance random packing. FRI's Design Rating Program was initially authored during John's tenure.

John was an AIChE Separations Division Director for 6 years, and its Chair in 2004. Anyone who knew or worked for John enjoyed, respected, and learned from him. The Separations world benefitted greatly from John's leadership.

## Graduate Student Research Awards

In an effort to encourage graduate students to excel, to promote a high level of interest in the field of separations, to identify future leaders in the field, and to strengthen the cooperation between academia and industry in the separations field, the Separations Division of AIChE has established a Graduate Student Research Award program. In 2016, the Graduate Student Awards Program was underwritten by Air Products & Chemicals, Inc., by Chevron Energy Technology Company, and by the Separations Division of AIChE.

Graduate Student Research Awards recognize outstanding work by graduate students in one of the Separations Division Program Areas: Distillation & Absorption (Area 2a), Crystallization & Evaporation (Area 2b), Extraction (Area 2c), Membrane-based Separations (Area 2d), Adsorption & Ion Exchange (Area 2e), Fluid Particle Separations (Area 2f), and Bioseparations (Area 2g).

For 2016, the Separations Division is pleased to recognize the following students for excellence in separations research (in alphabetical order):

Christine Duval  
Adsorption and Ion Exchange  
Professor Scott Husson  
Clemson University

Daniel Griffin  
Crystallization & Evaporation  
Professor Ronald Rousseau  
Georgia Institute of Technology

Jovan Kamcev  
Membrane-Based Separations  
Professor Benny Freeman  
University of Texas at Austin

Katy Olafson  
Crystallization & Evaporation  
Professor Jeffrey Rimer  
University of Houston

Jian Ren  
Membrane-Based Separations  
Professor Jeffrey McCutcheon  
University of Connecticut

Mansi Shah  
Adsorption and Ion Exchange  
Profs. Michael Tsapatsis and J. Ilja Siepmann  
University of Minnesota

George Weeden  
Extraction  
Professor Linda Wang  
Purdue University

Each award comprises a \$200 check and a plaque. Nominees must be (have been) graduate students since the last Annual AIChE meeting and/or the following calendar year. A nomination package includes: 1) A single nomination letter detailing the student's strengths and accomplishments, by a faculty member who must be a member of AIChE; 2) A single research paper (published or otherwise) contributing to separations fundamentals or applications. This paper may be co-authored by others, but the student nominee must have been the primary author. The paper should be of a quality acceptable for publication in journals such as *AIChE Journal* or *Chem. Eng. Science*; and 3) The student's CV.

Nominations for 2017 Graduate Student Awards are due by May 1, 2017. For more information, go to <http://www.aiche.org/community/awards/separations-division-graduate-student-research-award>.

### **Professor Dibakar Bhattacharyya Graduate Student Research Award**

Another award given for excellence in research by a graduate student is the Dibakar Bhattacharyya Award. This award recognizes excellence in membrane-based separations research and is given to recognize Professor Bhattacharyya's support and overall long-term commitment to student development. In 2016, the award was given to Jinsong He, a Ph.D. candidate at the National University of Singapore.

## **Election Results for 2017**

### **Atanas Serbezov, Secretary**

Atanas Serbezov was re-elected to continue serving as Secretary. Atanas is a Professor of Chemical Engineering at Rose-Hulman Institute of Technology in Terre Haute, Indiana. He holds B.S. (1991) and M.S. (1991) degrees in process control from the University of Chemical Technology and Metallurgy, Sofia, Bulgaria and M.S. (1995) and Ph.D. (1997) degrees in chemical engineering from the University of Rochester, Rochester, New York. Prof. Serbezov began his professional career in 1991 as a process control engineer at Honeywell. Upon earning his doctorate, Atanas joined the adsorption R&D group at Praxair. In 1998 he joined the faculty at Rose-Hulman Institute of Technology. While in academia, Atanas has worked as a consultant for Praxair, Eli Lilly and General Electric. Atanas joined AIChE and the Separations Division in 1995 as a graduate student. He started his volunteer work for the Institute and the Division in 1997. Atanas has been the Division's Secretary since 2002. In 2011, he was recognized with the Division's Service Award (now the Founders Award).

