SEPARATIONS DIVISION

American Institute of Chemical Engineers

| 2022 | | | | | |
|------------------|--------------------|--------------------|----------------------------|-----------------|-----------------------------|
| Alice He | Seth Huggins | Isaac K. Gamwo | Atanas Serbezov | Tarun Poddar | Anand Vennavelli |
| Chair | First Vice Chair | Second Vice Chair | Secretary | Treasurer | Past Chair |
| Chevron | Amgen | NETL/DOE | Dept. Chem. Eng. | | Koch-Glitsch |
| | | | Rose-Hulman Inst. Technol. | | Research and Development |
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CTOC LIAISON

Paul Collins collins_paul_compton@lilly.com

MINUTES

Separations Division Planning Meeting American Institute of Chemical Engineers 2022 AIChE Annual Meeting, Phoenix, AZ

Sunday, November 13, 2022 - 1 pm to 5:00 pm (MST) Phoenix Convention Center - N-131A

In person attendance:

Alice He Atanas Serbezov Caryn Heldt Dan Summers Daniel Siderius Stefano Brandani Stephanie Wettstein Thomas Vetter Marcus Mello Seth Huggins Anand Vennavelli Ranil Wickramasinghe Heather Chenette Jenifer Gomez Pastora Seyi Odueyungbo Josh Thompson Tony Cai

Isaac Gamwo Haiqing Lin CJ Kurt Christine Duval Marina Tsianou D.B. Bhattacharyya Tiangxing Cai Paul Collins

Online attendance: Tarun Poddar

Evan Hatakeyama

Steve Thiel Steve Ritchie Paul Scovazzo

Approval of Minutes from May 11, 2022 (Atanas Serbezov)

A motion to approve the minutes as distributed by e-mail passed by acclamation.

Election Results and Introduction of New Officers (Alice He)

Marina Tsianou - 2nd Vice Chair Tony Cai – Director Steve Ritchie - Director Tarun Poddar - Treasurer Atanas Serbezov – Secretary

Proposal Presentation by the 2022 Education and Outreach Award Winner (Stephanie Wettstein)

Stephanie Wettstein presented her proposal. The goal of the project is to develop a freely accessible repository of interactive photos and videos of commonly used industrial separations equipment to help students learn more about separations.

Separations Division 2022 Annual Planning Meeting November 13, 2022

2022 Education and Outreach Award Funding Discussion (All)

Following an extensive discussion, the following motion was put forward for a vote:

<u>Motion</u>: Award the full amount of the award, \$5,000, to Montana State University for the education and outreach work proposed by Stephanie Wettstein, with the stipulation that the work is completed by end of June 2023 and a project report including links to developed content is submitted to the Division by end of July 2023.

Motion carried.

Treasurer's Update (Tarun Poddar)

See slides in the Appendix for details.

Before the end of the calendar year the Executive Committee of the Division must decide on the Division funds allocation for 2023.

Action Item: Atanas to organize a poll for the funds allocation.

Awards Update (Dan Summers and Haiqing Lin)

See slides in the Appendix for details.

Award winners' information is posted on the Division web site.

The Division is looking to increase the diversity of the awards nomination pool. Several ideas were put forward:

- Establish an award nominations committee.
- Liaise with professional organizations of underrepresented groups, such as NSBE and SWE.
- Allow for self-nominations.

Second Vice Chair Report (Isaac Gamwo)

See slides in the Appendix for details.

Newsletter (Marina Tsianou)

See slides in the Appendix for details. Newsletters are posted on the Division web site. Marina will continue to be in charge of the newsletter in 2023 and beyond.

Separations Engage Platform Update (Paul Scovazzo)

See slides in the Appendix for details. The platform has not gained traction with the separations The Division will discontinue its use.

Diversity Initiatives (Caryn Heldt)

See slides in the Appendix for details.

<u>Action item:</u> Caryn to submit a proposal to the Division leadership for specific activities to be accomplished in 2023.

Action Item: The Division Council to appoint a Diversity Committee led by Caryn Heldt.

Area Reports (Area Chairs)

See slides in the Appendix for details.

