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Letter from the Editor-in-Chief

As the year 2021 is coming to an end, it provides us with an opportunity to reflect on the past and anticipate changes that will come as the new year progresses. Dr. Noel Fong, current president of SIMB, has provided an excellent overview of the work the Board of Directors were able to accomplish even as we are still experiencing the pandemic. Among these activities, were the difficult decisions to move meetings to virtual formats, weighing the many options and choosing to hold the Annual Meeting in person, and the outright cancellation of others.

Barring any unwelcomed disruptions due to the pandemic, next year’s Annual Meeting and the RAFT meeting are currently planned to occur in person. Meeting in person enables spontaneous conversations to occur, something that does not happen when interacting via virtual meetings. During the Annual Meeting, I met Dr. Leo H. Liu and was delighted to engage in one of these conversations. I learned he recently earned his PhD from the University of California, Los Angeles, and works on the cell-free synthesis of commodity chemicals. Leo describes himself as a science “guru” archetype and possesses a keen interest in science communication and how to attract young people’s attention to the sciences. He has interests in the use of social media to reach younger people and to provide science education through these means. I am very pleased that he will join the SIMB Editorial Board in January 2022.

Unfortunately, our “Welcomes!” are sometimes balanced with “Good-Byes”. As Noel mentions in the President’s statement SIMB’s Executive Director, Chris Lowe is taking a well-deserved retirement. Chris has been an indispensable help to me as I have served as the Editor-in-Chief of SIMB News. She has done a wonderful job in ensuring that all activities, such as election profiles and timelines to science fair announcements, are covered. If something doesn’t seem quite right, she always alerted me. It has been a pleasure working with her. Chris, you will be greatly missed!

I hope that I will get to see many SIMB members in person during the meetings planned for this coming year and that we strike up wonderful spontaneous conversations.

Have a healthy and heartening 2022!

Sincerely,

Melanie R. Mormile

Editor-in-Chief, SIMB News

mmormile@mst.edu
Dear Friends and Colleagues,

As we embark on the second year of the pandemic, we are still experiencing challenges, but are facing them with grace and continuing to thrive as a group.

While we had a successful virtual SBFC earlier this year, we decided to take the chance and hold the Annual Meeting live, even when other organizations (e.g. ASM) were continuing to be virtual. This meeting was held in Austin, TX in early August with 270 attendees. While this is far less than the usual 600-700, all the attendees were very happy to see each other, and it felt like a ‘normal’ meeting with the usual robust scientific program.

At this meeting, I officially became the standing SIMB President, following in the big footsteps of those before me. Most immediately, I want to thank Steve Decker for his tenacious guidance during one of the most difficult years in SIMB’s history. Along with welcoming Nigel Mouncey as the President-Elect, I am proud to be working with these two as a member of the leadership team.

Of course, the board can’t do its work without the support of the folks at SIMB headquarters, especially Chris Lowe, our Executive Director. Chris is taking a well-earned retirement after being the force that has sustained us since 2005. We cannot thank her enough for her hard work, passion, and dedication over this period. She and her team have adapted to an ever-changing Board of Directors, maintaining the equilibrium of SIMB to bring us the programs that we have.

In her place, Haley Cox will join us as the new Executive Director on January 4, 2022. Haley has a background in non-profit management, most recently as a Project Manager at The American Institute of Aeronautics and Astronautics. Previously, she was at the American Geophysical Union, and she holds an M.A. in Non-Governmental Organizational Management from Johns Hopkins University. Welcome, Haley!

At our recent Board meeting in November, we discussed some changes to improve our offerings to our members. Among them are (a) initiating a mentoring program for students and early-career scientists, and (b) hosting more virtual events, such as workshops and meetings on special topics.

Looking ahead to 2022, we regrettably had to cancel the Industry Meets Microbiome Meeting (IMMMM) that was going to be held in January. It was a great idea when it was conceived in 2019 by Debbie Yaver and George Garrity. However, it lost momentum after COVID hit. Its topics are still timely and evolving, and we hope to incorporate those sessions into a virtual meeting or a series of sessions at an Annual Meeting.

The RAFT meeting that was to be held in November of 2021 has been postponed to November of 2022 at the same place, the Hyatt at Coconut Point, FL. RAFT has a loyal following, with up to 30% of the attendees normally coming from Europe. With the COVID concerns in Europe and their restrictions on travel, the projected attendance was much lower than we needed for this meeting, and we would miss the interaction with our European colleagues. To maintain the every-odd-year periodicity of this meeting, the next three meeting of RAFT will be held in 2022, 2023, and 2025.

More immediately, we look forward to a live meeting of SBFC in New Orleans on May 1-5, 2022. Co-chairs Davinia Salvachua and Carrie Eckert have a great program in store, with Kristala Prather as the Keynote Speaker. https://www.simbhq.org/sbfc/

Also live will be the Annual Meeting to be held in San Francisco on August 7-10, 2022. Mark Blenner is the program chair, and we will have Jay Keasling as the Keynote speaker.

We look forward to seeing you all online and live,

Noel

“Gentlemen, it is the microbes who will have the last word.” -- Louis Pasteur
SIMB Strategic Plan

Vision
To be the leading international professional society in industrial microbiology and biotechnology

Mission
Empower our members and others to address current and future challenges facing humanity using industrial microbiology and biotechnology.

Core values
Scientific excellence (innovation, rigor, multi-disciplinary science and engineering, translational technology)
Leadership (collaboration, continuity, advocacy)
Diversity (promotion, inclusion, openness, internationality)
Responsibility (ethics, integrity, transparency, societal impact)
Communication (education, information, outreach, responsiveness)
Passion for science (fun, inspiration)

Goals
1. Provide information to increase global knowledge, understanding, and application of industrial microbiology and biotechnology.
2. Organize preeminent meetings in our core scientific disciplines.
3. Publish the leading journal in industrial microbiology and biotechnology.
4. Promote and increase diversity in all aspects of the Society, with membership open to anyone interested in our vision and mission.
5. Enhance the value of membership in the Society for both individual and corporate members.
6. Offer educational/professional development opportunities for the membership and the general public.
7. Communicate our activities and accomplishments in industrial microbiology and biotechnology to both the global scientific community and the general public.
8. Expand our global reach.
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Genetics & Molecular Biology of Industrial Organisms

Published in partnership with Oxford University Press
Chairwoman of the House Committee on Science, Space, and Technology, Representative Eddie Bernice Johnson (D-TX), has announced that she will be retiring at the end of her term in January 2023. Johnson, currently serving her fifteenth term in Congress, is the first Black woman to chair the science panel. In this role, she has championed increasing federal support for science as well as combating sexual harassment and improving diversity and equity in STEM.

Johnson has generally sought to work in a bipartisan way to shape science legislation. In recent years, she partnered with House Science Committee Ranking Member Frank Lucas (R-OK) to address several challenges facing the scientific community. Earlier this year, Johnson and Lucas co-sponsored the National Science Foundation (NSF) for the Future Act (H.R. 2225), which would make significant new investments in NSF by nearly doubling the science agency’s budget over five years and creating a new technology directorate to enable translational research.

“There is no one I would rather have as my counterpart across the aisle,” said Lucas in response to Johnson’s retirement announcement. “Because of her willingness to work across the aisle, we have achieved great things together in her time as chairwoman,” he added. “We passed the first major overhaul of U.S. energy policy in more than a decade, we worked to make STEM education more inclusive and accessible, and we developed legislation to double down on our investment in research and development so that America can continue to lead the world in science and technology.”

