

MIT Industrial Liaison Program Faculty Knowledgebase Report

2024 MIT Houston Symposium

December 3, 2024 9:00 am - 5:30 pm

8:00 AM

Registration/Check-In

9:00 AM

Welcome and Introduction
Irina Sigalovsky
Director, MIT Corporate Relations



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Irina Sigalovsky is Director of MIT Corporate Relations where she builds mutually beneficial partnerships between corporations and MIT.

Dr. Sigalovsky comes to MIT with 10 years of international experience in innovation strategy, technology forecasting and external innovation. Prior to MIT, Irina worked at GEN3 Partners, Inc. as a senior principal collaborating with Fortune 1000 companies to focus their innovation investments, execute strategic innovation agendas, and develop business globally. Throughout her career, Irina has taught at Tufts University, MIT Sloan, X-Prize Lab@MIT, MIT HST, Boston and Harvard Universities.

Irina earned her B.S. degree in Biomedical Engineering from Boston University and her Ph.D. in Neuroscience from the MIT/Harvard Medical School Division of Health Sciences and Technology (HST).

9:05 AM

Industrial Transformation: A New Era of U.S. Manufacturing

Elisabeth B. Reynolds

U.S. manufacturing is at a transformational moment as the country embarks on an ambitious agenda to rebuild its industrial base. Supply chain priorities, climate threats, a changing geopolitical landscape, technological advances, and a new trajectory in public policy are leading to breakthrough innovations and significant investments in domestic manufacturing. Across core industries – transportation, semiconductors, defense, energy, and materials– there is a generational shift in U.S. manufacturing toward greater resilience, digitalization, and sustainability. Liz Reynolds will provide an overview of the recent changes that are impacting the U.S. industrial base and the implications for U.S. manufacturing going forward.

9:45 AM

Scaling New Technologies That Improve Work
Ben Armstrong
Executive Director, [MIT Industrial Performance Center](#)



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[MIT Industrial Performance Center](#)

Ben Armstrong is the executive director of MIT's Industrial Performance Center, where he co-leads the Work of the Future initiative. His research examines how workers, firms, and regions adapt to technological change. His current projects include a working group on generative AI, as well as a book on American manufacturing competitiveness. His work has been published or featured in academic and popular outlets including the New York Times, Harvard Business Review, Forbes, Sloan Management Review, Times Higher Education, the Boston Review, Daedalus, and Economic Development Quarterly. He received his PhD from MIT and formerly worked at Google Inc.

Despite fears that new technologies will displace workers, the most common outcome is for new technologies to transform the jobs we do and how we do them. The question is: how can we use technologies to make jobs more enjoyable and more productive? With historical examples and recent data, MIT's Ben Armstrong will identify strategies and opportunities for "positive-sum automation" that benefits firms and workers alike.

10:25 AM

Networking Break

10:50 AM

Panel Discussion: The Future of Work in the U.S.

Kathleen Kennedy

Elisabeth B. Reynolds

Ben Armstrong

Aurora Kennedy

Cyrus Shaoul

11:40 AM

MIT and its Innovation-Driven Entrepreneurial Ecosystem

Olivier J Cadet

Program Director, [MIT Industrial Liaison Program](#)



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Program Director

[MIT Industrial Liaison Program](#)

Prior to joining MIT in September 2022, Olivier Cadet was Senior Vice President Global Operations, Americas, and President of Kongsberg Maritime Inc. located in Houston, TX and responsible for Kongsberg Maritime operations in the Americas region. Prior to assuming his role in July 2018, Olivier was Executive Vice President of Products & Services, based in Norway. In that role, Olivier was overseeing the teams managing Kongsberg Maritime's products portfolio aligned with market demands and future trends, such as autonomous operations and digital performance. Olivier was also accountable for Kongsberg Maritime's strategic initiative around Information Management System and Smart Data.