Separations Division 2022 Annual Planning Meeting November 13, 2022

Web Site Update (Steve Thiel)

See slides in the Appendix for details.

Directors' Responsibilities

See slides in the Appendix for details. Dan Summers will assume responsibility for administering the Gerhold Award. CJ Kurt will join Haiqing on the awards directors team. Tony Cai will assume responsibility for liaising with other organizations. Tiangxing Cai will work will Tony.

CTOC Update (Paul Collins)

See slides in the Appendix for details.

Division Bylaws Revision

The Division will update its bylaws in 2023. The last update was in 2017. Per CTOC guidelines, Divisions are encouraged to review and update their bylaws every 5 years.

APPENDIX



Adsorption and Ion Exchange Fluid-Particle Separations BioSeparations General Topics



2022 Separations Division Planning Meeting

November 13, 2022

1:00 – 5:00 PM MST

Phoenix Convention Center - N-131A



Adsorption and Ion Exchange Fluid-Particle Separations BioSeparations General Topics



Financial Summary and Updates Separation Division

Tarun Poddar November 2022



Distillation & Absorption Crystallization & Evaporation Extraction

Membrane-Based Separations

Adsorption and Ion Exchange Fluid-Particle Separations BioSeparations General Topics



Financial Update-2022 Separation Division, AIChE

Good financial health

Current balance of over \$97,000 (as of end of September-2022)

► Anticipated year-end balance around \$90,000

Received all anticipated corporate donations for 2022

From three companies – FRI, Chevron, Honeywell-UOP
 Total of \$6,400

Current investment

> 75% investment in AIChE portfolio & 25 % CD

Investment for 2023

> Distribution needs to be decided and communicated to AIChE by year-end



Adsorption and Ion Exchange Fluid-Particle Separations BioSeparations General Topics



Financial Overview for 2021

| Assets on 12/31/2020 (Sep div) | 82,552.02 |
|--------------------------------|-----------|
| Assets on 12/31/2021 | 90,301.47 |
| Net Change | 7,749.45 |

| Total receipts | 23,080.66 |
|---------------------|-----------|
| Total lecelpts | 23,000.00 |
| Total disbursements | 15,331.21 |
| Net earning | 7,749.45 |



Adsorption and Ion Exchange Fluid-Particle Separations BioSeparations General Topics



Receipts & Disbursements Details for 2021

Receipts

Disbursements

| Dues Payment | 6,435 | Awards | 6,700.00 |
|-----------------------------|-----------|-----------------------------|----------|
| Donations from corporations | 6,400.00 | Plaques and related | 1,943.50 |
| Investment income | 7,515.66 | Award dinner and related | 5,012.90 |
| Dinner ticket | 2730 | Annual meeting audio visual | 219.81 |
| Total Receipts | 23,080.66 | Amex card membership fee | 55.00 |
| | | 2020 annual meeting video | |
| | | making* | 1400.00 |

Total Disbursements

15,331.21



Distillation & Absorption Crystallization & Evaporation Extraction

Extraction BioSeparations Membrane-Based Separations General Topics

Adsorption and Ion Exchange

Fluid-Particle Separations



Award Dinner Details for 2021

Ticket sale : 2,730 (39 @ 70/ticket) Total award dinner related expenses: 5,012.90 Division's expense : 2,282.90

Award Related Expenses

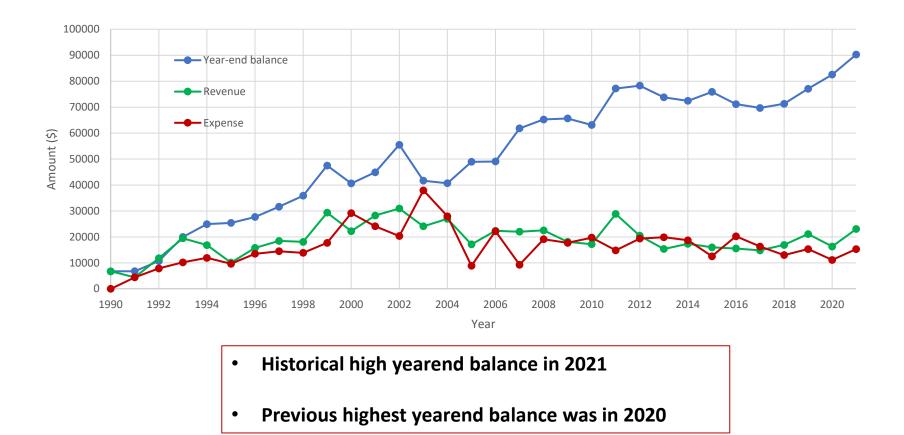
Dinner expenses for 51 meals + event fee (20%) + gratuity(15%) : 4,697.94 Award related printing and shipping: 314.96