### **Neil Yeoman, Treasurer**

Neil Yeoman was re-elected to continue serving as Treasurer. Neil worked for Koch-Glitsch LP from 1986 to 2001 as R&D Director, and for Scientific Design Company from 1960 to 1986 in a variety of positions, including eleven years as a process manager and seven years as Vice President and Chief Chemical Engineer. From 1957 to 1960 he worked for General Foods. Neil has been a member of the Design Practices Committee of Fractionation Research, Inc. since its 1976 founding, including eight years as chair in the 1980s and as secretary since 2002. He was one of the founders, in 1990, of the Separations Division of AIChE and, in 2010, of AIChE's Virtual Local Section, and has served as treasurer of both since their founding. Neil served two 3-year terms (2005-2007 and 2009-2011) as a national director of AIChE, and he has worked on about a dozen different AIChE committees, including the Admissions Committee, which he currently chairs. Neil has a B.Ch.E. from Polytechnic Institute of New York University and an M.S. from Columbia University. He is a Fellow of AIChE, a registered professional engineer in Kansas, Louisiana, New York, and Texas, and an inventor on 28 U.S. patents. Neil won AIChE's 2007 Chemical Engineering Practice Award and its 2013 Van Antrwerpen Award, and in 2010 he was given the Sep Division's Gerhold Award and its Service Award (now the Founders Award).

### **Marcus Mello, 2nd Vice Chair (Succeeding to 1<sup>st</sup> Vice Chair in 2018 and Division Chair in 2019)**

Marcus Mello is Staff Research and Development Engineer with Chevron Energy Technology Company, working in the Separations R&D group in Richmond, CA. He holds B.Sc., M.Sc. and Ph.D. degrees in Chemical Engineering and has over 18 years of experience in the oil and gas, specialty chemicals, and process consulting industries. He has had extensive experience serving the Separations Division of AIChE, currently serving as a Director (2012-2016). Dr. Mello is an expert in a variety of separations technologies and concepts including absorption, adsorption, membranes, and process intensification applied to natural gas

treating, CO<sub>2</sub> capture, purification of crude oil and products, and water clean-up in refineries and upstream applications. Dr. Mello's expertise includes conceptual and experimental design, process development, pilot testing, scale-up, economics, commercialization of new technologies, project management and R&D portfolio management. He has also been a technical liaison representing Chevron in external technology collaborations with universities and industry-university consortia. He has served as a reviewer for Chemical Engineering journals, has co-authored several peer-reviewed publications in adsorption, and is an inventor on 11 U. S. patents and applications. He has been involved in the Separations Division since 1995, having chaired and co-chaired sessions in Area 2e (Adsorption and Ion Exchange). In addition, Marcus has served as Director-at-Large (2008-2009) and Secretary (2009-2010) on the Northern California AIChE Local Section. He lives in the San Francisco Bay Area with his family.

#### **Isaac Gamwo, Director (2017 – 2021)**

Isaac Gamwo, P.E., is Senior Research Engineer at the U.S. Department of Energy's National Energy Technology Laboratory (Pittsburgh, PA) where he currently leads the Equation of State research group. In 2011, he earned the Outstanding Professional Employee Gold Award (All Fields, Including Medical and Scientific) from the Regional Federal Executive Board's Excellence in Government Awards Program in recognition of his research accomplishments. Dr. Gamwo co-authored the book *Design and Understanding of Fluidized Bed Reactors* (Verlag 2009) and co-edited the book *Ultraclean Transportation Fuels* (Oxford University Press, 2007). He is a Fellow of AIChE and is serving a third term as area 2f Program Chair within the AIChE Separations Division. Isaac is past chair of the AIChE-SIOC-External Awards Committee, past ACS, NOBCCHE symposium organizer, and immediate past chair of the AIChE-Minority Affairs Committee (MAC) where he led the 25<sup>th</sup> AIChE-MAC anniversary celebration in Salt Lake City. He previously served as a full-time faculty member at the University of Akron (Akron, OH) and at Tuskegee University (Tuskegee, AL). He earned M.S. and Ph.D. degrees, all in chemical engineering, from the Illinois Institute of Technology (Chicago, IL).

