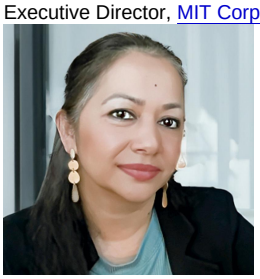
MIT Industrial Liaison Program Faculty Knowledgebase Report

2025 MIT Paris Symposium

October 16, 2025 9:00 am - 12:30 pm

8:30 AM	Registration and Check-In
9:00 AM	Welcome & Introduction Christophe Lienard Gayathri Srinivasan Executive Director, MIT Corporate Relations



Gayathri Srinivasan
Executive Director
MIT Corporate Relations

Dr. Srinivasan is a distinguished scientist who received her PhD in Microbiology from The Ohio State University in 2004, where she contributed to the discovery of the 22nd amino acid, Pyrrolysine (2002). She first came to MIT as an NIH Postdoctoral Fellow in Prof. Tom Rajbhandary's lab, where her research focused on understanding protein synthesis mechanisms in Archaea.

Dr. Srinivasan subsequently moved into the business development and technology licensing space, serving in MIT's Technology Licensing Office, where she helped commercialize technologies in medical devices and alternative energies. She then moved to UMass Medical School's Office of Technology Management in 2009 and to Emory University in Atlanta in 2014 as the Director of Public and Private Partnerships for the Woodruff Health Sciences Center. In 2019, Dr. Srinivasan joined Emory's Office of Corporate Relations as Executive Director, and in 2021, she led the Office of Corporate and Foundation Relations.

9:15 AM	Doubling Down on Digital Innovation: How Exceptional Firms Use Digital to Turn Uncertainty into Growth Nils Fonstad

In the face of increasing volatility and resource scarcity, many organizations continue to invest in digital yet aren't sure what to do next to translate those investments into much greater bottom-line impact. Others retreat from digital innovation. Dr. Fonstad's research finds that a few exceptional organizations do the opposite: they turn uncertainty into growth by doubling down on digital innovation. But they do so with a disciplined, test-and-learn approach for realizing their strategy with digital. Their *value realization model*consists of three key parts, each with a distinct set of leaders. Together, they generate strategic value systematically while mitigating risk. In this session, Dr. Fonstad will describe and discuss this approach to help participants identify opportunities to strengthen their organization's value realization model.

9:45 AM

Digital Twins and Industrial Performance: Bridging Physical and Virtual Worlds
Brian W Anthony

Associate Director, MIT.nano
Director of Technical Operations, Center for Clinical and Translational Research

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Dr. Brian Anthony is a leading expert in the design of intelligent, or smart, instruments and methodologies for monitoring, measuring, and controlling complex physical systems. His interdisciplinary work spans mechanical, electrical, and optical engineering, seamlessly integrated with computer science and optimization, to deliver innovative solutions across manufacturing, healthcare, and other industries.

At the core of Dr. Anthony's research is computational instrumentation—the development of advanced tools and techniques to observe and manage intricate systems, particularly in manufacturing and medical diagnostics. His contributions include pioneering measurement and imaging technologies that enhance precision and performance in both industrial and clinical settings.

With over 30 years of experience, Dr. Anthony combines deep academic insight with practical industry expertise in technology innovation, product development, and entrepreneurship. He has successfully guided market-driven solutions from concept to commercialization, especially at the intersection of information technology and advanced manufacturing. His achievements include receiving an Emmy Award from the Academy of Television Arts and Sciences for technical innovation in broadcast engineering.

In the classroom, Dr. Anthony is dedicated to teaching the modeling and analysis of large-scale systems to support decision-making in domains such as manufacturing, medicine, and entertainment. He also leads efforts in developing optimization algorithms and software tools for system design and evaluation.

Dr. Anthony's dual roles in academia and industry position him as a bridge between cutting-edge research and real-world application, driving impactful technologies that shape the future of engineering and innovation.

