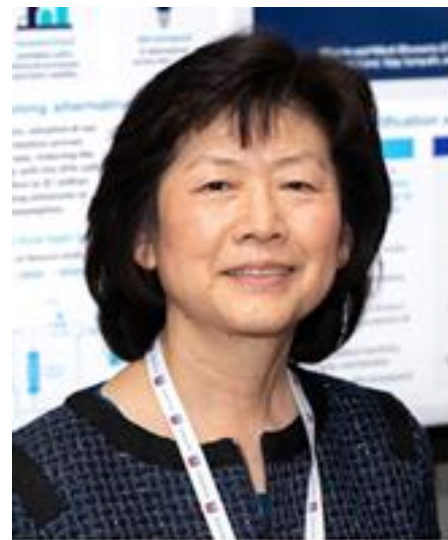


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## Words from the Division Chair

First, I would like to thank everyone who contributed their time and effort to the Separations Division in 2022. Your dedication has enabled our Division to serve as a platform for sharing our knowledge, for supporting each other, and for building a strong community around the field of separations technologies. It is empowering that today we are still able to uphold the founding leaders' vision for the Separations Division, stated 32 years ago as "a focal point for all Institute activities in separations, including furthering the significance of separations within the chemical engineering profession, and providing much needed interaction and communication among chemical engineers in the field."



Through nearly three years of living with the COVID pandemic, our Division's performance remains strong. Despite an initial dip in our membership at the start of the pandemic, our membership numbers in 2022 have shown promising signs of growth. We have additionally maintained strong financial status, thanks to our officers' responsible stewardship of our resources, good investment decisions, and our treasurer Tarun Poddar's excellent guidance.

We have continued to host strong technical programs that enrich technical learning, communication, and networking both within and beyond our Division's community. In 2022, our Distillation Symposium at the Spring conference ran from Monday through Thursday, marking our Division's first fully in-person symposium since the start of COVID-19 pandemic. During the Fall conference, our Division hosted a remarkable total of 66 technical sessions. I applaud our eight technical area chairs and vice chairs for their tremendous dedication to organizing and planning these sessions.

We were especially amazed by the strength of candidates this year for our Division's five prestigious awards. Our awardees represent a group of highly recognized and accomplished professionals in the Separations technology field. Congratulations to this year's awardees:

- **Mark W. Pilling – Sulzer Chemtech USA, Inc., winner of the Clarence G. Gerhold award**
- **Zachary P. Smith – Massachusetts Institute of Technology, winner of the FRI / John G. Kunesh award**
- **Miao Yu – State University of New York at Buffalo, winner of FRI / Neil Yeoman Innovation award**
- **Benny D. Freeman – University of Texas at Austin, winner of the Separations Founders award**
- **Stephanie G. Wettstein – Montana State University, winner of the Education & Outreach award**

In addition, the Division granted seven Graduate Student Research Awards in 2022. It is exciting to see the young talent among our graduate student awardees, who represent the future leaders in the Separations technology field. Congratulations to this year's winners:

- **Luke Macfarlan, University of Texas at Austin**
- **Tony Joseph Mathew, Purdue University**
- **Yanqiu Lu, National University of Singapore**
- **Roberto Mennitto, University of Edinburgh, UK**
- **Brandon David Clark, Stanford University Our**
- **Rollie George Mills, University of Kentucky**
- **Thomas A. Horseman, Vanderbilt University (Prof. DB Award)**

I would like to offer special thanks to Dan Summers and Haiqing Lin, the directors of our Division's awards program, for diligently and gracefully heading the enormous task of coordinating the Award program. I am also greatly appreciative for everyone who nominated candidates, wrote recommendations letters, and participated in selection committees, allowing us to recognize our accomplished winners amongst so many talented applicants. A big thank you also goes to Isaac Gamwo for planning an incredible award ceremony and dinner event.

A few notable updates regarding our Awards program in 2022: First, Paul B. Bryan, who has been the Gerhold Award Committee Chair since 2003, has announced that he will step down from this post in 2023. We are deeply appreciative of Paul's commitment to find exemplary candidates and winners for this award over the past two decades, for which he was honored at the award ceremony dinner during the Annual meeting. We are excited to announce that Dan Summers, the 2016 Gerhold award winner and one of the current Separations Division award directors, has graciously agreed to take over the role. Second, starting in 2023, the Education & Outreach Award description has been restructured from evaluating candidates based on an education and outreach proposal to awarding candidates based on past and present achievements in this realm. We hope this change will align with the award evaluation process with other awards in the Division and encourage long-lasting commitment to education and outreach in our Division members. Finally, the Division will be setting up an awards nomination committee starting in 2023 to increase the diversity of the awards nomination pool.

This year additionally marked exemplary strides towards expanding our Division's initiatives in community engagement and communication. Thanks to Caryn Heldt, our Division's Director of Diversity Initiatives, for her dedication in communicating AIChE's IDEAL vision and activities to our community and for proposing specific plans to promote these values, which our Division is enthusiastic to implement in the coming year. Thanks also to Paul Scovazzo, who manages the Separations Engagement platform, for sharing his education materials with industrial practitioners and students in the adsorption field. His dedication to improving our Division's technical communication platforms will continue to foster a spirit of collaborative learning within the Separations community for years to come. We are additionally thankful to the team that keeps our community up to date on Division events and announcements. I would especially like to recognize our webmaster Stephen Thiel, who continues to update and improve our Division's website; Dan Summers for updating our division's presentation template; and our Newsletter editor Marina Tsianou, for her continued leadership in ensuring our division newsletter remains visible and engaging.