Adsorption and Ion Exchange Fluid-Particle Separations BioSeparations General Topics



Financial Summary Trends





Distillation & Absorption Crystallization & Evaporation Extraction

Membrane-Based Separations

AIChE The Global Home of Chemical Engineers

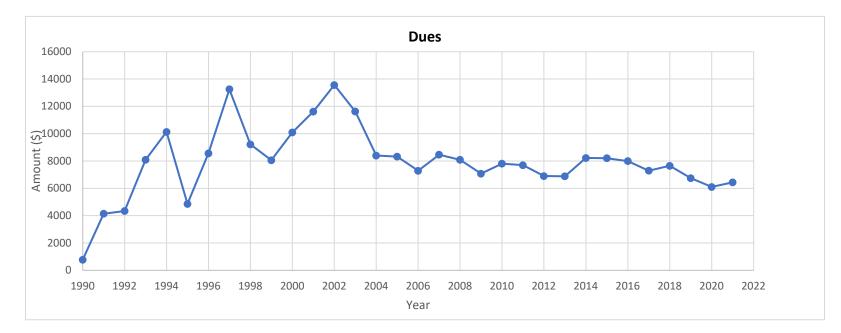
Membership Dues Trend

Adsorption and Ion Exchange

Fluid-Particle Separations

BioSeparations

General Topics



- Change in trend after lowest membership dues collected in the last 24 years
- 429 membership
- Record dues collected in 2002, \$13560 (904 memberships at the rate of \$15/member)



Distillation & Absorption Crystallization & Evaporation Extraction

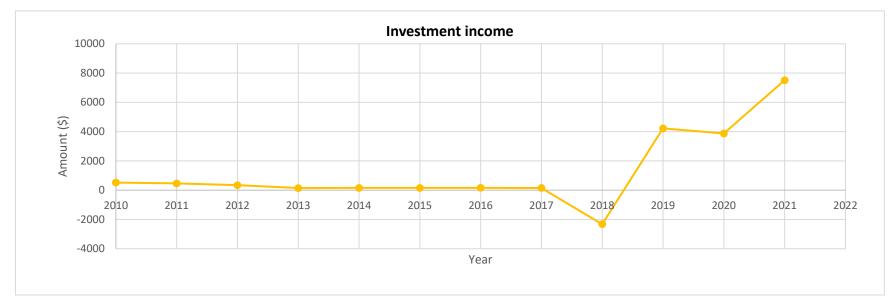
Extraction BioSeparations Membrane-Based Separations General Topics



Investment Income Trend

Adsorption and Ion Exchange

Fluid-Particle Separations



| Investment Distribution | | | | |
|-------------------------|---------|----------------------|--|--|
| Year | % in CD | % in AIChE portfolio | | |
| Prior 2018 | 100 | 0 | | |
| 2018 | 25 | 75 | | |
| 2019 | 75 | 25 | | |
| 2020 | 50 | 50 | | |
| 2021 | 25 | 75 | | |
| 2022 | 25 | 75 | | |

Record investment income in 2021
Much lower, possibly loss expected in 2022



Adsorption and Ion Exchange Fluid-Particle Separations BioSeparations General Topics



Summary of Awards – Fall 2022

Accomplished

- Photos and Biographies of <u>all</u> winners received
- Awards Slides and Bios given to Marina for the Newsletter
- Awards all uploaded to National AIChE website they look good
- Awards given to Stephen Thiel for posting on our web site
- Awards "Deck" sent to all Area Chairs
- Agenda for Awards Presentations written and given to Alice and Isaac
- Plaque Order completed and received
- Award Checks have been received.

