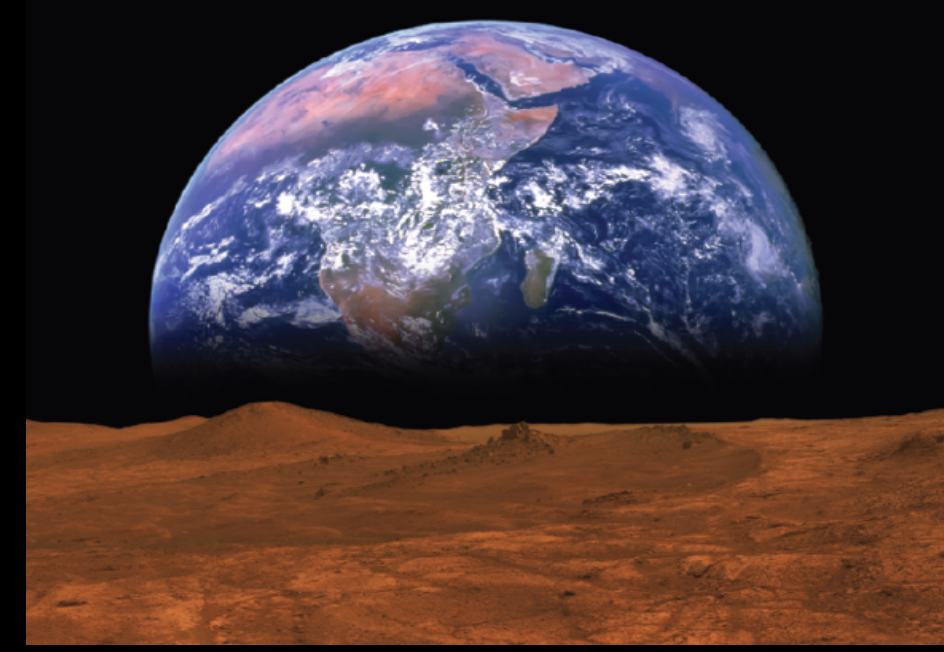




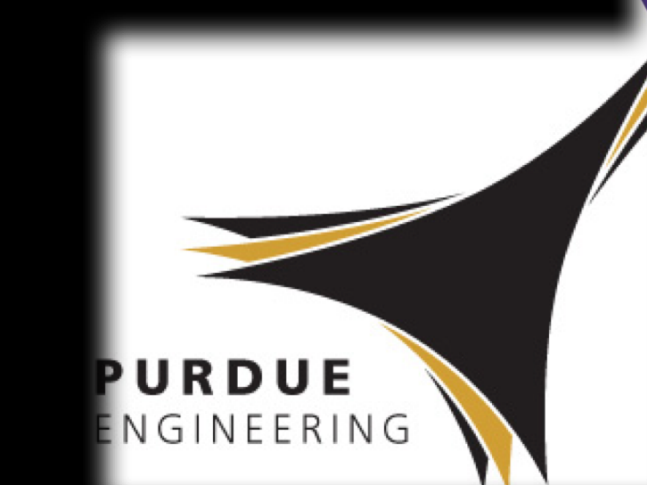
Additive Manufacturing for Habitats

J. Olek¹, M. Moini¹, P.D. Zavattieri¹, and J.P. Youngblood², J. Biernacki³, A. S. Mohammad³, B. Y. Onanuga³,
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RETH International Workshop, October 22nd - 23rd, 2018

Purdue University

Combining **bioinspired architectures** in design along with **introduced flaws** during 3D-printing allowed for:

- ❖ Flaw-tolerant properties and resilient structures
- ❖ Enhance toughness and inelastic deformation in materials with brittle characteristics

