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## Words from the Division Chair

The AIChE Separations Division was officially founded in January 1991. We have just completed our 30th year of operation. Part of the original newsletter is included in this 2020 newsletter. The original newsletter states that, 'The Separations Division is 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.' The Separations Division had about 400 members. I found the original newsletter fascinating reading. I am honored and humbled to have met and worked with many of the founders of the Separations Division.



Dibakar 'DB' Bhattacharya will chair a Podcast which can be accessed from our website. Please check for this in December. Some of the Founders of the Separations Division: Founding Chair, C. Judson King; Founding First Vice Chair Jimmy L. Humphrey; Founding Second Vice Chair Richard D Noble; one of the first three Directors John Pellegrino; AIChE Council Liaison Edward L. Cussler and Second Area 2D Chair for Membrane Based Separations William J Koros will discuss the formation of the Separations Division. It is interesting to note that the original Separations Division letterhead indicates the following programming areas: Distillation and Adsorption, Crystallization and Evaporation, Extraction, Membrane Based Separations, Adsorption and Ion Exchange, Fluid Particle Interactions, Other Methods of Separation and General Topics. Over the last 30 years there have been two changes: addition of Bioseparations and combining Other Methods of Separations and General Topics.

Today the Separations Division continues to be the focal point for all Institute activities in separations. In 2020 we have 439 professional members and 5217 student members. While the number of professional members has not grown much the increase in student members is very exciting. In 2021 the Separations Division needs to focus on providing programming for these student members and in particular ensure we provide value for our student members in order to encourage them to continue as professional members.

The Separations Division continues to focus on high quality technical programming at the Spring and Annual meetings. At the Spring meeting the Separations Division offered 2 sessions with a total of 6 oral presentations. These two sessions were added to Topical 8: Distillation Symposium which had 10 sessions consisting of 19 oral presentations. The

(Words from the Division Chair continued...)

Distillation Symposium included the session: 'Distillation Symposium 2020: Honors Session for Daryl Hanson - Existing Practice and New Directions in Refinery Distillation'. At the annual meeting, the Separations Division offered 71 primary sessions. The number of sessions appears high as many sessions were divided into two in order to accommodate the virtual meeting schedule. The 71 primary sessions consisted of 4 poster and 67 oral sessions. Of the 67 oral sessions, 9 were plenary sessions and 7 honorary sessions. In addition, the Separations Division co-sponsored 17 sessions with following Divisions, Topical Conference and Forum.

- i. Fuels & Petrochemicals Division
- ii. Forest and Plant Bioproducts Division
- iii. Next-Gen Manufacturing Topical Conference
- iv. Interfacial Phenomena (Area 1C)
- v. Environmental Division
- vi. Pharmaceutical Discovery Development and Manufacturing Forum
- vii. Process Development Division

Clearly the Separations Division is extremely active with strong programming at the Spring and Annual (virtual) meetings. The success of our programming is a result of the tremendous dedication of our 8 Area Chairs: 2A Distillation & Adsorption, Andrew Sloley; 2B Crystallization & Evaporation, Thomas Vetter; 2C Extraction, George Goff; 2D Membrane Based Separations, Mahdi Malmali; 2E Adsorption & Ion Exchange, Peter Ravikovitch; 2F Fluid Particle Separations, Isaac Gamwo, 2H General Topics & Other Methods, Joshua Thompson; 2G Bioseparations, Caryn Heldt.

For the first time in its 30 year history, all Separations Division programming was held virtually. The AIChE Spring and Annual Meetings which were to have been held in Houston and San Francisco respectively, were converted to a virtual format due to the COVID-19 pandemic. I would like to thank our officers and directors, area chairs and AIChE staff for working tirelessly to convert both meetings to an online format.

Though a virtual meeting can never replace a face to face meeting one advantage is that many talks were recorded. Consequently, there are links to all talks that were sponsored by the Separations Division at the Spring meeting, for which the presenters provided permission, on the Separations Division website. In addition, we will add links to Separations Division plenary talks given at the Annual meeting, for which the presenters provide permission, on the Separations Division website.

The Separations Division offers a number of awards that recognize outstanding contributions to the field of separations, education in separations and service to the Separations Division. In 2020 we were very fortunate to receive extremely high quality nominations for all 5 awards we offer. In particular I am very glad there was a winner of our Education and Outreach Award which will help make the Separations Division more relevant to our many student members. I am delighted to announce the following winners of the 2020 Separations Division Awards. As we cannot present these awards to our winners in person, we have prepared an 'Awards Video' which can be accessed through the [Separations Division YouTube channel](#).

