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Interviews with the Experts

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Letter from the Editor-in-Chief

Dear SIMB Community,

As 2025 draws to a close, our field stands at a remarkable inflection point. This year brought sweeping national action that placed biotechnology, microbiology, and data driven science at the center of US strategy. The White House's new national policy framework for artificial intelligence, combined with the historic biotechnology provisions in the FY2026 National Defense Authorization Act, signals a profound shift: biotechnology is no longer a supporting discipline—it is a strategic capability essential to national resilience, economic competitiveness, and global leadership.

For the first time, the National Defense Authorization Act includes multiple dedicated subtitles on biotechnology. These provisions elevate biotech leadership within the Department of Defense (DOD), establish a DOD-wide biotechnology strategy, strengthen biological data infrastructure, and launch new programs to accelerate the transition from laboratory innovation to real world deployment. They also reinforce protections for US genomic data and emphasize the importance of ethical, responsible biotechnology. This level of federal attention reflects what many of us in the SIMB community have long understood: microbial science and biomanufacturing are foundational to the nation's future.

Against this backdrop, the work of SIMB members has never been more relevant. Our scientists, students, educators, entrepreneurs, and industry leaders are advancing the microbial innovations that underpin these national priorities. *SIMB News* remains committed to elevating those voices and showcasing the ideas shaping the next era of biotechnology.

In this issue, we are proud to feature a special article by SIMB President Dr. Rob Donofrio, who explores the rapidly evolving intersection of artificial intelligence and spectroscopy. Spectroscopy has been a cornerstone of microbial science for more than a century, offering a window into the chemical and metabolic dynamics of living systems. Yet the traditional bottleneck has always been interpretation—rapid data generation paired with slow, manual analysis. Rob highlights how AI powered spectral intelligence is transforming this paradigm. Machine learning models can now detect subtle spectral signatures that classical chemometrics often miss, enabling real time, nondestructive monitoring of cells, metabolites, and media chemistry. These tools can identify early signs of contamination, process drift, or suboptimal growth long before they affect yield or quality. This shift toward instantaneous biological insight represents a new era for microbiology and bioprocessing—one where data and decision-making move at the speed of biology itself.

We also bring you conversations with leaders shaping the future of biotechnology and national preparedness. Ms. Arlene Joyner of US Department of Health and Human Services (HHS) and Administration for Strategic Preparedness and Response (ASPR) reflects on strengthening the public health industrial base and emphasizes that every innovation in microbial science contributes to national resilience. Dr. Michael Koeris, Director of Defense Advanced Research Projects Agency's (DARPA) Biological Technologies Office, offers candid guidance for students and early career scientists pursuing entrepreneurial paths, reminding them that meaningful innovation must deliver real value and that mentorship is a lifelong discipline. Dr. Sarah Corley of MITRE shares insights from national initiatives such as the All of Us Research Program and the Million Veterans Program, highlighting opportunities for SIMB members to contribute to the future of personalized medicine. And Dr. Mohammed Quadri of Hackensack

Meridian Health provides guidance for premed students and faculty navigating a rapidly evolving healthcare landscape—one where medicine is increasingly interdisciplinary and innovation driven.

Looking ahead to 2026, *SIMB News* will continue in its digital format, with the possibility of reintroducing a print edition in the future. Our editorial priorities include expanding interview driven articles, highlighting interdisciplinary research, and showcasing emerging technologies relevant to microbiology and biotechnology. We are exploring new digital features—such as integrated video links and interactive content—to make the newsletter more dynamic and accessible. We are also launching a new outreach section designed to support students, postdocs, and early career scientists with information on internships, job opportunities, networking events, and insights from industry professionals. Additionally, we plan to feature more articles on international collaborations, strengthening engagement with SIMB's global community.

Our vision for 2026 is simple: broaden participation, elevate diverse voices, and strengthen SIMB's role as a hub for scientific exchange, mentorship, and community engagement.

On behalf of our associate editors—Dr. Elisabeth Elder, Dr. Kristien Mortelmans, and Dr. Stephanie Gleason—and our Executive Director, Ms. Haley Cox, I wish you and your families a joyful holiday season and a bright start to the new year. We are deeply grateful for your support and for the passion you bring to advancing microbial science and biotechnology.

We always welcome your suggestions, ideas, and contributions. Please feel free to reach out to us—we truly value hearing from our members and look forward to shaping the future of *SIMB News* together.

Warm regards,

Kris Rath

Editor-in-Chief, *SIMB News*

SIMB Board of Directors Annual Meeting July 30, 2025 San Francisco, CA

Previously in *SIMB News*' history, summaries of the discussions at the SIMB Board of Directors meetings would be published by the President-elect for reference by SIMB members. For this and future issues, the current SIMB Board of Directors would like to return to this practice.

The SIMB Board of Directors (BOD) holds two meetings in association with the Society's Annual Meeting each summer. The following is a list of the topics discussed during the meeting that was the first one to include the newly elected members.

The BOD members in attendance were Rob Donofrio, President; Betty Elder, President-elect; Ramon Gonzalez, Past President; Katy Kao, Treasurer; Mark Blenner, Secretary; Jennifer Headman, Aindrila Mukopadahay, and Carrie Eckert, Directors: Kevin Solomon, Director in virtual attendance; and Haley Cox, Executive Director. The usual sequence used to start the meeting included:

- Call to order,
- Agenda confirmation,
- Reminding participants of the Code of Conduct, and
- Reviewing the motions and action items from the previous BOD meeting.

The basic items discussed included:

- The need for academic, industry, and national lab representatives on each program committee,
- The need to cycle in and progress on selecting new chairs for several standing committees,
- The addition of a Revenue Development Committee, an ad hoc committee to increase the financial stability of SIMB, with Neal Connors as chair,
- The possibility of a golf tournament, as a fund raiser, during RAFT®16 or 2026 Annual Meeting,
- The possibility of a virtual fundraiser for SIMB as a fun run/walk either in honor of the 75th Anniversary or for a specific cause,
- The possibility of offering existing in-person workshops virtually in addition to in-person to reach more people and generate additional revenues,
- Possible interactions between SIMB and international organizations to support SIMB conference attendees who would otherwise be unable to attend,

- The scheduling of BOD meetings for the new Board,
- The scheduling of BOD check-in calls for the new Board,
- Structuring the BOD meeting agenda to concentrate attendance of non-BOD members at BOD meetings to a specific section of the meeting to continue allowing non-BOD members to participate in the meeting while better enabling the Board to engage in high-level strategy discussions,
- Distribution of RFPs for contractors involved in meeting development,
- Acceptance of the report submitted by the Awards and Honors Committee approving the 2025 Perlman Award Winner,
- Annual Meeting program scheduling was discussed and,
- The possibility of separating the Education and Outreach Committee back into two sections to increase efficiency and better enable SIMB's outreach and partnerships with international organizations.

Betty Elder

SIMB President-elect

Newsworthy

by ***Rob Donofrio***

How AI is Reinventing a Century-Old Tool — and Changing Microbiology from the Inside Out: Spectral intelligence will transform the pace of innovation across research and industry

The momentum behind AI-powered spectroscopy and real-time data analytics has never been stronger, a trend that was unmistakable at the recent SIMB RAFT® conference. Multiple sessions showcased how machine learning, continuous monitoring, and advanced data-mining workflows are reshaping fermentation science — accelerating strain optimization, improving process stability, and reducing time to insight. This surge of innovation comes at a pivotal moment for the field.

As we look ahead to the 2026 SIMB Annual Meeting, themed "The Future of Industrial Microbiology," it's clear that AI-enabled tools will play a defining role in that future. To reflect this trajectory, the meeting will feature a dedicated special session on AI technologies for biological processes, highlighting the growing expectation that computational intelligence will become foundational to how we design, monitor, and control bioprocessing systems. This article explores how spectroscopy — a century-old cornerstone of microbiology — is being reinvented by AI to meet those emerging demands.

Spectroscopy has been a key part of scientists' toolkit for more than a century, allowing scientists to capture the chemical stories quietly unfolding inside living systems. Yet the technique has always carried a bit of irony. It can generate raw data in minutes or even seconds but turning that into clear, actionable insights often demands time-intensive analyses.

Now, advances in AI and machine learning are closing that gap and reinventing spectroscopy for a new era — one where information and insights happen simultaneously, giving scientists a clearer view of what's happening in real time. Instead of relying on manual sampling or single-point readouts, AI-powered spectral intelligence allows for real-time, non-destructive monitoring of cells, metabolites, and media chemistry. It can extract subtle spectral signatures that human eyes and classical chemometrics miss. And it can catch early signs of process drift, contamination, or suboptimal growth before they impact titer or yield.

For microbiologists, it marks the transformation of a familiar tool into something more powerful than once thought possible. It provides a way to accelerate innovation at a once unthinkable pace. And it's opening the door to discoveries once out of reach with traditional methods.

A Real-Time Window

The power of the technology lies in its ability to surface what often ends up buried in data. AI models can filter out background noise and pick up faint biochemical shifts that traditional methods might miss, such as early signs of metabolic change or emerging stress responses. Spectral intelligence surfaces these clues in real time, allowing for system adjustments and optimization of growth parameters to ensure greater yields and product consistency.

At its core, this technology converts subtle spectral fingerprints into meaningful data about how cells are behaving, giving researchers a continuous, full-picture view of the biological processes at work rather than a single, momentary snapshot. That means a trained model can provide deeper insights into phenotype shifts, contamination signals, metabolic states, and product quality markers — all in real time.

It's a major shift from the way microbiologists historically work. Classical fermentation microbiology relies heavily on measurements such as dissolved oxygen, pH, or cell density. Inline probes and monitoring tools exist for these, but the data may be limiting and not fully diagnose the complex metabolic dynamics of the system. Traditional spectroscopy delivers a flood of raw data but interpreting that data takes time. Through the coupling of spectral AI to continuous monitoring, scientists can track those dynamics as they happen.

Companies, like Hyperspectral, are developing solutions to combine continuous monitoring with spectral AI to help overcome long-standing limitations in bioprocessing, including manual sampling, slow quality control cycles, batch-to-batch variability, and limited visibility into complex co-cultures.

All of these can be mitigated by real-time spectral fingerprints and AI-based pattern recognition. That means faster decisions, earlier interventions, and far fewer surprises. It replaces the stop and start rhythm of manual sampling with something closer to a live feed of the biology itself.

This shift turns fermentation from a process checked at intervals to a process monitored end-to-end, and the resulting impact on yield and reproducibility is significant. With real-time insight, researchers can maintain more consistent conditions across runs, helping reduce batch failures, shorten development timelines, and strengthen the ability to scale up. Whether the system holds 200 mL or 200,000 L, the same spectral fingerprints can guide optimization across volumes and locations. Taken together, these capabilities represent a meaningful evolution in bioprocessing — one that delivers a

continuous, data rich view of fermentation, and expands what is possible at every stage of production.

A Faster Path Through Contamination Control

Even with better visibility into the fermentation process, one major challenge still looms over bioprocessing: contamination.

Current approaches to contamination control in bioprocessing remain slow, episodic, and largely reactive—whether the goal is detecting an emerging contaminant within an active fermentation or verifying that equipment is truly clean after a run. Inside the system, operators still rely on infrequent manual sampling, culture-based assays that take 24–72 hours, and indirect signals such as unexpected pH or DO drift, all of which reveal contamination only after it has already altered metabolism or impacted yield. Macro-level in-line probes are commonly used for sensing changes in CO_2 evolution rate, O_2 uptake rate, redox potential, and turbidity/OD, as well as metabolic drift indicators such as lactic acid, acetate, and ethanol accumulation, or shifts in glucose, ammonium, and amino acid levels. High-performance liquid chromatography (HPLC) is also routinely used as an analytical and modeling tool, enabling teams to quantify these metabolites, characterize their temporal trajectories, and model the underlying metabolic state of the culture. Due to the sampling and processing workflow, HPLC remains time-delayed, providing insight after a sample is collected rather than supporting real-time decision making. Macro-level in-line probes are commonly used for sensing changes in CO2 evolution rate, O2 uptake rate, Redox potential, turbidity/OD as well as for metabolic drift indicators, such as lactic acid, acetate and ethanol accumulation, or shifts in glucose, ammonium and amino acid levels.

These indicators indirectly detect the microbiological contaminant and may only be detectable at later stage growth after the contamination has already altered the system. Post-run sanitation monitoring suffers similar delays: ATP swabs, qPCR, and culture-based surface testing provide point-in-time, species-limited snapshots that may take minutes to days to confirm that tanks, lines, and transfer systems are free of residual microbes, biofilms, or organic material. Spectral AI fundamentally shifts this paradigm by providing continuous, non-destructive chemical fingerprinting throughout the entire lifecycle of the process. In fermentation, AI-driven spectral models detect subtle metabolic shifts, stress signatures, and low-abundance organisms hours or days before traditional assays would register a problem.

After a run, spectral imaging of surfaces, swabs, or rinse solutions can instantly identify microbial residues, organic load, and cleaning agent remnants with far greater sensitivity

than ATP or plate counts. The result is real-time insight that compresses the detection window from hours or days to seconds, enabling operators to intervene early, tighten sanitary controls, reduce batch failures, and move with far greater confidence between production cycles.

Whether in academic or industrial labs, it's blind spots like this that spectral intelligence can fill. When teams in academic settings are working on enzyme engineering, strain development, metabolic pathway studies or phenotyping, even small delays in understanding how cells shift their metabolism or respond to stress can set experiments back. In industrial environments, the stakes are different, but the gaps are just as costly. Process control depends on knowing not only whether a system is drifting but why. Quality control cycles hinge on confirming stability fast enough to keep production moving. Regulatory documentation requires consistent, traceable records of system behavior across entire runs.

Despite their different missions, both academic and industry labs gravitate toward the same core strengths of spectral intelligence: speed, sensitivity, and a clearer view of how biological systems change over time. Academic teams rely on it to accelerate discovery by revealing metabolic shifts and stress responses as they happen. Industry teams turn to it to strengthen reliability, tighten process control, and reduce risk. In both settings, spectral intelligence replaces slow, point in time measurements with a deeper, continuous picture — one that gives scientists a level of clarity that was once out of reach.

Sifting Through the Data

Unleashing the advantages of spectral intelligence, however, means first addressing a series of hurdles, starting with the data itself. Many labs have decades of information scattered across paper notebooks, spreadsheets, and legacy Laboratory Information Management Systems, often with inconsistent naming conventions or missing metadata. These gaps make it difficult to train reliable models, because AI needs organized, high integrity datasets. That means organizations that want to turn to spectral intelligence must first bring historical data into a more uniform format and then build the groundwork for continuous, high quality data capture moving forward.

A second challenge is workforce readiness. AI-powered tools ask microbiologists to think differently about how they design experiments and interpret signals. The field is already shifting toward hybrid roles that blend microbiology with bioinformatics and engineering. That evolution is necessary. Spectral intelligence produces far richer datasets than traditional methods, and teams need the expertise to understand how

those datasets guide decisions. Training programs and upskilling efforts will all play a role in preparing scientists for this next phase.

Regulatory expectations will also shape how quickly these tools can be adopted. Any method powered by AI must meet standards for validation, traceability, and secure data handling. Regulators will expect clear documentation of how models are trained, how inputs are managed, and how outputs are used to inform decisions. They will also look for strong cybersecurity practices, especially as more processes move toward automated decision making. Early engagement with regulatory agencies and transparent model design will help smooth this transition.