Olivier started his international career in the offshore drilling industry in 1998, working for Schlumberger/Transocean as a Controls Engineer where he was involved in the installation, commissioning and support of Dynamic Positioning and Automation systems on offshore drilling rigs. In 2004 Olivier joined Air Liquide, the world leader in industrial gases, where he served for 9 years in a variety of innovation management roles, including R&D Group Manager and Program Director, driving Air Liquide's research efforts in the field of Advanced Process Control and Operations Research to support the company's efficiency program.

A dual citizen (U.S./France), Olivier graduated from the Grenoble Institute of Technology (INP Grenoble) in France in 1998 with a Master of Engineering (Diplôme d'Ingénieur) in Electrical Engineering. He completed the Advanced Management Program with MIT Sloan Executive Education in June 2022.

11:55 PM

Startup Exchange Lightning Talks

Ali Merchant

Shiv Bhakta

Andy Wang

Cyrus Shaoul

12:25 PM

Lunch

1:35 PM

Cyber Resilience: Thriving in the Age of GenAI-Driven Threats

Keri Pearlson

The bad guys are relentless, armed with cutting-edge GenAI, trickier phishing schemes, and new attack vectors. Brace yourself for a wild ride where traditional protection takes a backseat, and cyber resilience steals the spotlight. No more waiting for breaches to happen – it's time to take charge. From the desk jockeys to the big shots, everyone must be on the cyber resilience squad. Don't just survive, use this opportunity to thrive in the chaos of cyber threats because, in this digital jungle, resilience isn't an option; it's the only way to play the game.

2:15 PM

Data Analytics in the Smart Factory - From Digital Twins to Real-Time Control
Brian W Anthony

Associate Director, [MIT.nano](#)
Director, Immersion Lab
Co-Director, Advanced Manufacturing and Design Program
Technology Director, MIT Center for Clinical and Translational Research



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Dr. Anthony is an expert in designing instruments and techniques to monitor, measure, and control complex physical systems. His work integrates mechanical, electrical, and optical engineering with computer science and optimization to deliver innovative solutions across various manufacturing industries.

The core of Dr. Anthony's research lies in *computational instrumentation*—the development of tools and methods to monitor and control intricate systems in fields like manufacturing and medical diagnostics. His work includes creating advanced measurement and instrumentation solutions for both manufacturing systems and medical imaging technologies.

Beyond academia, Dr. Anthony brings extensive experience in technology innovation, product realization, and business entrepreneurship, particularly at the convergence of information technology and advanced manufacturing. He has over 25 years of experience driving market-driven technology solutions from concept to commercialization. His achievements include winning an Emmy Award from the Academy of Television Arts and Sciences for broadcast technical innovation.

In the classroom, Dr. Anthony focuses on teaching the modeling of large-scale systems for decision-making across various domains. He is also deeply involved in developing optimization algorithms and software for analyzing and designing these systems. His dual experience in academia and industry positions him as a leader in translating cutting-edge research into practical, impactful technologies.

[View full bio](#)
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The manufacturing industry is undergoing a major transformation, shifting from automated to autonomous operations. This change promises to speed up the process of turning ideas into real, market-ready products. The key to making this happen is the integration of digital technologies, including sensors, data, computing power, and information systems.

At the heart of this shift are digital twins—virtual models that represent not just the products but also the materials, manufacturing processes, supply chains, and production lines. These digital replicas allow manufacturers to simulate, monitor, and improve operations in real-time using sensor data. By combining physical and digital worlds, digital twins help bridge the gap between designing a product and bringing it to life. When digital twins are combined with real-time control systems and machine learning, factories become smarter and more adaptive. Real-time data flows from sensors to digital models and ML algorithms, enabling predictive maintenance, reducing waste, and optimizing production. This connected ecosystem creates a highly efficient, data-driven manufacturing environment. We'll explore real-world examples of these technologies in action and how they are shaping the future of manufacturing today.

2:55 PM

Networking Break

3:20 PM

Panel Discussion: The Future of Operations

Kathleen Kennedy

Keri Pearlson

Brian W Anthony

Robert Scott

Erik Lee

4:10 PM

Key Takeaways & Trends

Kathleen Kennedy

4:30 PM

Adjournment with Networking Reception