- *Clarence Gerhold Award*, sponsored by UOP, for outstanding contributions to research, development, or application of separations technology: Tony J Cai
- *FRI/John G. Kunesh Award*, sponsored by Fractionation Research, Inc., for outstanding contributions by an individual under the age of 40: Anand Vennavelli
- *Innovation Award*, for outstanding contributions to scientific, technological, or industrial areas involving separations technologies: Haiqing Lin
- *Founders Award*, for outstanding service to the Separations Division: Dibakar 'DB' Bhattacharyya

*(Words from the Division Chair continued...)*

- *Education & Outreach Award*, for outstanding work to devise, improve or enhance teaching methods for Separations in Chemical Engineering Education and Outreach: Natacha Souto-Melgar

In addition, the Separations Division recognizes graduate students for contributions to separations fundamentals and applications. This year there were 7 award winners.

- Area 2A Distillation and Absorption: Radhakrishna Tumbalam Gooty
- Area 2B Crystallization and Evaporation: Matthew McDonald
- Area 2D Membrane Based Separations: Thien Tran and Shiqi Huang
- Area 2E Adsorption and Ion Exchange: Kai-Jher Tan
- Area 2G Bioseparations: Pratik Joshi
- Professor DB Bhattacharyya Graduate Student Research Award: Woochul Song

I would like to thank everyone involved in the nomination and selection of these awards. In addition, I would especially like to thank our co-awards directors Dan Summers and Haiqing Lin for all their efforts to promote these awards and attract high quality nominations.

As 2020 Chair of the Separations Division I set myself the goal of ensuring we have an up to date website that is a resource for our members. I am extremely grateful to Stephen Thiel for his tireless efforts to update our website. I encourage you to browse through the [Separations Division website](#). I am looking forward to 2021 as the website is further enhanced thus increasing its value as a resource to our members.

The first Separations Division newsletter was published in July 1991. For many years, newsletters were mailed to members. From 2013 onwards an annual newsletter was posted on the Separations Division website. A second goal I set myself when I took over as Chair, was to ensure we publish an annual newsletter before the Annual meeting. After a small pause in 2017 and 2018, we published the 2019 newsletter in June 2020. You are reading our Fall 2020 newsletter. I very much appreciate Marina Tsianou's efforts to revive our newsletter. The newsletters are available on our website. I look forward to 2021 and the continuation of our annual newsletter.

The success of the Separations Division depends on its volunteers. I have had the honor to serve with highly dedicated officers and directors. I thank them for their support of the Separations Division.

First Vice Chair: Anand Vennavelli

Second Vice: Alice He

Secretary: Atanas Serbezov

Treasurer: Tarun Poddar

Past Chair: Marcus Mello

Directors: Lauren Greenlee, Dan Summers, Marina Tsianou, Isaac K. Gamwo, Paul Scovazzo, Seyi Oduyungbo, Haiqing Lin, Angela Lueking, Stefano Brandani, Stephen Thiel.

I would like to congratulate Caryn Heldt and Dan Summers on being elected Directors of the Separations Division for a 5-year term. Atanas Serbezov and Tarun Poddar will continue as Secretary and Treasurer of the Separations Division, respectively. I thank both of them for their dedication to the Separations Division. Congratulations to Seth Huggins who was elected as Second Vice Chair and to Alice He and Anand Vennavelli who progress to First Vice Chair and Chair, respectively. I look forward to next year's programming and Separations Division activities. The Separations Division is in

*(Words from the Division Chair continued...)*

excellent hands. Finally, I would like to thank Marcus Mello our Past Chair, for his guidance as I began my term as Chair of the Separations Division.

It has been a tremendous honor to serve as Chair of the Separations Division in 2020. On a personal level this was a very rewarding experience and I encourage our members to play an active role in the Separations Division. While 2020 will be remembered by many for the COVID-19 pandemic, I will always remember my year as Chair of the Separations Division.

Best wishes for the holiday season and a happy, healthy and successful 2021.