Johnson is the sixteenth House Democrat to announce that they will not seek reelection next year. If Republicans win back the House in the 2022 midterm elections, Representative Lucas is expected to take over as chair of the science panel.
Bioremediation 3.0: The New Frontier in Environmental Biotechnology

Introduction

It is 250 years since the start of the industrial revolution, and the advances for mankind have been profound and beneficial enabling a standard of living and global capabilities that were unfathomable just 100 years ago. By contrast, the impact on our planet has been devastating, with a list of long-standing environmental consequences including polluted land, water, and atmosphere.

The good news – nature is resilient and will always find ways to heal itself. The bad news – the damage done in 250 years will take thousands of years to undo without help. We simply cannot wait that long.

In nature, nothing is wasted because nature is the original innovator, recycling everything in a circular ecosystem. Conversely, humanity’s impact has been to impose linear systems on our circular world. Our ethos at Allonnia is to work in harmony with nature, combining biology and technology to fast forward time and bring nature’s future solutions to the present day. Through this collaboration, we will unlock the potential in waste and enable a world where nothing is wasted. The observation of circularity in nature suggests a new law of conservation — that waste can be neither created nor destroyed — only transformed.

Now is a unique moment in time thanks to a confluence of factors that permit us to develop and deploy at scale powerful transformative biology solutions that leapfrog existing mechanical and chemical systems to transform waste. We consider the introduction of synthetic biology the third “era” of bioremediation, or Bioremediation 3.0. A few examples of current Allonnia technology development efforts are presented to explore the realm of what is possible in this new frontier.

Historical Overview of Bioremediation

This use of nature-inspired solutions is not new thinking; it is just more intentional. The use of biological processes to treat contaminated wastewater dates back to the Romans, circa 600 B.C. (Figure 1). More dedicated and engineered uses are over a century old with the invention of activated
sludge for treatment of municipal wastewater in 1914. We like to call this first era of biological treatment of a waste stream Bioremediation 1.0.

In the late 1960s George Robinson, an assistant county engineer for Santa Maria, California, first applied bioremediation to clean up an oil spill, and we define this treatment of environmental contamination as the advent of Bioremediation 2.0. Even in this relatively early era of bioremediation, genetic modification and molecular tools were featured. Fifty years ago, Dr. Ananda Chakrabarty of General Electric genetically engineered the bacterium *Pseudomonas putida* (Figure 2) by fixing plasmid genes from known oil-degrading bacteria to create a new stable strain that consumed oil one to two orders of magnitude faster than the known strains. After a legal battle that went all the way to the U.S. Supreme Court, he attracted international attention by receiving the first patent in the world for a genetically engineered organism. As Bioremediation 2.0 moved from addressing petroleum hydrocarbons to metals and organic compounds such as chlorinated solvents, molecular tools for identifying specific microorganisms and functional genes became commonplace in the cleanup of contaminated soil and groundwater. The documentation of *Dehalococcoides* spp. in the mid-1990s as being capable of complete reductive dehalogenation of chlorinated ethenes and the characterization and sequencing of its various reductive dehalogenase enzyme genes was a driving force in this change. Bioaugmentation of chlorinated solvent-contaminated groundwater sites with *Dehalococcoides* containing cultures also became standard practice during Bioremediation 2.0.

While progress treating a variety of contaminants has been great in the last few decades, many compounds that are contaminating the environment or are preventing waste streams from being converted to value streams are recalcitrant to biological processes, in many cases because the chemicals are synthetic, and nature has had little time to “learn” to process them. Perhaps the most notable of these are the ubiquitous and problematic per- and polyfluorinated alkyl substances, or PFAS, which the media are portraying as “forever chemicals” due to their persistence in the environment. In addition to the challenge of recalcitrant contaminants, value chains in many industries are struggling with physical and chemical processes that are either expensive or have a very high carbon footprint but appear to be operating at their limits of optimization. All these applications require a breakthrough to resolve these unmet needs.

**The New Frontier**

The good news is that through transformative biology coupled with modern computational power we now have the potential to harness and collaborate with nature to fast-forward its ability to degrade, sequester, or upcycle challenging compounds or elements. Welcome to what we call Bioremediation 3.0. In just the last ten to twenty years we have had enormous leaps forward in the ability to read and write DNA simultaneously with dramatic increases in computing power. Consider that it originally took 13 years and over $1 billion to sequence the human genome. Today, less than 20 year later, it can be done in hours for less than $1000! This explosion in technology around synthetic biology left Moore’s law in the dust in about 2008 (Figure 3). The genetic transformation of organisms is now positioned such that many keen observers predict a revolution that will dwarf what has been accomplished in digital technology. The potential now exists to read nature’s programming in microorganisms and to discover or write new programming tailored to accomplish Allonnia’s mission: To leverage the power of biotechnology
A confluence of factors permit us to develop & deploy at scale powerful transformative biology solutions and engineered systems to create transformative solutions for a waste- and pollution-free world.

We organize what seems like endless opportunities for transformative biology to provide environmental benefit into three solution vectors:

Remediation – searching for and deploying microbes or enzymes to degrade or sequester contaminants and render them non-toxic

Upcycling – converting low-value waste into a high-value resource by breaking down complex molecules into new material building blocks or by binding and extracting beneficial elements or molecules for use as raw materials

Sensing – analyzing environmental media or process streams to detect contaminants or to monitor the performance of biological systems.

While this is just the dawn of Bioremediation 3.0, a few early case studies are illustrative of its exciting potential.

Case Study 1 – Oil Sands Process Water

While the oil sands in Alberta, Canada, provide a vital source of fuel for North American energy independence,
oil sands process water (OSPW) will present a major environmental challenge as operations wind down and close at production sites. These facilities operate tailings ponds with over 1.3 billion cubic meters of water that must be released to the environment during closure of the sites (Figure 4). Unfortunately, the water in the ponds is contaminated with a class of compounds known as naphthenic acids (NAs) which are toxic to fish in the receiving waters. NAs have a wide variety of chemical structures that are captured in the generalized formula $C_mH_{2m+2}ZO_2$, where $m = 5-25$; $Z$ is zero or a negative, even integer that specifies the hydrogen deficiency resulting from ring formation. Detoxification of the NAs can occur naturally, but the biodegradation process is too slow to meet the closure schedules the producers are required to meet.

Working with researchers at the University of British Columbia, we focused on the identification, optimization and deployment of naturally occurring microbes that thrive on the NAs found in Oil Sands Process Water (OSPW) that are capable of breaking down the complex hydrocarbon molecules into smaller, non-toxic compounds. Our team identified and isolated microbes growing on NAs from OSPW. The Microtox assay was used to confirm that the strains achieve at least some level of detoxification of NAs without any optimization (Figure 5). Two of the strains were evaluated individually and in a co-culture to study not only the degradation of NAs, but also to do a detailed transcriptomic analysis to build an understanding of the mechanisms for degradation (Chegounian et al., 2021). Armed with these data, the next step will be to optimize the degradation pathways through engineering or directed evolution. Ultimately the goal is to deploy the optimized NA-detoxifying community in a semi-passive application, such as a wetland, for a low-cost and sustainable alternative to expensive physical or chemical treatments.