#### **Marina Tsianou, Director (2017 – 2021)**

Marina Tsianou is an Associate Professor in the Department of Chemical and Biological Engineering at the University at Buffalo (UB), The State University of New York (SUNY). Tsianou joined UB in 2007, after receiving a Diploma in Chemical Engineering from the National Technical University of Athens, Greece, a Master's in Chemical Engineering from Tufts University, Medford, Massachusetts, a PhD degree in Chemistry from Lund University, Sweden, and having worked in industry. Tsianou's research interests and activities involve the design, development, and characterization of molecularly-engineered nanomaterials with desirable functionalities, and the utilization of these in products and processes that improve the quality of life. Her research focuses on thermodynamic and kinetic aspects of polymer mediated crystallization, bio-inspired material synthesis, nano- and meso-scale organization and structure, complex fluids and soft interfaces, and nanostructured polymers in films and on surfaces. In addition to her research, she is very dedicated to improving undergraduate education. She has served as advisor of the AIChE student chapter at UB and was recognized by the undergraduate students as Professor of the Year in 2010. She was also awarded the 2015 UB School of Engineering & Applied Sciences Senior Teacher Award for outstanding contributions to education. Tsianou has been a member of AIChE since 1992 and has organized and chaired multiple technical sessions at AIChE annual meetings. She is a member of the Separations Division where she has served as the vice-chair and currently as the chair of Area 2b "Crystallization and Evaporation".

## The Separations Division of AIChE

2016 Officers, Directors, and Chair Holders

### ELECTED OFFICERS AND DIRECTORS (2016)

<b>CHAIR:</b> Scott Husson	<b>1<sup>st</sup> VICE CHAIR:</b> Mark Davis
<b>IMMEDIATE PAST CHAIR:</b> Tim Frank	<b>2<sup>nd</sup> VICE CHAIR:</b> Roger Whitley
<b>TREASURER:</b> Neil Yeoman	<b>SECRETARY:</b> Atanas Serbezov
<b>DIRECTOR:</b> Marcus Dutra e Mello (2012-2016)	<b>DIRECTOR:</b> Glenn Lipscomb (2016)
<b>DIRECTOR:</b> Jeff McCutcheon (2013-2017)	<b>DIRECTOR:</b> Tarun Poddar (2013-2017)
<b>DIRECTOR:</b> Kathleen Mihlbachler (2014-2018)	<b>DIRECTOR:</b> Anand Vennavelli (2014-2018)
<b>DIRECTOR:</b> Megan Donaldson (2015-2019)	<b>DIRECTOR:</b> Christopher Burcham (2015-2019)
<b>DIRECTOR:</b> Lauren Greenlee (2016-2020)	<b>DIRECTOR:</b> Alice He (2016-2020)

### SPECIFIC ROLES SERVING THE DIVISION (2016)

<b>AWARDS PROGRAM COORDINATOR:</b> Anand Vennavelli	<b>AICHe CHEMICAL TECHNOLOGY OPERATING COUNCIL (CTOC) LIAISON:</b> Sharon Robinson
<b>GERHOLD AWARD COORDINATOR:</b> Paul Bryan	<b>NEWSLETTER EDITOR:</b> Tim Frank
<b>MEMBERS COORDINATOR:</b> Marcus Mello	<b>WEBMASTER:</b> Megan Donaldson
<b>ADVISORY COUNCIL CHAIR:</b> Mark Pilling	<b>STAFF LIAISON:</b> Darlene Schuster
<b>ASSISTANT TREASURER:</b> Tarun Poddar	

**AREA CHAIRS (2016)**

<b>CHAIR:</b> Area 2a (Distillation & Absorption) Dan Summers	<b>VICE CHAIR:</b> Area 2a (Distillation & Absorption) Clint Aichele
<b>CHAIR:</b> Area 2b (Crystallization & Evaporation) Marina Tsianou	<b>VICE CHAIR:</b> Area 2b (Crystallization & Evaporation) Seth Huggins
<b>CHAIR:</b> Area 2c (Extraction) George Goff	<b>VICE CHAIR:</b> Area 2c (Extraction) TBD
<b>CHAIR:</b> Area 2d (Membrane-Based Separations) Jeff McCutcheon	<b>VICE CHAIR:</b> Area 2d (Membrane-Based Separations) Haiqing Lin
<b>CHAIR:</b> Area 2e (Adsorption & Ion Exchange) Matthias Thommes	<b>VICE CHAIR:</b> Area 2e (Adsorption & Ion Exchange) Stefano Brandani
<b>CHAIR:</b> Area 2f (Fluid-Particle Separations) Isaac Gamwo	<b>VICE CHAIR:</b> Area 2f (Fluid-Particle Separations) Seyi Oduyungbo
<b>CHAIR:</b> Area 2g (Bioseparations) Steven Thiel	<b>VICE CHAIR:</b> Area 2g (Bioseparations) Nick Merchant
<b>CHAIR:</b> Area 2h (General Topics & Other Methods) Stephen Ritchie	<b>VICE CHAIR:</b> Area 2h (General Topics & Other Methods) Alice He