*Ranil Wickramasinghe*

2020 Separations Division Chair

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## 2020 AIChE Annual Meeting

<https://www.aiche.org/conferences/aiche-annual-meeting/2020>

The new virtual Annual Meeting program has been redesigned per AIChE's best practices to maximize the attendee experience by allowing for a healthy mix of live, pre-recorded, scheduled and on-demand content throughout the week.

Shorter sessions and talks will allow all attendees to stay focused on the presentations at hand and pre-recorded components to a majority of the talks will enable attendees to ask questions from the presenters during their presentations.

As a bonus, all presentations can be viewed within the platform for 30 days after the conference, allowing for a wider range of attendees to view the content and a higher level of visibility for presenters. All recordings\* will then be made available for permanent access to registrants of the meeting a few weeks after the meeting concludes.

*\*For those who grant permission to post*

The program has been organized into four main types of presentations and will be hosted on two interconnected virtual platforms:

- **Live Presentation:** includes featured lectures, group-level plenaries, and panel discussions.
  - These will be scheduled at a specific date and time and staff will work with the chairs and speakers of each live session ahead of the meeting.



- Recordings of live sessions will be available the following day.
- Session time blocks have been segmented into 60-minute slots, allowing for more flexibility to all participants, as well as more opportunities to network and explore all that the meeting has to offer. Sessions that could not fit into one time slot have been spread across multiple to accommodate all talks.
- **Pre-Recorded Presentation:** includes invited content such as area plenaries or honorary sessions.
  - All talks will be standardized at 15 minutes.
  - These will be scheduled at a specific date and time, allowing for presenters to be present at their scheduled time to answer questions from those viewing.
  - Recordings for these presentations will be available approximately one hour after their scheduled end time.
  - Session time blocks have been segmented into 60-minute slots, allowing for more flexibility to all participants, as well as more opportunities to network and explore all that the meeting has to offer. Sessions that could not fit into one time slot have been spread across multiple to accommodate all talks.
- **Pre-Recorded+ Presentation:** includes more focused technical sessions and content.
  - All talks will be standardized at 15 minutes.
  - Talks will available for on-demand viewing throughout the conference, but particularly during an unopposed one-hour session slot each day, allowing attendees to view the many available talks with undivided attention.
  - Speakers will also be assigned a specific time block to where they will be encouraged to be available for Q&A on the platform. Speakers will have the ability to interact with attendees via text chat or zoom video meetings at a scheduled time.
- **Poster Presentation:** includes all poster sessions.
  - All poster presentations will be standardized at 3 minutes.
  - Posters will available for on-demand viewing throughout the conference, but particularly during an unopposed one-hour session slot each day, allowing attendees to view the many available talks with undivided attention.
  - Speakers will also be assigned a specific time block to where they will be encouraged to be available for Q&A on the platform. Speakers will have the ability to interact with attendees via text chat at a scheduled time.





## Separations Division: 30 years of innovation in research and development, education, and service to chemical engineering and AIChE

Below is the first page of our first Newsletter published in 1991.

CELEBRATING OUR

30<sup>th</sup>


ANNIVERSARY

C. JUDSON KING, CHAIR  
UNIVERSITY OF CALIFORNIA - BERKELEY

JIMMY L. HUMPHREY, FIRST VICE-CHAIR  
J.L. HUMPHREY & ASSOCIATES

RICHARD D. NOBLE, SECOND VICE-CHAIR  
UNIVERSITY OF COLORADO

ANTHONY L. HINES, SECRETARY  
UNIVERSITY OF MISSOURI - COLUMBIA



SEPARATIONS DIVISION  
AMERICAN INSTITUTE OF CHEMICAL ENGINEERS

NEIL YEOMAN, TREASURER  
KOCH ENGINEERING CO., INC.

RICHARD C. BENNETT, DIRECTOR  
SWENSON PROCESS EQUIPMENT

MAURICE A. LARSON, DIRECTOR  
IOWA STATE UNIVERSITY

JOHN J. PELLEGRINO, DIRECTOR  
NAT'L INSTITUTE OF STANDARDS AND TECH

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1991

NEWSLETTER

July

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### SEPARATIONS DIVISION OFF TO A QUICK START

At the Chicago Annual Meeting, AIChE Council officially added separations to the list of technical specialties served by its divisions. Thus, the Separations Division, which began operation January 1, 1991, became the thirteenth division of the Institute.