**Case Study 2 – Rare Earth Element Recycling**

For the second case study we pivot to an upcycling (or in this case, recycling) application. Rare earth elements (REEs) comprise the 15 lanthanide metals in the periodic table, along with scandium and yttrium. These metals are critical components in a broad range of consumer electronics, electric vehicles, and defense applications, to name a few. However, REEs are usually present in relatively low quantities in the Earth's crust and are expensive and difficult to recycle. The process is time consuming and large-scale separation requires large volumes of toxic reagents. Due to the health and environmental hazards associated with recovery, the amount of REEs currently recycled from end-of-life materials is very low in the United States (Jowitt et al., 2018). To make matters worse, China accounts for as much as 97% of the total world production of REEs (Foreign Policy Research Institute, https://www.fpri.org/article/2020/10/chinas-monopoly-on-rare-earth-elements-and-why-we-should-care/). The lack of a secure domestic supply chain of REEs is rapidly becoming a national security issue.

Fortunately, the acquisition, transport, sequestration, and elimination of metals is vital in biological systems, with one-third of enzymes using catalytic or structural metal cofactors. The biological importance of lanthanides specifically was demonstrated in 2011 with the discovery of a lanthanide-dependent methanol dehydrogenase (MDH) in methylotrophic bacteria. More recently, a lanthanide binding protein called lanmodulin was
discovered with high selectivity of REEs over other metals, and even exhibited binding selectivity of “light” REEs compared to “heavy” REEs (Cotruvo et al., 2018). Building on these encouraging findings, Allonnia partner Ginkgo Bioworks collaborated with a major consumer electronics manufacturer to perform an initial high-throughput screening of proteins thought to be candidates for REE binding based on structural similarity to lanmodulin or other properties. The screening included 1461 unique proteins and 114 assay plates, testing a total of 10,809 samples. Taking the top performers from initial screening, a second phase led to the discovery of a protein that binds these hard-to-recycle metals five times more efficiently than lanmodulin, the best-performing protein in the scientific literature (Figure 6).

The next step will be to identify proteins with at least 100X greater binding affinity for REEs over other metals commonly in the same process streams, but also with at least a 5X greater affinity for heavy REEs over light REEs.

This project has been selected for exploratory funding by the US Department of Defense’s Strategic Environmental Research and Development Program. The approach will be to perform biophysical characterization of top performing proteins, and to test them under relevant conditions for application, including evaluating thermal properties that might facilitate protein reuse. Template proteins will be identified that can be used for the next phase of development, building new metagenomic libraries for sourcing of even better proteins that can be optimized for a biological solution that transforms the REE supply chain globally, providing circularity and decreasing environmental impact.

Case Study 3 – Degradation of Per- and Polyfluoroalkyl Substances (PFAS)

Per- and polyfluoroalkyl substances (PFAS) are a family of persistent, bioaccumulative, toxic compounds that have captured the attention of the entire global community,
in particular when it became understood that these compounds are present in the bloodstream of most humans on the planet (e.g., https://www.atsdr.cdc.gov/pfas/health-effects/us-population.html). The PFAS family contains thousands of compounds, commonly found in water-resistant coatings in products such as Teflon, Scotchguard, and firefighting foams. In addition to the challenge of the ubiquity of PFAS in the environment, proposed and promulgated regulatory standards for these compounds are diving into the single-digit part per trillion level, and even lower in some cases. PFAS separation systems in water (using granular activated carbon, ion exchange, or foam fractionation) are effective for removing many PFAS from water, but do not eliminate the problem of PFAS waste disposal.

Biodegradation of perfluorinated compounds is especially challenging in that the carbon-fluorine bond is the strongest chemical bond in nature, and perfluorinated molecules have only been present in the environment for the last few decades. Biology has had very little time to develop metabolic pathways to derive energy from breaking these bonds. Bioremediation 3.0 represents an unprecedented opportunity to accelerate nature by discovering natural enzymes that can partially degrade these compounds and optimizing them for complete and efficient degradation.

We are currently exploring both enzymatic and whole cell biodegradation of PFAS. In an initial screening of more than 70 ligninolytic enzymes paired with several different mediators, up to about 30% degradation of perfluorooctanoic acid (PFOA) was observed (Figure 7). While these data are preliminary, they are encouraging.

### Case Study 4 – Biosensors for PFAS

![Figure 4. Tailings ponds at a representative OSPW site in Alberta.](image)

![Figure 5. The percent dilution required to decrease the sample toxicity below the EC50 in the Microtox assay as a function of incubation time. EC50 is the effective concentration at which a 50% reduction in light emission (due to toxicity) was observed after 15 minutes, calculated based on a dose-response curve.](image)
Measuring real-time contaminants in process water is difficult, but increasingly important. Water treatment systems currently rely on sending field samples for expensive laboratory analysis that is both labor- and time-intensive. For contaminants like PFAS, this is especially problematic due to the part-per-trillion discharge limits and the widespread use of media for treatment. This means discharge exceedances, if they occur, will not be known until weeks after samples are collected, and media changeouts are generally performed well before breakthrough to avoid such exceedances, which increases operating costs. Currently, field analysis tools are non-existent for PFAS and many other emerging contaminants.

Allonnia is initially targeting seven PFAS compounds for sensing, including those of greatest regulatory concern, perfluorooctane sulfonic acid (PFOS) and PFOA. Three technical approaches are being pursued in parallel, including whole cell, bioaffinity, and antibody-based methods (Figure 8). For bioaffinity-based biosensors, the maximum number of protein variants that could typically be evaluated by conventional means might be approximately 1,000-10,000. As an example of what is possible in the era of Bioremediation 3.0, Allonnia is able to screen about 10^10 (many trillions) protein constructs in weeks or months with our partner Ginkgo Bioworks and their state-of-the-art high throughput equipment and technology.

The case studies presented here are just the beginning of the challenges that can be overcome during this exciting new era of environmental biotechnology. We are actively engaged or preparing to tackle unmet needs in: recycling and upcycling of plastics, wastewater treatment bioengineering, in-situ or ex-situ bioremediation of 1,4-dioxane, tailings valorization and ore beneficiation in mining, and carbon sequestration to name a few.
Important advancements in each of these areas are expected in the near future. While Bioremediation 3.0 is undeniably in its infancy, these early applications encourage us to continue in our effort to demonstrate the truth of our core philosophy, that Waste is a Failure of Imagination.

References


After the cancellation of the 2020 Annual Meeting slated for San Francisco, it was a delight to hold the 2021 SIMB Annual Meeting in-person in Austin, Texas from August 8 – 11, 2021. All things considered, the Annual Meeting was a great success and was well attended, with 257 attendees.

This year’s meeting featured four excellent Keynote talks. Dr. Nancy Keller kicked off the meeting on Sunday with the postponed 2020 Charles Thom Award Lecture titled “Translating biosynthetic gene clusters into fungal armor and weaponry”. This was followed by Dr. Gregg Beckham talking about “Hybrid catalytic and biological processes for lignin and plastics valorization”. On Monday, we continued our 2018 Memorandum of Understanding with the Korean Society for Microbiology and Biotechnology (KMB), in which we exchange speakers at our respective annual meetings, with KMB President Dr. Kun-Soo Kim presenting a pre-recorded talk titled “A diketopiperazine-mediated signaling pathway in pathogenic Vibrio species: A novel target for anti-pathogenic bacterial agents”. On Tuesday, the 2021 Charles Thom Award winner Dr. Lee Lynd presented “Microbial cellulose utilization: From applications to fundamentals and back again”.