To do yet

- New Education and Outreach Award distribution established & given to national
- Distribute (Mail) Plaques and Awards checks to those not in attendance
- Get ready for next year



Adsorption and Ion Exchange Fluid-Particle Separations BioSeparations General Topics



2nd Vice Chair Report

Separations Division Planning Meeting November 13, 2022

Isaac K. Gamwo, Ph.D., P.E 2022 2nd Vice Chair – Separations Division



Adsorption and Ion Exchange Fluid-Particle Separations BioSeparations General Topics



Role 2nd Vice Chair #1

- Organize Awards Dinner Select a venue and menu
 - Walking distance from Phoenix convention center
 - A private section that can accommodate 60-80 attendees for about a 3-hour duration
 - Available cash bar
 - A podium with microphone for the presentation of award

Mancuso's Restaurant At The Collier Center **201 E. Washington, Street, Suite 201** Phoenix, AZ. 85004 480-556-0770 Free Parking

www.mancusosrestaurant.com



Adsorption and Ion Exchange Fluid-Particle Separations BioSeparations General Topics



2nd Vice Chair Role #2

- Chair Education and Outreach Award Committee
 - One application received

Title "Interactive Unit Operations Images to Enhance Student Learning" Dr. Stephanie Wettstein Department of Chemical and Biological Engineering To: AIChE Separations Board From: Paul Scovazzo Date: November 10, 2022

Re: Separations Engage Report

Dr. Scovazzo's portfolio as a Separations Division Director included the AIChE Separations Engage Platform. The strategy to increase the use of the Separations Engage Platform was to recruit/arrange for active members of the Separations Division to post questions or initial discussions covering a number of relevant topics; such as:

- Benefits of Separation Division Membership
- Supporting Local Sections
- Access to Current Research and Technologies
- Connecting Researchers with Practitioners
- AIChE Meeting Improvements
- Public Policy
- AIChE Obligation to Student Guidance
- Membranes vs. All Other Separations
- Membrane Materials vs Membrane Unit Operations
- Length of the Unused Bed (LUB) Scale-Up Method

The following case study illustrates the overall success of the Separations Engage Platform. One of the postings was on the utility to industry of the LUB method for the scale-up of adsorption columns along with the clarity of the materials used to instruct students on the use of the LUB method. These LUB postings were first published on the Separations Engage Platform. Then after a 1-year waiting period, so the postings would not be in the recent memory of users, the same LUB postings were published on the General AIChE Engage Platform.

Significantly more (and useful) responses resulted from the General AIChE Engage Platform (Individuals engaged: 5 vs. 1). Moving forward, this case study may indicate that the Separations Engage Platform, as currently configured, may not be of use to the current members of the Separations Division.



Adsorption and Ion Exchange Fluid-Particle Separations BioSeparations General Topics



Diversity initiatives for Division

Caryn Heldt

Michigan Technological University

INCLUSION DIVERSITY EQUITY ANTI-RACISM LEARNING







Adsorption and Ion Exchange Fluid-Particle Separations BioSeparations General Topics



- EDI/IDEAL events at the AIChE meeting 2022
 - Monday, Nov 14
 - Unconscious Bias Conversation
 - 8:00 AM 9:00 AM N-226B
 - 9:30 AM 10:30 AM N-226B
 - IDEAL Featured Session: A Conversation on Equity, Diversity, and Inclusion
 - 3:30 PM 5:00 PM N-231B
 - IDEAL Reception (A Celebration for DORIC, K-12, LGBTQ+, MAC and WIC (ALL are Welcome)
 - 5:30 PM 7:00 PM N-229AB



Adsorption and Ion Exchange Fluid-Particle Separations BioSeparations General Topics



• EDI/IDEAL events at the AIChE meeting 2022

- Tuesday, Nov 15
 - LGBTQ+ & Allies Safe Zone Workshop
 - 2:00 PM 3:00 PM N-231B
- Wednesday, Nov 16
 - AIChE's Ideal Path ABET's Potential Role
 - 8:00 AM 10:30 AM W-105C
 - LGBTQ+ & Allies Safe Zone Workshop
 - 10:30 AM 11:30 AM N-226A
 - ABET Updates and Insights (Invited Talks)
 - 12:30 PM 3:00 PM W-105A