The Separations Division is a focal point for all Institute activities in separations, including furthering the significance of separations within the chemical profession, and providing much needed interaction and communication among chemical engineers in the field. The Division has about 400 members and is growing.

*Officers Are Installed*

The Division has installed the following individuals as officers: Chair: C. Judson King, University of California-Berkeley; First Vice-Chair: Jimmy L. Humphrey, J.L. Humphrey & Associates; Second Vice-Chair: Richard D. Noble, University of Colorado; Secretary: Anthony L. Hines, University of Missouri-Columbia; Treasurer: Neil Yeoman, Koch Engineering Co., Inc. Three directors have been installed including Richard C. Bennett, Swenson Process Equipment; Maurice A. Larson, Iowa State University; and, John J. Pellegrino, National Institute of Standards and Technology. The first formal election of officers and directors will be held later this year. The Nominating Committee is composed of C. Judson King, Dick Bennett, Norman Li, and Dan Wiley. Any suggestions of persons to be nominated as officers or directors should be sent to C. Judson King (Fax 415/642 - 4778) as soon as possible.

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**WANT TO JOIN THE SEPARATIONS DIVISION ?**  
- Fill out the application form on page 7 -

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Programming has been divided into eight areas, with a chair for each area. The area chairs, their affiliations, and addresses are given on Page 2. Beginning January 1, 1992, Mike Lockett (Union Carbide) will replace Tony Porter as Chair of the Distillation Area, and Bill Koros (The University of Texas at Austin) will replace Norman Li as Chair of the Membrane-Based Separations Area. The first official activity was to initiate programming at the Pittsburgh Summer National Meeting (August 18 - 21, 1991). The Pittsburgh technical program is given on page 4, while the program for the Annual

Meeting, to be held in Los Angeles, November 17 - 22, 1991, is given on page 5.

*Objectives of the Division*

The Separations Division addresses the broad field of separations including research, development, and applications. The objectives are to:

- Provide a focal point for AIChE members with interests in separations;
- Develop technical programs for meetings. Seek balanced coverage of a variety of currently used and novel methods of separation;
- Exchange knowledge of technical publications, computer programs, data bases, separation research centers, networks, and programs;
- Keep members informed of future separations meetings;
- Coordinate exchanges with other groups, such as the American Chemical Society Separations Science and Technology Subdivision;
- Recognize achievements of members through awards;
- Encourage chemical engineering educators to place suitable emphasis on the field of separations and on the development of appropriate curricular material;
- Foster research, development, and the application of chemical engineering knowledge to separations technologies; and,
- Arrange social gatherings.

*continued on page 4...*

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*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

### 2020 Clarence Gerhold Award



**Tony J. Cai**

*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 Dr. Tony J. Cai, Chief Scientist, Fractionation Research, Inc. as the recipient of the 2020 Clarence G. Gerhold Award for his outstanding contributions to industrial distillation research and development as well as his service to the Separations Division.



### 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!

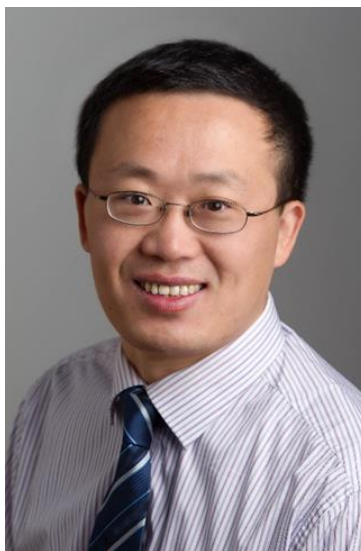
Larry championed many UOP processes: thermal reforming, catalytic polymerization, dehydrogenation, and the UDEX extraction and SORBEX adsorption processes. His solutions overcame obstacles to commercial realization, and his vision and persistence resulted in new directions for these developing industries.

#### 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 Separations Division Innovation Award



### Haiqing Lin

*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 Prof. Haiqing Lin, Associate Professor, Department of Chemical and Biological Engineering, University at Buffalo, The State University of New York (SUNY), for the design, discovery, and development of high-performance membrane materials for CO<sub>2</sub> capture, including Polaris™ membranes for industrial hydrogen purification and carbon dioxide removal.