Despite these challenges, the path forward is clear. Centralizing data practices, investing in workforce development, and aligning early with regulatory bodies will give microbiologists and bioprocessing teams the foundation they need. These steps will not slow innovation — they will accelerate it by making sure the infrastructure around spectral intelligence is strong enough to support its impact. The labs that take these steps now will be the ones best positioned to lead as the field evolves.

Preparing For an AI-Driven Future

As spectral intelligence becomes more widely adopted, automation will play a larger role, not only in how samples are measured but in how systems respond to those measurements. Continuous monitoring, combined with AI-driven analytics, will allow reactors to adjust conditions on their own, shifting from reactive troubleshooting to proactive, self-correcting workflows. These autonomous systems will help stabilize production, reduce human error, and improve consistency across batches and sites.

Faster experiment cycles will also define the labs of tomorrow. Real-time insight will allow teams to iterate rapidly, testing new strains, nutrient mixes, or process conditions without waiting for overnight cultures or time-consuming assays. Modeling tools will simulate potential outcomes before experiments begin, and live data feeds will refine those models as processes unfold. This closed loop of modeling, sensing, and learning will shorten discovery timelines and expand the number of ideas scientists can test in a given week.

Overall, these shifts point to a future where microbiology is more connected, more automated, and more dynamic than ever before. Spectral intelligence sits at the center of that evolution, enabling systems that learn continuously, adjust instantly, and provide researchers with a level of understanding that once seemed out of reach. As the field

embraces these tools, the pace of innovation will quicken — and the laboratories built around them will look different from the ones we know today.

The Next Chapter for Microbiology

Still, the rise of spectral intelligence does not replace traditional microbiology — it extends it. The core practices that have guided the field for more than a century still matter, from understanding growth dynamics to interpreting how cells respond to their environment. What changes now is the speed and depth at which those insights arrive. Spectral intelligence takes a tool microbiologists have trusted for generations and lifts the limits that once held it back.

Beyond the lab, these advances carry broader societal benefits. Spectral intelligence supports more efficient biomanufacturing, faster development of sustainable bioproducts, reduced contamination and waste, and more reliable food, pharma, and environmental microbiology systems. It can also accelerate breakthroughs in drug discovery and biofuel development, strengthening the industries people depend on every day.

Microbiologists remain central to this evolution. AI can surface patterns, highlight anomalies, and trace the chemical signatures of change, but it cannot decide which questions matter or how those signals translate into action. The expertise required to interpret biology, design experiments, and evaluate what the data means for a system still rests with the scientists themselves. Spectral intelligence simply gives them a clearer, faster, more continuous view of the biology they already know how to navigate.

In many ways, the transformation of spectroscopy reflects the broader trajectory of the field — a blend of long-standing knowledge and new computational power. A 100-year-old technique is now capable of revealing what once went unseen, and that shift opens the door to discoveries that will shape the next generation of microbial science. By pairing tradition with technology, spectral intelligence offers microbiologists not just a better tool but a new lens to examine the living systems at the heart of their work.

Rob Donofrio is President of the Society for Industrial Microbiology and Biotechnology (SIMB) and Chief Life Science Officer at HyperSpectral, the world's first AI-powered spectral intelligence company.

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Newsworthy

by ***Max Barnhart***

Back to bioprospecting: How new techniques are helping researchers find druglike compounds all around us

In March 2025, the journal *Nature* published the discoveries of two paradigm-breaking antimicrobial compounds in as many weeks: a polyene macrolide antifungal called mandimycin and a lasso peptide antibiotic called lariocidin.

Both these compounds, which use never-before-seen antimicrobial mechanisms, were found using techniques that let researchers look deep into the chemical diversity of microbes—much deeper than a typical antibiotic or antifungal screen might go. And it's not just these two molecules. Scientists are using the new approaches to discover countless other antimicrobial compounds with the potential to become drugs.

Gerry Wright, a biochemist at McMaster University who led the research group that discovered lariocidin, likens the hunt for antimicrobials to the gold mining operations in his native Ontario, Canada. "In the old days, you'd look for a gold vein and you'd blast out that slag to get as much gold as you could," he says. "Now, coming back with different tools, you can remine that slag and get more gold or maybe other precious metals."

The first gold rush

The first bioprospecting operations took place nearly 100 years ago. The antibiotic penicillin was famously discovered in 1928 by Alexander Fleming, who isolated the compound from a fungus that was contaminating his bacterial cultures.

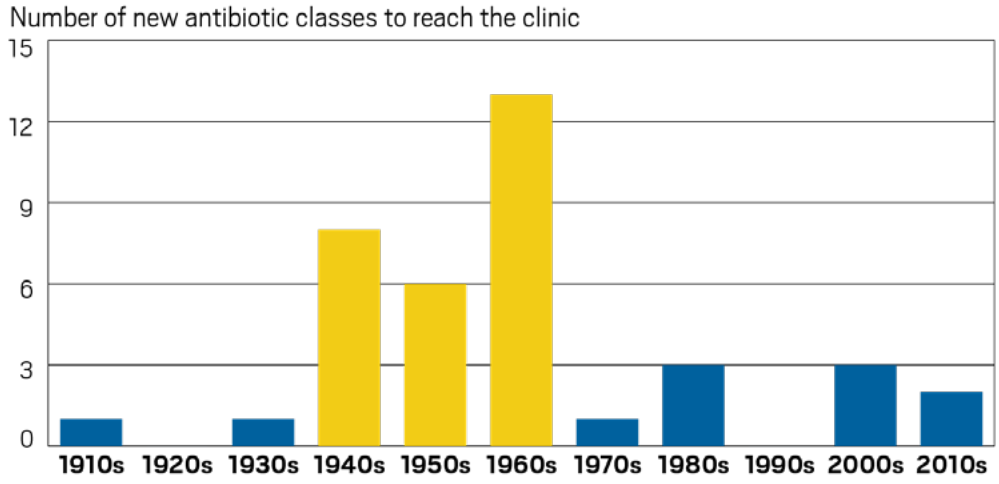
That marked the start of the first "golden age of natural product antibiotic discovery," according to a frequently cited review paper (Curr. Opin. Microbiol. 2019, DOI: 10.1016/j.mib.2019.10.008). The claim of a golden age is often repeated in other scientific papers, most of which describe the peak of that period as lasting from the 1940s to the 1960s.

Researchers working during that time discovered and developed natural product–derived antimicrobial classes such as tetracyclines, cephalosporins, macrolides, and aminoglycosides. Most of these antimicrobials were found via whole-cell screens in which assortments of microbes—often found in soil samples—were grown alongside pathogens in a laboratory culture. Those cultures were then screened to see if the microbes inhibited growth of the pathogens.

This was a highly effective strategy for finding new antimicrobials, because for hundreds of millions of years microbes have been at war with each other in competition for

The golden age of antibiotic discovery

The 1940s, 1950s, and 1960s significantly outperformed all other decades in new classes of antibiotics reaching the clinic. And of those three decades, the 1960s had the most classes by far.



Source: *Curr. Opin. Microbiol.* 2019, DOI: 10.1016/j.mib.2019.10.008.
Note: Some of the listed antibiotics are individual drugs, not classes, because they are typically not identified as a class.

resources. In that competition, one microbe evolves to manufacture a compound that inhibits the growth of another. And as that process repeats itself over time, microbes create a diverse assortment of drug-like compounds.

After the initial discovery of antimicrobials from whole-cell screens, medicinal chemists created many clinically relevant derivatives of those compounds. Today, most antimicrobials are natural products or are synthesized compounds based on natural products (Med. Res. Rev. 2009, DOI: 10.1002/med.20154).

The rate of antimicrobial discovery started to decline in the 1970s. Whole-cell screens often revealed only previously discovered compounds. Meanwhile, antimicrobial-resistant pathogen strains rendered some earlier drugs obsolete.

The last class of natural product–derived antibiotics to make it to the clinic were the lipopeptides. Daptomycin, a cyclic lipopeptide, was discovered in 1987 and didn't enter the clinic until 2003.

But in the past decade or so, new techniques have enabled a resurgence of antimicrobial discovery. These discoveries include molecules that use novel ways to target bacteria. In 2020, Wright found a compound that fights bacteria by caging them; he struck gold again with lariocidin earlier this year.

Mining for antimicrobial gold

If whole-cell screens were the crude, antiquated way to find natural products—akin to the early days of gold mining—low-cost, high-throughput genomic techniques are the new tools. While 10 years ago it cost $5,000–$10,000 to sequence a bacterium's whole genome, Wright says that now "we could do it for 100 bucks, and it comes back a really good quality." And genome mining, as the process of searching is often called, makes it clear there's a lot left to be discovered.

To identify drug-like compounds produced by bacteria, scientists take advantage of the fact that bacterial genomes are relatively small and that genes with related functions tend to be clustered close to one another on the genome.

Kai Blin is a computational biologist at the Technical University of Denmark working on antiSMASH (antibiotics and secondary metabolite analysis shell), a genome-mining software that helps researchers identify the secondary metabolite gene clusters that could lead to the discovery of useful natural products. It's one of many platforms available that assist scientists looking for potential antimicrobials. Blin says discoveries made to date are just the "tip of the iceberg" when it comes to the chemical diversity of microbes.

antiSMASH looks for clusters of genes that code machinery that makes secondary metabolites. It's these secondary metabolites that the bacteria use to interact with the world around them, and studying the biosynthetic pathways that make the metabolites can reveal a variety of compounds with potentially useful activity.

Blin cites tetracycline biosynthesis as an example. "We know precisely how every step in the tetracycline biosynthesis works. But the fun thing about this is that we also can find everything else that is produced by the same general biosynthesis pathway as tetracycline, and that opens up a big chemical space of completely different structures," he says.

Searching through that complicated mix of compounds, natural product drug hunters are seeking flashes of antimicrobial gold.

Another way of discovering compounds from warring microbes is by looking for the genes that confer resistance on them. "The organisms that make antibiotics have to protect themselves from the antibiotics," Wright says. "And so, very often within their biosynthetic gene clusters are hints about what that self-resistance mechanism might be."

Traditional whole-cell screens for antimicrobials still have their place, Wright says. But that often means going beyond the obvious. His group found lariocidin in bacteria that also produce colistin—an antibiotic discovered in the 1940s. The scientists came across colistin first, and that could have been reason enough to start looking elsewhere.

But now scientists can separate the compounds being produced by a microbe via liquid chromatography or other means and test them individually for drug-like activity. That's how Wright's group was able to find lariocidin and distinguish its unique antibiotic properties.

Digging deeper

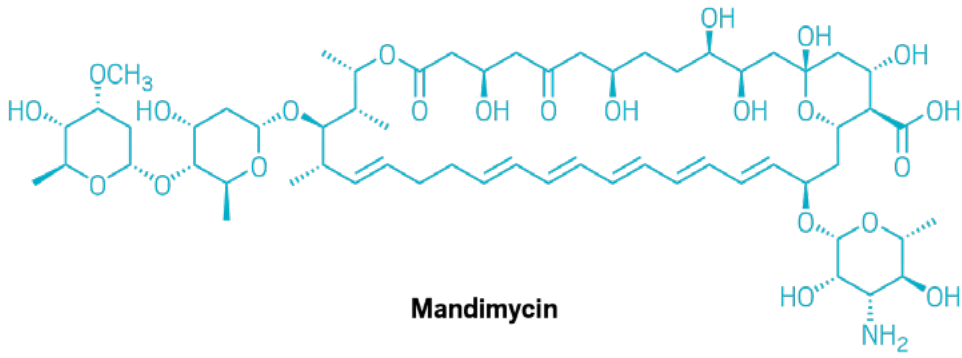
Artificial intelligence is also being used to make new discoveries in the antimicrobial world. Nikolay Tzvetkov, a biochemist at the Institute of Molecular Biology at the Bulgarian Academy of Sciences, says that "the number of molecules predicted by artificial intelligence is greater than the number of stars in the Milky Way." And that could be a conservative estimate.

James J. Collins, a synthetic biologist at the Massachusetts Institute of Technology, has been working on developing AI tools to computationally predict new compounds that have antibiotic activity. His lab "trained a deep graphical neural network" on thousands of compounds that were screened for antibiotic activity, Collins says. When fed a novel compound, the team's AI can look "bond by bond, substructure by substructure" and determine whether that compound will have antimicrobial properties, he adds.

That's how the researchers in Collins's group found that a compound originally developed for the treatment of diabetes has antibacterial potential. They dubbed the compound halicin after the computer in 2001: A Space Odyssey (Cell 2020, DOI: 10.1016/j.cell.2020.01.021).

Collins's model, published in 2020, was trained on only 2,500 compounds, but 5 years later his training dataset has expanded to include 39,000. He hopes to develop this model to make predictions about the other properties of these compounds, including toxicity and bioavailability.

But Blin says AI technologies still have some maturing to do before they exceed the capabilities of human-derived models. Until more training data can be developed, "Rule-based tools still have a leg up," he says. "The question is not, How do we build the next AlphaFold?" he says, referring to Google DeepMind's protein structure prediction program. "The question is, How do we build the next PDB [protein database] that we can



Mandimycin

An increasing number of pathogens are becoming resistant to antimicrobials. That's why it's so important to look for new compounds, like this polyene macrolide antifungal discovered in bacteria using advanced genomic tools.

then use to train the next AlphaFold?"

Designing a microbial drug factory

Finding a compound of interest is a great start, but producing enough of that compound for testing and optimizing it further remains a challenge. And that's where synthetic biology can shine.

Though Fleming isolated penicillin in 1928, it was another 16 years before Pfizer chemists would figure out how to ferment fungi in large tanks. Today, fermentation facilities are producing massive amounts of drugs relied on around the world. But even the most advanced sites have a hard time persuading stubborn bacteria to make more of a compound that they typically produce only in small quantities.

That's why Wright calls the use of synthetic biology "transformative" when it comes to manufacturing natural products for laboratory testing. "The wild organism rarely tends to do what you want it to do in a lab," he says.

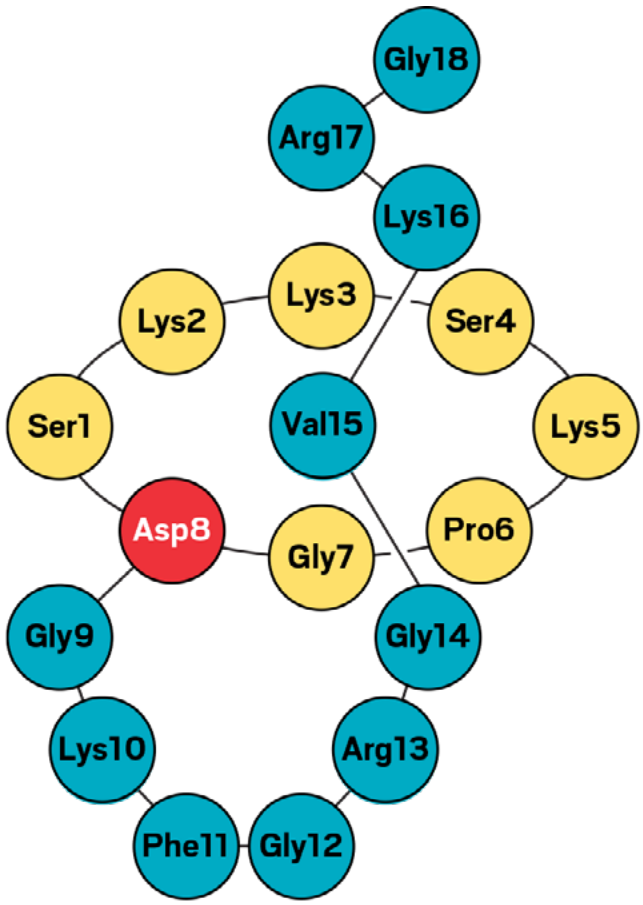
Researchers will often grab the whole biosynthetic pathway for a specific compound and put it into another organism specifically designed to produce that compound at high concentrations. That move makes studying some of these compounds possible.