## 2017 Officers, Directors, and Chair Holders

**ELECTED OFFICERS AND DIRECTORS (2017)**

<b>CHAIR:</b> Mark Davis	<b>1<sup>st</sup> VICE CHAIR:</b> Roger Whitley
<b>IMMEDIATE PAST CHAIR:</b> Scott Husson	<b>2<sup>nd</sup> VICE CHAIR:</b> Marcus Mello
<b>TREASURER:</b> Neil Yeoman	<b>SECRETARY:</b> Atanas Serbezov
<b>DIRECTOR:</b> Jeff McCutcheon (2013-2017)	<b>DIRECTOR:</b> Tarun Poddar (2013-2017)
<b>DIRECTOR:</b> Kathleen Mihlbachler (2014-2018)	<b>DIRECTOR:</b> Anand Vennavelli (2014-2018)
<b>DIRECTOR:</b> Megan Donaldson (2015-2019)	<b>DIRECTOR:</b> Christopher Burcham (2015-2019)
<b>DIRECTOR:</b> Lauren Greenlee (2016-2020)	<b>DIRECTOR:</b> Alice He (2016-2020)
<b>DIRECTOR:</b> Marina Tsianou (2017-2021)	<b>DIRECTOR:</b> Isaac Gamwo (2017-2021)

**SPECIFIC ROLES SERVING THE DIVISION (2017)**

<b>AWARDS PROGRAM COORDINATOR:</b> Anand Vennavelli	<b>AICHE CHEMICAL TECHNOLOGY OPERATING COUNCIL (CTOC) LIAISON:</b> Seyi Oduyungbo
<b>GERHOLD AWARD COORDINATOR:</b> Paul Bryan	<b>NEWSLETTER EDITOR:</b> Tim Frank
<b>MEMBERS COORDINATOR:</b> Marcus Mello	<b>WEBMASTER:</b> Megan Donaldson
<b>ADVISORY COUNCIL CHAIR:</b> Mark Pilling	<b>STAFF LIAISON:</b> Darlene Schuster
<b>ASSISTANT TREASURER:</b> Tarun Poddar	

**AREA CHAIRS (2017)**

<b>CHAIR:</b> Area 2a (Distillation & Absorption) Dan Summers	<b>VICE CHAIR:</b> Area 2a (Distillation & Absorption) Clint Aichele
<b>CHAIR:</b> Area 2b (Crystallization & Evaporation) Marina Tsianou	<b>VICE CHAIR:</b> Area 2b (Crystallization & Evaporation) Seth Huggins
<b>CHAIR:</b> Area 2c (Extraction) George Goff	<b>VICE CHAIR:</b> Area 2c (Extraction) TBD
<b>CHAIR:</b> Area 2d (Membrane-Based Separations) Jeff McCutcheon	<b>VICE CHAIR:</b> Area 2d (Membrane-Based Separations) Haiqing Lin
<b>CHAIR:</b> Area 2e (Adsorption & Ion Exchange) Matthias Thommes	<b>VICE CHAIR:</b> Area 2e (Adsorption & Ion Exchange) Stefano Brandani
<b>CHAIR:</b> Area 2f (Fluid-Particle Separations) Isaac Gamwo	<b>VICE CHAIR:</b> Area 2f (Fluid-Particle Separations) Seyi Oduyungbo
<b>CHAIR:</b> Area 2g (Bioseparations) Steven Thiel	<b>VICE CHAIR:</b> Area 2g (Bioseparations) Nick Merchant
<b>CHAIR:</b> Area 2h (General Topics & Other Methods) Stephen Ritchie	<b>VICE CHAIR:</b> Area 2h (General Topics & Other Methods) Alice He