## 2020 FRI/John G. Kunesh Award



**Anand Vennavelli**

*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. Anand Vennavelli, Pilot Plant Manager, Koch-Glitsch Research and Development, for his outstanding contributions to industrial distillation research and development as well as his service to the Separations Division.*



**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 – Jeffrey D. Rimer  
 2018 – Ryan P. Lively  
 2019 – William A. Phillip

## 2020 Founders Award



### Dibakar "DB" Battacharyya

*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 announce Prof. Dibakar "DB" Battacharyya, UK Alumni Professor, Department of Chemical & Materials Engineering, University of Kentucky, as the recipient of the 2020 Founders Award in recognition of five decades of exemplary leadership and innovation in service, research, and education which embraced the need for mentoring along with knowledge creation.

## 2020 Education & Outreach Award



### Natacha Souto-Melgar

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

The AIChE Separations Division is pleased to recognize Dr. Natacha Souto-Melgar, Teaching Assistant Professor, Ralph E. Martin Department of Chemical Engineering, University of Arkansas, for the design and development of a molecular diffusion experimentation platform to demonstrate Fick's Law and document the results for other instructional facilities.

## 2020 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 2020, the Separations Division is pleased to recognize the following students for excellence in separations research:

### Area 2A, Distillation & Absorption



**Radhakrishna Tumbalam**  
**Gooty**  
 Purdue University  
 (Professor Rakesh Agrawal)

### Area 2B, Crystallization & Evaporation



**Matthew McDonald**  
 Georgia Institute of Technology  
 (Professor Ron Rousseau)

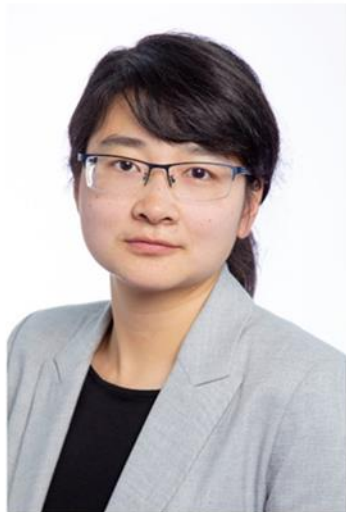
### Area 2D, Membrane-Based Separations



**Thien Tran**  
 University at Buffalo, SUNY  
 (Professor Haiqing Lin)



**Area 2D, Membrane-Based Separations**



**Shiqi Huang**

École Polytechnique Fédérale de  
Lausanne  
(Professor Kumar Varoon Agrawal)

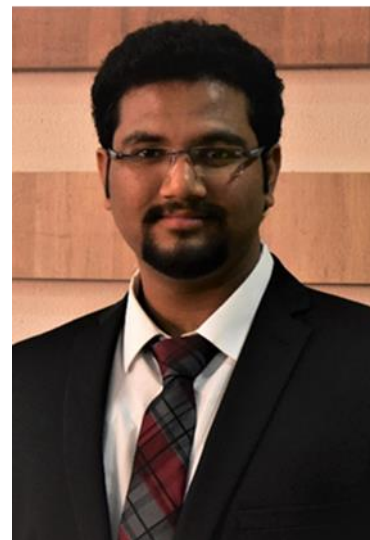
**Area 2E, Adsorption & Ion Exchange**



**Kai-Jher Tan**

MIT  
(Professor Alan Hatton)

**Area 2G, Bioseparations**



**Pratik Joshi**

Michigan Technical University  
(Professor Caryn Heldt)

**Professor Dibakar Bhattacharyya Graduate Student Research Award**



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

**Woochul Song**

University of Texas at Austin  
(Professor Manish Kumar)

## 2020 Division and Area Recognitions

The Division is grateful to

- [Ranil Wickramasinghe](#), 2020 Chair of the Separations Division for his Service

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

- [Alice He](#)
- [Lauren Greenlee](#)

The Separations Division is proud to honor:

- [Giorgio Carta](#)  
For his Outstanding Contributions to the Fundamentals of Protein Adsorption, Chromatography, and the Development of Bioseparation Processes
- [Daniel A. Green](#)  
For a Lifetime of Outstanding Contributions to Crystallization Technology that Connected Solid State Chemistry with Process Engineering
- [Daryl W. Hanson](#)  
For Outstanding Contributions to Improve Design, Operations and Troubleshooting of Distillation Technology, for Successfully Applying Advanced Technology in Industrial Units, for Novel Applications of Existing Technology and His Willingness to Share Technology, Experience and Expertise with the Industry
- [Jerry Y. S. Lin](#)  
For his Lifetime of Dedication and Contributions to the Fundamentals and Application of Membrane Technology

## Division Member Receives National Award



### Isaac Gamwo

Dr. Isaac Gamwo, a Director of the AIChE's Separations Division, Area Chair of Fluid-Particle Separations, AIChE Fellow, and NETL research chemical engineer, is a recipient of the 2020 AIChE-MAC Eminent Chemical Engineers award. Dr. Gamwo was recognized for his outstanding technical accomplishments and his services as mentor and role model to underrepresented minorities in engineering.