Adsorption and Ion Exchange Fluid-Particle Separations BioSeparations General Topics



- Last year we discussed the need for data on diversity
- If we want to support being inclusive in our programming, we can work on a few things:
 - 1. When we have programming meetings, invite session chairs, invite keynote speakers, we need to remind everyone in the room to keep diversity in mind. It makes a big difference.
 - 2. We need to keep our own data. We need to share demographics of award nominations, award winners, keynotes, session chairs, etc
 - 3. We need to have a conversation on the award nominating process
 - Is it too restrictive (asks for too much information, makes finding a nominator hard)?
 - Could people self nominate? (women and minorities are less likely to ask someone to nominate them)
 - We need to advertise the awards more broadly



Adsorption and Ion Exchange Fluid-Particle Separations BioSeparations General Topics



27

Area Reports (2022 Total: 1 Topical Conf. & 67 Tech sessions)

| • | Code | Spring 2022 | Fall 2022 | Spring 2023 Planned | Fall 2023 Planned |
|-----------------------------------|------|---|--------------|------------------------|----------------------|
| Sep div | 20 | 0 | 2 | | |
| Distillation and Absorption | 2A | Topical 8: Distillation Symposium 1 | 1 | | |
| Crystallization & Evaporations | 2B | | 9 | | |
| Extraction | 2C | | 2 | | |
| Membrane-based Separations | 2D | | 22 | | |
| Adsorption & Ion Exchange | 2E | | 19 | | |
| Fluid-Particle Separations | 2F | | 2 | | |
| Bio separations | 2G | | 8 | | |
| General Topics & Other Methods | 2H | | 1 | | |



Adsorption and Ion Exchange Fluid-Particle Separations BioSeparations General Topics



Separations Division Website

- Interested in information about from Area Chairs see "About" and details for areas 2A and 2G
 - https://www.aiche.org/community/sites/divisions/separations/separationsdivision-areas
- Want to do some restructuring to make newsletter, past awards more prominent and easier to find
- Some issues with editing working with National



Adsorption and Ion Exchange Fluid-Particle Separations BioSeparations General Topics



2023 Division Leadership – Directors Succession Plan

Haiqing Lin (2019-2023) Award Coordinator **Topical Conference Liaison** Angela Lueking (2019-2023) Stefano Brandani (2020-2024) Stephen Thiel (2020-2024) Webmaster Caryn Heldt (2021-2025) Diversity Planning Coordinator (would like to work with another director) Evan Hatakeyama (2022-2026) Membership Growth Initiatives CJ Kurth (2022-2026) Award coordinator Dan Summers (2021-2025) Gerhold award chair Tony Cai (2023-2027) Interaction with other organizations **Steve Richie (2023-2027)**

| Special appointment – Newslette | er editor | Marina Tsianou |
|---------------------------------|------------|----------------|
| CTOC Liaison | Paul Colli | ns (2021-2023) |

Outgoing directors

Paul Scovazzo (2018-2022)Communication PlatformsSeyi Odueyungbo (2018-2022)Interactions with Other Organizations



Adsorption and Ion Exchange Fluid-Particle Separations BioSeparations

General Topics



CTOC update

Paul Collins



Adsorption and Ion Exchange Fluid-Particle Separations BioSeparations General Topics



- Presentation quality is still an item of interest
 - Session chair rubric does SEP know about this?
 - Overlap table for use across D/F does SEP know about this?
 - "Big bucket" programming is SEP using this approach?
- IDEAL
 - Annual D/F survey indicates confusion
 - What would SEPs feedback (open ended) be?
- By-laws
 - Effort across AIChE to update on 5-year cycle
 - Operating manuals for process
 - SEP by-law revision is due in 2023



Distillation & AbsorptionAdsorption and Ion ExchangeCrystallization & EvaporationFluid-Particle SeparationsExtractionBioSeparationsMembrane-Based SeparationsGeneral Topics



- Liaison
 - What is SEPs thinking about how CTOC and D/F interact?
 - What would be most helpful?
 - What would you like to see changed if possible?