Tennessee Technological University

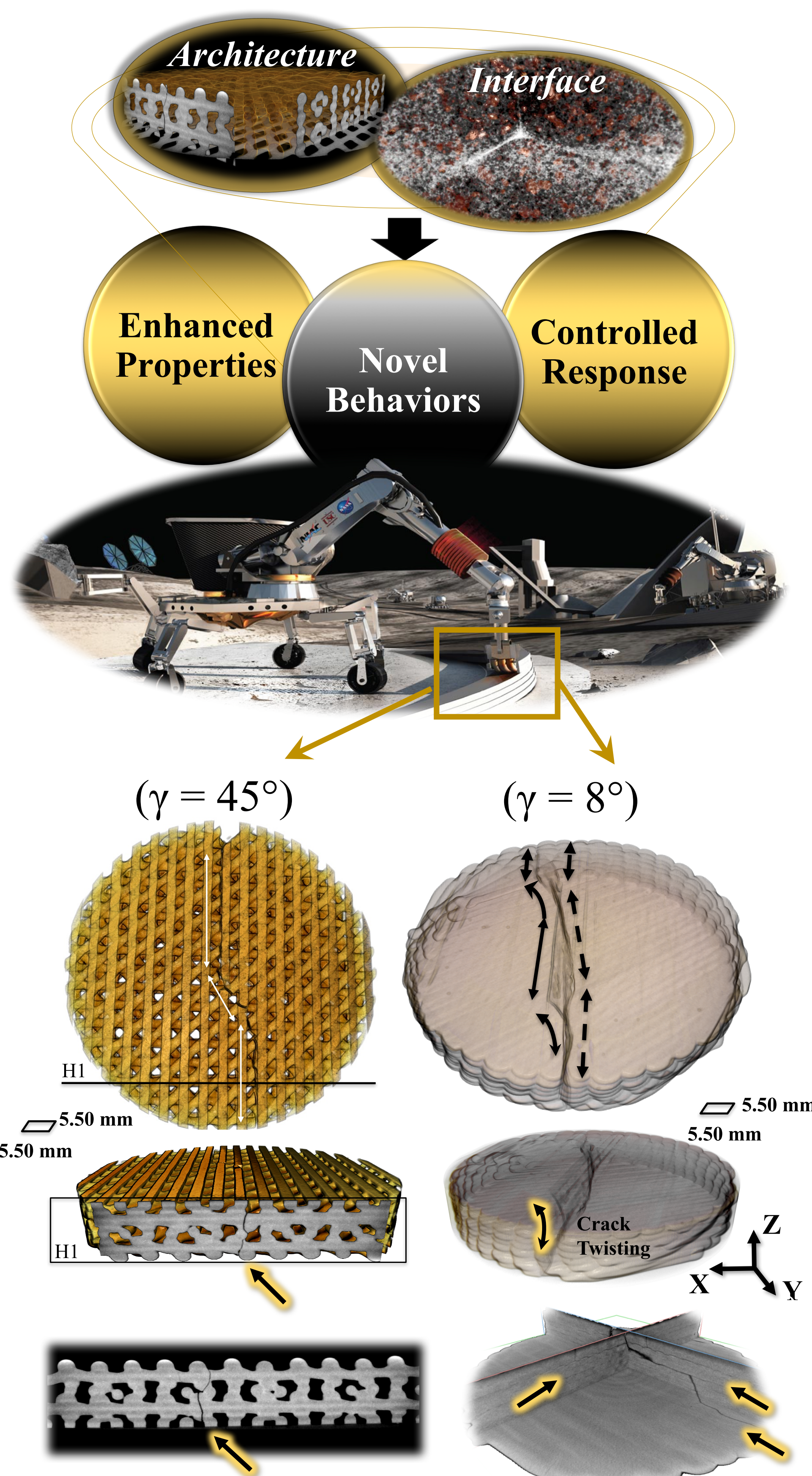
Printing paste formulation, additive chemistry, rheology, printability and flow modeling:

- ❖ Uniformity of printed paste across various length scales
- ❖ Predictability of paste design and print outcomes as a function of print scale