Please join me in congratulating our newly elected Division leaders for 2023: Secretary Atanas Serbezov; Treasurer Tarun Poddar (thanks to Atanas and Tarun’s long continuity of the service to the Division); 2nd vice chair Marina Tsianou; and directors Tony Cai and Stephen Ritchie. Our 2023 Division officers will include Seth Huggins, Chair; Isaac Gamwo, 1st Vice Chair (2024 Chair); Marina Tsianou, 2nd Vice Chair; Atanas Serbezov, Secretary; Tarun Poddar, Treasurer; and Alice He, Past Chair. We would be remiss to not thank the outgoing directors, Paul Scovazzo and Seyi Oduyungbo, and the outgoing area chairs, Thomas Vetter and Tony Cai, for their dedication to serving our Division. In particular, I would like to express my sincere appreciation to our 2021 Chair Anand Vennavelli, who shared so much advice and guidance with me this year and is always ready to lend a supportive hand.

It has been a great honor and pleasure to serve as the Separations Division Chair in 2022; working together, we all have achieved a great year. I am sending my best wishes and full support to our 2023 leadership team, and I am excited to see how our Division continues to grow in the coming years.

Sincerely,

**Z. Alice He**

2022 Separations Division Chair

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**2022 AIChE Annual Meeting**  
**November 13, 2022 to November 18, 2022**  
**Phoenix Convention Center, Phoenix, AZ**



**Powering the Future**

The AIChE Annual Meeting is the premier educational forum for chemical engineers interested in innovation and professional growth. Academic and industry experts will cover a wide range of topics relevant to cutting-edge research, new technologies, and emerging growth areas in chemical engineering.





*A message from Paul Scovazzo who is leading the efforts on AIChE Engage:*

Dear AIChE Separations Division Members,

We would like to call your attention to the Separations Division Online Engage Community, an information sharing, and networking platform within the AIChE Engage Community. This platform is exclusively for Separations Division members. Each Separations Division member was automatically added as a member of this platform. Recent exchanges have been students looking for professional guidance or discussions about specific separation processes between practicing engineers. You can use this platform to assist AIChE to better connect with its membership or to give your input on how the Separations Community (academia, practicing engineers, students, etc.) can best improve the profession.

A goal of this platform is to increase engagement of members by stimulating discussion around chemical separation principles, practices, career and professional topics. In addition, through this forum, Separations Division members and leaders can ask questions, seek advice, or provide suggestions on issues that relate to the Separations Division. One important benefit of this platform is timely and easy information sharing of Separations Division activities plus useful information by members for the benefit of others.

There may be different discussions going on in this community; however, you will only receive one email digest each morning summarizing the discussions from the previous day. This email digest will be separate from the Discussion Central daily digest. Of course, you can always visit the Separations Engage community to follow up on ongoing discussions at any time of the day. To ensure you receive the digest email, *stay connected by white listing the email address [Mail@ConnectedCommunity.org](mailto:Mail@ConnectedCommunity.org). You can find more information on how to white list this address [here](#).*

There are some rules regarding how we should conduct ourselves when using the private Engage Community. We recommend that you read through the [Engage Code of Conduct](#) and familiarize yourself with the platform through the [Engage Quick Start Guide](#).

We look forward to connecting and discussing with you on, Separations Engage Community.

Regards,

*AIChE Separations Division Leadership*

## Separations Division Awards

### 2022 Clarence Gerhold Award



**Mark W. Pilling**

*This award, sponsored by UOP, LLC (A Honeywell Company), 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 Mark W. Pilling as the recipient of the 2022 Clarence G. Gerhold Award for his sustained and outstanding service and for contributions in the field of fractionation in the form of industrial research, development and commercialization.*

Mark Pilling is the Manager of Technology for Sulzer Chemtech USA where he oversees mass transfer equipment innovation and specializes in engineered applications for various process technologies. He is a licensed Professional Engineer in the State of Oklahoma.

After graduating from the University of Oklahoma in 1985, Mark began his professional career as a Process Engineer at Farmland Industries. While working at the Ammonia Plant, he worked with Steam Methane Reforming, CO<sub>2</sub> absorption, and cryogenic distillation of argon. These processes are perhaps even more relevant today with the emphasis on clean energy and carbon capture.

Mark then moved to the refining industry working for Total Petroleum (now Valero) and Fluor Daniel. During this time, he was involved in design and operations for variety of refinery processes, including a UOP Platformer and Parex unit (Thanks Mr. Gerhold!).

Mark then moved firmly into the separations world, taking a job as a process engineer at Nutter Engineering (now Sulzer) where he now serves as the Global Head of the Refinery Systems Business. Over the past 27 years, he has been active within the distillation/absorption community and the AIChE Separations Division. He holds 13 patents and has over 30 publications in the field. He is an AIChE Fellow and is a Past Chair of the Separations Division. Mark also served for many years as the SepDiv Awards Director. He received the AIChE Industry Leadership award in 2014 and the Separation Division's Founders Award in 2016.

He is an active member of Fractionation Research, Inc. and serves as Vice President as well as Chair of the Long Range Planning Committee. He was recognized in the 2022 FRI Annual Meeting for outstanding contributions over the years.