*This is the Minority Affairs Committee's highest award and recognizes outstanding achievements from a professional in a traditional chemical engineering position or from a chemical engineer making significant contributions in a non-traditional profession. Beyond professional achievement, the most successful nominees will have served as mentors and role models to underrepresented minorities in engineering and other related areas in education or business environment, have outstanding technical accomplishments and distinguished service to the profession, and be well-respected and recognized within the engineering communities and underrepresented minorities engineering/science organizations.*

## Election Results for 2021

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

#### Anand Vennavelli, 2021 Division Chair



Anand Vennavelli has a Bachelor's degree in Chemical Engineering from Osmania University, India, and M.S. and Ph.D. degrees in Chemical Engineering from Oklahoma State University, and is a registered P.E. in the state of Texas.

Anand has a combined 10 years of process and control engineering experience. He previously worked as an Advanced Process Control (APC) engineer at the Phillips 66 San Francisco refinery and as a Research Engineer at Fractionation Research, Inc. (FRI). At FRI, he was primarily involved in developing tray and packing correlations and project engineering.

He is currently the Pilot Plant Manager at Koch-Glitsch Research and Development. In this role, he develops, plans, executes, and coordinates distillation, absorption, extraction, and general separations experiments at the Koch-Glitsch R&D experimental facility in Wichita, KS.

Anand also serves as an Adjunct Assistant Professor of Chemical Engineering at the Oklahoma State University. He served as the chair for the AIChE Distillation and Absorption area and as a Director of the Separations Division of the AIChE. He is currently the first-vice-chair of the Separations Division. Anand is also an active member of the ISA106 committee working on a procedure automation standard for continuous systems.

#### Alice Z. He, 2021 1<sup>st</sup> Vice-Chair



Alice Z. He is a consulting engineer at Chevron Energy Technology Company (ETC). She has more than 30 years of oil & gas industrial experience (Chevron and Mobil) after earning her Ph.D. degree in Chemical Engineering in 1989. Her technical expertise is in separations process R&D,

process modeling, and advancing new technologies from bench and pilot scale to commercial success. She has led the Separations Process R&D team at Chevron ETC for more than 15 years, where she leads a group PhD chemical engineers to research, develop, and apply novel separation process technologies in supporting internal Chevron customers across upstream and downstream businesses, and collaborates externally with practitioners in the field from industry, academia, and national labs. She is an author and coauthor of more than 25 patents and patent applications. She is also a reviewer for refereed technical journals.

Alice has been a member of AIChE since 1988 and a member of the Separations Division since 1994. She has served in the Separations Division as an area co-chair of General Topic and Other Methods (2h) from 2010-2016. She has created, organized, chaired, and presented multiple technical sessions at AIChE annual meetings, such as Green Solvents for Separations, Hybrid Separations Process, Water in Developing Communities, and Separation challenges in upstream, etc. She was elected to one of the directors in 2015 and the 2<sup>nd</sup> vice chair in 2019 of AIChE's Separations division.

## Seth Huggins, 2021 2<sup>nd</sup> Vice-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<sup>®</sup>, Corlanor<sup>®</sup>, and as lead for the Neulasta<sup>®</sup> 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.

## Atanas Serbezov, 2021 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, 2021 Treasurer



Tarun Poddar is currently working in global application and business development for WL Gore and Associates, Elkton, MD. Tarun has 25 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

2019-2020: 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

### Caryn L. Heldt, Director (2021-2025)



Dr. Caryn L. Heldt is the Director of the Health Research Institute, the James and Lorna Mack Chair in Bioengineering, Professor in the Department of Chemical Engineering, and an Affiliate Professor in Biological Sciences at Michigan Technological University. She received her B.S. in Chemistry and Chemical

Engineering from Michigan Technological University in 2001. She worked for two years at BASF Corporation before commencing her Ph.D. studies. Upon receiving her Ph.D. in Chemical Engineering from North Carolina State University in 2008 under the guidance of Dr. Ruben Carbonell, she

joined Rensselaer Polytechnic Institute for her 2-year postdoctoral training under the guidance of Dr. Georges Belfort. In 2015, Dr. Heldt was awarded an NSF CAREER award to study virus surface chemistry and she was promoted to Professor in 2020. Her lab is focused on the purification, removal, and inactivation of viruses and gene therapy vectors.