This year’s program contained five topical tracks, with multiple sessions in each area. The Natural Products track featured five sessions, with foci on systems and synthetic biology, new modes of natural product activity, unusual enzymology, peptide natural products, and new sources of natural products. The Metabolic Engineering track also consisted of five sessions, with topics highlighting automation and machine learning, engineering for production of fuels and chemicals, use of alternate feedstocks, and development of tools for non-model organisms. The Environmental track featured two sessions focused
on developing engineered functions in the environment and use of genomic and molecular tools. The Biocatalysis track consisted of five sessions, including topics in biomaterials, strategies for commercialization, advances in first generation ethanol production, extremophiles and electrocatalysis, and cell-free and growth-decoupled production. The Cell Culture and Fermentation track featured three sessions, with topics including scale-up and scale-down, shelf-life stability, and unconventional feedstocks and modes of fermentation. Each session was well received and highlighted excellent science and engineering being performed by members of the Society.

This year’s program also featured three special topics sessions. Two focused on emerging areas of science and engineering, and the other focused on Diversity, Equity, and Inclusion (DEI). The first highlighted cutting-edge research in the area of radical decarbonization, including novel applications of plant cell culture, carbon-negative fermentation processes, and decarbonization of the agricultural sector. A second special session focused on plastics, including the enzymatic deconstruction of existing plastics, the biological upcycling of the breakdown products into monomers for novel and performance-advantaged plastics, and the commercialization of biopolymer production. The DEI session highlighted tools and approaches to minimize bias and increase the diversity of voices within SIMB, a critical area for both SIMB and science in general.

In addition to the excellent oral presentations, a poster session was also held on Monday night, with 51 poster presenters. Posters were presented on topics from all five topical tracks. In particular, it was great to see students and postdocs able to present their work to the scientific community.

We would specifically like to thank our nine sponsors: AB Biotek, Amyris, ARPA-E, Conagen, Frances Templeton Fund, Genomatica, Hiden Analytical, ManusBio, and POET. Their support helped make the meeting possible. We would also like to thank the ten exhibitors that displayed their newest services and equipment for us. Exhibitors included Biolog, Bio-Technical Resources, Global BioIngredients, Inc., Hamilton, INFORS USA, Inscripta, m2P-Labs, Inc., Molecular Devices, Pall, and Procelys.

It was an honor to serve as Program Chair for the 2021 SIMB Annual Meeting. This meeting was especially interesting to organize due to the uncertainty related to travel restrictions and health concerns due to the pandemic. I would especially like to thank the SIMB team, including Chris Lowe and Tina Hockaday, for all their assistance. This meeting could not have happened without their guidance, attention to detail, and patience as we adapted to last-minute scheduling changes and reorganizations. I would also like to thank each of the Program Committee members and Session Chairs, whose flexibility and perseverance were critical to the meeting’s success. I am already looking forward to the 2022 SIMB Annual Meeting being held August 7-10 in San Francisco, and I welcome the new Program Chair, Dr. Mark Blenner from the University of Delaware.
Symposium on Biomaterials, Fuels and Chemicals (SBFC) 2022

Astor Crowne Plaza
New Orleans, LA

May 1–4, 2022
www.simbhq.org/sbfc

Program Chair: Davinia Salvachua, NREL
Program co-chair: Carrie Eckert, ORNL
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Abstract submission now open for invited and contributed talks, posters, student poster presentation, student oral session and DEI submissions

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Kristala Prather, MIT

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» Biofuels, bioproducts and synthetic biology
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Updated Session Topics coming soon
Exhibits prospectus available April 2022
Call for abstracts coming April 2022
Call for 2022 SIMB Award Nominations

Nominations for the following SIMB awards and honors will be presented at the 2022 SBFC in New Orleans and 2022 SIMB Annual Meeting in San Francisco.

Access www.simbhq.org/awards for nomination forms and instructions or contact Raj Boopathy, SIMB Awards and Honors Chair by emailing ramaraj.boopathy@nicholls.edu

**Presented at SBFC:**
- Charles D. Scott Award
- Bioeconomy Leadership Award

**Presented at the SIMB Annual Meeting:**
- Charles Thom Award
- Charles Porter Award
- SIMB Fellowship
- SIMB Early Career Award (formerly the Young Investigator Award)
- Waksman Outstanding Teaching Award
4th International Conference on Discovery and Development in the Genomic Era

Manchester Grand Hyatt
San Diego, CA

January 8–12, 2023
www.simbhq.org/np

A joint conference with Society for Antibiotics Japan (SAJ) and the Korean Society for Microbiology and Biotechnology (KMB)

Explore Southern California’s vibrant culture and natural beauty from the Hyatt waterfront hotel in downtown San Diego. Experience spacious rooms, stunning views, and upscale amenities steps from the city’s top attractions. Guests enjoy easy access to San Diego’s best beaches, restaurants, shops, entertainment venues, and more.

Conference Chair:
Ben Shen, Scripps Institute

Co-chairs:
Yi Tang, UCLA, Alison Narayan, U Michigan, Kaity Ryan, U British Columbia

The Conference will include plenary talks, invited sessions, poster session, two half-day workshops for attendees only as well as plenty of time for networking and exploring San Diego.

More information coming soon!
1. To the 2020-2021 Officers of the Society:

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
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<tbody>
<tr>
<td>President</td>
<td>Steve Decker, PhD, NREL</td>
</tr>
<tr>
<td>Past President</td>
<td>Jan Westpheling, PhD, UGA</td>
</tr>
<tr>
<td>President-elect</td>
<td>Noel Fong, PhD, Nucelis</td>
</tr>
<tr>
<td>Secretary 2021</td>
<td>Elisabeth Elder, PhD, GSU</td>
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<td>Treasurer 2020</td>
<td>Laura Jarboe, PhD, ISU</td>
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<tr>
<td>Directors</td>
<td>Rob Donofrio, PhD, Neogen</td>
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<td>Katy Kao, PhD, SJSU</td>
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<td>Priti Pharkya, PhD, Genomatica</td>
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<tr>
<td></td>
<td>Tiffany Rau, PhD, Rau Biotech</td>
</tr>
<tr>
<td>Executive Director</td>
<td>Christine Lowe, SIMB</td>
</tr>
</tbody>
</table>

2. To the outgoing members of the Board for their dedicated service:

- Past President Jan Westpheling, PhD
- Director Tiffany Rau, PhD

3. To the incoming members of the Board for 2021-2022, beginning August 12, 2021:

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
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</thead>
<tbody>
<tr>
<td>President</td>
<td>Noel Fong, PhD, Nucelis</td>
</tr>
<tr>
<td>President-elect</td>
<td>Nigel Mouncey, JGI</td>
</tr>
<tr>
<td>Director</td>
<td>Ben Shen, Scripps Institute</td>
</tr>
</tbody>
</table>

4. To Ramon Gonzalez, PhD, Editor-in-Chief of the *Journal of Industrial Microbiology and Biotechnology*, for outstanding editorial services during the year.

5. To the Editors: S.T. Bagley, PhD; R.H. Baltz, PhD; T.W. Jeffries, PhD; T.D. Leathers, PhD; M.J. Lopez Lopez, PhD; C.D. Maranas, PhD; S. Park, PhD; J.L. Revuelta, PhD; B. Shen, PhD; D.K. Solaiman, PhD; Y. Tang, PhD; E.J. Vandamme, PhD; X. (Jerry) Yang, PhD; and H. Zhao, PhD.
6. To Nigel Mouncey, PhD, for chairing the Publications Committee and for producing a distinguished international journal of industrial microbiology and biotechnology.

7. To Melanie Mormile PhD, Editor-in-Chief of *SIMB News*, Kristien Mortelmans, PhD, Vanessa Nepomuceno, PhD and Elisabeth Elder, PhD, Associate Editors; and to Ms. Katherine Devins, Production Coordinator, for providing the membership with an attractive and professional publication throughout the year.