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A new era in manufacturing is emerging as the industry evolves from traditional automation to intelligent, autonomous operations - further guided by human-in-the-loop expert systems. This transformation is accelerating the journey from concept to market-ready product by leveraging the power of integrated digital technologies.

At the heart of the smart factory lies the digital twin—a comprehensive virtual replica of the physical world, encompassing everything from raw materials to finished goods. These digital twins serve as dynamic sandboxes, enabling companies to simulate, test, and refine processes before and during deployment. Continuously updated by real-time sensor data, they offer an unparalleled view into the health and performance of the entire manufacturing ecosystem.

When digital twins are combined with machine learning and connected to real-time control systems, the factory evolves into a self-optimizing entity. Data flows seamlessly from machines to models, generating predictive insights that prevent failures, reduce waste, and enhance efficiency.

This is not a vision of the distant future—it's happening now. Through compelling case studies, we'll explore how these technologies are already reshaping modern industry.

Crucially, we also examine the role of human expertise in guiding the context and application of these tools. Far from replacing people, autonomous systems amplify human intelligence, enabling more informed decisions and unlocking new levels of innovation.

10:15 AM

Fireside Chat: Pioneering Construction Innovation with Omniverse

Vincent Maret

Jérôme Loywick

During this fireside chat, Jérôme will share his vision for applying digital twins in the construction industry and highlight the opportunities enabled by NVIDIA Omniverse.

10:25 AM

Modeling Urban Nature: The Role of AI and Digital Twins in Tree Health Monitoring

Sara Beery

Natural world images collected by communities of enthusiast volunteers provide a vast and largely uncurated source of data. As an example, iNaturalist has enabled the collection of over 250 million images that are taxonomically identified by their community and then contributed to GBIF as species occurrence records. But these images contain a wealth of "secondary data" that gets lost when we label images with species alone, including crucial insights into interactions, animal social behavior, morphology, habitat, and co-occurrence. The analysis needed to surface valuable scientific insight beyond species is currently costly, time-consuming, and expert-dependent. We propose interactive, open-ended image retrieval as a mechanism to support scientific discovery in these collections, and introduce INQUIRE, a novel text-to-image retrieval benchmark built to provide a rigorous evaluation that challenges models to demonstrate advanced knowledge and visual reasoning on expert, scientifically impactful retrieval tasks. We demonstrate several case studies exploring the use of our tool to rapidly test ecological hypotheses, and discuss the need for innovation in statistical techniques to understand uncertainty in retrieval-derived trends.

10:55 AM

Coffee Break

11:25 AM

From Virtual Learning to Sustainable Action: The Central Role of Hybrid Digital Twins

Francesco Chinesta

Intelligent modeling technologies, such as digital twins, can enhance community-centric urban planning by simulating environments and generating predictive scenarios in response to critical or uncertain situations. This enables optimal planning as well as supported, or even automated, real-time decision-making.

11:55 AM

Fireside Chat : 2IN

Vincent Maret

Maud Guizol

Colas has advanced its use of BIM into a true territorial digital twin with 2IN, a mapping platform that integrates business and open data to improve project and asset management. This simple, accessible solution enhances operational performance, strengthens decision-making, and actively supports the ecological transition of our territories.

12:05 PM

Spotlight Speakers

Gabriel Vincent

Frederic Vacher

Yves Ubelmann

12:37 PM Closing Remarks

Christophe Lienard

Jewan Bae
Director, MIT Corporate Relations

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Jewan John Bae comes to MIT Corporate Relations with more than 20 years of experience in the specialty chemicals and construction industries. He facilitates fruitful relationships between MIT and the industry, engaging with executive level managers to understand their business challenges and match them with resources within the MIT innovation ecosystem to help meet their business objectives.

Bae's areas of expertise include new product commercialization stage gate process, portfolio management & resource planning, and strategic planning. He has held various business leadership positions at W.R. Grace & Co., the manufacturer of high-performance specialty chemicals and materials, including Director of Strategic Planning & Process, Director of Sales in the Americas, and Global Strategic Marketing Director. Bae is a recipient of the US Army Commendation Medal in 1986.