### **IUTAM**

# Symposium on Architectured Material Mechanics

Architectured materials are an emerging and exciting class of materials with the promise of advantageous performance and multifunctional properties. These materials are characterized by specific and periodic structural features which are larger than what is typically considered a microstructural length scale (such as a grain size) but smaller than the size of the final component made of the architectured material. This class of materials includes but is not limited to lattice materials and cellular material systems, dense material systems composed of building blocks of well-defined size and shape.

The key characteristic distinguishing architectured materials from other materials is their very high morphological control, and architectured materials can therefore be considered high information materials. The tight control of the morphological characteristics allows to predefine and control specific mechanisms of local stress transfer, elastic/plastic buckling, gliding of building blocks or propagation of cracks along predefined paths. Well-designed architectured materials can generate new and attractive combinations of properties which can be programmed in the material. In particular, the empty spaces and gliding interfaces contained in architectured materials can be exploited to overcome the theoretical bounds that apply to monolithic materials.

This IUTAM symposium will provide a state of the art on the engineering science of architectured materials and focus on the mechanics, design, fabrication and mechanical performance of all categories of architectured materials including but not limited to lattice materials, metamaterials and topologically interlocked materials.

Symposium: Sept. 17-19, 2018

Location: The Gleacher Center, Downtown Chicago, IL, USA

#### **Conference Chairs:**

- Thomas Siegmund, Purdue University, siegmund@purdue.edu (mailto:siegmund@purdue.edu)
- Francois Barthelat, McGill University, francois.barthelat@mcgill.ca (mailto:francois.barthelat@mcgill.ca)

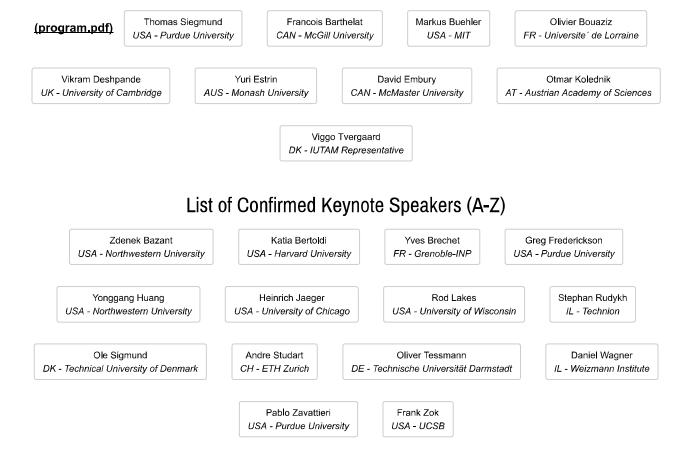
#### Conference Contact:

Please submit inquires to amm2018@purdue.edu (mailto:amm2018@purdue.edu)

#### Program:

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## **Scientific Committee**



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