2022 MIT Manufacturing Conference

March 16, 2022 9:00 am - 5:00 pm

8:00 AM - 8:45 AM  Registration and Light Breakfast
Welcome and Introduction
John Roberts
Executive Director (Interim), MIT Corporate Relations

John Roberts has been Executive Director of MIT Corporate Relations (Interim) since February 2022. He obtained his Ph.D. in organic chemistry at MIT and returned to the university after a 20-year career in the pharmaceutical industry, joining the MIT Industrial Liaison Program (ILP) in 2013. Prior to his return, John worked at small, medium, and large companies, holding positions that allowed him to exploit his passions in synthetic chemistry, project leadership, and alliance management while growing his responsibilities for managing others, ultimately as a department head. As a program director at MIT, John built a portfolio of ILP member companies, mostly in the pharmaceutical industry and headquartered in Japan, connecting them to engagement opportunities in the MIT community. Soon after returning to MIT, John began to lead a group of program directors with a combined portfolio of 60-80 global companies. In his current role, John oversees MIT Corporate Relations which houses ILP and MIT Startup Exchange.

Ron Spangler
Program Director, MIT Corporate Relations

Ron Spangler joined the Office of Corporate Relations (OCR) in October 2013 as Senior Industrial Liaison Officer.

Spangler comes to OCR with many years of experience in business development, portfolio management, product development, and strategy. For the past thirteen years, he has been at TIAX as Director, Government Business Development where he has been responsible for new technology-based business development, with emphasis on products and services in energy and defense. Prior to that, he was at Milde Technology Corporation, an MIT spinoff, as Vice President, Marketing and Business Development. Spangler has also held positions at Cymer, Inc. as Director, Product Marketing, Emerging Technologies and Applications and as Director, Semiconductor Applications; at Active Control eXperts, Inc. as General Manager, Sports Equipment Business Unit and as Engineering Manager, Vibration and Motion Control Business Unit; and at Litton Industries, Itek Optical Systems Division, as Senior Electrical Engineer.

Spangler earned his S.B., Aeronautics and Astronautics, his S.M., Aeronautics and Astronautics, and his Ph.D from the Department of Aeronautics and Astronautics here at MIT. He was also a member of the MIT Rugby Football Club, Sigma Xi Scientific Research Society, Tau Beta Pi Engineering Honor Society, and General Manager of WMBR-FM.

Spangler has many publications and patents to his credit and is an FAA licensed pilot with a glider rating.
9:00 AM - 9:40 AM

Shocks and Shortages: Reconsidering the “Skills Gap” in U.S. Manufacturing

Ben Armstrong
Interim Executive Director, MIT Industrial Performance Center

Ben Armstrong
Interim Executive Director
MIT Industrial Performance Center

Ben Armstrong is the Interim Executive Director and a Research Scientist at MIT's Industrial Performance Center. His research and teaching examine how workers, firms, and regions adapt to technological change. His current projects include a national plan for the U.S. manufacturing workforce in partnership with the Department of Defense, as well as a regional playbook developing lessons for struggling regional economies in the United States. In his work, Ben has collaborated with governments, non-profit organizations, and firms to understand how scholarship and education can be useful to practitioners and policymakers.

Previously, Ben was a Research Fellow and Postdoctoral Research Associate at Brown University, where he studied how workers, policymakers, and the public think about automation and taught courses on technology, public policy, and capitalism. He worked with the Provost to spearhead the Brown and the Innovation Economy initiative, which developed a strategy for the university to contribute to good job growth in the region, and a faculty colloquium on the future of work. In partnership with the State of Rhode Island and others, he studied the longest autonomous vehicle public transit route in the United States to date.

Ben completed his undergraduate degree at Northwestern University and his PhD at MIT, where he received the Lucian Pye Award for Outstanding Political Science PhD Dissertation. Before graduate school, he helped lead an open-source hardware non-profit and worked at Google Inc.

Job openings in U.S. manufacturing spiked during 2021, but workforce challenges are nothing new: factories have been struggling to recruit and retain workers for more than a decade. This presentation will examine the roots of the problem, as well as how some firms are adapting more successfully than others.
J.J. Laukaitis
Program Director, MIT Corporate Relations

J.J. Laukaitis joined the Industrial Liaison Program in 2012 and is a strong believer in the amplifying power that comes from building enduring relationships between industry leaders and MIT researchers and innovators.

J.J. has over 25 years of experience in engineering, product management and commercial sales management across multiple industries including mechanical design and manufacturing, electronics, semiconductor equipment, health care IT and renewable energy.