Dr. Heldt has been active in AIChE for over a decade. She has participated in activities sponsored by the Women in Chemical Engineering (WIC) as Fall programming chair, communications committee, panelist, and as Chair in 2016. She is currently a member of the Societal Impact Operating Council (SIOC) as well as serving her second year as Chair of Area 2G.

### Daniel R. Summers, Director (2021-2025)



Dan Summers is the Tray Technology Manager for Sulzer Chemtech. 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 Union Carbide Linde (now Praxair), UOP, Stone & Webster (now

TechnipFMC), Nutter Engineering and Sulzer Chemtech. His entire career has been focused exclusively on distillation. He is the author of over 70 papers on distillation and is a listed inventor on three US patents.

Dan is a member of FRI's Design Practices Committee & was the Chair of that committee for 12 years. He is the past 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. He is also a recipient of the prestigious AIChE Gerhold Award for outstanding work in the Application of Chemical Separations Technology.

## 2020 Separations Division Officers

### *Elected Officers*

Chair:	Ranil Wickramasinghe (swickram@uark.edu)
1 <sup>st</sup> Vice Chair:	Anand Vennavelli (vennavelli@fri.org)
2 <sup>nd</sup> Vice Chair:	Alice Z. He (azhe@chevron.com)
Past Chair:	Marcus Dutra e Mello (mvdem@chevron.com)
Secretary:	Atanas Serbezov (serbezov@rose-hulman.edu)
Treasurer:	Tarun Poddar (tpoddar@att.net)
Directors:	Stefano Brandani (2020-2024) (sbrandan@exseed.ed.ac.uk) Isaac K. Gamwo (2017-2021) (gamwo@netl.doe.gov) Lauren Greenlee (2016-2020) (greenlee@uark.edu) Haiqing Lin (2019-2023) (haiqingl@buffalo.edu) Angela Lueking (2019-2023) (luekinga@mst.edu) Seyi Oduyungbo (2018-2022) (seyiodu@hotmail.com) Paul Scovazzo (2018-2022) (scovazzo@olemiss.edu) Dan Summers (2020) (dan.summers@sulzer.com) Stephen Thiel (2020-2024) (thiels@ucmail.uc.edu) Marina Tsianou (2017-2021) (mtsianou@buffalo.edu)

### *Appointed Officers*

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

## 2020 Separations Division Area Chairs

2A, Distillation & Absorption, Chair:	Andrew Sloley
Vice Chair:	<i>vacant</i>
2B, Crystallization & Evaporation, Chair:	Thomas Vetter
Vice Chair:	Christopher Burcham
2C, Extraction, Chair:	George Goff
Vice Chair:	<i>vacant</i>
2D, Membrane-Based Separations, Chair:	Mahdi Malmali
Vice Chair:	William Phillip
2E, Adsorption & Ion Exchange, Chair:	Peter Ravikovitch
Vice Chair:	F. Handan Tezel
2F, Fluid-Particle Separations, Chair:	Isaac Gamwo
Vice Chair:	Seyi Oduyungbo
2G, Bioseparations, Chair:	Caryn Heldt
Vice Chair:	Heather Chenette
2H, General Topics & Other Methods, Chair:	Josh Thompson
Vice Chair:	Stephen Ritchie

## Future AIChE Meetings

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



**2020 AIChE Annual Meeting**, November 16-20, 2020, Virtual Meeting



**2021 Spring Meeting and 17th Global Congress on Process Safety**, April 18-22, 2021, Hilton Anatole, Dallas, TX

**2021 AIChE Annual Meeting**, November 7-12, 2021, Marriott Boston Copley Place, Sheraton Boston, Westin Copley Place, Hilton Boston Back Bay, John B. Hynes Convention Center



### 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)



CELEBRATING OUR

*30<sup>th</sup>*

ANNIVERSARY

*1990 - 2020*

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