8. To Mr. Bob Berger, Exhibits Chair, Placement Chair, and SIMB official photographer, for his efforts throughout the year on behalf of the Society.

9. To the Society’s committee chairs and committee members for their dedicated service to the Society,

10. To Mark Berge and Tim Cooper who organized the virtual Fermentation Basics Workshop.

11. To the 2021 Quarter Century Club inductees:

   » Mervyn Bibb
   » Robert Donofrio
   » Carsten Hjort
   » David Hogsett
   » Doug Wenzel
   » Janet Westpheling

12. To the SIMB Headquarters Office Staff: Ms. Suzi Citrenbaum, Website Manager; Ms. Jennifer Johnson, Director of Member Services; Mr. Al Trapal, Accountant; Ms. Tina Hockaday, Meeting Coordinator; Ms. Katherine Devins, Production Coordinator; Ms. Jen Ruben, Marketing; and Mr. Todd Carlisle, IT and networking, for their devotion and dedicated service to the Society.

Contributions by the above dedicated members of the Society are acknowledged.

SIMB acknowledges the passing of long time member Paul Behrens in 2021.

These Resolutions are respectfully submitted.

Christine Lowe
Executive Director
December 2021
2021 Annual Meeting Resolutions

The 2021 SIMB Annual Meeting was held in person in Austin, Texas. The 2020 SIMB awardees were recognized along with the 2021 SIMB awardees as follows:

2021 SIMB Awardees

Charles Thom Award – Lee Lynd, Dartmouth
Charles Porter Award – Nigel Mouncey, JGI
Waksman Outstanding Teaching Award – Sidney Crow, Georgia State University
SIMB Fellows – Thomas Klasson, USDA
SIMB Young Investigator Award – Marc Chevrette, University of Wisconsin

2020 Awardees

Charles Thom Award – Nancy Keller, University of Wisconsin
Charles Porter Award – Debbie Yaver, Novozymes
Waksman Outstanding Teaching Award – Rajesh Sani, South Dakota School of Mines
SIMB Fellows – Jonathan Mielenz, White Cliffs Biosystems and Krishna Madduri, Corteva

To acknowledge the 2020-2021 annual meeting chair, Adam Guss, the annual meeting program committee, session conveners, invited speakers and poster presenters for developing and executing excellent technical sessions.
SIMB acknowledges the 2021 SIMB Annual Meeting sponsors and exhibitors.

2021 Sponsors:
» ARPA-E
» AB Biotek/AB Mauri
» Amyris
» Conagen
» Frances Templeton Foundation
» Genomatica
» Hiden Analytical
» Manus Bio
» POET

2021 Exhibitors:
» Global BioIngredients
» Hamilton Company
» INFORS USA
» Kuhner Shaker, Inc.
» m2P Labs/Beckman Coulter Life Science
» Mettler Toledo
» Molecular Devices
» Pall Corporation
» Procelys
» Scientific Bioprocessing

These Resolutions are respectfully submitted.

Christine Lowe
Executive Director
September 2020
The SIMB Election for positions on the Board of Directors will commence March 1, 2022. The election will close at noon EDT on March 31, 2022 and members must join/renew by noon EDT, March 30, 2022 to be eligible to vote.

Current members for 2022 will receive login instructions for accessing the voting module.

The first step in the election process is the identification of the Nominations Committee (NC) consisting of the chair and least two members. The committee members are approved by the Board and serve only for the current year and cannot be reappointed within a three-year period. The NC proposes a slate of candidates (usually at least two candidates for each position) with input from the membership. The candidates must be current SIMB members with a demonstrated interest and involvement in SIMB. Upon acceptance of the nomination, the NC informs the candidates of the duties and responsibilities required by each position. In addition to the NC, candidates can be identified via Article 5, Section 4 in the SIMB Constitution using a petition process.

The final slate of candidates is due to the president by the first board meeting during the annual meeting. Candidates must submit a biography and photograph by October 15 for publication in the October-December issue of SIMB News and for posting on the website. After voting ends, the Election Committee, consisting of a minimum of two SIMB members, receives access to the voting module and certifies counts from online voting, as well as any paper ballots previously requested and postmarked no later than the deadline date for electronic voting ballots, and delivers the results to the SIMB President and SIMB Secretary for announcement.

The election process and ballots are available for inspection for at least 30 days following the annual meeting. Ballots and records are destroyed six months after the election (unless otherwise directed by the Board) and final tabulation of the votes is preserved.
Candidate for President-Elect
Michael Resch

“I earned my PhD in biochemistry and molecular biology from Colorado State University working on protein-DNA interactions in chromatin. I began my professional career at the National Renewable Energy Laboratory (NREL) in 2008 working on projects funded by industrial partnerships and the Department of Energy. My research focus now spans from lignocellulosic feedstock processing and conversion, CO2 conversion into fuels and chemicals, low carbon ammonia production and other technologies to enable technologies for a circular carbon economy. At NREL I also contribute to Business Development activities across technologies to engage industrial collaborations from bench to pilot scale.

“I have been a member of SIMB since 2008, a member of American Chemical Society and have served on the Journal of Biological Chemistry Editorial Board since 2012. I have enjoyed contributing to the Symposium on Biotechnology for Fuels and Chemicals and SIMB Annual Meetings as a session convener/chair, an invited speaker, a member of the SIMB Annual Meeting Biocatalysts Program and membership committee and from 2017 to 2020 I served as a member of the SIMB Board of Directors.

“As an SIMB Board Member, we worked to improve the conference experience for sponsors, organizers, and attendees by updating the online registration system and initiating a more user-friendly smart phone program viewer. We also organized the meeting structures for consistency into annual meetings and specialty meetings.

“As President of SIMB, I will be dedicated to keeping SIMB meetings and publications subscribed by high impact academic and industrial science. I would also like to keep the meetings programs fun and flexible to allow meeting organizers to integrate novel scientific topics and encourage young investigators to organize sessions alongside scientific pioneers. As President I will also work to keep the fiscal viability of the society strong. All of this is in the hope to enable an atmosphere where international, academic, industrial and government stakeholders can develop a well-rounded SIMB with diverse viewpoints.”
Candidate for President-Elect
Yi Tang

Yi Tang received his undergraduate degree in Chemical Engineering and Material Science from Penn State University. He received his PhD in Chemical Engineering from California Institute of Technology under the guidance of Prof. David A. Tirrell, where he worked the incorporation of unnatural amino acids into proteins for biomaterials applications. After NIH postdoctoral training in Chemical Biology from Prof. Chaitan Khosla at Stanford University, he started his independent career at University of California Los Angeles in 2004. He is currently the Ralph M. Parsons Foundation Chair in Department of Chemical and Biomolecular Engineering at UCLA, and holds joint appointments in the Department of Chemistry and Biochemistry; and Department of Bioengineering. The Tang research lab aims to mine new bioactive natural products using synthetic biology approaches; to understand the fundamental enzymology of biosynthetic enzymes; and to discover new enzymes for applications in biocatalysis and green chemistry.

His notable awards include the ACS Arthur C. Cope Scholar Award (2012), the EPA Presidential Green Chemistry Challenge Award (2012), NIH DP1 Director Pioneer Award (2012) and the ACS Eli Lilly Award in Biological Chemistry (2014). He has also received both the Young Investigator Award (2010) and the Charles Thom Award from the Society of Industrial Microbiology and Biotechnology (SIMB) (2019).