In his work for PTC, Continuum, Teradyne, DFT Microsystems and GE, J.J. has managed programs to conceive, design and launch new products and services and has led major initiatives to transform customer information into insight for revenue growth.

Ben Armstrong
Interim Executive Director, MIT Industrial Performance Center

Ben Armstrong is the Interim Executive Director and a Research Scientist at MIT’s Industrial Performance Center. His research and teaching examine how workers, firms, and regions adapt to technological change. His current projects include a national plan for the U.S. manufacturing workforce in partnership with the Department of Defense, as well as a regional playbook developing lessons for struggling regional economies in the United States. In his work, Ben has collaborated with governments, non-profit organizations, and firms to understand how scholarship and education can be useful to practitioners and policymakers.

Previously, Ben was a Research Fellow and Postdoctoral Research Associate at Brown University, where he studied how workers, policymakers, and the public think about automation and taught courses on technology, public policy, and capitalism. He worked with the Provost to spearhead the Brown and the Innovation Economy initiative, which developed a strategy for the university to contribute to good job growth in the region, and a faculty colloquium on the future of work. In partnership with the State of Rhode Island and others, he studied the longest autonomous vehicle public transit route in the United States to date.

Ben completed his undergraduate degree at Northwestern University and his PhD at MIT, where he received the Lucian Pye Award for Outstanding Political Science PhD Dissertation. Before graduate school, he helped lead an open-source hardware non-profit and worked at Google Inc.

Thomas Kochan
George Maverick Bunker Professor of Management
Professor Post Tenure, MIT Sloan School of Management

Thomas A. Kochan is the Post-Tenure George Maverick Bunker Professor at the MIT Sloan School of Management and a faculty member in the MIT Institute for Work and Employment Research. Kochan focuses on the need to update America’s work and employment policies, institutions, and practices to catch up with a changing workforce and economy. His recent work calls attention to the need for a new social contract at work, one that anticipates and engages current and future technological changes in ways that build a more inclusive economy and broadly shared prosperity. Through empirical research, he demonstrates that fundamental changes in the quality of employee and labor-management relations are needed to address America’s critical problems in industries ranging from healthcare to airlines to manufacturing. His most recent book is Shaping the Future of Work: A Handbook for Action and a New Social Contract (Routledge, 2021).

He is a member of the National Academy of Human Resources, the National Academy of Arbitrators, and past president of the International Industrial Relations Association and the Industrial Relations Research Association. Currently he is member of the MIT Task Force on Work of the Future.

Kochan holds a BBA in personnel management as well as an MS and a PhD in industrial relations from the University of Wisconsin. View full bio

Duane Graupman
Vice President of Global Operations and Supply Chain
Xylem, Inc.

Michael McDonnell
Vice President - Chief Technology and Innovation Officer
Amsted Rail
<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:20 AM - 10:25 AM</td>
<td>MIT Professional Education</td>
</tr>
<tr>
<td>10:25 AM - 10:55 AM</td>
<td>Networking Break</td>
</tr>
</tbody>
</table>
Ron Spangler joined the Office of Corporate Relations (OCR) in October 2013 as Senior Industrial Liaison Officer.

Spangler comes to OCR with many years of experience in business development, portfolio management, product development, and strategy. For the past thirteen years, he has been at TIAX as Director, Government Business Development where he has been responsible for new technology-based business development, with emphasis on products and services in energy and defense. Prior to that, he was at Milde Technology Corporation, an MIT spinoff, as Vice President, Marketing and Business Development. Spangler has also held positions at Cymer, Inc. as Director, Product Marketing, Emerging Technologies and Applications and as Director, Semiconductor Applications; at Active Control eXperts, Inc. as General Manager, Sports Equipment Business Unit and as Engineering Manager, Vibration and Motion Control Business Unit; and at Litton Industries, Itek Optical Systems Division, as Senior Electrical Engineer.

Spangler earned his S.B., Aeronautics and Astronautics, his S.M., Aeronautics and Astronautics, and his Ph.D from the Department of Aeronautics and Astronautics here at MIT. He was also a member of the MIT Rugby Football Club, Sigma Xi Scientific Research Society, Tau Beta Pi Engineering Honor Society, and General Manager of WMBR-FM.

Spangler has many publications and patents to his credit and is an FAA licensed pilot with a glider rating.

Emre Gençer joined the MIT Energy Initiative in September 2016. His research interests include efficient and integrated process design, as well as renewable energy conversion and optimization. Currently, he is working on a multi-level systems analysis of carbon capture, utilization, and storage technologies.

Emre holds a Ph.D in Chemical Engineering from Purdue University. He received both a B.Sc. in Chemical Engineering and B.Sc. in Mathematics from Bogazici University in Istanbul, Turkey.

