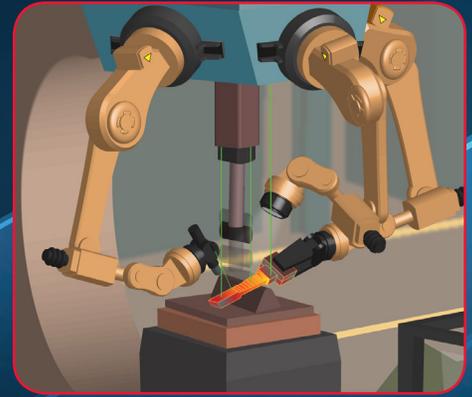


The Minerals, Metals & Materials Society (TMS)  
cordially invites you to the Congressional Briefing:

# METAMORPHIC MANUFACTURING

A New Frontier for Digital Manufacturing



Hosted by the House Manufacturing Caucus

Sponsored by The Minerals, Metals & Materials Society (TMS) and the United Engineering Foundation



## KEY INFORMATION

Thursday, June 6, 2019 • 12:00 p.m. to 1:30 p.m. • 2044 Rayburn House Office Building  
Lunch will be served. • RSVP by May 31 at [www.tms.org/MetamorphicBriefing](http://www.tms.org/MetamorphicBriefing)

## BRIEFING DESCRIPTION

Imagine agile, robotic arms able to shape metals into highly precise parts, large and small, with almost no waste. Now, imagine that this methodology can also create new market opportunities and increased economic growth. Metamorphic Manufacturing, a new technology that forges metal objects to precise specifications, takes the skill and force of a human metalsmith and replicates it with a combination of robotic systems, intelligent machines, sensors, and integrated computational learning (i.e., artificial intelligence). **The U.S. is in the lead in developing Metamorphic Manufacturing, and it is vital to ensure we remain the leaders in the field.**

Also called robotic blacksmithing, this has enormous potential to be a disruptive manufacturing technology, particularly for the production of highly specialized, complex, customized parts. It can be applied to a variety of metals, and has the ability to control properties with high precision and a low carbon dioxide footprint. Metamorphic Manufacturing will call for new types of training and education and will yield new types of jobs. **The first industries most likely to benefit are aerospace, maritime, and automotive, while defense and medical sectors are expected to take great advantage of this technology.**

Compared with similar technologies, Metamorphic Manufacturing can be cheaper, faster, produce higher quality parts and with a lower carbon output. Join us to learn how this technology could potentially shape the future of advanced manufacturing and advance the U.S. economy, productivity, and national security.

## SPEAKERS

### FEATURED SPEAKER

**Glenn Daehn, Ph.D.,**  
The Ohio State University

Glenn Daehn is the Fontana Professor of Metallurgical Engineering at The Ohio State University. His research, education, and service efforts are all related to the interwoven themes of manufacturing revival, which in turn depends on technology development, regional industry, and the development of a world-class workforce. Daehn is active in a number of manufacturing initiatives, including playing key roles in establishing the Lightweight Innovations for Tomorrow Manufacturing USA Institute, the Ohio State Center for Design and Manufacturing Excellence, and the Ohio Manufacturing Institute.

### Moderator

**George Spanos, Ph.D.,**  
Director of New Initiatives,  
Science and Engineering, TMS



For more information, contact Mary Samsa, TMS Public Affairs Manager, at [msamsa@tms.org](mailto:msamsa@tms.org) or 1-724-814-3130.