

# MIT Industrial Liaison Program Faculty Knowledgebase Report

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## Advances in Additive Manufacturing

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February 16, 2023 10:00 am - 11:50  
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10:00 AM

Welcome and Introductions  
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

Better and Faster Metal Parts, to Enable the Next Generation of Industrial Innovation

Jake Guglin  
Founder and CEO  
[Foundation Alloy](#)

Foundation Alloy takes a materials-driven approach to innovate in production-scale metal parts manufacturing. Foundation metals improve both the processing and performance of parts, solving critical supply chain issues while providing engineers superior properties to design around. The combination - higher performance parts delivered through a fast, flexible, reliable and cost-effective supply chain - adds both speed and power to engineering cycles, providing an entirely new foundation upon which companies across industries can build their future products.

10:30 AM

Accelerating the Implementation of Additive Manufacturing – MIT Center for Additive and Digital Advanced Production Technologies

John Hart

Director, Center for Additive and Digital Advanced Production Technologies (APT)

Director, Laboratory for Manufacturing and Productivity

Professor of Mechanical Engineering, [MIT Department of Mechanical Engineering](#)



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[MIT Department of Mechanical Engineering](#)

[John Hart](#) is Professor of Mechanical Engineering, Director of the [Center for Additive and Digital Advanced Production Technologies](#), and Director of the Laboratory for Manufacturing and Productivity, at MIT. John's research group at MIT, the [Mechanosynthesis Group](#), aims to accelerate the science and technology of production via advancements in additive manufacturing, nanostructured materials, and precision machine design. In 2017 and 2018, respectively, he received the MIT Ruth and Joel Spira Award for Distinguished Teaching in Mechanical Engineering and the MIT Keenan Award for Innovation in Undergraduate Education. He is a co-founder of [Desktop Metal](#) and [VulcanForms](#), and a Board Member of [Carpenter Technology Corporation](#).

10:55 AM

VulcanForms: Laser Powder Bed Fusion at Industrial Scale

John Hart

Director, Center for Additive and Digital Advanced Production Technologies (APT)

Director, Laboratory for Manufacturing and Productivity

Professor of Mechanical Engineering, MIT Department of Mechanical Engineering

Co-Founder

[VulcanForms](#)

11:20 AM

Materials Development at MIT Lincoln Laboratory for Multi-Material Additive Manufacturing

Bradley P. Duncan

Technical Staff

[MIT Lincoln Laboratory](#)

Additive manufacturing offers the unprecedented ability to design and fabricate novel devices with unique properties. For example, the geometric design freedom provided by emerging multi-material additive manufacturing techniques permits the tailoring of materials composition at the voxel level. However, the available materials set for additive manufacturing techniques are extremely limited, so this design freedom cannot be fully appreciated. MIT Lincoln Laboratory has been developing a number of additive manufacturing materials and processes to address this challenge. A family of nanocomposite inks and their use with custom active mixing nozzle will be discussed. A low temperature process for fabricating 3D glass structures will also be described.

11:50 AM

Adjournment