Yi Tang is actively involved with the programming and publication of SIMB since the start of his independent career. He is currently serving as an associated editor for the Journal of Industrial Microbiology and Biotechnology (JIMB). He was involved in the recruitment and editing of special issues on natural products for JIMB. Tang served as the programming chair of the Natural Products track for the Annual Meeting, and has chaired many sessions throughout his continuing attendance of the meeting. He was a co-organizer of the 2020 SIMB Natural Product Conference held in San Diego and will do so again for the 2023 meeting.

Vision statement:

“As President-Elect and President of SIMB, I will modernize and expand SIMB outreach to the broader scientific and biotechnology community. I will achieve this in three ways: 1) to dramatically expand SIMB membership by reaching out to researchers at the start of their scientific careers. This can be accomplished by incentivizing membership enrollment, increasing online presence and emphasizing SIMB’s relevance to current societal challenges; 2) to elevate the scientific rigor and broader impact of the annual meeting and SIMB conferences, starting with the reorganization, renaming and addition of new tracks and specialty workshops. This can promote cross-track participation that is lacking under the current format; and 3) to work closely with Prof. Gonzalez and other JIMB editors to elevate the quality and impact of the society journal.”
Candidate for Board of Directors
Adam Guss

“I am a Genetic and Metabolic Engineer at Oak Ridge National Laboratory. I earned my PhD at the University of Illinois at Urbana, Champaign in the lab of Bill Metcalf, followed by postdoctoral positions at Harvard University with Colleen Cavanaugh and Dartmouth College with Lee Lynd. I have been at ORNL for 11 years, and my research group focuses on the development of genetic tools for non-model microbes and the application of those tools for metabolic engineering to produce fuels and chemicals from renewable (lignocellulose) or waste (plastics) feedstocks. I am passionate about academic/government/industry collaborations to develop technologies that bring a positive impact to society.

“I have been involved in SIMB conferences for over a decade, including as a speaker, session convener, and as part of the Program Committee for the Biocatalysis track (2015) and the Metabolic Engineering track (2016-2018). In 2020, I was scheduled to be the Program Chair for the SIMB Annual Meeting, which was cancelled due to the pandemic, and I returned the next year to organize the 2021 Annual Meeting in Austin, Texas.

“As a member of the Board of Directors, my goal will first be to help the Society maintain our excellent reputation for promoting applied science and bringing together the industrial microbiology community. Extending this, I would like to see the Society do more to facilitate collaborations and knowledge transfer between academia and industry. I am also an advocate for increasing diversity, equity and inclusion within the Society. A critical component of this will be increasing participation in SIMB by early career researchers, including undergraduates, graduate students, and postdoctoral researchers and facilitating networking and career mentoring, helping to create the next generation of industrial microbiologists. SIMB plays a critical role in industrial microbiology, and I am excited for the opportunity to serve our community.”
Candidate for Board of Directors
Brian Pfleger

Brian Pfleger is the Jay and Cynthia Ihlenfeld Professor of Chemical and Biological Engineering at the University of Wisconsin-Madison with a courtesy appointment in the Microbiology Doctoral Training Program. Brian received his bachelor’s degree in Chemical Engineering from Cornell University and earned his PhD in Chemical Engineering from the University of California-Berkeley. At UW-Madison, Brian teaches two biochemical engineering courses (lecture and lab) and has trained over 150 undergraduate and high-school researchers with the basics of industrial biotechnology. Many of these individuals have gone onto graduate school and/or careers in biotechnology. Brian’s research group uses systems and synthetic biology approaches to develop biocatalysts for production of small molecules, especially oleochemicals. Brian’s group studies common microbes (E. coli and S. cerevisiae) and has helped domesticate non-model microbes (cyanobacteria, P. putida, Y. lipolytica) for use as industrial biocatalysts. Brian’s group has partnered with industrial microbiology companies, including Corteva and LanzaTech, on research projects. His group is a part of the Great Lakes Bioenergy Research Center and the Center for Advanced Bioenergy and Bioproducts Innovation, DOE-funded bioenergy research centers. Brian’s research has been recognized with young investigator awards from the Society of Industrial Microbiology and Biotechnology, 3M, NSF (CAREER), DOE (Early Career), the Air Force Office of Scientific Research (AFOSR-YIP), Biotechnology and Bioengineering (Daniel IC Wang Award), the American Chemical Society BIOT Division (2018 YI Award), and Purdue University (Mellichamp lectureship). Brian also received the Benjamin Smith Reynolds teaching award from the UW-Madison College of Engineering for his efforts to introduce undergraduates to biotechnology.

Brian has been active in SIMB since he was a graduate student. The Society is a personal favorite because of its ability to blend metabolic engineering, natural product, and biocatalysis (Brian’s scientific interests) research all in one place. Brian appreciates meetings organized by SIMB for the high quality of research talks, interactions with younger scientists at poster sessions, and opportunities to network with industry leaders and vendors. Brian has served SIMB as a speaker, poster presenter, poster judge, session chair, and member of the Metabolic Engineering Steering Committee (chaired in 2014). Brian is excited by the chance to provide additional leadership to the society in order to ensure SIMB continues to provide a leading forum for developing careers and disseminating new knowledge in the fields of industrial microbiology and biotechnology.
Candidate for Board of Directors
Andreas Schirmer

Andreas Schirmer is an Industrial Microbiologist. After graduating from the Georg-August University of Göttingen, Germany, he was a post-doctoral fellow at Harvard Medical School before he joined industry. He has worked in the Biotechnology Industry for over 20 years with Kosan Biosciences, LS9, REG Life Sciences and Genomatica, where he currently is a Research Fellow. He has in-depth knowledge of microbial fatty acid, hydrocarbon, polyketide and polyhydroxyalkanoate metabolism, which he has applied extensively to engineer microbes to produce natural products or fatty-acid derived fuels & chemicals. He is an inventor on over 200 patents & patent applications worldwide.

His motivation is to guide innovative science from ideation all the way to commercial readiness.

“After having heard good things about SIMB from my colleagues for several years, I finally attended my first Annual SIMB Meeting in San Francisco in 2010, and it instantly became my favorite conference to go to. Since then, I have been an active member of the society. Between 2011 and 2017 I convened six sessions on fuels & chemicals or on microbiomes, which I enjoyed very much and gave me the opportunity to meet many great people inside and outside of SIMB. From 2016-2019, as a member of the Annual Program Committee for Metabolic Engineering, I helped organize the annual meetings. Around that time, I noticed that corporate sponsorships of the SIMB meetings were lagging, so I volunteered to fundraise and contributed to revitalizing the SIMB Corporate Outreach Committee, becoming its Co-chair from 2017-2020.

I am still part of the Corporate Outreach Committee because I think SIMB needs to be on a strong financial foundation to fulfill its mission and industry has the capacity to help. As a member of the board of directors I intend to continue my outreach work and intend to collaborate with my fellow directors to strengthen SIMB as the preeminent organization for networking & career development in Industrial biotechnology. In addition, I would like to help SIMB become a stronger vehicle and visionary of connecting industry, academia & government labs to solve the many challenges that society face today. If we work together, our field is poised to make major contributions to some of these challenges, for example the transition from a fossil-based to a more sustainable economy, securing food supply for a growing population or developing novel materials. I think SIMB can foster these developments by further improving its meeting platform and by emphasizing on relevant & applied science in microbiology & biotechnology.”
Veterinary Vaccines: Current Innovations and Future Trends
Laurel J. Gershwin and Amelia R. Woolums, editors
2020
ISBN: 978-1-913652-59-3 (paperback) and 978-1-913652-60-9 (ebook)
Caister Academic Press, UK

Veterinary Vaccines was edited by Laurel J. Gershwin (University of California Davis) and Amelia R. Woolums (Mississippi State University). In addition to her editorial duties, Amelia R. Woolum co-authored Chapter 1 with Cypriana Swiderski (also of Mississippi State University). This chapter covers the impacts of advances in next generation sequencing, bioinformatics, and protein modeling on new approaches to vaccinology. It identifies new antigens, the holistic responses of hosts to antigens and adjuvants, and identifies adverse reactions to vaccines. The combination of the new technologies with classical methods has the potential for development and delivery of vaccines that are safer and more effective.

