MIT Industrial Liaison Program Faculty Knowledgebase Report

2025 MIT Chile Symposium

July 8, 2025 - July 10, 2025

Antofagasta | July 8, 2025

[redacted]

Enjoy Hotel,
Av. Angamos N° 01455, 1272037, Antofagasta, Región de Antofagasta, Chile
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8:30 AM	Registration
8:40 AM	Welcome and Opening Remarks René Aguilar Eduardo Garrido

9:10 AM

Data Analytics in the Smart Factory - 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.

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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.

10:00 AM

Startup Lightning Talks

10:45 AM

Coffee Break

11:15 AM

Automation from the Worker's Perspective: How Can New Technologies Make Jobs Better?
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 concerns that new technologies will displace workers, the more common outcome is that they transform the jobs we do—and how we do them. The question is: how can we use these technologies to make work more enjoyable and more productive? Drawing on historical examples and recent data, MIT's Ben Armstrong will outline strategies and opportunities for "positive-sum automation" that benefit both firms and workers.

12:00 PM

Startup Lightning Talks

12:45 PM

Startup Exhibit

Santiago | July 10, 2024

W Hotel,
Isidora Goyenechea 3000, 7550653 Las Condes, Región Metropolitana, Chile
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Iván Arriagada

Eduardo Garrido

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