But Eriko Takano, a microbial synthetic biologist at the Agency for Science, Technology, and Research, says that process is not so simple.

Taking a biosynthetic gene cluster—such as one found using antiSMASH—and putting it into another organism is just the start of the synthetic biology process. From

there, researchers like Takano work to tweak the pathway with different enzymes, either to make production more efficient or to try out modifications of the original molecule. "We can modify our core structure so that it has different characteristics—maybe it's more active or has less toxicity or more solubility, she says. "There's so much that one can do with synthetic biology."

AI can also lend a hand here. Let's say Takano wants to add a carboxyl group to a molecule. Previously, she would have a student dig through the literature and test dozens of carboxylases to find one with the right kind of activity. But now, AI tools can dig through that same literature and make enzyme predictions; liquid-handling robots then perform the routine wet-lab work to make and test the options identified. This automation helps reduce the hours needed for raw experimentation.



Bacteria can produce lots of antimicrobial compounds. But looking for new compounds with unique modes of action, like Lariocidin, means looking beyond the obvious.

Getting an antibiotic approved isn't easy

While the types of tools able to find new compounds that might have drug-like activity have expanded greatly, validating that those molecules do something interesting is still a major bottleneck. Getting them approved for clinical use is another challenge.

For Wright, Collins, Takano, and many other academic scientists in the drug discovery space, their role tapers off after validation. Generating safety profiles, putting a drug candidate through clinical trials, and—if those are successful—scaling up manufacturing are jobs too big for academic labs to tackle.

The burden of testing new antimicrobials inevitably falls to the pharmaceutical industry, which faces its own hurdles. Antimicrobials offer smaller profit margins than other drugs, and their rate of failure in clinical trials is high. That's partly why Takano says that only a few out of hundreds of potential antimicrobial compounds will pass testing and make their way to the clinic.

The PASTEUR Act, a bipartisan bill that has been proposed in the US Congress a number of times, aims to appropriate $6 billion to fund antimicrobial development and give the Department of Health and Human Services the ability to enter subscription contracts with companies developing critical-need antimicrobials. But it has been stuck in political limbo for some time and is unlikely to go anywhere soon.

So, despite the novelty of lariocidin's mechanism of action and its lack of reported toxicity in initial testing, the drug candidate has a long road to the clinic and approval. Yet Wright remains optimistic about the potential for lariocidin and many other recently discovered compounds. "We're at the beginning of what I would consider a new golden age," he says.

Only time will tell if all that antimicrobial gold really pans out.

https://cen.acs.org/pharmaceuticals/drug-discovery/Bioprospectors-mine-microbial-genomes-antibiotic/103/web/2025/06

An Interview with
Arlene Joyner,
Deputy Assistant Secretary, Director, Center for Industrial Base Management and Supply Chain, HHS Administration for Strategic Preparedness and Response

From Vaccines to Vision

Arlene Joyner's Journey in Biotech and National Preparedness

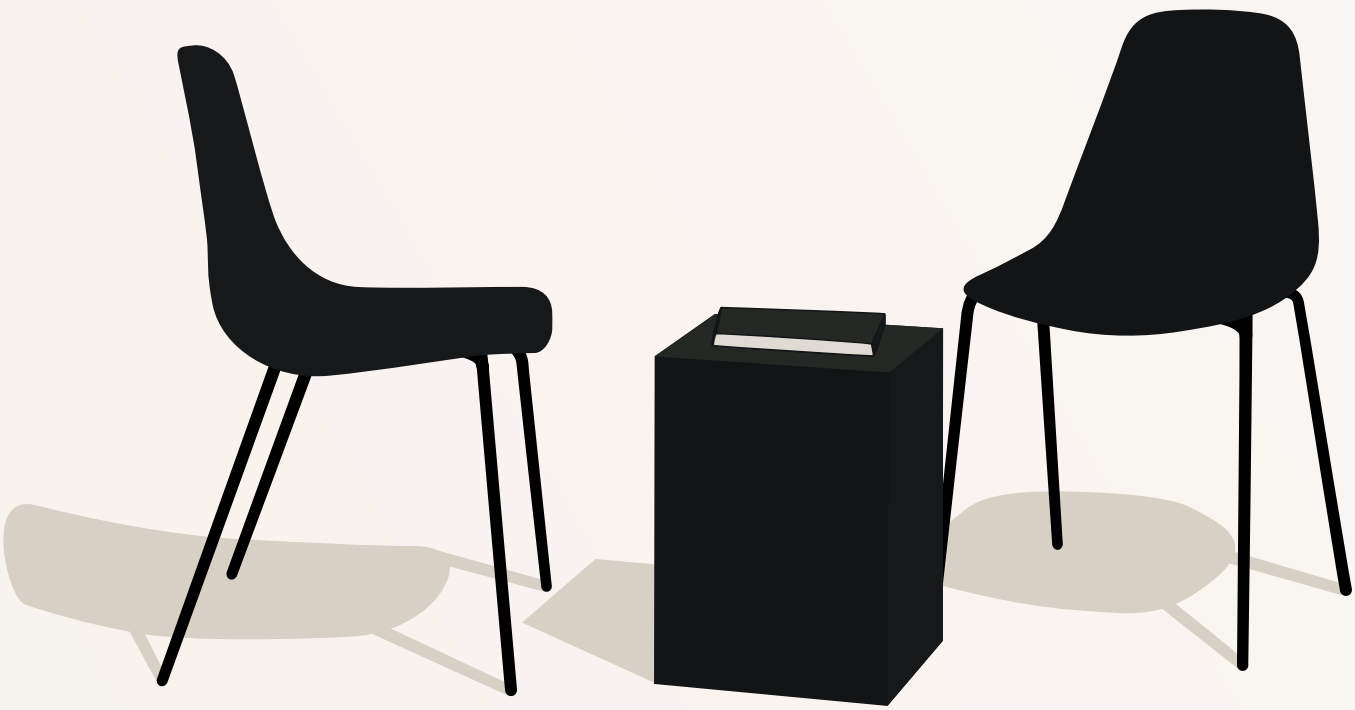


Illustration by the iop on Unsplash

“Resilience [is] really about building trust, transparency, and long-term partnerships.”

Arlene Joyner serves as the Deputy Assistant Secretary and Director of Industrial Base Management and Supply Chain (IBMSC) at the Administration for Strategic Preparedness and Response (ASPR), part of the US Department of Health and Human Services (HHS). In this leadership role, she oversees national efforts to strengthen the public health industrial base through advanced manufacturing technologies, personal protective equipment, testing and diagnostics, and supply chain optimization. She also manages HHS’s Defense Production Act authorities, ensuring critical infrastructure and resources are mobilized during public health emergencies.

Prior to her current position, Ms. Joyner held several key roles within ASPR’s Biomedical Advanced Research and Development Authority (BARDA), including Deputy Director of the Pharmaceutical Countermeasure Infrastructure Division and Branch Chief of the Pharmaceutical Countermeasure Infrastructure Department. She led major initiatives such as the Fill Finish Manufacturing Network and Contract Development and Manufacturing Organization (CDMO) Core Services, supporting vaccine and therapeutic production during the COVID-19 pandemic under Operation Warp Speed. Her earlier industry experience includes six years at Merck in quality auditing and vaccine manufacturing, and 16 years at Baxter’s Vaccines Division, where she managed upstream and downstream manufacturing, supply chain operations, and program management. Ms. Joyner holds a Bachelor of Science in Chemical Engineering from Pennsylvania State University and a Master of Science in Chemical Engineering from Villanova University.

Interview Questions

You've had an impressive trajectory from vaccine manufacturing to federal leadership. What advice would you offer to students and young scientists looking to make a meaningful impact in biotech or public health?

I have often said, "things happen for a reason." Regardless of the field that a young person is pursuing, they should be open to the different doors that are opened to them—even if unexpected, even if you didn't ask for it, or if it was the result of a rejection or denial of something you wanted.

After 21 years in the private sector, I was told that the facility I was working at was closing its doors. I had not even updated my resume in 16 years! A friend suggested I put my resume in with ASPR. Four months later, I interviewed, was hired, and became a federal employee. I just marked my 14th year in federal service this past August.

For those interested in biotech and public health, I would similarly advise that you remain open to different jobs or roles in this field. If you have a science degree, consider working in a manufacturing company and get that hands-on experience. Or you may find you are more interested in the policy side of public health in a hospital or a trade organization. You may find value in working for the federal government, which offers a different perspective than the private sector. Or you may be interested in the political side, such as a White House or Congressional staffer position.

There are many places where your expertise can be used, so look for and pursue these opportunities as you go through your career. As Director of Industrial Base Management and Supply Chain at ASPR, what are your top priorities for advancing national preparedness?

IBMSC has five strategic pillars that shape our priorities for national preparedness.

Our first pillar is Domestic Manufacturing Resilience, which means we are investing in and expanding sustainable, scalable domestic manufacturing capacity for Key Starting Materials (KSMs), Active Pharmaceutical Ingredients (APIs), Final Dosage Forms (FDFs), personal protective equipment, diagnostics, and other essential medical countermeasures.

The second pillar is Supply Chain Visibility and Security. Here we are monitoring vulnerabilities and improving transparency across critical medical supply chains—from raw materials to distribution.

Surge Readiness and Responsiveness is our third pillar. Our priority here is to strengthen the ability of the public health industrial base to rapidly pivot and respond to emerging threats by maintaining warm base manufacturing capabilities and strategic stockpiles aligned with national needs.

Our fourth pillar is Strategic Public-Private Collaboration, where we foster enduring partnerships with industry, academia, and federal agencies to co-develop innovative technologies, modernize production infrastructure, and reduce dependence on foreign sources for essential medical products.

Finally, our fifth pillar is Innovation and Sustainability. Here, our priority is to promote the adoption of advanced manufacturing technologies to modernize production while reducing environmental impact and long-term costs.

The Defense Production Act plays a key role in your portfolio. How have you leveraged DPA authorities to support national preparedness and response?

IBMSC has leveraged DPA authorities to make significant investments to reshore upstream pharmaceutical materials, such as KSMs and APIs, for high-demand medicines that have no current domestic sources and/or have few global sources. Specifically, we have invested $52.38 million in KSM/API investments under our DPA team.

Additionally, DPA authorities have been used to make investments to secure domestic medical countermeasure supply chains and ensure US government access to critical sterilization capacities during a federal response to a public health emergency. To date, we have invested $33.63 million toward these efforts.

You've worked extensively on continuous manufacturing and advanced technologies. How do you see these innovations transforming the future of domestic biopharmaceutical production?

Agile and distributed manufacturing platforms are really changing the game. Instead of relying on slow, batch processes, these platforms let us make medicines faster, more efficiently, and with greater consistency. What that means for preparedness is simple: we can respond quicker in a crisis, reduce dependence on fragile overseas supply chains, and make critical medicines here at home. At ASPR, we see these innovations not just as efficiency tools, but as national security assets—helping us build a system that's resilient, sustainable, and ready for whatever comes next.

For example, we're working with DEKA Research and Development Corp in Manchester, New Hampshire to develop a manufacturing pod that will produce sterile saline on demand at the point of care, such as at a hospital or pharmacy. Each pod will produce up to 500 bags of IV fluid each day, helping prevent or mitigate intravenous fluid shortages in the United States. Beyond that, ASPR is advancing one of the first efforts to commercialize engineered living systems that make small molecule drug substances for analgesics, clotting agents, anticholinergics, and reversal agents. And through our Equip-A-Pharma program, we are actively creating the technology and process model for real-time qualification of finished drug products produced in agile manufacturing platforms.

As someone who has led cross-sector collaborations across government and industry, how do you approach building resilient ecosystems for medical countermeasures?

Resilience in medical countermeasures is really about building trust, transparency, and long-term partnerships across government and industry. No single sector can do this alone.

That's why at ASPR, through IBMSC, we're focused on strengthening supply chains, sustaining warm production bases, establishing agile and distributed manufacturing capacities, and creating incentives that make it viable for US manufacturers to stay engaged between crises.

Programs like ASPR's Strategic National Stockpile and our Biomedical Advanced Research and Development Authority (BARDA), along with the many partners they work with, are part of that broader ecosystem. So, when we talk about resilience, it's not just an abstract goal—it's something we're actively building, hand-in-hand with our partners, to ensure we're ready before the next crisis begins.

What are the biggest challenges in optimizing supply chains for medical countermeasures, and how is ASPR addressing them?

Optimizing supply chains for medical countermeasures is challenging because they're complex, global, and stretched across multiple sectors. Key issues include dependence on overseas materials, limited visibility into bottlenecks, and the need for surge capacity in a crisis.

At ASPR, we're addressing these by diversifying domestic manufacturing, improving data sharing for real-time supply awareness, and supporting innovations like continuous manufacturing and 3D printing of medical products. The goal is simple: creating supply chains that are not just efficient, but resilient—ready to deliver the right countermeasures to the right people when they're needed most.

Finally, what message would you like to share with SIMB members, scientists, professors, students, and biotechnology industry professionals about their role in advancing national resilience?

To the members of SIMB, scientists, professors, students, and biotechnology industry professionals, I want to emphasize that your work is at the heart of national resilience. Every innovation in biomanufacturing, every breakthrough in microbial science, and every lesson taught in the classroom contributes to a stronger, more prepared public health ecosystem. The challenges we face—whether supply chain vulnerabilities, global health threats, or the need for sustainable production—cannot be solved by government alone. They require the creativity, dedication, and collaboration of the scientific and industrial communities. Together, we are building not just technologies, but trust and capacity that will safeguard the nation and inspire the next generation of leaders in biotechnology.