Chapter 2 was written by Philip J. Bergman (Katonah Bedford Veterinary Center and Memorial Sloan-Kettering Cancer Center, both in New York). This chapter points out that a large portion of cancer vaccine research has been based on work with mice which are not necessarily good models for expanding this research to humans. It also points out that molecular biology and veterinary research have the potential to bridge the gap between mouse studies and human studies which will advance the field of vaccinology significantly.

Chapter 3 was written by Paola Elizalde and Philip J. Griebel (both at the University of Saskatchewan). This chapter reminds the reader of the importance of intranasal and oral vaccines in protecting cattle from clinical diseases, reducing the spread of mucosal pathogens, reducing interference of maternal antibodies with vaccines, and providing protection as maternal antibody level decrease in the maturing calves. Mucosal vaccines have proven to be effective in controlling respiratory and enteric viruses as well as opportunistic mucosal infections. They have been shone to work by activating both innate and adaptive mucosal effector cells plus maintaining mucosal integrity and function. Further
research needs to be done to improve vaccine efficiency and delivery systems.

Chapter 4 was written by Sylvia van Drunen Little-van den Hurk and George Mutwiri (both of the University of Saskatchewan). This chapter provides background on the importance of adjuvants in increasing immune responses to vaccines, the mechanisms of action of adjuvants, and the limited options in available adjuvants. It also covers investigations of new adjuvant types, adjuvant interactions with antigens, and the potential for additive effects through combining adjuvants.

Chapter 5 was written by Charles E. Lewis and James A. Roth (both of Iowa State University). Increasing human populations have resulted in increasing animal production in large facilities as well as backyards which have resulted in increased outbreaks of diseases in livestock. This chapter deals with the increased challenges in having vaccines available to control these diseases, characteristics of transboundary animal disease vaccines, the needs for diagnostic assays, problems in getting effective vaccines to market, and potential problems in stockpiling vaccines.

Chapter 6 was written by Heather L. Wilson and Volker Gerdts (both of the University of Saskatchewan). This chapter reviews the potential for neonates to develop effective immune responses, the impact of immunizations given to the mother on the protection of the neonate, plus strategies for vaccines to be used against common neonatal and maternal vaccines.

In addition to her editorial duties, Chapter 7 was written by Laurel J. Gershwin. This chapter covers the potential advantages of mRNA vaccines including rapid manufacture, absence of the need for cell culture and viral propagation, and lower costs. The chapter also covers descriptions of mRNA vaccines for human and zoonotic diseases (from livestock as well as companion animals), mechanisms of action of mRNA vaccines, choices of delivery for mRNA vaccines, and potential applications in oncology and in transplantation medicine.

Each chapter is easy to read, well organized, and extensively referenced. This book will be of interest to advanced graduate students, postdoctoral students, and faculty involved in vaccine production and immunology. It will also be of interest to faculty in veterinary programs and animal breeders.
## Upcoming SIMB Meetings

<table>
<thead>
<tr>
<th>MAY 1–4, 2022</th>
<th>AUG. 7–10, 2022</th>
<th>NOV. 6–9, 2022</th>
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<tbody>
<tr>
<td>Symposium on Biomaterials, Fuels &amp; Chemicals (SBFC)</td>
<td>SIMB Annual Meeting &amp; Exhibition</td>
<td>Recent Advances in Fermentation Technology (RAFT®)</td>
</tr>
<tr>
<td>Astor Crowne Plaza • New Orleans, LA</td>
<td>San Francisco Hyatt Regency • San Francisco, CA</td>
<td>Hyatt Regency Coconut Point • Bonita Springs, FL</td>
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<tr>
<th>JAN. 8–12, 2023</th>
<th>APR. 30–MAY 3, 2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>4th International Conference on National Products Discovery &amp; Development in the Genomics Era</td>
<td>45th Symposium on Biomaterials, Fuels and Chemicals (SBFC)</td>
</tr>
<tr>
<td>Manchester Grand Hyatt • San Diego, CA</td>
<td>Hilton Portland • Portland, OR</td>
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<tr>
<td><a href="http://www.simbhq.org/np">www.simbhq.org/np</a></td>
<td><a href="http://www.simbhq.org/sbfc">www.simbhq.org/sbfc</a></td>
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### Virtual Workshops - First in a Series

**Fermentation process upscaling workshop**
- **Date:** Saturday, February 26, 2022
- **Location:** Virtual
- **Time:** 9:00 a.m. – 1:00 pm EDT
- **Organizer:** Mark Berge, AstraZeneca

The eventual outcome of all developed fermentation processes is the need to scale to larger production vessels. This four hour workshop will delve into the factors that influence fermentation scale-up and provide a basis for the attendees to understand and use those fundamental concepts. The workshop is intended for individuals who have limited experience scaling fermentation processes, but do understand fermentation basics. The workshop can also act as a refresher for individuals who have not scaled fermentation processes recently. The workshop will include a lecture and an example scale-up case study.

**Registration:** [https://www.simbhq.org/education/virtual-workshops/](https://www.simbhq.org/education/virtual-workshops/)

Registration will close on at noon EDT on February 18, 2022.
The latest Corporate Member survey indicated that the SIMB Career Center was a top benefit of SIMB Corporate Membership.

COMPANIES/ORGANIZATIONS

Job posting rates for one, three and ten 30-day online packages provide significant discounts for SIMB corporate members.

Additional fee-based enhancements to job postings can include:

- Job Posting Videos
- Social Recruiting
- “Featured jobs” offering prominent visibility to job seekers

SIGN UP FOR SIMB CORPORATE MEMBERSHIP TODAY!

https://www.simbhq.org/corporate-membership/
or contact: Jennifer Johnson, Director of Member Services, Jennifer.johnson@simbhq.org

INDIVIDUAL MEMBERS

If you are seeking a position, post your resume, apply for jobs and receive job alerts.

Complimentary enhancements:

Career Learning Center includes video and written presentations designed to instruct and entertain.