Jacquelyn Pless is the Fred Kayne (1960) Career Development Professor of Entrepreneurship and an Assistant Professor at the MIT Sloan School of Management. Her research interests are in the economics of innovation, energy and environmental economics, and public economics.

Her research focuses on understanding how policy affects firm behavior and innovation outcomes, with a particular interest in clean energy innovation. Current projects concentrate on the role of public subsidies in driving private research and development investments and the direction of innovation. Other work examines renewable energy markets and how environmental policy impacts firm competitiveness.

She holds an MS and PhD in mineral and energy economics from the Colorado School of Mines, and a BA in economics and political science from the University of Vermont.
Ariadna Rodenstein
Events Leader, MIT Startup Exchange

Ariadna joined MIT Startup Exchange in a new role as Events Leader in September 2019. She has responsibility for the development and execution of events featuring startups, and for helping to promote collaboration and partnerships between MIT-connected startups and industry. She works closely with the Industrial Liaison Program (ILP), also within Corporate Relations, and with other areas around the MIT innovation ecosystem and beyond. Prior to this, Ariadna worked for over a decade at Credit Suisse Group in New York City and London in a few different roles in event management and later became a Director for client strategy. She has combined her experience in the private sector with work in non-profits as a Consultant and Development Director at the New York Immigration Coalition, Immigrant Defense Project and Americas Society/Council of the Americas. Ariadna also served on the Board of the Riverside Clay Tennis Association in NY for several years. She earned her B.A. in Political Science and Communications from New York University (NYU), also doing coursework at the Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM) in Mexico City, and her M.A. in Sociology from the City University of New York (CUNY).

Dan Paluska
Co-founder and Chief Roboticist
Pickle Robot

David Sossen
Senior Advisor and Director
Coventry

John Greenfield
VP of Business Development and Partnerships
Everactive

Kimo Johnson
Co-founder and CSO
GelSight

Cyrus Shaoul
Co-founder and CEO
Leela AI

Elise Jones
Content and Experiential Marketing Lead
Tulip

Emily Malina
Co-Founder & President
Spoiler Alert

Ali Merchant
Co-founder and CEO
iQ3Connect

Emanuel Zgraggen
Co-founder & CEO
Einblick

Dave Landry
Co-founder and CEO
Datawheel
1:50 PM - 2:40 PM

Successful Implementation of Machine Intelligence in Manufacturing and Operations
Bruce Lawler
Managing Director, MIT Machine Intelligence for Manufacturing and Operations

Bruce Lawler is a technology entrepreneur and executive leader with consecutive public and private exits, and early stage investing success with leading venture firms including Accel, CRV, KPCB, Redpoint, Sequoia, and Softbank. He is an industry thought leader and public speaker with development expertise in mobile applications, SaaS, artificial intelligence systems and video distribution networks; and an operations executive with experience ranging from consumer and industrial hardware/electronics manufacturing to wireless and video network operations (DevOps). Bruce is also President of ReBuild Digital where he is focused on rebuilding America’s manufacturing base and creating meaningful, sustainable jobs through the application of digital technologies.

In 1998 Bruce founded a company to deliver digital video over the internet and had a successful IPO 2 years later. In 2001 he founded a venture capital firm focused on investing in mobile phone technology. He invested in other successful entrepreneurs like Andy Rubin, the creator of Android. In 2003 he founded a company to write applications for mobile phones which he recently sold to Motorola.

Bruce began his career in Artificial Intelligence as a COMMON LISP developer at ICAD where he helped to automate design and manufacturing for companies that included Boeing, Airbus, GM, GE, Northrop Grumman and Ford. He also helped fast track the porting of ICAD’s core platform from LISP/Symbols to C++/SUN. At Kodiak, Bruce led the development of the Kodiak Business Intelligence, a data visualization and analytics platform now used by Motorola.

Bruce attended Purdue University where he received his Bachelor’s degree in Engineering specializing in electro-mechanical control systems and was a President’s Honor Award recipient. In 1990 he was awarded the LGO Fellowship to attend MIT, where he obtained both a Master of Science in Engineering and an MBA from MIT’s Sloan School.