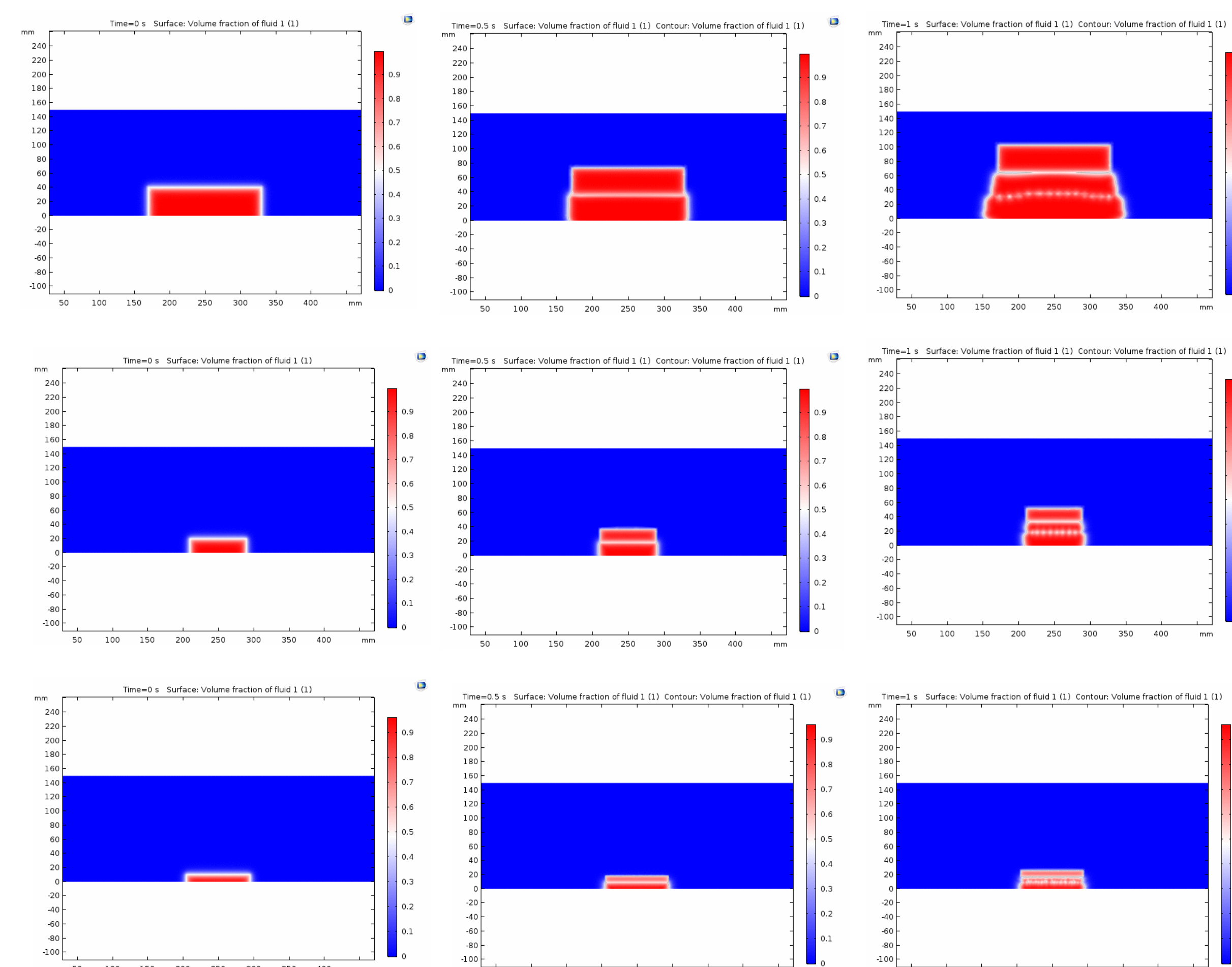
Vanderbilt University

Characterizing the interfaces between layers of 3D printed cement paste for different printed patterns:

- ❖ Studying the effects of interfaces on the bulk material properties of 3D printed cement pastes



Continuum Scale



Particulate Scale