## Clarence Gerhold

### *A Pioneer in Chemical Processes*

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 witness to this accolade. From 1929, when he conceived of thermal reforming, to the SORBEX adsorptive separation method, he always explored the unconventional possibilities instead of simply following evolutionary paths.

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

An important example of his accomplishments: 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 a commercially-successful operation within 2.5 years of the first laboratory experiment!

Larry championed many UOP processes: thermal reforming, catalytic polymerization, dehydrogenation, and the UDEX extraction and SORBEX adsorption processes. His solutions overcame obstacles to commercial realization, and his vision and persistence resulted in new directions for these developing industries.

### 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.L. 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  
 2017 – A.L. Zydney  
 2018 – U. M. Diwekar  
 2019 – Y. Cohen  
 2020 – T. J. Cai  
 2021 – J. Y. S. Lin

## 2022 Separations Division FRI / Yeoman Innovation Award



### Miao Yu

*This award recognizes outstanding contributions to scientific, technological, or industrial areas involving separations technologies. Criteria considered in selecting an awardee include development and implementation of significant discoveries, creative research, or new processes and/or products. The innovation should have demonstrated significant and measurable commercial, environmental, or societal value.*

*This year, the AIChE Separations Division is pleased to recognize Dr. Miao Yu for his contribution of designing and applying nanoporous materials and advanced nanoporous structures for CO<sub>2</sub> capture and utilization.*

Dr. Miao Yu joined the Department of Chemical and Biological Engineering at the State University of New York at Buffalo as an Empire Innovation Professor in January 2021.

He was an Associate Professor in the Department of Chemical and Biological Engineering at Rensselaer Polytechnic Institute (RPI) from August 2017 to January 2021. He was an Assistant Professor in Chemical Engineering at the University of South Carolina (UofSC) between 2012 and 2017. Before joining UofSC, he was an assistant research professor in Chemical Engineering at the University of Colorado, Boulder (CU-Boulder) from 2010 to 2012.

He obtained B.S. (1998) and M.S. (2002) degrees from Tianjin University, China. He earned his Ph.D. degree from CU-Boulder in 2007, and subsequently worked in the same department as a postdoctoral researcher from 2007 to 2010.

Dr. Yu has published about 90 peer-reviewed papers, with two in *Science* and others in *Nature Communications*, *Advanced Materials*, *JACS*, *Nano Letters*, *Angewandte Chemie International Edition*, *ACS Catalysis*, *Chemical Communications*, etc. He is a recipient of 2015 NSF Career Award.



### Neil Yeoman

#### *A Promoter of Chemical Engineering*

The FRI/ Yeoman Innovation Award honors the memory of Neil Yeoman, a charter member of both the Separations Division as well as FRI's Design Practices Committee. His long-time dedication to the Separations Division was exemplified by applying practical solutions to existing problems.

Neil received his BS Chemical Engineering degree from the Polytechnic Institute of Brooklyn and his MS Chemical Engineering degree from Columbia University. His first industry position was with General Foods in 1957. He then worked 26 years for Scientific Design and then 15 years for Koch Engineering where he was manager of Research and Technology. He retired in 2001 but was heavily involved with AIChE as well as the Separations Division.

Neil was a founding member of AIChE's Separations Division as well as a founding member of the Design Practices Committee of Fractionation Research, Inc., (FRI). For AIChE, Neil was elected to the Board of directors twice, was on the Career and Education Operating Council, the Membership Committee, the Admissions Committee, the Government Relations Committee, and the Equipment Testing Procedures Committee. In addition, Neil was the long-standing Treasurer of the Separations Division as well as the Treasurer of the Virtual Local Section. Neil was a Fellow of AIChE, was named on 28 US Patents, has authored over 100 publications and was the recipient of the 2010 Gerhold Award.

Anybody who knew Neil understood his passion for life and the advancement of Chemical Engineering. The Separations Industry misses Neil for all his wonderful insights, his clarity of the situation and his understanding of the path forward.

## 2022 FRI / John G. Kunesh Award



**Zachary P. Smith**

*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. Zachary P. Smith for his advancements in fundamental science, mentorship, and technology transfer related to developing polymers and porous materials for gas separation membranes.*

Zachary P. Smith is an Associate Professor of Chemical Engineering at the Massachusetts Institute of Technology. His research focuses on the molecular-level design, synthesis, and characterization of polymers and inorganic materials for applications in membrane and adsorption-based separations. Prof. Smith has co-authored over 50 peer-reviewed papers and has been recognized with several awards, including the DoE Early Career Award, NSF CAREER Award, ONR Young Investigator Award, AIChE 35 Under 35 Award, North American Membrane Society Young Membrane Scientist Award, and DoE Office of Science Graduate Fellowship. He was also awarded the Frank E. Perkins Award for Excellence in Graduate Advising at MIT. He served as a committee member in writing the 2019 National Academies of Sciences, Engineering, and Medicine report on *A Research Agenda for Transforming Separation Science*.

Prof. Smith serves on the Board of Directors for the North American Membrane Society and is on the Editorial Advisory Boards of *Macromolecules* and *Polymer*. He is a co-founder and Advisor for Flux Technology and a co-founder and Chief Scientific Officer for Osmoses Inc., two startup companies aiming to commercialize membrane technology. He earned his bachelor's degree in Chemical Engineering from the Penn State Schreyer Honors College and completed his PhD in Chemical Engineering at the University of Texas at Austin. His postdoctoral training was in Inorganic Chemistry at the University of California, Berkeley.