An Interview with
Michael Koeris,
Director, Biological Technologies Office,
Defense Advanced Research Projects Agency

From Startup to Strategy

A Conversation with DARPA's Michael Koeris on Synthetic Biology and Data-Driven Discovery

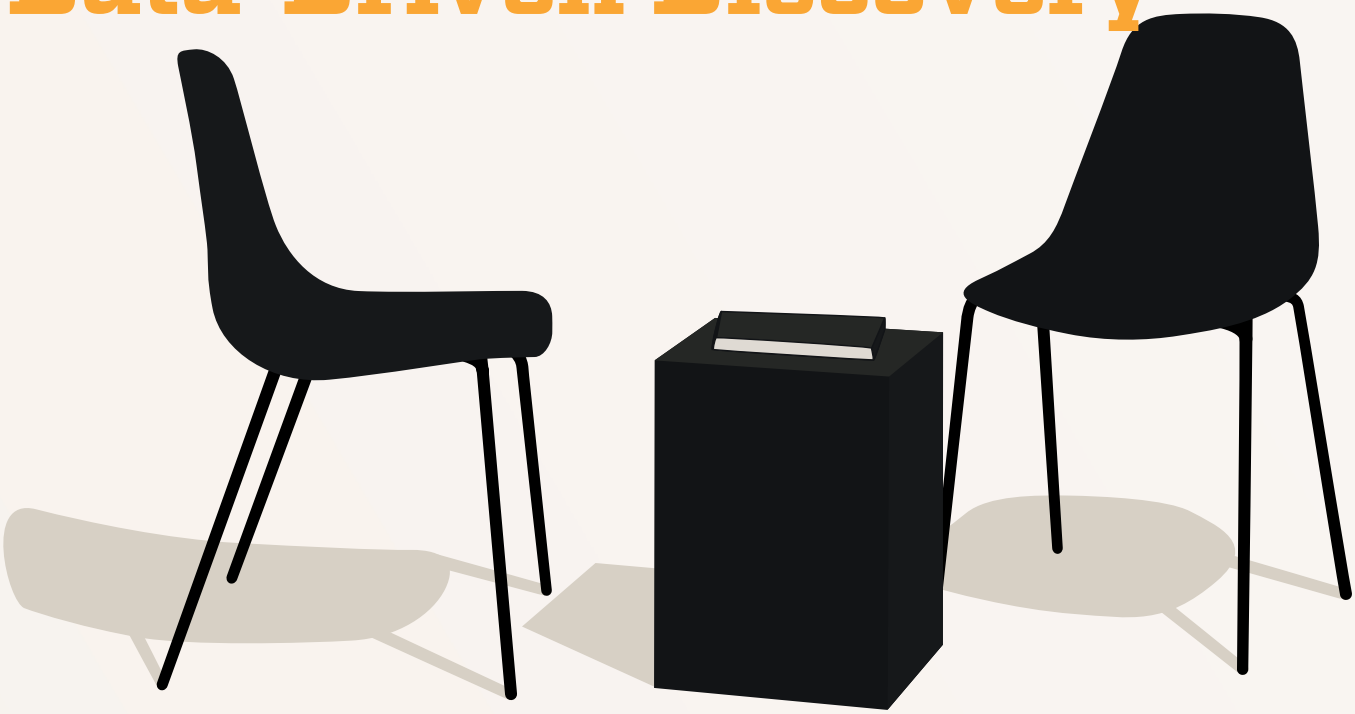


Illustration by the iop on Unsplash

“If you want people to care, your work must deliver real value.”

Michael Koeris, PhD is a biotechnology entrepreneur and strategic leader whose career bridges synthetic biology, diagnostics, and national security. He currently serves as Director of the Biological Technologies Office (BTO) at DARPA, where he oversees programs that accelerate innovation in biodefense, advanced manufacturing, and biological data infrastructure.

Dr. Koeris began his entrepreneurial journey by founding Sample6, a synthetic biology diagnostics company that pioneered enrichment-free pathogen detection and was named one of Forbes 25 Most Innovative AgTech Startups in 2017. Following Sample6’s acquisition, he continued to launch and lead ventures focused on molecular diagnostics, biomanufacturing, and translational health technologies. His consultancy, Ares Innovation LLC, supports biotech strategy and operations across therapeutic and diagnostic domains.

During the COVID-19 pandemic, Dr. Koeris served as Portfolio Executive for the NIH RADx initiative, helping scale diagnostic development and deployment nationwide. He also contributed to academic innovation as Associate Professor of Bioprocessing at the Keck Graduate Institute and a member of the Amgen Bioprocessing Center. His research spans chemistry, manufacturing, and control (CMC) for microbiome therapeutics and advanced cell and gene therapies. Dr. Koeris holds more than a dozen patents and serves on the Board of Directors for AddGene, a global nonprofit repository

for genetic tools. His current work includes leading BTO's efforts on the Live Chain, autonomous science, and global biosurveillance.

He earned his PhD in Biomedical Engineering from Boston University and holds B.S. and M.S. degrees in Biochemistry and Biophysics from the Free University of Berlin. Across public and private sectors, Dr. Koeris brings a systems-level perspective rooted in academic rigor, entrepreneurial agility, and translational impact. His leadership continues to shape the future of biological engineering through innovation, mentorship, and strategic collaboration.

Interview Questions

Looking back at your early career, who were the mentors that shaped your path? How did you find and build those relationships, and what role did they play in guiding your journey from scientist to entrepreneur?

My PhD advisor, Jim Collins, was unquestionably the most formative influence on my early career. Jim encouraged me to think beyond the confines of the lab and to focus on how science could be translated into real-world impact. His mentorship created the space for me to be entrepreneurial, and that mindset—of looking outward and imagining applications—took root during graduate school and has continued ever since.

Jim also played a pivotal role in expanding my network. He introduced me to Noubar Afeyan of Flagship Pioneering, which ultimately led to my first role after graduate school. At the time, we had put the company on pause, but that period of reflection was invaluable—it taught me that revisiting a problem often reveals layers of nuance that aren't immediately obvious. Noubar's guidance, coupled with his vision for innovation in biotechnology, was instrumental in shaping my understanding of the "sausage-making" of entrepreneurship and venture capital. Those early lessons gave me a front-row seat to how ideas evolve into ventures, and how persistence and perspective are just as critical as scientific insight in building something impactful.

You've built and exited multiple biotech ventures over the past decade. What core principles have guided your entrepreneurial journey from Sample6 to GDMC?

My entrepreneurial journey, from Sample6 to GDMC, both profitable and unprofitable, has been guided by the principle that technology serves as an enabler of valuable solutions, not as an end in itself. Early on, I learned that the immediate and significant financial benefit a technology offers is paramount. People are primarily motivated by substantial, near-term gains. This understanding shapes my approach now. I prioritize solving high-value problems for large communities, focusing on rapid implementation. Biotech, with its long timelines and high costs, often struggles with this, leading me to explore alternative approaches, such as software solutions that deliver immediate improvements.

As Director of DARPA's Biological Technologies Office, what strategic priorities are you advancing in synthetic biology, biodefense, or next-gen therapeutics?

At DARPA's Biological Technologies Office, we are advancing strategic priorities centered on 'autonomous science. This involves two key components: 'data factories' that generate high-quality biological data, and 'reality engines' that leverage this data for predictive modeling and experimental design. The ultimate goal is a closed-loop system where reality engines inform data factories, and vice versa, enabling rapid and iterative scientific discovery.

How does the Biological Technologies Office foster collaboration between government, academia, and industry to accelerate high-impact biotech innovation?

The DARPA Biological Technologies Office actively fosters collaboration between government, academia, and industry through persistent and continuous engagement. We recognize that collaboration and alignment are not one-time events, but ongoing processes that require consistent effort. By proactively seeking collaborative opportunities and reinforcing alignment, we aim to maximize the impact of biotech innovation, as collaboration almost always yields better results than working in isolation.

Can you share more about your Data Factory initiative? What gaps in biotech data pipelines are you aiming to close, and how does this project support national security?

Our Data Factory initiative addresses critical gaps in biotech data pipelines, particularly the power-law distribution where genomic data vastly outweighs other crucial data types. We aim to enrich data resources with single-cell, bulk, and non-genomic data, as well as multi-organismal data, including human data, which are currently significantly underrepresented. By expanding our understanding of complex biological systems at all scales, from the cellular level to entire organisms, we will bolster national security capabilities in areas such as biodefense and advanced therapeutics.

Looking ahead, what emerging technologies or strategic partnerships are you most excited about in shaping the future of biological engineering?

We are particularly excited about strategic partnerships that extend the focus of biological engineering beyond human applications. Recognizing the vulnerability of crops and livestock, we are actively pursuing collaborations with the USDA to address national security concerns related to agricultural security. This partnership aims to leverage biological engineering advancements to protect critical agricultural resources.

What message would you share with SIMB members—especially microbiology and biotechnology students and early-career faculty—who aspire to follow an entrepreneurial path? What steps or mindset shifts do you believe are most important for them to begin that journey?

If you want people to care, your work must deliver real value—and in entrepreneurship, that ultimately means financial success. Focus on identifying problems that truly matter and on developing solutions that can scale and generate meaningful returns. If you're working on "me-too" products or incremental drop-ins, remember: your innovation has to be so compelling that it forces existing solutions out of the market. That's the standard you should hold yourself to.

Equally important is mentorship. Find a small handful—no more than five—exceptional mentors who will challenge you relentlessly. The best mentors are the ones who will call you out when you're bluffing or drifting, because that honesty is what sharpens your thinking and keeps you grounded.

And don't expect those relationships to form overnight. Give them at least a year to develop, and be intentional about how you engage. Mentorship is a two-way street: always consider how you can contribute back, whether by supporting their work or paying it forward to others. That reciprocity is what makes those relationships enduring and transformative.

An Interview with
Sarah Corley
Chief Medical Advisor, Center for Enterprise Modernization, MITRE

Genomics in Personalizing Medicine

Dr. Sarah Corley on Innovation, Safety, and Strategy

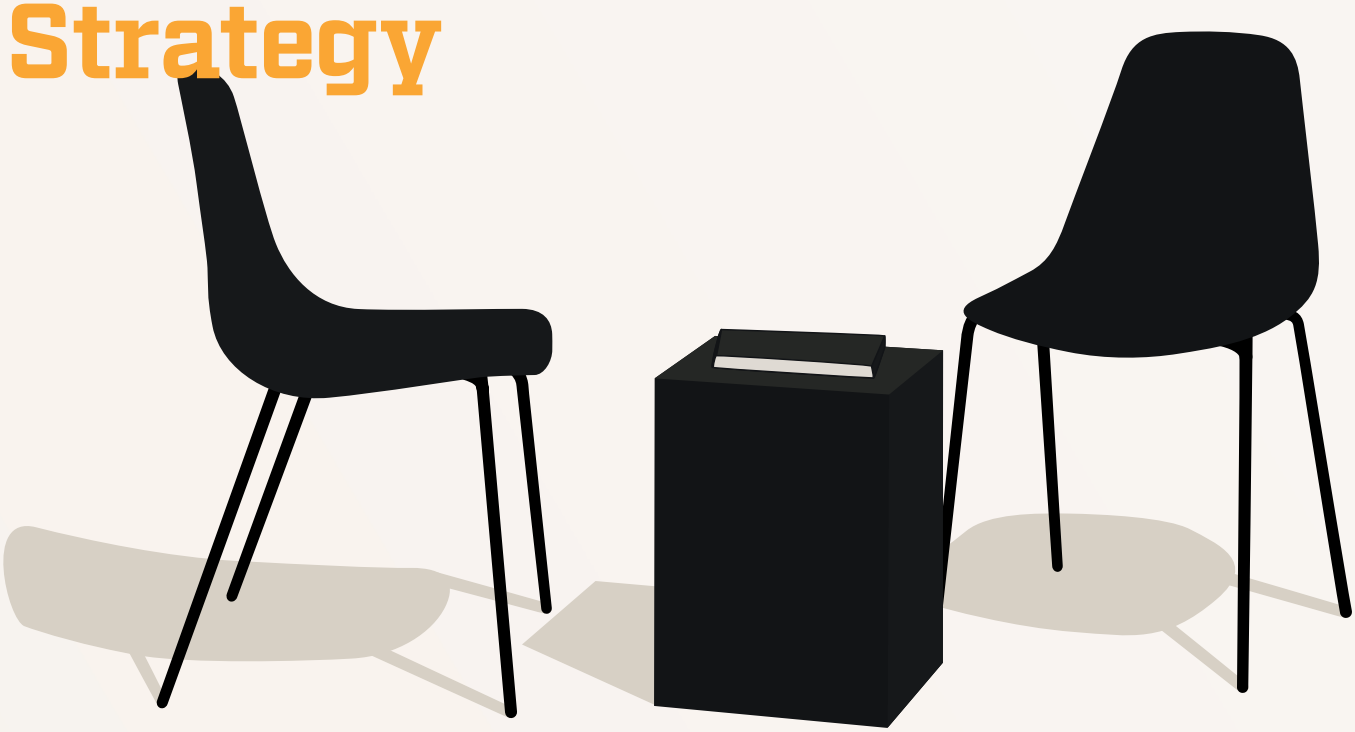


Illustration by the iop on Unsplash

“Innovation isn’t just about what’s new—it’s about what works.”

Dr. Sarah Corley serves as Chief Medical Advisor at MITRE’s Center for Enterprise Modernization, where she partners with US federal agencies to tackle systemic healthcare challenges through strategic innovation and technology. With over three decades of experience as a practicing primary care internist, Dr. Corley brings deep clinical insight to her work in health IT, regulatory strategy, and patient safety.

Prior to joining MITRE, she was Chief Medical Officer at NextGen Healthcare Systems, a leading electronic health record (EHR) vendor. In that role, she advised the executive team on clinical product strategy, led physician engagement, and oversaw regulatory affairs and quality management initiatives to ensure safe and effective care delivery. Her leadership has extended across national organizations, including the American College of Physicians, the Electronic Health Record Association, and the American Medical Informatics Association.

Dr. Corley’s research and advocacy have focused on harnessing health information technology to improve care quality, optimize clinical workflows, and support physician compliance. Her career reflects a commitment to advancing healthcare systems that are safer, smarter, and more responsive to the needs of both providers and patients. Through her work at MITRE, she continues to shape the future of enterprise health modernization with a focus on ethical innovation and public impact.

Interview Questions

Tell us about the early influences that sparked your interest in science—was there a moment or mentor that shifted your trajectory toward healthcare and innovation?

I didn't grow up imagining I'd become a physician, much less lead national health information technology (IT) initiatives. My journey started at 18 when I enlisted in the Navy and trained as a Hospital Corpsman. That early exposure to clinical environments—combined with the trust placed in me to care for others—ignited something. I realized this work wasn't just academic—it was practical, human, and powerful. Later, it was my attending physicians and Navy mentors who encouraged me to pursue medicine formally, and eventually my curiosity about how systems work pushed me into innovation.

How did your educational journey shape your approach to solving complex problems in biotech and medical systems, especially as you transitioned into leadership roles?

Medical training teaches you discipline, triage, and humility. You learn to gather incomplete data, make decisions under pressure, and adapt as new information becomes available. When I went back to school in my 40s to earn a certification in medical informatics, I learned a new language—one that blended clinical knowledge with systems thinking. That combination helped me approach healthcare not just as a series of patient encounters but as a set of interdependent systems with opportunities for optimization.

You've worked across clinical practice and enterprise modernization—what motivated you to bridge these worlds, and how has that shaped your impact?

I became frustrated watching good clinicians burn out and patients fall through the cracks—not because people didn't care, but because the systems around them weren't built to support good care. When I first saw an electronic health record, I didn't see a clunky tool—I saw potential. I left private practice and became a translator between clinical, technical, and policy communities. That's been my role ever since: bridging the worlds that need to work together to truly modernize healthcare.

Looking back, what were some of the most challenging transitions in your career, and how did they help refine your strategic thinking?

One of the most challenging transitions was navigating the dual role of clinician and innovator. Even as I took on leadership roles in healthcare and policy, I continued to practice medicine part time until the end of 2022. That balancing act required constant recalibration—managing the demands of patient care while advancing systemic change on a national scale. It refined my thinking by keeping me grounded. Every technical solution or policy I worked on had to make sense in the exam room. This dual perspective helped me become a more effective strategist: someone who could think at the enterprise level without losing sight of the human realities on the front lines of care.