Which companies deploy machine intelligence and data analytics successfully for manufacturing and operations? Why are those leading adopters so far ahead — and what can others learn from them? MIT Machine Intelligence for Manufacturing and Operations (MIMO) and McKinsey & Company have the answer. This talk will provide the detail behind a newly published Harvard Business Review article that reveals the findings of a 100-company quantitative and qualitative study to explain how high-performing companies successfully wield machine learning technologies (and where others could improve).
Supply chains have been in the spotlight throughout the protracted pandemic. Discussions about resilience, which historically spike during disruption, are now more persistent. This talk explores experiences that have improved understanding of supply chains and considers how to leverage collective knowledge to increase resilience for all.
Yuri Ramos brings 20 years of international experience, having worked with Information Technology for multinational companies in his native Brazil, throughout South America and in the United States. Before MIT, Yuri was with Santander Bank N.A., where he first worked as a Sr. Manager for online and mobile initiatives, and then as Chief of Staff for the CIO of Digital Channels.

Prior to Santander, Yuri was the co-founder and CEO of 2 startups in the EdTech space. In both endeavors he was responsible for strategy, business development and operations. Before this entrepreneurial period, Yuri held positions at Universo Online – Brazil’s largest Internet portal - as Director of Operations and Senior Manager; at ACISION as Engineering Manager (Latin America Operations) and Senior Project Manager; and at Nortel Networks as Project Manager.

Yuri earned his Bachelor’s degree in Mathematics at the University of Brasilia, and his MBA at MIT where he was a Sloan Fellow.

Retsef Levi
J Spencer Standish (1945) Professor of Management
Professor of Operations Management
MIT Sloan School of Management

Retsef Levi is the J. Spencer Standish (1945) Professor of Operations Management at the MIT Sloan School of Management. He is a member of the Operations Management Group at Sloan and affiliated with the Operations Research Center. Before coming to MIT, he spent a year in the Department of Mathematical Sciences at the IBM T.J. Watson Research Center as the holder of the Goldstine Postdoctoral Fellowship. He received a Bachelor's degree in Mathematics from Tel-Aviv University (Israel) in 2001, and a PhD in Operations Research from Cornell University in 2006. Levi spent more than 11 years in the Israeli Defense Forces as an Officer in the Intelligence Wing and was designated as an Extra Merit Officer. After leaving the Military, Levi joined and emerging new Israeli hi-tech company as a Business Development Consultant.

Levi’s current research is focused on the design of analytical data-driven decision support models and tools addressing complex business and system design decisions under uncertainty in areas, such as health and healthcare management, supply chain, procurement and inventory management, revenue management, pricing optimization and logistics. He is interested in the theory underlying these models and algorithms, as well as their computational and organizational applicability in practical settings. Levi is leading several industry-based collaborative research efforts with some of the major academic hospitals in the Boston area, such as Mass General Hospital (MGH), Beth Israel Deaconess Medical Center (BIDMC), Children’s Hospital, and across the US (e.g., Memorial Sloan Kettering Cancer Center, NYC Prebyterian Hospital System and the American Association of Medical Colleges). Levi is the lead PI on an MIT contract with the Federal Drug
How To Disrupt (almost) Everything
Neil Gershenfeld
Director, Center for Bits and Atoms

Prof. Neil Gershenfeld is the Director of MIT's Center for Bits and Atoms, where his unique laboratory is breaking down boundaries between the digital and physical worlds, from pioneering quantum computing to digital fabrication to the Internet of Things. Technology from his lab has been seen and used in settings including New York's Museum of Modern Art and rural Indian villages, the White House and the World Economic Forum, inner-city community centers and automobile safety systems, Las Vegas shows and Sami herds. He is the author of numerous technical publications, patents, and books including Designing Reality, Fab, When Things Start To Think, The Nature of Mathematical Modeling, and The Physics of Information Technology, and has been featured in media such as The New York Times, The Economist, NPR, CNN, and PBS. He is a Fellow of the American Association for the Advancement of Science and the American Physical Society, has been named one of Scientific American's 50 leaders in science and technology, as one of 40 Modern-Day Leonards by the Museum of Science and Industry, one of Popular Mechanic's 25 Makers, has been selected as a CNN/Time/Fortune Principal Voice, and by Prospect/Foreign Policy as one of the top 100 public intellectuals. He's been called the intellectual father of the maker movement, founding a growing global network of over two thousand fab labs in 125 countries that provide widespread access to prototype tools for personal fabrication, directing the Fab Academy for distributed research and education in the principles and practices of digital fabrication, and chairing the Fab Foundation. He is a co-founder of the Interspecies Internet and of the Science and Entertainment Exchange. Dr. Gershenfeld has a BA in Physics with High Honors from Swarthmore College, a Ph.D. in Applied Physics from Cornell University, honorary doctorates from Swarthmore College, Strathclyde University and the University of Antwerp, was a Junior Fellow of the Harvard University Society of Fellows, and a member of the research staff at Bell Labs.

Adjournment with Networking Reception