## 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 received BS, MS and PhD 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 Design Engineering in the Process Division. He managed twenty engineers. 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 the management of the engineers of a coal liquefaction plant.

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: 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 reign.

John was an AIChE Separations Division Director for 6 years, and its Chairman in 2004. Anybody who knew or worked for John enjoyed, respected, and learned from him.

The Separations world benefitted appreciably from John's time in it. Very unfortunately, John is no longer available to mentor those engineers.

## 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  
 2017 – J. D. Rimer  
 2018 – R. P. Lively  
 2019 – W. A. Phillip  
 2020 – A. Vennavelli  
 2021 – K. V. Agrawal

## 2022 Founders Award



**Benny D. Freeman**

*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 Dr. Benny D. Freeman with this award in recognition of his sustained contributions to the Separations Community.*

Benny Freeman is the William J. (Bill) Murray, Jr. Endowed Chair in Engineering at The University of Texas at Austin. He is a professor of Chemical Engineering and has been a faculty member for 33 years. Dr. Freeman's research is in polymer science and engineering and, more specifically, in mass transport of small molecules in solid polymers.

He currently directs 25 Ph.D. students and postdoctoral fellows performing fundamental research in gas and liquid separations using polymer and polymer-based membranes and barrier packaging. His research group focuses on discovery of structure/property relations for water purification and gas separation membrane materials, including new materials for carbon capture and new materials for improving fouling resistance and permeation performance in liquid separation membranes. His research is described in more than 500 publications and more than 20 patents. He has co-edited 5 books on these topics. He is Director of the Center for Materials for Water and Energy Systems, M-WET, a U.S. Dept. of Energy center focused on new membranes for water purification. His research has served as the basis for several startup companies, including Energy-X and NALA Systems.

He served as Chair of the Membranes Area of the Separations Division of AIChE in 2002, Director of the Separations Division from 2003 to 2008, and Chair of the Separations Division in 2011. He co-organized a Topical Conference on Membranes for the Separations Division in 2003.

Benny served on the AIChE Fellows Admission Committee from 2013-2018, and he chaired the committee in 2017. Beyond AIChE, he served as President (2005-2006) and a member of the Board of Directors (2001-2012) for NAMS, the North American Membrane Society, and he chaired the Gordon Research Conference on Membranes (2004).

## 2022 Education & Outreach Award



### Stephanie G. Wettstein

*This award recognizes outstanding work to devise, improve or enhance teaching methods for Separations in Chemical Engineering Education and Outreach.*

*This year, the AIChE Separations Division is pleased to recognize Dr. Stephanie G. Wettstein with this award in recognition for her engaging of students with novel teaching materials to improve student learning of Unit Operations.*

Dr. Stephanie G. Wettstein is an Associate Professor in the Chemical and Biological Engineering Department at Montana State University (MSU) where she joined the department in 2012. She received her B.S. in Paper Science at the University of Wisconsin – Stevens Point and worked as a Process Engineer for three years at Kimberly-Clark after graduation. Dr. Wettstein then obtained her Ph.D. from the University of Colorado in the area of zeolite membrane separations under Profs. John Falconer and Rich Noble and completed a two-year post-doc at the University of Wisconsin – Madison in the area of catalysis and separations extractions under the guidance of Prof. James Dumesic.

Dr. Wettstein has over 9 years of experience teaching mass transfer unit operations including the junior-level separations course and the senior-level unit operations laboratory. In both classes, she has incorporated industry-based experiences from her time at Kimberly-Clark including redesigning the senior lab course to make it more industrially relevant. Her teaching style includes active learning, allowing the students agency throughout the class, and helping students develop critical thinking skills, confidence, and a sense of curiosity about the material. Through this award, she will develop QR-code based learning modules that focus on unit operation laboratory systems. These modules will provide information and details as to how unit operations work and define major process systems. These modules will be used in the laboratory course, the junior-level separations course, and be able to be accessed by the public since they will be on the MSU domain.

Dr. Wettstein has been recognized for her excellence in teaching and mentorship by receiving the MSU College of Engineering 2019 Excellence in Teaching award, four MSU Awards for Excellence from 2019-2022, the 2022 MSU Innovation in Teaching Award, and a 2022 SWE Emerging Engineering Educator award. Additionally, she integrates her research, which focuses on synthesizing renewable chemicals from lignocellulosic biomass using novel catalytic and separation processes, into the classroom through problem-solving and examples. Dr. Wettstein is currently focused on producing high yields of 2,5-furandicarboxylic acid (FDCA) in order to improve the process to synthesize polyethylene furanoate (PEF), a bioderived, fully recyclable plastic. She has over 30 peer-reviewed publications and an h-index of 21. Dr. Wettstein has served as the MSU Society of Women Engineers faculty advisor and as an MSU Equity Advocate since 2013. She focuses on recruiting diverse students into her lab and has mentored eight graduate students, two of which were female and 31 undergraduates with 14 being female in her research lab. Dr. Wettstein also serves on the University Athletics Committee and as a reviewer for over 20 journals and 13 funding programs.