At MITRE, you're helping federal agencies tackle systemic healthcare and life sciences challenges. What's one project or insight that's changed how you think about public health innovation?

One of the most valuable insights has come from leading MITRE's efforts to identify best practices for implementing electronic health records at the Veterans Affairs (VA). This work has reinforced how central operational design and clinician experience are to successful modernization. Technology alone isn't enough.

We've studied both VA and non-VA deployments to understand what works in the real world. Through that process, we've recommended innovations like ambient listening as a promising way to reduce documentation burden and return time to patient care. While I'm not directly implementing those tools, shaping the strategic conversation and ensuring VA is aware of scalable, evidence-based solutions has been a meaningful part of the role.

Ultimately, the biggest insight is that innovation in government healthcare often hinges not on invention, but on integration. It depends on connecting the right ideas to the right processes at the right time.

How have professional communities like SIMB supported your journey, and what role do you think they play in shaping the future of interdisciplinary research?

The American College of Physicians and The American Medical Informatics Association (AMIA) have both been instrumental in shaping my career—not only as a clinician but as a national voice in health IT and policy. The American College of Physicians was an early platform for my informatics work: I served on the Medical Informatics Subcommittee, where I had the chance to regularly collaborate with leaders in the emerging field of health IT. They also invited me to speak at national meetings and contribute to published chapters, which significantly raised my visibility and led to formal participation in government-led efforts like those at ONC (now ASTP) and CMS.

AMIA provided a different but equally vital home—one centered on the science and practice of informatics. Through AMIA, I was part of the EHR 2020 initiative, which helped articulate a forward-looking vision for electronic health records. I also contributed to the 25x5 Task Force, which remains one of the most impactful national efforts to reduce documentation burden for clinicians. AMIA has been where some of the most thoughtful, interdisciplinary conversations about healthcare transformation happen.

And while I was with NextGen, I served in a leadership role with the Electronic Health Record Association, which provided yet another venue to shape standards, share innovations, and represent the voice of practicing clinicians in policy and regulatory conversations.

These communities were more than professional affiliations; they were launchpads for influence and collaboration. They continue to play a critical role in shaping the future of interdisciplinary research by bringing together clinicians, technologists, policy experts, and scientists around shared goals and values.

You've worked across both industry and government. What's your take on how these sectors can better collaborate to accelerate innovation and ensure ethical deployment?

Each sector brings something essential: government ensures accountability, while industry brings agility and innovation. The key is co-development—bringing both to the table early, aligning on goals, and avoiding one-size-fits-all mandates. We need shared frameworks, joint pilots, and trusted intermediaries who can bridge the two worlds.

The path from innovation to implementation and impact must be done in collaboration and partnership. It requires humility, persistence, and communication. Don't wait for perfect conditions—pilot, iterate, and learn from users early. And never underestimate the power of your work to save lives. Innovation isn't just about what's new—it's about what works.

You've worked at the intersection of translational research and clinical practice. How do you see electronic health record (EHR) data transforming drug discovery, and what role do standards, AI, and omics play in that evolution?

Translational research is about turning insights from bench to bedside—and increasingly, from bedside back to bench. EHR data is a treasure trove for this process. We now have decades of longitudinal clinical data, and when paired with omics—genomics, proteomics, microbiomics—it opens the door to truly personalized medicine. But to unlock that potential, we need interoperability standards like HL7, and robust data repositories that integrate clinical and molecular data.

Large language models (LLMs) and natural language processing (NLP) are helping us mine unstructured data—clinical notes, ambient listening transcripts, patient-reported outcomes—to identify trends that might not be explicitly documented. That's a game-changer for cohort identification, subgroup analysis, and even market surveillance. We're starting to see AI tools match patients to clinical trials based on eligibility criteria buried deep in their records, which could dramatically accelerate recruitment and improve trial design.

Ultimately, this convergence of EHR data, omics, and AI isn't just about making drug discovery faster—it's about making it smarter. Imagine being able to say, "Based on my genome and clinical history, which protocol is most likely to work for me?" That's the future we're building. It requires scientific literacy, computing power, and a commitment to ethical data use—but it's feasible, and it's happening.

From your experience, how is genomics personalizing medicine and revolutionizing care?

Genomics is transforming medicine from reactive to proactive. Instead of waiting for symptoms to appear, we can now identify genetic predispositions and intervene earlier—sometimes even before disease manifests. In my clinical experience, pharmacogenomics has been especially powerful. Understanding how a patient's genetic makeup affects drug metabolism allows us to tailor treatments that are safer and more effective. Advances in biotech—like CRISPR-based gene editing and rapid sequencing technologies—are accelerating this shift, making precision medicine more accessible and scalable. We're moving toward a future where care isn't just personalized—it's predictive, preventive, and participatory. That's a profound shift, and it's one I'm proud to help guide through my work at MITRE.

You've been involved with national initiatives like the NIH's All of Us Research Program and the Million Veterans Program. Can you share your experience with these efforts, and how biotechnology or microbiology students—especially SIMB members—can contribute?

Both the All of Us Research Program and the Million Veterans Program represent a seismic shift in how we approach biomedical research, and biotechnology is at the heart of that transformation. These initiatives are building diverse, longitudinal datasets that enable breakthroughs in genomics, proteomics, and microbiome science—fields that rely heavily on biotech innovation. My involvement has focused on ensuring these programs are not just collecting data—but doing so ethically, securely, and in ways that empower participants.

For students in biotechnology and microbiology, these programs are goldmines of opportunity. Whether you're interested in genomic analysis, bioinformatics, microbiome research, or data science, these initiatives need your expertise. SIMB members, in particular, bring a systems-level mindset that's essential for translating raw data into actionable insights. You can get involved through internships, collaborative research, or by contributing to open-source tools and publications that support these efforts. These programs aren't just about discovery—they're about building the future of personalized, equitable healthcare.

SIMB | Society for Industrial Microbiology and Biotechnology

Your membership. Your community. Your success.

It takes a strong network of people and organizations to succeed in this industry, and SIMB helps you stay connected. Your membership is a powerful investment in your future, so be sure to renew it today to keep all these great benefits!

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- **Learn** the latest tools, methods, and applications so you and your team stay up-to-date
- **Exchange ideas** between areas of microbiology and biotechnology
- **Access** industry-oriented news and education backed by scientific rigor
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SIMB Members **SAVE $100s** on meeting registration and exhibiting!

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$50

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Renew your membership at *simbhq.org/membership*

An Interview with
Mohammed Quadri, MD, MBA, SSBB
Vice President Strategy, Academics, Research and Innovation,
Hackensack Meridian Health (HMH)

The Industrial Engine of Modern Medicine

A Bioprocessing Perspective

Illustration by the iop on Unsplash

“Embrace interdisciplinarity, seek mentorship, and don’t be afraid to innovate”

Mohammed Quadri is a Venture Capital Fellow at the Material Change Institute, where he is expanding his expertise in impact-driven investments and innovation strategy. He currently serves as Vice President of Strategy, Academics, Research, and Innovation at Hackensack Meridian Health (HMH), leading transformative initiatives across the healthcare ecosystem.

With over 19 years of experience, Dr. Quadri has built a connected academic, research, and innovation network spanning market intelligence, commercialization strategy, and translational research. In his current role at HMH, Dr. Quadri, mentors future leaders in public health and innovation. Clinically trained and academically grounded in Business Management, Healthcare Administration, and Epidemiological Principles, he brings a multidisciplinary lens to strategic leadership.

His investigative research skills and operational acumen have enabled him to create high-performance environments that drive measurable impact. Dr. Quadri developed integrated strategic, financial, and operational plans for multiple service lines including oncology, neuroscience, and robotics. He led the reimagining of acute medical centers, overseeing

volume projections, regulatory approvals, and market repositioning. His ambulatory care strategy introduced a Hub and Spoke model to expand access and efficiency across the continuum. He has played a key role in network development through Mergers and Acquisitions (M&A) assessments, joint ventures, and clinical affiliations.

His business planning efforts have supported technology acquisition, facility expansion, and service line innovation. At the Material Change Institute, he is excited to collaborate with visionary professionals to shape the future of venture capital. Dr. Quadri's work reflects a deep commitment to strategic transformation, stakeholder engagement, and advancing healthcare innovation.

Interview Questions

What early experiences or mentors inspired your passion for science, and how did they influence your path toward healthcare and innovation?

From an early age, I was fascinated by how science could tangibly improve human life. Growing up, mentors encouraged my curiosity while instilling a sense of responsibility to use knowledge for impact. During my medical training at St. Petersburg State Medical Academy in Russia, I became particularly interested in sleep medicine and metabolic health: two interconnected areas that influence individual and population-level outcomes. This early exposure highlighted the power of translating research into practical diagnostics and interventions.

As I moved into healthcare administration and strategy, mentors emphasized innovation, systems thinking, and organizational transformation as levers for large-scale change. These lessons shaped my trajectory at HMH, where I progressed from a sleep researcher to Vice President of Strategy for Academics, Research, and Innovation. I co-founded the HMH Research Institute, expanded the research portfolio by 25%, and led initiatives like the Real-Time Indication of Sleepiness Evaluation (RISE) Study – a non-invasive breath-based diagnostic using extracellular vesicle (EV)-associated microRNA to identify high-risk drivers and reduce reliance on traditional sleep studies. These experiences taught me to ground my work in rigorous science while always seeking the translation point where discovery meets implementation, whether through clinical innovation, digital health, or public safety programs.

In what ways did your educational background shape your problem-solving approach in biotechnology and medical systems, particularly as you stepped into leadership roles?

My multidisciplinary education, including medical training at St. Petersburg State Medical Academy, business studies at Stratford College in London, and an MBA in Healthcare Administration from the Forbes School of Business at Ashford University—has provided a unique vantage point for solving complex healthcare challenges. Clinical training honed my understanding of patient care, while business and Lean Six Sigma (Black Belt) certification equipped me with the operational and strategic tools to implement scalable solutions.

This combination has been critical in biotechnology and medical systems, which are inherently complex, adaptive, and involve multiple stakeholders. My grounding in epidemiological principles enables me to think in terms of populations and systems, while my strategic and operational expertise allows me to bridge silos between researchers, administrators, and clinical teams. At HMH, I have applied this integrated approach to reimagine acute medical centers, implement the Hub and Spoke ambulatory care model, guide M&A assessments, and clinical affiliations, and develop enterprise-wide strategies across service lines like oncology, neuroscience, and robotics.

Through programs like the Diagnostic Innovation Lab (breath biomarkers, EV-based diagnostics, AI-powered screening), the Clinical Translation Core, and Public Health & Safety Initiatives such as drowsy driving prevention, my educational and professional training enables me to pair scientific discovery with strategic implementation. This ensures measurable impact on patient outcomes, operational efficiency, and public health to transform care for millions while saving billions in healthcare costs.

Modern medicine is advancing rapidly. How do you see industrial biotechnology shaping this revolution?

The real revolution in healthcare is not just in the clinic but in the factories, labs, and digital models that make medicine scalable. Bioprocess engineering, analytics, and scale-up are the scaffolds on which therapies rest. Every gain in yield, every hour shaved off purification, every real-time release decision directly translates into faster access, lower costs, and greater global equity.

What's striking today is how this industrial backbone is converging with AI, advanced analytics, and synthetic biology. AI-backed companies are reporting 20–30% improvements in trial success rates, 50% shorter trial durations, and up to $26 billion in annual savings. The same predictive engines that can accelerate drug trials are also keeping bioreactors running flawlessly. When we connect the dots from bench to bedside, the future of medicine becomes a story of engineering precision as much as biological discovery.

Artificial intelligence is often discussed in terms of patient outcomes. Where is its most immediate impact in biotechnology?

Right now, its biggest impact is behind the stainless-steel walls of bioreactors. Manufacturing biologics is like conducting an orchestra—one wrong note in nutrient gradients, glycosylation, or enzymatic capping efficiency can ruin an entire batch. AI-enabled Process Analytical Technologies (PAT) are becoming the digital sentinels of these processes. By integrating Raman spectroscopy, mass spectrometry, and soft sensors, they do not just give us data, they give us foresight.

Predictive models can now link subtle metabolic shifts directly to critical quality attributes like glycan heterogeneity or RNA integrity. This enables Real-Time Release Testing (RTRT), where digital twins of processes continuously monitor and adjust production in real time. Each prevented batch failure saves costs and makes tens of thousands of vials of life-saving therapy more accessible to patients. When paired with AI-driven trial acceleration, this creates a continuum where both discovery and production move at unprecedented speed and scale.

Gene editing is moving quickly. How do you view its current trajectory?

We are moving well beyond CRISPR 1.0. The real frontier is precision: delivery innovations, tissue-specific targeting, and higher fidelity enzymes are pushing us closer to *in vivo* applications with far fewer off-target effects. That means not just proof-of-concept cures, but precision genetic medicines capable of addressing root causes of disease safely and efficiently.

The bottleneck, however, is manufacturing. For example, a single dose of an Adeno-Associated Virus (AAV) therapy can require up to 100 trillion viral genomes. Current production technologies plateau far below this threshold, making therapies like Zolgensma million-dollar marvels instead of global standards. Industrial advances such as stable packaging cell lines, CRISPR-optimized hosts for viral assembly, and smarter chromatography are building the Archimedean lever that could multiply output by 100–1000x. Without such breakthroughs, genomic medicine risks remaining a privilege of the few. With them, it becomes equitable and accessible.

Autologous cell therapies like chimeric antigen receptor T (CAR T) are life-changing but difficult to scale. What role does digitalization play here?

CAR-T embodies the promise and the problem: a curative therapy locked inside a "batch of one." Current processes are manual, centralized, and fragile. Digitalization is the unlock. Closed, automated systems reduce contamination risks, while digital twins track live variables like cytokine profiles, glucose uptake, and single-cell analytics, guiding the expansion of each patient's cells in real time.

This shift doesn't just improve sterility or potency; it decentralizes care. Community hospitals, not just elite centers, could administer cell therapies. Turning a bespoke, artisanal process into a reproducible science is one of the most transformative impacts of technology. It also reflects a broader trend we call bioconvergence: the merging of biology, engineering, and computing. It's the same interdisciplinary momentum driving organ-on-a-chip systems and manufacturing digital twins, which are virtual labs that predict biological outcomes before we spend millions running trials.

Bioprocessing principles are also moving closer to patients. What does this look like in practice?

The same principles of industrial biotechnology that perfected the bioreactor are now undergoing radical miniaturization, moving from the factory to the patient's own body. The artificial pancreas is a perfect example. A continuous glucose monitor (CGM) paired with an insulin pump creates a closed-loop system that mirrors a bioreactor inside the body—constantly measuring, adjusting, and optimizing. That's bioprocessing miniaturized into personal medicine.

Wearables are another promising frontier. For example, with smart rings or watches that monitor biomarkers like Human Rhinovirus, sleep architecture, or mood, patients essentially monitor a real-time data loop guiding health management. This combined with more advanced emerging wearables such as low-intensity transcranial focused ultrasound (TFUS) can introduce a non-invasive way to modulate brain circuits, potentially treating depression or enhancing memory consolidation. Biotech is increasingly merging high-fidelity remote patient monitoring with accessible therapeutic interventions to form a continuous, personalized process to empower patients.

