Dr. Ali Vahdati

Assistant Professor, Biomedical and Mechanical Engineering
Multi-physics and Multi-Scale Modeling, Medical Devices,
Biomechanics and Mechanobiology, Tissue Engineering,
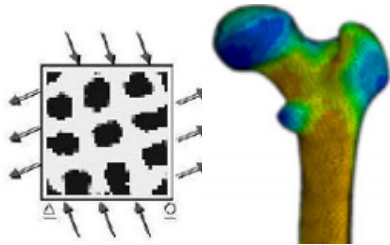*Computational and Experimental Modeling for Precision Medicine*

Computational Modeling in Precision Medicine

- *Implant-Tissue Interaction*
- *Bone Mechanics and Remodeling around Personalized Implants*
- *Subject-Specific Surgical Modeling*
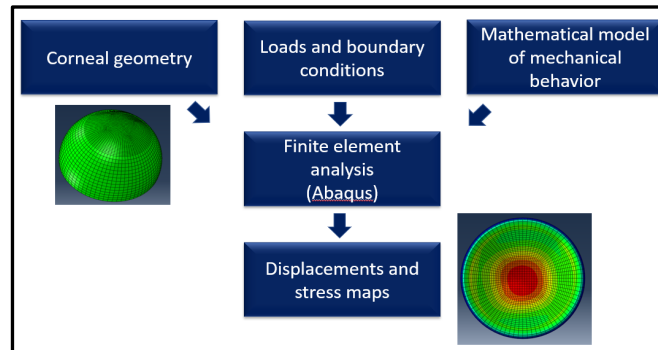- *Constitutive Modeling of Soft and Multiphase Materials*

Tissue Mechanics and Mechanobiology

- *Biomechanical Testing of Soft and Calcified Tissue*
- *Bone and Cartilage Tissue Engineering*
- *Damage and Failure Characterization of Soft Materials*
- *Spine Biomechanics*
- *Skin Biomechanics*
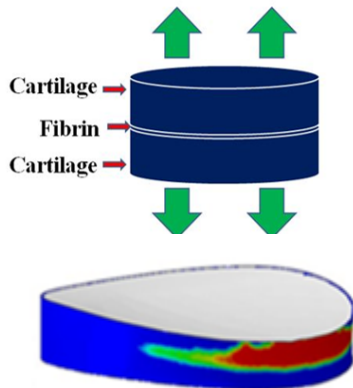- *Mechanically-induced pathologies*

Modeling Bone Adaptation and Remodeling

Predictive Personalized Surgical Modeling

Native and Engineered Tissue Interaction

Multi-Scale Computational and Experimental Modeling