## 2022 Graduate Student Research Awards

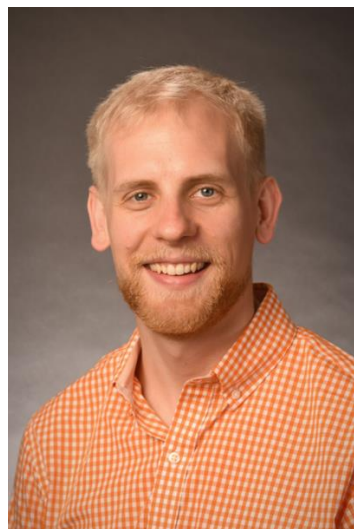
In an effort to encourage graduate students to excel, to promote a high level of interest in the field of separations, to identify future leaders in the field, and to strengthen the cooperation between academia and industry in the separations field, the Separations Division of AIChE has established a Graduate Student Research Award program.

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).

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 *Chemical Engineering Science*; and (3) The student's CV.

For 2022, the Separations Division is pleased to recognize the following students for excellence in separations research:

### Area 2A, Distillation & Absorption



**Luke Macfarlan**

University of Texas at Austin  
(Professor Bruce Eldridge)

### Area 2A, Distillation & Absorption



**Tony Joseph Mathew**

Purdue University  
(Professor Rakesh Agrawal)

### Area 2D, Membrane-Based Separations



**Yanqiu Lu**

National University of Singapore  
(Professor Sui Zhang)

**Area 2E, Adsorption & Ion Exchange**



**Roberto Mennitto**

The University of Edinburgh  
(Professor Stefano Brandani)

**Area 2E, Adsorption & Ion Exchange**



**Brandon David Clark**

Stanford University  
(Professor William A. Tarpeh)

**Area 2G, Bioseparations**



**Rollie George Mills**

University of Kentucky  
(Professor Dibakar Bhattacharyya)

**Professor Dibakar Bhattacharyya  
Graduate Student Research Award**

*Recognizing Professor Bhattacharyya's support and overall long-term commitment to student development in the membranes area.*



**Thomas A. Horseman**

Vanderbilt University  
(Professor Shihong Lin)

## 2022 Division and Area Recognitions

The Division is grateful to

- [Alice He](#), 2022 Chair of the Separations Division for her Service

The following outgoing **Division Directors** are recognized for their service to the Division:

- [Seyi Oduyungbo \(2018 – 2022\)](#)
- [Paul Scovazzo \(2018 – 2022\)](#)

The Division appreciates the service of the following outgoing **Area Chairs**:

- [Tony J. Cai](#)  
Area 2A, Distillation & Absorption
- [Thomas Vetter](#) (for serving an extra year as Chair)  
Area 2B, Crystallization & Evaporation

The Separations Division is proud to honor:

- [Paul Bryan](#)  
For 20 Outstanding years of Service (2002 – 2022) to the Separation Division, for managing the administration of the Gerhold Award, and enabling the well-deserved recognition of 20 of the finest minds and ablest contributors to our profession.
- [Izak Nieuwoudt](#)  
For his many Outstanding Contributions to the fields of Distillation and Absorption
- [Suzana P. Nunes](#)  
For her Lifetime of Dedication and Contributions to the Fundamentals and Application of Membrane Surface Science Technology.
- [Jan Sefcik](#)  
For Contributing to the Elucidation of the Link between Solution Properties, Reactor Conditions, and Nucleation and Breakage Phenomena, as well as for his Contributions to Advanced Crystallization Process Development.
- [Andreas Seidel-Morgenstern](#)  
For his Outstanding Contributions to the Fundamentals of Adsorption, Chromatography, and Chemical Engineering.
- [Ranil Wickramasinghe](#)  
For his Outstanding Contributions to Membrane-based Bioseparations and his Excellence in Service and Leadership in the Separations Division.

## Highlights from the 2022 AIChE Annual Meeting

The 2022 AIChE Annual Meeting was held November 13-18, 2022, in Phoenix, AZ.

The Annual Separations Division Awards Dinner was held on Monday, November 14, 2022, at Mancuso's Restaurant in Phoenix. The event is always greatly anticipated and serves as an excellent opportunity to honor members of the Division for their service and to recognize outstanding individuals for their contributions to scientific, technological, or industrial areas involving separations technologies.



**Alice He**, 2022 Chair of the Separations Division, presided over the evening's activities. Special thanks to **Isaac Gamwo**, 2<sup>nd</sup> Vice-Chair of the Division, who made the banquet arrangements and to **Dan Summers** and **Haiqing Lin** for their efforts in coordinating the awards.

Some scenes from the Annual Separations Division Awards Dinner are presented in the next pages.



Alice He (right), 2022 Chair of the Separations Division, was presented with a plaque by Anand Vennavelli (left), Past Chair of the Separations Division. Anand thanked Alice for her service and dedication to the Division.



Isaac Gamwo, 2<sup>nd</sup> Vice-Chair of the Division, welcomed everyone to the banquet.



2022 / AIChE  
ANNUAL  
MEETING

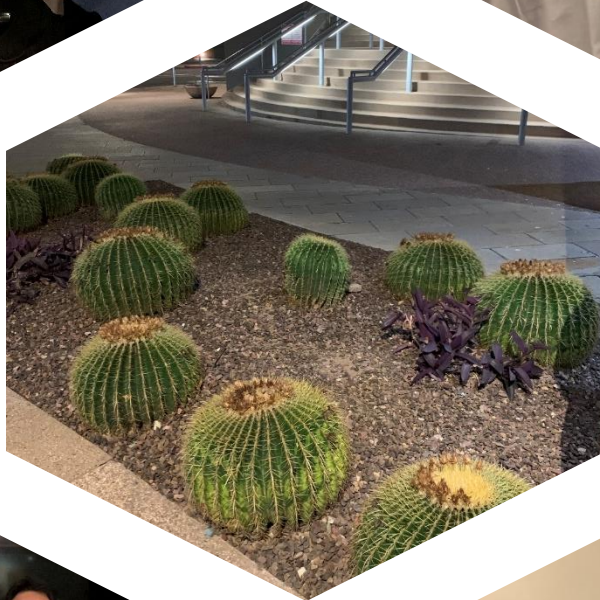


**SEP**  
Separations Division  
An AIChE Community



*Scenes from the 2022 Annual Separations Division Awards Dinner*





*Scenes from the 2022 Annual Separations Division Awards Dinner*



The 2022 Clarence Gerhold Award was presented to Mark W. Pilling (right) by Dan Summers (left)