Additional fee-based enhancements include:

- Career Coaching
- Resume Writing
- Reference Checking

SIMB PLACEMENT COMMITTEE

For assistance with job postings at all SIMB meetings, the Career Workshop held during the SIMB Annual Meeting, navigating the Career Center site, or Resume Review during the year, contact SIMB Placement Chair Elisabeth Elder via email: elisabeth.elder@gsw.edu
<table>
<thead>
<tr>
<th>SIMB Committee</th>
<th>Chair</th>
<th>Email</th>
<th>Term expires</th>
<th>Members</th>
<th>Staff liaison</th>
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<td>Annual Meeting 2022</td>
<td>Mark Blenner</td>
<td><a href="mailto:blenner@udel.edu">blenner@udel.edu</a></td>
<td>2022</td>
<td>See Program Committee</td>
<td>Tina Hockaday, Chris Lowe</td>
</tr>
<tr>
<td>Archives</td>
<td>Debbie Chadick</td>
<td><a href="mailto:dchadick@embarqmail.com">dchadick@embarqmail.com</a></td>
<td>2022</td>
<td>Ann Kulback</td>
<td>Jennifer Johnson</td>
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<tr>
<td>Audit Committee</td>
<td>Jeff Schwartz</td>
<td><a href="mailto:JLSmicro@aol.com">JLSmicro@aol.com</a></td>
<td>2022</td>
<td>Debbie Yaver</td>
<td>Chris Lowe</td>
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<tr>
<td>Awards/Honors</td>
<td>Raj Boopathy</td>
<td><a href="mailto:ramaraj.boopathy@nicholls.edu">ramaraj.boopathy@nicholls.edu</a></td>
<td>2023</td>
<td>Cathy Asleson Dunton, Tom Jeffries, Dale Monceaux, Susan Bagley, Sara Shields-Menard, Mahendra Jain, Thomas Klasson, Stephanie Gleason</td>
<td>Chris Lowe</td>
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<td>Corporate Outreach/Exhibits</td>
<td>Steve Van Dien</td>
<td><a href="mailto:svandien@persephonebiome.com">svandien@persephonebiome.com</a></td>
<td>2023</td>
<td>Bob Berger</td>
<td>Jennifer Johnson, Tina Hockaday</td>
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<td>Corporate Sponsorship</td>
<td>Yoram Barak</td>
<td><a href="mailto:yoram.barak@amat.com">yoram.barak@amat.com</a></td>
<td>2023</td>
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<td>Jennifer Johnson</td>
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<td>Diversity</td>
<td>Sheena Becker</td>
<td><a href="mailto:sheena.becker@corteva.com">sheena.becker@corteva.com</a></td>
<td>2023</td>
<td>Noel Fong, Laura Jarboe, Felipe Sarmiento, Vanessa Nepomuceno</td>
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<tr>
<td>Education and Outreach</td>
<td>Katy Kao</td>
<td><a href="mailto:katy.kao@gmail.com">katy.kao@gmail.com</a></td>
<td>2022</td>
<td>Mark Berge, Steve Van Dien, Noel Fong, Laura Jarboe</td>
<td>Chris Lowe</td>
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<td>Elections</td>
<td>Kristien Mortelmans</td>
<td><a href="mailto:kristien.mortelmans@sri.com">kristien.mortelmans@sri.com</a></td>
<td>2022</td>
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<td>Ethics Committee</td>
<td>Susan Bagley</td>
<td><a href="mailto:sthbagley@mtu.edu">sthbagley@mtu.edu</a></td>
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<td>Scott Baker, Neal Connors</td>
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<td>International Outreach</td>
<td>Susanne Kleff</td>
<td><a href="mailto:kleff@msu.edu">kleff@msu.edu</a></td>
<td>2023</td>
<td>Scott Baker, Tim Davies, George Garrity, Peter Punt, Thomas Klasson, Erick Vandamme, Michael Resch</td>
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<td>Investment Advisory</td>
<td>Dick Baltz</td>
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<td>Meeting Sites</td>
<td>Chris Lowe</td>
<td><a href="mailto:chris.lowe@simbhq.org">chris.lowe@simbhq.org</a></td>
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<td>BOD and meeting chairs</td>
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<tr>
<td>Membership-individual</td>
<td>Michael Resch</td>
<td><a href="mailto:michael.resch@nrel.gov">michael.resch@nrel.gov</a></td>
<td>2022</td>
<td>Laura Jarboe, Thomas Klasson, Steve Van Dien</td>
<td>Jennifer Johnson</td>
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<td>Nominations</td>
<td>Jan Westpheling</td>
<td><a href="mailto:janwest@uga.edu">janwest@uga.edu</a></td>
<td>2022</td>
<td>Richard Baltz, Susan Bagley, Adam Guss</td>
<td>Chris Lowe</td>
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<tr>
<td>Placement</td>
<td>Elisabeth Elder</td>
<td><a href="mailto:elisabeth.elder@gsw.edu">elisabeth.elder@gsw.edu</a></td>
<td>2023</td>
<td></td>
<td>Jennifer Johnson</td>
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<tr>
<td>Planning</td>
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<td><a href="mailto:njmouncey@gmail.com">njmouncey@gmail.com</a></td>
<td>2022</td>
<td></td>
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<td>Publications</td>
<td>Nigel Mouncey</td>
<td><a href="mailto:njmouncey@gmail.com">njmouncey@gmail.com</a></td>
<td>2022</td>
<td>George Garrity</td>
<td>Chris Lowe</td>
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<tr>
<td>JIMB</td>
<td>Ramon Gonzalez</td>
<td><a href="mailto:ramon.gonzalez@usf.edu">ramon.gonzalez@usf.edu</a></td>
<td>2025</td>
<td>JIMB Editors</td>
<td></td>
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<tr>
<td>SIMB News</td>
<td>Melanie Mormile</td>
<td><a href="mailto:mmormile@mst.edu">mmormile@mst.edu</a></td>
<td>2023</td>
<td>Kristine Mortelmans, Vanessa Nepomuceno, Elisabeth Elder</td>
<td>Katherine Devins</td>
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### Presidential Ad Hoc Committees

**Membership benefits (incl. career outreach)**  
- Noel Fong  
  - nfong@nucelis.com  
  - 2022  
  - Hal Alper, John Trawick, Jennifer Headman, Sheena Becker, Katy Kao, Mark Berge, Laura Jarboe

### Special Conferences

| SBFC 2022 Chair                      | Davinia Salvachua              | davinia.salvachua@nrel.gov           | 2022         |                                                                         |               |
| Co-chair                             | Carrie Eckert                  | carrie.eckert@nrel.gov               |              |                                                                         |               |
| Past chair                           | Scott Baker                    | scott.baker@pnnl.gov                 | 2022         |                                                                         |               |
| RAFT® 2022 Chairs                    | Mark Berge                     | mark.berge@astrazeneca.com           | 2022         |                                                                         |               |
|                                      | Kat Allikian                   | kat@nourishing.io                    | 2022         |                                                                         |               |
| Natural Products 2023 Chair          | Ben Shen                       | shenb@scripps.edu                    | 2023         |                                                                         |               |
| Co-chair                             | Alison Narayan                 | arhardin@umich.edu                   | 2023         |                                                                         |               |
| Co-chair                             | Kaitly Ryan                    | ksryan@chem.ubc.ca                   | 2023         |                                                                         |               |
| Co-chair                             | Yi Tang                        | yitang@g.ucla.edu                    | 2023         |                                                                         |               |
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**Member Benefits:**
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- □ Direct Mail
- □ SIMB News
- □ Social Media
- □ SIMB Local Section
- □ SIMB Member
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- □ SIMB Website
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- □ Antibiotics/Secondary Metabolites/Natural Products/Pharmaceuticals
- □ Microbiome Research/Metagenomic
- □ Microbial Control/Biocides and Disinfectants/Clinical & Medical Microbiology
- □ Environmental Microbiology/Bioremediation
- □ Food Microbiology and Safety
- □ Brewing, Winemaking, and Fermented Foods
- □ Systems Biology, Omics, Computational Biology, and Bioinformatics
- □ Process Development & Biochemical Engineering
- □ Agriculture/Plant Biology
- □ Marine, Aquatic Biology & Algae
- □ Mycology/Fungal Biotechnology
- □ Analytical Chemistry, QA/QC
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