How are market and regulatory dynamics shaping this landscape?

The biotech market is already massive, valued at $1.744 trillion in 2025 and projected to exceed $5 trillion by 2034. With that scale comes financial innovation. Equity-only financing gives way to royalties and hybrid revenue models, reflecting a sector that is maturing and prioritizing sustainable value over speculative growth.

There is a shift away from early/preclinical stage IPOs: 2024 saw a sharp drop in IPO value for discovery/preclinical companies compared to earlier years, as public investors favor companies with clinical data or later-stage pipelines. In 2024, there were 50 completed biotech IPOs globally raising about $8.52 billion. That was a ~68.4% increase from 2023, when biotech IPOs raised $5.06 billion. Now, there's a clear trend toward bigger rounds but fewer deals: large "megarounds" (>$100 million) are more common now, while seed and early-stage rounds are leaner or more selective. Of those 2024 IPOs, companies raising more than $100 million nearly doubled from 15 IPOs in 2023 to 24 in 2024 and contributed ~$7.88 billion of that IPO funding.

However, with higher valuations and investor scrutiny, any inefficiency (yield losses, batch failures, variable quality) is much more costly – not just financially but reputationally. Public market investors now favor companies with strong clinical data and robust manufacturing plans. As biotech startups pursue fewer but larger rounds and aim to go public, there is more capital available for building the infrastructure: better bioreactors, improved vector production, regulatory compliance, etc. but there is also less patience for missteps, and they need to show a clear demonstration of process control, scale, and QAs.

At the same time, regulations are getting more complex. FDA reforms, political scrutiny, and prolonged timelines have pushed some firms to pursue "global-first" strategies, starting trials in the EU or Australia. This could permanently shift where breakthroughs debut, which in turn makes robust process control and global supply chains more critical than ever. Companies that can demonstrate validated, reproducible quality across borders will have a competitive edge.

With all this change, what remains the bedrock of trust in medicine?

Analytical rigor. No matter how advanced the therapy is, trust rests on reproducibility. Glycan mapping ensures antibodies function as intended, LC-MS reveals minute impurities, and single-particle analysis validates viral vectors. This rigor is the covenant between science and society.

As the global market grows and regulatory strategies diverge, validated analytics become the universal language—one that patients, regulators, and manufacturers can all trust. Every assay is a promise that what works in a trial will work in the real world. Without this, scale means nothing. With it, we can build a healthcare future where AI, gene editing, and bioconvergence are more than breakthroughs—they are reliable, accessible realities.

What's the big picture? How should we view this moment in biotech history?

This is a convergence moment. We're not just seeing AI, gene editing, synthetic biology, and advanced manufacturing rise in isolation; they are advancing together, reinforcing one another. That's what makes this era unique. The challenge is ensuring these tools are harnessed responsibly and distributed equitably, so they serve not just the privileged few but global health, food security, and environmental resilience.

In short, 21st-century medicine has two volumes: the language of genomes and molecular pathways and the language of process control and engineering. The real story is in their convergence. That's the industrial engine of modern medicine, transforming biology's promise into healthcare's reality.

As a Vice President of Strategy and Professor of Medicine, what guidance would you offer to pre-med students, as well as to instructors and faculty members in medical schools, to help them navigate and thrive in today's evolving healthcare landscape?

The most important advice I would offer to pre-med students is to develop a mindset that extends beyond the classroom and clinic into systems thinking. Medicine is no longer siloed; it is a convergence of biology, technology, engineering, and social science. Students should not only master the fundamentals of human health but also cultivate fluency in data science, business strategy, and innovation frameworks. The leaders of tomorrow will be those who can translate discoveries into scalable solutions, who view patients not only as individuals in need of care but as participants in a larger ecosystem of health.

For faculty and instructors, I would encourage creating curricula and mentorship models that reflect this interdisciplinary reality. Training the next generation requires more than teaching pathophysiology; it requires giving students opportunities to engage in real-world challenges, such as healthcare equity, digital transformation, and industrial scalability. When we integrate experiential learning, collaborative research, and entrepreneurial thinking into medical education, we prepare students to thrive in a world where medicine is as much about systems innovation as it is about direct patient care.

One of my students, Dr. Om Panda, exemplifies this new breed of physician-leader. While completing his residency in psychiatry, he is also building a mental health startup, Open Mind, which merges digital health, neuromodulation, and integrative personalized care models. During his time in my Strategic Planning in Healthcare course, he demonstrated a remarkable ability to apply system-level thinking to practical challenges, particularly in developing frameworks that connect clinical insight with scalable business models. Through mentorship in this course, he learned to navigate the intersections of strategy, finance, and patient-centered design. His trajectory illustrates how structured mentorship combined with strategic training can equip young physicians to not only deliver care but also redesign how care itself is conceived and delivered.

In short, my guidance is: embrace interdisciplinarity, seek mentorship across domains, and don't be afraid to innovate within medicine's industrial and clinical frontiers.

48th Symposium on Biomaterials, Fuels and Chemicals

Astor Crowne Plaza Hotel
New Orleans, LA

May 3–6, 2026
www.simbhq.org/sbfc

Event Information

Award Nominations: Due January 30, 2026

Abstract Submissions: Due February 10, 2026

Registration: Online registration is open! Early registration pricing ends on February 18, 2026

Housing: Reserve your room early! Rate of $199 plus taxes per night

Photo by Aya Salman on Unsplash

Chairs and Speakers

2026 Program Chairs

REBECCA ONG
MICHIGAN TECHNOLOGICAL UNIVERSITY

Program Co-chair: Charles Foster, dsm-firmenich

Past Program Chair: Ben Woolston, Northeastern University

Keynote Speaker

GREGG BECKHAM
SENIOR RESEARCH FELLOW AND GROUP LEADER
NATIONAL LABORATORY OF THE ROCKIES

2026 Program

This year's program features 15 technical sessions spanning cellular and process engineering, feedstock utilization and design, and biomaterials. We are particularly excited to introduce a new session on synthetic biology for space exploration, as well as a special session that highlights the many past, present and future contributions of midwestern companies to the bioeconomy, in celebration of the conference's location. These will be joined by the latest advances in metabolic engineering, valorization of low-cost feedstocks, deconstruction of plastics, single-carbon metabolism, bioenergy crop development, lignocellulose breakdown, and more. Tying everything together will be our keynote speaker, Prof. Michelle O'Malley, whose work spans all of the central themes of SBFC and whose new NSF-funded anaerobic foundry will provide exciting opportunities for collaboration throughout the SBFC community.

TOPIC AREA 1: Biofuels, Products, and Synthetic Biology

Topic Area Chairs:

Rebecca Mickol – US Naval Research Laboratory
Dan Olson – Dartmouth College
Rajib Sahan – University of Nebraska-Lincoln

Sessions:

- Bio X AI
- Enzymes and cell-free systems
- Living and performance-advantaged bio-based materials
- Finding the (redox) balance
- Metabolic engineering to overcome product titer limitations
- Biomanufacturing with extremophiles and exobiology

TOPIC AREA 2: Feedstock Processing and Valorization

Topic Area Chairs:

Chuck Smallwood – Sandia National Laboratories
Jian Shi – University of Kentucky
Ning Sun – Lawrence Berkeley National Laboratory

Sessions:

- C1 metabolism
- Plant, algal biomass, and organic feedstocks
- Plastics and alternative feedstocks
- Aerobic and oxidative bioprocessing and biomanufacturing
- Anaerobic and reductive bioprocessing & biomanufacturing

TOPIC AREA 3: The Big Picture: Complex Integrated Systems

Topic Area Chairs:

Lynn Wendt – Idaho National Laboratory
Stephen Techtmann – Ohio State University
Juliana Vasco-Correa – Pennsylvania State University

Sessions:

- System optimization and integration for bioconversion
- Complex microbial interactions for improved performance from the field to products
- Harnessing biology for critical mineral recovery
- Integrated chemical and biological processing for AI-enabled biomanufacturing
- Biomanufacturing and bioprocessing scale-up

Call for Industry Support

Your help is needed!

Interested in sponsoring or engaging with this unique audience? Reach out to SIMB's Executive Director, Haley Cox, at *haley.cox@simbhq.org* to learn more about new and existing opportunities to achieve your goals while giving much needed support for the 48th SBFC meeting.

FUN RUN/WALK AT SBFC

For many years, a 5K Fun Run/Walk has been part of SIMB Annual Meetings. This event has been enjoyed by many participants who recently suggested inclusion in all SIMB meetings. Okay – lets' go for it! In New Orleans, there will be a run/walk along the Riverfront on Tuesday, May 5. To participate, please indicate your interest when registering online and fill out a waiver when you pick up your registration materials onsite. The run will start at 6:15 am from the SIMB registration desk in the hotel. T-shirts will be available for the first 24 people who arrive the morning of the run. Water, fruit, and granola bars will be provided for all who participate.

76th SIMB Annual Meeting and Exhibition

Marriott Austin Downtown
Austin, TX

August 2–5, 2026
www.simbhq.org/annual

Event Information

Housing: Room block open! Reserve your room early. Rate of $229 plus taxes per night

Registration: Online registration opening in February 2026

Abstracts: Submissions opening February 2026

2026 Program Chair

Jennifer Headman, POET

2026 Program

Stay tuned for the program submission details to be available by the end of February 2026. In the meantime, prepare to focus on the future of the industry with SIMB's refreshed core topics:

- Biocatalysis and Protein Engineering
- Fermentation and Biomanufacturing
- Microbiomes and Environmental Microbiology
- Metabolic Engineering
- Natural Products

Photo by Carlos Delgado on Unsplash

Society for Industrial Microbiology and Biotechnology 2025 RESOLUTIONS

1. To the 2024–2025 Board of Directors of the Society:

Officers:

President	Ramon Gonzalez, MojiaBio
Past President	Michael Resch, NREL
President-elect	Rob Donofrio, Neogen
Secretary (2024–2027)	Mark Blenner, University of Delaware
Treasurer (2023–2026)	Katy Kao, San José State University
Directors	Aindrila Mukhopadhyay, Lawrence Berkeley National Laboratory Adam Guss, Oak Ridge National Laboratory Brian Pfleger, University of Wisconsin–Madison Jennifer Headman, POET
Executive Director	Haley Cox, SIMB

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

Michael Resch, NREL (Past President)
Adam Guss, Oak Ridge National Laboratory (Director)
Brian Pfleger, University of Wisconsin–Madison (Director)

3. To the incoming members of the Board for 2025–2026, whose terms began on July 30, 2025:

Betty Elder, Georgia Southwestern State University (President-elect)
Carrie Eckert, Oak Ridge National Laboratory (Director)
Kevin Solomon, University of Delaware (Director)

4. To the outgoing SIMB Committee Chairs whose terms concluded in 2025:

Allen Lee, Membership–Individual Committee
Hal Alper, Publications Committee
Nigel Mouncey, Student/Postdoc/Early Career Ad Hoc Committee
Aindrila Mukhopadhyay, Core Topic Areas Ad Hoc Committee

5. To Yi Tang, Editor-in-Chief of the *Journal of Industrial Microbiology and Biotechnology* and the *JIMB* editorial team, for maintaining a high-quality, open-access journal that advances the field of industrial microbiology and biotechnology.

6. To the *SIMB News* editorial team for their dedication to producing a professional, informative, and engaging publication for SIMB members throughout a year of change and growth.

7. To SIMB committee chairs, committee members-at-large, and volunteers for their time, expertise, and service in support of Society programs and initiatives.

8. To the Quarter Century Club inductees and the Class of 2025 SIMB Fellows, in recognition of their sustained contributions to the Society and to the field:

SIMB Quarter Century Club – 2025 Inductees: Charles Isaac, Sang Yup Lee, Istvan Molnar, Janice Pero, David Sherman, Eric Solum, and Mark Wach

SIMB Fellows – Class of 2025:

Tim Cooper, Brazen Snake Bio
Laura Jarboe, Iowa State University
Alex Beliaev, Pacific Northwest National Laboratory

9. To the memory of SIMB members who passed away in 2025, honoring their lasting contributions to the Society and to industrial microbiology and biotechnology:

Jennie Charlotte Hunter-Cevera, Past President of SIMB
Janet Westpheling, Past President of SIMB

10. To the SIMB Headquarters staff for their professionalism, dedication, and support of the Society's meetings, publications, and member services throughout 2025.

These resolutions are respectfully submitted.

Haley Cox
Executive Director
December 2025

2025 SIMB Annual Meeting Resolutions

Be it resolved that we, the members of the Society for Industrial Microbiology and Biotechnology, express our sincere appreciation and thanks to the following individuals and organizations for making the 2025 SIMB Annual Meeting a success:

1. To the 495 attendees, 278 of which are SIMB members, for dedicating time, resources, and energy to connect with friends, make new connections, and celebrate a monumental milestone: the 75th anniversary of the first Annual Meeting of the Society.

2. To the SIMB Headquarters Office staff for managing meeting logistics, registration, local arrangements, and networking activities.

3. To the Annual Meeting Program Chair José Avalos, the 2025 Program Committee, and every session convener for organizing and managing an outstanding and scientifically rigorous program.

4. To the oral session speakers, poster presenters, and Science Slam participants for their high-quality scientific contributions.

5. To Tim Cooper and Chris Stowers for presenting a valuable workshop on Fermentation Basics and delivering valuable professional development and technical training opportunities.

6. To Douglas C. Cameron for presenting and inspiring attendees through the keynote address.

7. To Dr. Jihyun F. Kim for presenting the Korean Society for Microbiology and Biotechnology plenary lecture; to KMB President Soo-Wan Nam for attending as a KMB delegate; and to KMB as an organization for its continued partnership and presence at this meeting.

8. To SIMB award recipients for their exceptional achievements in research, teaching, service, and early-career contributions.

Charles Porter Award Ramaraj: "Raj" Boopathy Nicholls State University
Charles Thom Award and Lecture: Wilfred Chen University of Delaware
Early Career Award: Benjamin "Ben" Woolston Northeastern University
Waksman Outstanding Teaching Award: Tochukwu Nwamaka Nwagu University of Nigeria

9. We congratulate the 2025 Diversity Travel Award recipient and student presentation award winners.

Diversity Travel Award: Darcy Hunstiger Colorado State University
Carol D. Litchfield Student Oral Presentation Awardee:
Aryan Razdan, for "Improving the colonization properties of the probiotic yeast *Saccharomyces boulardii* via mucus glycan metabolism"

Carol D. Litchfield Best Student Poster Presentation Awardees:
Environmental Topic Winner: Zoë Davis, for "Development of an enzyme-based biosensor for NSAID detection in wastewater effluent"

Natural Products Topic Winner: Yaereen Dho, for "Discovery and engineering of Cephalotaxus alkaloid biosynthesis"

Biocatalysis Topic Winner: Daniel Grinffiel for "Genetic Tools for Particulate Methane Monooxygenase Expression in Native and Heterologous Hosts"

Cell Culture and Fermentation: Rayhanul Shimul, for "Molasses desugarized solubles: an agricultural by-product feedstock for bioconversion"

Metabolic Engineering: Yun-Seo Park, for "Production of lacto-N-triose II and lacto-N-tetraose in metabolically engineered *Corynebacterium glutamicum*"

10. To the meeting sponsors and partner organizations for their generous support of the 2025 SIMB Annual Meeting.

GEA
Beckman Coulter Life Science
Braskem
IFF
Syngens
Merck
Frances Templeton Fund

11. To the commercial exhibitors and their representatives for supporting the meeting and engaging with the SIMB community.