Tony Cai (right) presented Zachary P. Smith (left) with the 2022 FRI / John G. Kunesh Award



The 2022 Separations Division FRI / Yeoman Innovation Award was presented to Miao Yu (left) by Tony Cai (right)



The 2022 Education & Outreach Award was presented to Stephanie G. Wettstein (right) by Dan Summers (left)



Haiqing Lin presented Luke Macfarlan (left photo), Tony Joseph Mathew (middle photo), and Rollie George Mills (right photo) with Graduate Student Research Awards recognizing their outstanding doctoral work in one of the Separations Division Areas.



Outgoing Division Director Seyi Oduyungbo (right) was recognized for his service to the Division by Isaac Gamwo (left)



Tony J. Cai (left), outgoing Chair of Area 2A, Distillation & Absorption was recognized for his service to the Division by Isaac Gamwo (right)

## Spring 2022 AIChE Meeting

The 2022 Spring AIChE meeting was held April 10-14, 2022, in San Antonio, Texas.

**SPRING22  
+18<sup>TH</sup> GCPS**  
A Joint AIChE and CCPS Meeting

*This year, the AIChE Separations Division is pleased to recognize Izak Nieuwoudt for his many Outstanding Contributions to the fields of Distillation and Absorption.*

**Izak Nieuwoudt** is a chemical engineer with 35 years of industrial and academic experience. He holds B.Eng, M.Eng and PhD degrees in Chemical engineering. He is listed as the inventor on 403 granted patents in 31 patent families, with a further 13 patent families pending. He is the inventor of the well-known INTALOX ULTRA random packing, PROFLUX severe service grid, FLEXIPRO valve tray and VORSOMAX cyclonic products. 7 PhD and 14 M.Eng students graduated under his guidance. Izak is listed as an author on 47 papers and book chapters, and 75 conference contributions. Izak developed several extractive distillation, azeotropic distillation, and liquid extraction processes that have been successfully commercialized. He is also an authority on high performance trays, hydraulic modeling of trays and packing, supercritical extraction, and solvent-driven separations. The University of Stellenbosch honored Izak with educator and researcher awards and appointed him as extraordinary professor. He also received awards from the German DAAD and Alexander von Humboldt Stiftung.



Izak Nieuwoudt (right) was recognized for his outstanding contributions to the fields of Distillation and Absorption by Greg Cantley (left), vice chair of Area 2A.

**SPRING22  
+18<sup>TH</sup> GCPS**  
A Joint AIChE and CCPS Meeting

APRIL 10-14, 2022 • SAN ANTONIO, TEXAS

## Election Results for 2023

### Congratulations to our new Division Officers and Directors!

#### Seth Huggins, 2023 Division Chair



Seth Huggins is a Director of Process Development at Amgen, leading the engineering team responsible for the process development and commercialization of its synthetic therapeutics. Seth has been at Amgen for more than 15 years and during that time has served on over 25

programs spanning from pre-clinical through commercialization. This included the drug substance team leader for commercial assets including Kyprolis®, Corlanor®, and as lead for the Neulasta® DSI.

Throughout his time at Amgen he has been influential in increasing the impact of the engineering group within the synthetic space, most notably in the areas of crystallization, process modeling and technology transfer. He and his team have established clear frameworks and business processes for these areas supporting the complete synthetic pipeline. He has been a passionate mentor and manager for his staff members, continuously elevating the performance and impact of his group members.

Seth has several publications in peer-reviewed journals and books and has given a number of presentations at AIChE meetings other notable conferences. He is a previous chair for the Crystallization and Evaporation area of the Separations Division.

Seth earned degrees in Chemical Engineering from the Ohio State University and the University of Southern California.

#### Isaac Gamwo, 2023 1<sup>st</sup> Vice-Chair



Isaac Gamwo is a senior research general engineer at the U.S. Department of Energy's National Energy Technology Laboratory (Pittsburgh), where he leads a multi-institutional research group to extend state-of-the-art computational mineral-scale modeling to high-

temperature, high-pressure conditions. Isaac has mentored several post-doctoral researchers, doctorate candidates, and summer Interns at NETL.

Isaac joined AIChE as a graduate student and became an AIChE Fellow in 2013. Isaac has continuously served in the Separations Division for over a dozen years primarily as Area 2f-Fluid Particle Separations Program Chair and co-Chair. He is currently completing a five-year term as a Director of the Separations Division. He recently co-edited a Taylor & Francis book Solid-Liquid Separation Technologies: Application for Produced Water. Isaac also served as chair of the Minority Affairs Committee (MAC) and chair of the external awards subcommittee within the Societal Impact Operating Council.

