

# MIT Industrial Liaison Program Faculty Knowledgebase Report

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December 7, 2021 10:00 am - 11:00  
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10:00 AM

Introduction  
J.J. Laukaitis  
Program Director, [MIT Corporate Relations](#)



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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.

10:05 AM

Growing Silk for Agrofood Resilience  
Benedetto Marelli  
Paul M. Cook Career Development Associate Professor  
MIT Department of Civil and Environmental Engineering  
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Paul M. Cook Career Development Associate Professor  
MIT Department of Civil and Environmental Engineering

Benedetto Marelli is the Paul M. Cook Career Development Associate Professor in the Department of Civil and Environmental Engineering at the Massachusetts Institute of Technology. The Marelli research group works on structural biopolymers and nanomanufacturing to design biomaterials with applications in precision agriculture, food security and food safety. The Marelli lab has recently developed new technologies to minimize food waste, enable agriculture in marginal lands, rapidly detect food contamination and precisely deliver payloads in plants. Benedetto has received several awards, including PECASE, NSF CAREER, ONR Young Investigator Award and ONR Director of Research Early Career Award. Benedetto has also joined the 2021-2023 New Voices Program promoted by the National Academies of Sciences, Engineering and Medicine. Benedetto is the co-founder of Mori, a startup that aims at reducing food waste to extend the shelf-life of perishable food. Mori is based in Boston, MA and has raised more than US\$36M in capital funding.

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10:35 AM

Rapid Detection of Plant Stress

Rajeev Ram

Professor of Electrical Engineering, Electrical Engineering and Computer Science (EECS)



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Rajeev J. Ram has worked in the areas of physical optics and electronics for much of his career. In the early 1990's, he developed the III-V wafer bonding technology that led to record brightness light emitting devices at Hewlett-Packard Laboratory in Palo Alto. While at HP Labs, he worked on the first commercial deployment of surface emitting lasers. In the early 1990's, he developed the first semiconductor laser without population inversion, semiconductor lasers that employ condensation of massive particles, and threshold-less lasers.

Since 1997, Ram has been on the Electrical Engineering faculty at the Massachusetts Institute of Technology (MIT) and a member of the Research Laboratory of Electronics. He has served on the Defense Sciences Research Council advising DARPA on new areas for investment and served as a Program Director at the newly founded Advanced Research Project Agency-Energy. At ARPA-E, he managed a research portfolio exceeding \$100M and consulted with the Office of Science and Technology Policy and the White House.

His group at MIT has developed record energy-efficient photonics for microprocessor systems, microfluidic systems for the control of cellular metabolism, and the first light-source with greater than 100% electrical-to-optical conversion efficiency. His group's work on small-scale solar thermoelectric generation is being deployed for rural electrification in the developing world as SolSource and was recognized with the St. Andrews Prize for Energy and the Environment.

Ram holds degrees in Applied Physics from California Institute of Technology and Electrical Engineering from the University of California, Santa Barbara.

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