Agile Biofoundry
Agilent Technologies, Inc.
Angel Yeast
Beckman Coulter Life Science
Biolog
Bionet, Inc.
Bio-Technical Resources
BlueSens Corporation
Caladan Bio
Dakota Bioworks
DCI, Inc.
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GEA North America
Getinge
Global BioIngredients Inc
Hamilton Company
IKA Works, Inc.
INFORS HT, USA Inc.
Kuhner Shaker Inc
Microbial Discovery Group
Nuclera
Nu-Tek Biosciences
ogibiotec
Optimal Biotech Group
JIMB, Oxford University Press
Scientific Bioprocessing (sbi)
SIMB Placement Services
Sunflower Therapeutics

12. To Run Coordinator Betty Elder for continuing the 5K Fun Run-Walk tradition.

13. To all SIMB members and guests who participated in the SIMB Business Meeting and contributed to discussions shaping the future of the Society.

These resolutions are respectfully submitted.

Haley Cox
Executive Director
December 2025

2026 SIMB Election for Board of Directors

The SIMB Election for positions on the Board of Directors will commence March 2, 2026. The election will close at noon EDT on March 31, 2026, and members must join/renew by noon EDT, March 30, 2026, to be eligible to vote.

Current members for 2026 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 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.

Photo by Benjamin Child on Unsplash

Candidate for President-elect
Mark Blenner

Dr. Blenner is the Thomas & Kipp Gutshall Career Development Professor of Chemical & Biomolecular Engineering at the University of Delaware. Prior to that, he was the McQueen Quattlebaum Associate Professor of Chemical and Biomolecular Engineering at Clemson University. He received his BS in Chemical Engineering from Manhattan College in 2004, and his PhD in Chemical Engineering from Columbia University in 2009.

Mark's research interests include metabolic engineering, synthetic biology, biocatalysis, natural products, biomanufacturing, and microbial community engineering – which align perfectly with SIMB's foci. His research is broadly focused on engineering biomolecular and cellular systems to produce fuels, chemicals, enzymes, biopharmaceuticals and biosensors. He is interested in the use of synthetic biology to promote the translation of research to application. He works in various non-model and non-conventional hosts. His work has been recognized by the community through several awards including the 2025 Langer Prize for Excellence in Innovation and Entrepreneurship, the 2022 AIChE Food, Pharmaceutical, and Bioengineering Division Early Career Award, the 2022 Biochemical Engineering Journal Young Investigator Award, the 2021 ACS BIOT Young Investigator Award, and the 2019 Presidential Early Career Award for Scientists and Engineers (PECASE).

Mark has been actively involved in SIMB since 2015. Most recently, Mark has served as a member of the SIMB Board in the role of Secretary. He was the program chair for the 2022 Annual Meeting in San Francisco, CA, and has served in other SIMB leadership roles. He is currently a member of the Awards Committee (2025), the Education Committee (2022), and the Webinar Committee (2023). He was previously a member of the Nominating Committee (2020). In addition, Mark has chaired numerous technical sessions and participated in all of SIMB's meetings.

Mark is excited for the opportunity to serve in the role of SIMB President. Should he be elected, his strategic priorities will focus on giving SIMB an EDGE:

Elevate our voice

» Promoting the voice of SIMB in matters of Industrial Microbiology and Biotechnology and Bioeconomy

» Enhancing partnerships with related societies and organizations in the US and abroad

» Create avenues for engaging with emerging topics

Deepen engagement with our members

» Expand the value of SIMB outside of meetings

» Developing an identity for SIMB

Grow our membership

» Creating better incentive structures for membership

» Foster development of future members and leaders

Efficiently operate Society business

» Promote the Society's long-term financial health

» Exploring new and alternative models for meetings

Candidate for President-elect
Jennifer Headman

"I am honored to stand as a candidate for President-elect of the Society for Industrial Microbiology and Biotechnology. For nearly two decades, SIMB has been my professional home, a community that has shaped my scientific career, expanded my leadership capacity, and continuously reminded me of the power of collaboration in advancing industrial microbiology and biotechnology. I am running for President-elect because I believe deeply in SIMB's mission, in the transformative strength of our membership, and in the critical role our Society plays at the intersection of research, innovation, and real-world application.

My professional career has been grounded in fermentation microbiology, product development, and technology commercialization across first- and second-generation biofuels, enzyme systems, and industrial yeast strain engineering. I have led teams responsible for taking concepts from molecular design through laboratory development, pilot trials, and full-scale deployment. Currently the fermentation manager in Research for POET, my work has spanned both industry and academia, resulting in multiple commercialized technologies, eight granted US patents, and meaningful contributions to the advancement of biorenewable solutions. These experiences have shaped my approach as a leader: data-driven, collaborative, supportive of diverse expertise, and always focused on long-term impact.

Within SIMB, I have dedicated years of service across committees, program leadership roles, and now as a current member of the Board of Directors. I have chaired the Biocatalysis Track, led the Student Poster and Oral Presentation Sessions, contributed to the Awards and Honors Committee, and am honored to serve as the 2026 Annual Meeting Program Chair. These roles have strengthened my understanding of our Society's operational needs and strategic opportunities. They have also reinforced my belief that SIMB thrives when we foster inclusive scientific communities, support early-career professionals, and maintain strong, transparent engagement with our membership.

As President-elect, I will prioritize three guiding commitments. First, I am dedicated to strengthening SIMB's role as a hub for translational science—where academic research, industrial application, and emerging technologies connect to address today's most pressing biotechnological challenges. Second, I will continue cultivating an inclusive and welcoming Society that reflects the diversity of our field, expands mentorship pathways, and ensures that students and early-career scientists see SIMB as a place where they belong and can grow. Third, I will work with the Board and membership to ensure SIMB remains agile, financially strong, and forward-looking as our discipline undergoes rapid technological evolution.

It would be a privilege to serve SIMB in this capacity. I am grateful for your consideration and for the opportunity to help guide our Society toward a vibrant future grounded in scientific excellence, community, and collaboration."

Candidate for Treasurer

Adam Guss

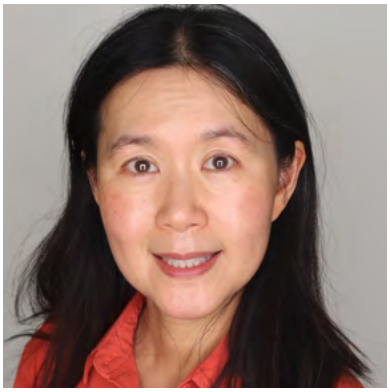
"I am a Genetic and Metabolic Engineer at Oak Ridge National Laboratory (ORNL). I earned my PhD at the University of Illinois at Urbana, Champaign in the lab of Bill Metcalf, followed by postdoctoral positions at Harvard University with Colleen Cavanaugh and Dartmouth College with Lee Lynd. I have been at ORNL for 15 years, where my research group focuses on the development of genetic tools for non-model microbes and the use of those tools for metabolic engineering. Applications include production of fuels and chemicals from renewable (lignocellulose) or waste (plastics, syngas) feedstocks and engineering of microbiomes. I am passionate about collaborations between academic, government, and industry researchers to develop technologies that bring a positive impact to society.

SIMB is my 'home' society. I have been involved in SIMB conferences for nearly two decades, 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 2021, I was the Program Chair for the SIMB Annual Meeting in Austin, Texas. Most recently, I served on the SIMB Board of Directors from 2022–2025. I would be honored to serve SIMB as Treasurer for the 2026–2028 term.

As a member of the Board of Directors, I saw the importance of securing the financial health of SIMB in order to ensure that we can continue providing maximum value to our members. Beyond finances, my goal will 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 also advocate for increased participation in SIMB by early career researchers, including undergraduates, graduate students, and postdoctoral researchers and facilitating networking and career mentoring, helping to support and train 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 Treasurer

Katy Kao



Katy is a Professor in the Department of Chemical and Materials Engineering at San Jose State University. Prior to joining San Jose State University in 2019, she was an Associate Professor in the Department of Chemical Engineering at Texas A&M University. Her work focuses on microbial adaptation for applications in biotechnology and microbial pathogenesis. Specifically, her lab is developing broadly applicable methods based on adaptive laboratory evolution for both strain development and to gain fundamental understanding of complex phenotypes in microbial systems. Her lab is also studying biofilm adaptation in human fungal pathogens.

Katy has been an active member of the SIMB community since 2008. She currently serves as the SIMB Treasurer. Her other service includes serving the chair of the 2019 SIMB Annual Meeting in Washington DC and as a director on the Board of Directors from 2019–2022, convening sessions, serving as a member of the Fermentation and Cell Culture program committee, and chairing the Fermentation and Cell Culture program committee. Her vision for SIMB is to grow the membership, engage young scientists, and continue to bring together members from industry, academia, and national labs to address issues important in industrial biotechnology.

Candidate for Director

K. Thomas Klasson

Thomas Klasson is a recently retired biochemical engineer researching biofuel and bioproducts from sugar crops via fermentation. Thomas is a member (12+ years) and Fellow of SIMB and organized SIMB's SBFC 2005-2016, serving as the Symposium's Chair or Co-chair and on the Organizing Committee. He has also served on the Board of Directors at SIMB (2016–2019) and on several SIMB Committees (2016–present), including the Ethics Committee, the Awards & Honors Committee, the International Outreach, and the Membership-Individual Committee. He has served as judge for SIMB Awards for High-School students for several years and provided award write-ups for *SIMB News*.

Thomas received his MS degree in Chemical Engineering from the Royal Institute of Technology in Sweden and his PhD in (Bio)Chemical Engineering, from University of Arkansas in Fayetteville. After his post-doctoral work on synthesis gas fermentation, he was the Biotechnology Laboratory Director at the University's Engineering Research Center. Thomas worked at the Oak Ridge National Laboratory for 12 years as a R&D Engineer and Group Leader of the Biochemical Engineering Research Group and the Remediation Technology Group. He continued and completed his career working for the US Department of Agriculture's Agricultural Research Service (2004–2025) as a Research Leader for the Commodity Utilization Research Unit (25 members). The group's research activities include development of fermentation processes for converting agricultural waste to fuels and products and genetic engineering of plants for improved vegetable oils, alternative uses for cotton seed, and process improvement of sugar factories. He recently co-authored work in *JIMB* on the potential application of antimicrobials in large industrial sugar processes.

His work has been documented in over 120 peer reviewed publications (including *JIMB*) and, in 2023, he was ranked in the top 0.7% of the scientist worldwide in the biotechnology research area. He has made numerous invited presentations and often served as expert reviewer for proposals and projects for the US Department of Energy and the US Department of Agriculture. He is a member of American Chemical Society, the American Institute of Chemical Engineers, and the American Society for Testing and Materials International. As a member of Arkansas Academy of Chemical Engineers, he has participated in discussion panels and is a mentor for Chemical Engineering student at his alma mater.

"If I am elected, I will bring administrative and technical experience from academia, national laboratories, federal government, conference organization, and professional societies. I will contribute to the Board's future success and financial stability by promoting scientific meeting success and profitability as well as enhanced committee contributions to the Board. I will encourage SIMB participation by graduate students and early career scientists with travel awards. And I will promote SIMB member participation as science judges to promote STEM activities."

Candidate for Director

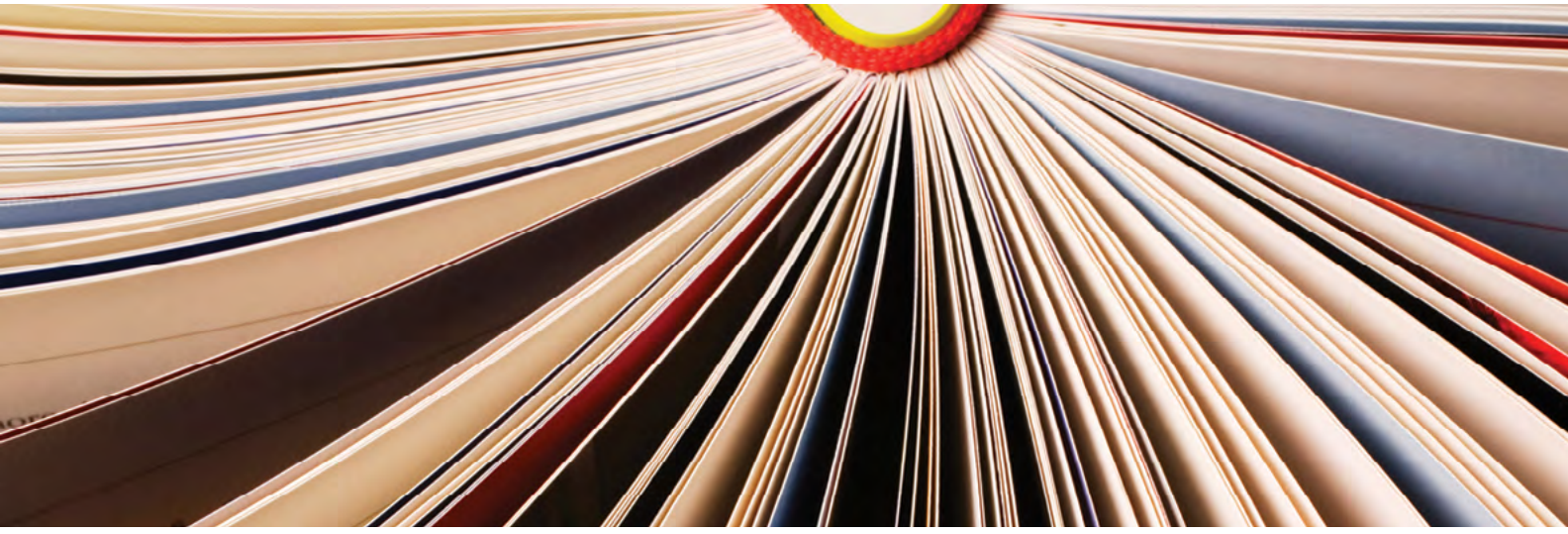
Chris Stowers

Chris Stowers currently serves as Vice President of BioFermentation Operations and Process Technology at Kerry Group, where he oversees more than ten biomanufacturing sites and leads a global team of process technology experts responsible for scaling new products and optimizing existing product lines. He brings nearly two decades of biotechnology leadership experience across R&D, manufacturing science and technology (MSAT), and operations, having held senior leadership roles at Dow, DowDuPont, Corteva Agrisciences, DSM, dsm-firmenich and Kerry. Throughout his career, Chris has guided teams in developing and commercializing a broad portfolio of products including biochemicals, agricultural chemicals, bioplastics, nutritional lipids, carotenoids, vitamins, and probiotics. He has also directed the design, commissioning, and startup of multiple pilot- and commercial-scale fermentation facilities.