Isaac earned his M.S. and Ph.D. in chemical engineering from the Illinois Institute of Technology (Chicago). He is a licensed professional engineer, a fellow of AIChE, and a member of the National Organization of Black Chemists and Chemical Engineers (NOBCChE). Isaac's work and expertise has garnered recognition through several awards including the 2020 AIChE Eminent Chemical Engineer award, the 2017 NOBCChE Cannon award for excellence in chemical engineering, and two Gold Excellence in Government awards (2011 Gold Award for Outstanding Professional Employee; 2002 Gold Award for Rookie).

Isaac previously served as an assistant professor at the University of Akron (Ohio) and Tuskegee University

(Alabama), and as an affiliate graduate faculty member at Virginia Commonwealth University (Richmond). Isaac is credited on over 150 articles and presentations.

## Marina Tsianou, 2023 2<sup>nd</sup> Vice-Chair



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). Marina 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, a PhD degree in Chemistry from Lund University, Sweden, and having worked in industry.

Tsianou's research interests and activities involve the design, development, characterization and applications of molecularly-engineered nanomaterials with desirable functionalities. Her research has addressed thermodynamic and kinetic aspects of polymer mediated crystallization, bio-inspired material synthesis, nano- and meso-scale organization and structure, complex fluids and soft interfaces, nanostructured polymers in films and on surfaces, and biomass processing. Her current focus is on environmental separations: PFAS sequestration and polymer recovery from plastic waste.

In addition to her research, Marina is very dedicated to improving undergraduate education and promoting equity, diversity, and inclusion. She has served as advisor of the AIChE student chapter at UB and was on the AIChE Student Chapter Advisors Honor Roll (2009, 2011, 2012). For her outstanding contributions to education, Marina has been recognized with the 2015 UB School of Engineering & Applied Sciences Senior Teacher Award and the 2021 SUNY Chancellor's Award for Excellence in Teaching.

Marina Tsianou has been a member of AIChE since 1992 when she joined as a graduate student. She is currently a member of AIChE's Separations Division, Food, Pharmaceutical and Bioengineering Division, Nanoscale Science and Engineering Forum, Women in Chemical Engineering (WIC), and LGBTQ+ & Allies. She has organized and chaired multiple technical sessions at AIChE annual meetings and has served as vice-chair and chair of Area 1C, "Interfacial Phenomena". In the Separations Division, Marina served as vice-chair and chair of Area 2B "Crystallization and Evaporation", as Division Director (2017-2021), and has been the Division's Newsletter Editor since 2019.

## Atanas Serbezov, 2023 Secretary



Atanas Serbezov is a Professor of Chemical Engineering at Rose-Hulman Institute of Technology in Terre Haute, IN. He holds BS (1991) and MS (1991) degrees in Process Control from the University of Chemical Technology and Metallurgy, Sofia, Bulgaria and MS (1995) and PhD (1997) degrees in

Chemical Engineering from the University of Rochester, Rochester, NY.

Atanas started his professional career in 1991 as a process control engineer at Honeywell. Upon earning his doctorate degree, 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 Atanas was presented with the Separation Division's Service Award (now the Founders Award).

## Tarun Poddar, 2023 Treasurer



Tarun Poddar is currently working in global application and business development for WL Gore and Associates, Elkton, MD. Tarun has 26 years of industrial experience while working in two different countries and in four different organizations. His experience

ranges from plant design and operation in heavy and specialty chemical manufacturing to technology development, product development, application development, and commercialization of new technologies in filtration–separation areas. Tarun has several publications in peer-reviewed journals and presentations in various international meetings. He also has multiple patents in his name.

Tarun is a member of American Institute of Chemical Engineers (AIChE) and actively involved with the organization. He is the current treasurer of Separation division. His services for the division are highlighted below.

2010-2011: Vice-chair, area 2D (membrane-based separation)

2012-2013: Chair, area 2D (membrane-based separation)

2013-2017: Director, Separation Division

2017-2019: Assistant Treasurer, Separation Division

2019-2022: Treasurer, Separation Division

Tarun has organized many topical conferences and chaired numerous sessions in AIChE meetings. He served as an industrial advisory board member for Membrane Science Engineering, and Technology center- an NSF Industry/University Cooperative Research Center. Tarun holds a doctorate from New Jersey Institute of Technology, a master's from Indian institute of Technology-Kanpur and a bachelor's from Jadavpur University, all in chemical engineering.

## New Directors

### Tony Cai, Director (2023-2027)



Dr. Tony Cai is the Chief Scientist and a member of the leadership team at Fractionation Research, Inc. (FRI). He holds BS and MS degrees in Chemical Engineering and a PhD in Mechanical Engineering. He has over 35 years of experience in the field of

separation technology and engineering. He serves as a guest member of the European Federation of Chemical Engineering Working Party on Fluid Separations. He is an adjunct professor at Oklahoma State University and Tianjin University

Tony joined AIChE and the Separation Division in 1996. He is currently the chair of Separations Division Area 2a, Distillation and Absorption. He has been organizing the Distillation and Separation session at Southwest Process Technology Conference since 2011. Tony is a member of AIChE Admissions Committee, an AIChE Fellow, the recipient of the 2020 AIChE Gerhold Award, and 2023 AIChE Spring Meeting Program co-chair.