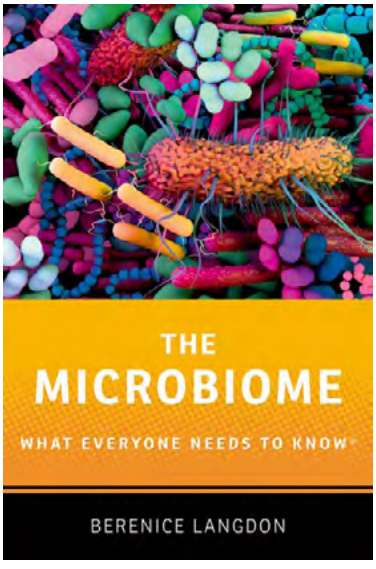
Chris has been an active member of SIMB since his graduate school days twenty years ago. From his first meeting, he found a strong sense of community and collaboration that has shaped his professional development. In return for the society's significant impact on his career, he has remained deeply committed to service. Chris has served as Chair of the SIMB Fermentation Committee, organized sessions at both RAFT® and the SIMB Annual Meeting, served as a poster judge on several occasions and delivered numerous presentations over the past fifteen years. Since 2019, he has taught the Advanced Fermentation Concepts workshop held prior to the RAFT ®meeting, helping train the next generation of fermentation scientists and engineers. He is also an active mentor in the SIMB Mentorship Program since its inception and frequently reviews manuscripts for *JIMB*. In 2023–2024, he co-led the SIMB initiative Accelerating the Bioeconomy Through a Pre-Competitive Knowledgebase for Biomanufacturing and Biotechnology and has actively advocated for the US bioeconomy on Capitol Hill for the last several years.

As a Director, Chris aims to uphold SIMB's high standards for scientific excellence across its meetings and journal. He is committed to strengthening the Xociety's partnership with industry by ensuring its programming remains both scientifically cutting-edge and industrially relevant. He also plans to continue expanding the mentorship program so that emerging biotechnology leaders are well-prepared and well-supported for the challenges ahead. Lastly, continuing to grow SIMB membership will be a priority, with a focus on attracting members from all three sectors: industry, government and academia.

Chris holds a BS in Chemical Engineering from the University of Alabama in Huntsville (2004) and a PhD in Biochemical Engineering from Vanderbilt University (2008).



by Elisabeth Elder



The Microbiome: What Everyone Needs to Know®
Bernice Langdon
2025
ISBN 9780197695609
Oxford University Press, New York, NY

Published in September 2025, *The Microbiome* is a recent contribution to the *What Everyone Needs to Know®* series. This book guides the reader through the contributions of the massive numbers of microorganisms that live on us and around us. It also provides in-depth information on how to remain healthy. Bernice Langdon got her BSc degree in Genetics at Edinburgh University then pursued her medical training at the Royal London Hospital Medical School. She became a clinical teaching consultant at St. George's Medical School in 2020, a position in which she advises on infection curriculum development. She became a Clinical Senior Lecturer in 2023. In addition, Dr. Langdon wrote *Learning Microbiology through Clinical Consultation* which is a textbook for medical students along with multiple articles for *The Independent*.

Her goal is to provide an understanding of the microbiome – including what it does and what it doesn't do. She meets this goal by explaining the form and function of the human microbiome, by reviewing the history of microbiome research, by dispelling common misunderstandings, and by covering recent scientific advancements.

The first chapter describes the generally benign microbes in our bodies and describes where they live. *The Microbiome* covers the actual organisms (fungi, bacteria, and viruses along with algae and protozoa) plus the genetic material of the microbes within a particular environment. Locations inside and outside of the body are covered. This chapter also reminds the readers of the contributions made by van Leeuwenhoek, Amici, Smith, Lister, Ehrenberg, Bassi, Nightingale, Duclaux, Pasteur, and Leidy. The importance of Koch's postulates and Chadwick's theories of sanitation and hygiene are also noted. Chapter 2 points out that studying microbiomes must include pathogens and nonpathogens occupying air, earth, and ocean along with those in built environments (hospitals, subways, and homes), and those associated with other organisms, plants, and animals. This chapter also addresses the possibilities of removing microbiomes and surviving while germ-free. The importance of 16S rRNA sequencing and metagenomic sequencing leads to the importance of the human microbiome project.

The following chapters cover the microbiome and the skin (chapter 3); acquisitions of microbiomes by newborns (chapter 4); microbiomes and the gut (chapter 5); microbiomes and the brain (chapter 6); and microbiomes and the genitals (chapter 7).

These chapters remind us of:

- representative bacteria such as *Cutibacterium*, *Corynebacterium*, *Staphylococcus* including the methicillin resistant ones, *Streptococcus*, *Bacillus*, *Bifidobacteria*, *Bacteroides*, *Clostridium*, and *Lactobacillus* among others,
- the spread of fungi such as *Candida*, *Debaryomces*, *Penicillium*, and *Scopulariopsis*,
- the distribution of viruses in the ocean, on the skin, and in the gut,
- applications of antiseptic soaps and alcohol gels,
- involvement of fungal and viral pathogens in seborrheic dermatitis, atopic dermatitis, eczema, and molluscum contagiosum,
- outcomes of caesarean sections versus vaginal births,
- problems with nutrient absorption in germ-free animals,
- tissue damage caused by decreased microbial populations,
- linking mental health disorders with imbalances of gut microbes, and
- linking vaginal examinations to infections.

This listing is not comprehensive but is intended to show the breadth of beneficial as well as harmful interactions between microbes, hosts, and environments.

Chapter 8 uses the World Health Organization (WHO) definition of probiotics as "live microorganisms that, when administered in adequate amounts, confer health benefit on the host." The microbiome industry also markets prebiotics, postbiotics, and fermented foods while noting their potential applications and their safety. This chapter also notes the potential use of fecal microbiota transplants and live biotherapeutic products plus supplements.

Chapter 9 shows that diversity can have several interpretations. It can be the number or richness of species in a sample. Swapping to alpha diversity can refer to the number of plant species within a swamp. Swapping to beta diversity can refer to the species diversity in a whole landscape. In humans, studying diversity has led to the importance of different diets, lifestyles, cultures, ethnicities, and nationalities in the development of different microbiomes. Urban, rural, and hunter-gatherer populations have distinctly different alpha diversities. Human microbiomes have been shown to impact the incidence of allergies, hay fever, eczema, and asthma. How many children are in a family plus the environments in which they live alter their microbiomes. There is a delicate balance between having balanced microbiomes while avoiding pathogens and diseases.

In the conclusions to the book, Bernice Langdon points out:

- topics such as eyes and lungs that have not been covered,
- overreliance on genetic techniques can alter the outcomes of certain samples,
- microbiomes aren't inescapable,
- although not all microbes are beneficial, we may still become dependent upon them,
- variability in microbiomes makes them difficult to interpret,
- microbiomes can change,
- microbiomes can evolve in the future, and
- remembering the lessons of germ theory.

Following known techniques in handwashing, food hygiene, sewage disposal, and water purification along with adhering to preventative medical care leads to an ordinary and healthy life. "Be confident. We are mainly doing everything right."

This book is an excellent read on the broad spectrum of microbiomes, why they are important to us, how they can improve our health, and how there have been misunderstandings about them. It will be of interest to many people in, and outside of, scientific communities.

Upcoming SIMB Meetings

MAY 3–6, 2026

48th Symposium on Biomaterials, Fuels and Chemicals

Astor Crowne Plaza • New Orleans, LA

www.simbhq.org/sbfc

AUG. 2–5, 2026

SIMB Annual Meeting and Exposition

Marriott Austin Downtown • Austin, TX

www.simbhq.org/annual

JAN. 17–21, 2027

Natural Products

Hyatt Regency Long Beach • Long Beach, CA

www.simbhq.org/np

JUN. 4, 2026

SIMB Mini-Conference held at ASM Microbe

Washington, DC

Click here to register

Upcoming Industry Meetings

FEB. 18–20, 2026

International Meeting on Antimicrobial Resistance and Innovation

Las Vegas, Nevada

https://imari.org

MAR. 3–6, 2026

Natural Products Expo West 45 Years

Anaheim, California

https://www.expowest.com/en/home/html

MAY 27–29, 2026

International Congress on Biotechnology and Bioengineering

Paris, France

https://eubiotech2026.synergiasummits.com

SIMB Committee	Chair	Email	Term expires	Members	Staff liaison
Annual Meeting 2026	Jennifer Headman	*AMProgramChair@simbvolunteer.org*	2026	See Program Committee Online	Haley Cox
Archives	Debbie Chadick	*chadickdebbie@gmail.com*	2028	Elisabeth Elder, Kristien Mortelmans, Erick Vandamme	Jennifer Johnson, Haley Cox
Awards/Honors	Jennifer Headman	*jennifer.headman@poet.com*	2026	Stephanie Gleason, Shawn Nelson, Thomas Klasson, Rajesh Sani	Haley Cox
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Diversity, Equity, and Inclusion	Efraín Rodríguez Ocasio	*rodriguezoca@wisc.edu*	2027	Amanda Godar, Ann Greggory, Arren Liu, Cesar Esponiosa, Katilyn Niebrugge, Kimia Noroozi, Noel Fong, Sheena Becker, Soniya Quick	Haley Cox
Education and Outreach	Noel Fong	*nfong@nucelis.com*	2027	Katy Kao, Elizabeth Orchard, Torben Bruck, Neal Connors, Mark Blenner, Ian Wheeldon, Laura Jarboe, Benjamin Philmus, Linnea Fletcher	Haley Cox
Elections	Kristien Mortelmans	*kristien.mortelmans@sri.com*	2026	TBD	Jennifer Johnson
Ethics Committee	Thomas Klasson	*thomas@klasson.cx*	2028	Noel Fong, Scott Baker, Susan Bagley	Haley Cox
Membership-individual	Anna Crumbley	*anna.m.crumbley2.civ@army.mil*	2028	Jason Boock, Eric Young, Qing Sun, Ryan Tappel, Shuai Qian, Casey Hooker, Biki Kundu, Efrain Rodriguez-Ocasio	Jennifer Johnson
Nominations	Michael Resch	*michaelgeorgeresch@gmail.com*	2026	TBD	Haley Cox
Placement	Sarita Chauhan	*Sarita.Chauhan@gea.com*	2026	Lisa Lee, Elisabeth Elder	Jennifer Johnson
Planning	Elisabeth Elder	*robert.donofrio11@gmail.com*	2026	TBD	Haley Cox
Publications	Pat Cirino	*pccirino@central.uh.edu*	2028	Ramon Gonzalez, Kris Rath, Yi Tang, Ben Shen	Haley Cox
JIMB	Yi Tang	*yitang@g.ucla.edu*	2027	JIMB Editors	Haley Cox
SIMB News	Kris Rath	*kris.rath.4.0@gmail.com*	2027	Kristine Mortelmans, Elisabeth Elder, Leo H. Liu	Katherine Devins
Science Policy and Advocacy Committee	Nigel Mouncey	*njmouncey@gmail.com*	2028	Noel Fong, Michael Resch, Andy Manning, Tae Seok Moon, Thomas Alexander, Efraín Rodriguez-Ocasio, Charles Isaac	Haley Cox
Student/Postdoc/ Early-Career	Allen Lee	*ls1@mit.edu*	2028	Blake Rasor, Elise Phillips, Efrain Rodriguez-Ocasio, Soniya Quick, William Gasparrini, Amanda Andrade	Haley Cox

Special Conferences			Term		Staff liaison
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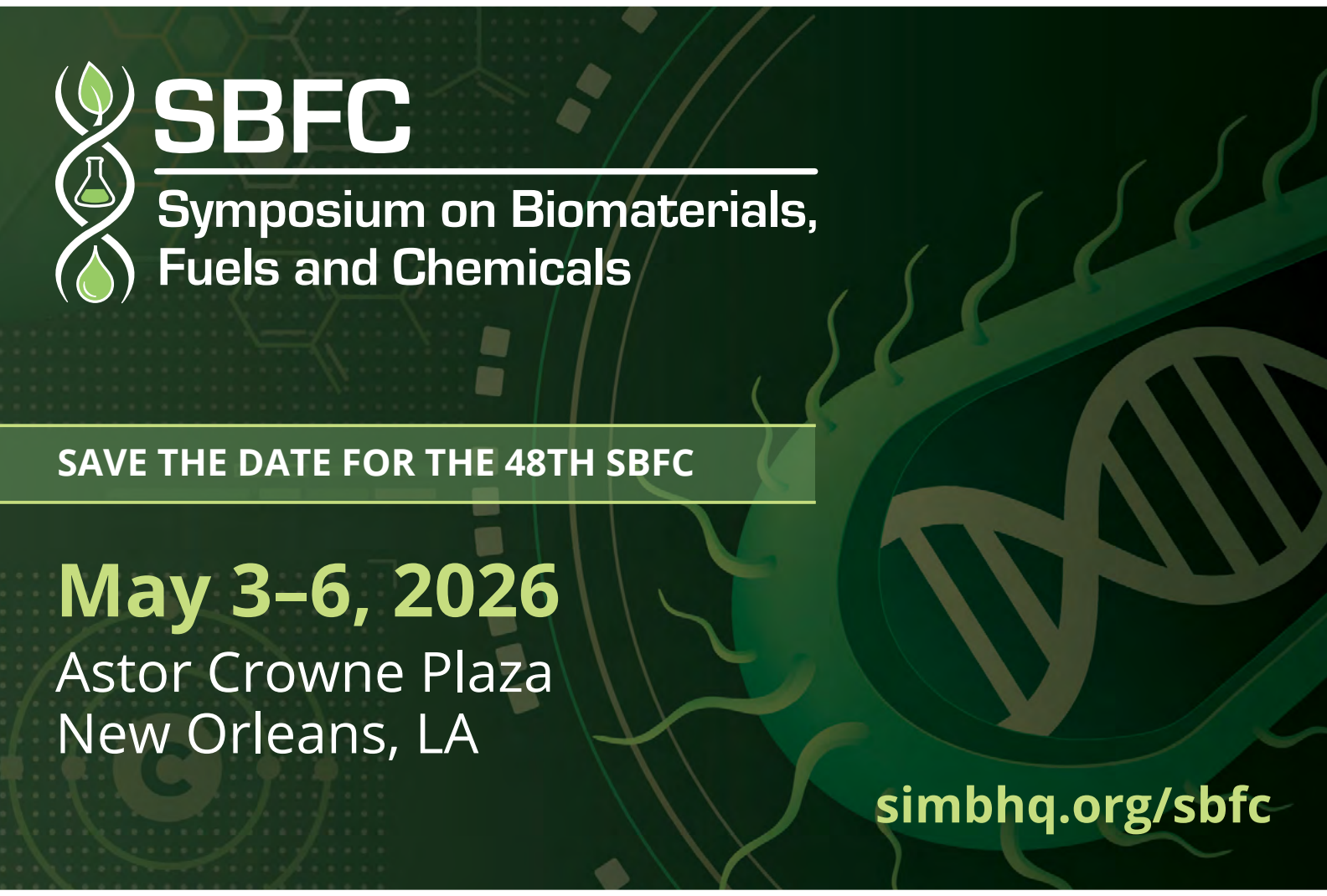
Past Chair	Kat Allikian	*kat.allikian@southpacificsera.co.nz*	2025		
Co-Chair	Gisela Nadal Rey	*GSNR@novonesis.com*	2027		
SBFC 2026 Chair	Rebecca Ong	*rgong1@mtu.edu*	2026	See Program Committee Online	Haley Cox
Past chair	Ben Woolston	*b.woolston@northeastern.edu*	2026		
Natural Products 2027 Chair	Jaclyn Winter	*jaclyn.winter@utah.edu*	2027		Haley Cox



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3 ANNUAL MEETING
AND EXHIBITION

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