### Stephen Ritchie, Director (2023-2027)

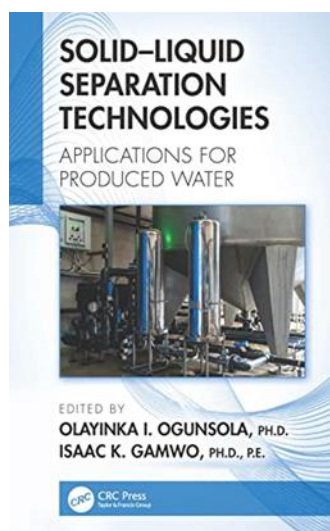


Dr. Stephen M.C. Ritchie – University of Alabama: Associate Professor of Chemical & Biological Engineering at the University of Alabama (UA).

He has been a member of AIChE since 1995 and is currently a senior member of AIChE and a member of the

Separations Division. He has served the division as an Area 2H chair and vice-chair since 2003. He is also a member of the Central Alabama local section and currently serves as the section Treasurer. He has also

served as the faculty advisor for the UA AIChE Student chapter since 2006. He is very active in the North American Membranes Society, serving as the annual meeting co-chair in 2006 and 2012, and he served on the NAMS Board of Directors from 2007-2010. In addition, he was a visiting scientist at Sepro Membranes from 2012-2014. He leads a research group primarily focused on functionalized membranes for protein separation and membrane reactors. His recent work has been focused on scale-up of functionalized membranes and membrane applications for dairy separations.



### CRC Press- Taylor & Francis Releases Book Co-Edited by Isaac K. Gamwo, Separations Division Vice Chair

Dr. Isaac K. Gamwo, Separations Division Vice chair co-edited with Dr. Dr. Olayinka I. Ogunsola a 302-page book ***“Solid-Liquid Separation Technologies - Applications for Produced Water.”*** The book consists of twelve peer-reviewed book chapters co-authored by NETL researchers and researchers from academia and industry in the United States, Singapore, and South Africa. This unique book covers both fundamentals and applied aspects of wide ranges of solid-liquid separation technologies and some applications for treating produced water to enable the beneficial re-use of these produced waters. CRC Press Taylor & Francis released the book on April 18, 2022.

The detailed book description appears at: <https://doi.org/10.1201/9781003091011>



## 2022 Separations Division Officers

### *Elected Officers*

Chair:	Alice Z. He (azhe@chevron.com)
1 <sup>st</sup> Vice Chair:	Seth Huggins (shuggins@amgen.com)
2 <sup>nd</sup> Vice Chair:	Isaac K. Gamwo (gamwo@netl.doe.gov)
Past Chair:	Anand Vennavelli (anand.vennavelli@kes.global)
Secretary:	Atanas Serbezov (serbezov@rose-hulman.edu)
Treasurer:	Tarun Poddar (tpoddar@att.net)
Directors:	Stefano Brandani (2020-2024) (sbrandan@exseed.ed.ac.uk) Evan Hatakeyama (2022-2026) (ehatakey@gmail.com) Caryn Heldt (2021-2025) (heldt@mtu.edu) CJ Kurth (2022-2026) (cj@aquamembranes.com) Haiqing Lin (2019-2023) (haiqingl@buffalo.edu) Angela Lueking (2019-2023) (luekinga@mst.edu) Seyi Odueyungbo (2018-2022) (seyiodu@hotmail.com) Paul Scovazzo (2018-2022) (scovazzo@olemiss.edu) Dan Summers (2020-2025) (190proofsummers@gmail.com) Stephen Thiel (2020-2024) (thiels@ucmail.uc.edu)

### *Appointed Officers*

Awards Program Coordinators:	Haiqing Lin and Dan Summers
Chemical Technology Operating Council (CTOC) Liaison:	Paul Collins
Industry Leaders Engagement:	Isaac Gamwo
Topical Conference Liaison:	Angela Lueking
Diversity and Inclusion	Caryn Heldt
Communication Platforms:	Paul Scovazzo
Webmaster:	Stephen Thiel
Newsletter Editor:	Marina Tsianou

## 2022 Separations Division Area Chairs

2A, Distillation & Absorption, Chair:	Tony Cai
Vice Chair:	Greg Cantley
2B, Crystallization & Evaporation, Chair:	Thomas Vetter
Vice Chair:	Christopher Burcham
2C, Extraction, Chair:	David Cantu
Vice Chair:	George S. Goff
2D, Membrane-Based Separations, Chair:	William Phillip
Vice Chair:	Christine E. Duval
2E, Adsorption & Ion Exchange, Chair:	F. Handan Tezel
Vice Chair:	Daniel Siderius
2F, Fluid-Particle Separations, Chair:	Seyi Oduyungbo
Vice Chair:	Jenifer Gomez Pastora
2G, Bioseparations, Chair:	Heather Chenette
Vice Chair:	Cristiana Boi
2H, General Topics & Other Methods, Chair:	Josh Thompson
Vice Chair:	Stephen Ritchie

## Future AIChE Meetings

<https://www.aiche.org/conferences-events>



**2023 Spring Meeting and 19th Global Congress on Process Safety**, March 12-16, 2023, Houston, TX



**2023 AIChE Annual Meeting**, November 5-10, 2023, Orlando, FL



### Message from the Newsletter Editor

Greetings! I am delighted to serve as the Separations Division Newsletter Editor. If you have any announcements, photos, comments to share, please forward these to me at [mtsianou@buffalo.edu](mailto:mtsianou@buffalo.edu).

I look forward to hearing from you! -*Marina Tsianou* (University at Buffalo, SUNY)



<https://www.aiche.org/community/sites/divisions/separations>