



# BIOMEDICAL & HEALTH RESEARCH EXPERTISE

## OVERVIEW

Developing enhanced health outcomes to improve people's quality of living and enabling earlier and more accurate diagnoses and treatments for disease.

## KEY PARTNERS



GE HealthCare



Northwestern University



## RESEARCH HIGHLIGHTS

- Biomechanics
  - Orthopaedics and musculoskeletal
- Rehabilitation
  - Mobility and assistive technology
  - Robotics
- Medical imaging
  - MRI and ultrasound
  - Cardiovascular modeling

## Partner with us:

**Andrew J. Graettinger**, Associate Dean for Research,  
 andrewjg@uwm.edu 414-229-7389



# EXPERT FACULTY AND FACILITIES

## Biomechanics & Rehabilitation

**Brooke Slavens, Richard and Joanne Grigg Associate Professor, Mechanical Engineering and Biomedical Engineering, [slavens@uwm.edu](mailto:slavens@uwm.edu)**

- Experimental and computational biomechanics
- Pediatric mobility and rehabilitation
- Musculoskeletal imaging
- Gait analysis



**Jacob Rammer, Assistant Professor, Biomedical Engineering, [jrrammer@uwm.edu](mailto:jrrammer@uwm.edu)**

- Advanced biomechanical instrumentation and modeling technique

**Priya Premnath, Assistant Professor, Biomedical Engineering, [premnath@uwm.edu](mailto:premnath@uwm.edu)**

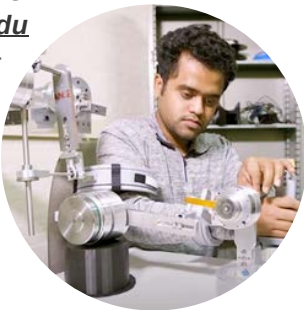
- Pharmaceutical approaches to improve tissue regeneration
- Targeted biomaterials to treat fractures in osteoporosis and advanced age
- Imaging techniques and animal models to investigate bone healing



## Robotics

**Habib Rahman, Richard and Joanne Grigg Associate Professor, Mechanical Engineering and Computer Science, [rahmanmh@uwm.edu](mailto:rahmanmh@uwm.edu)**

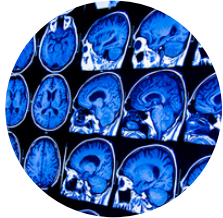
- Designing and creating wearable robots for daily living assistance



## Medical Imaging & Modeling

**Roshan D'Souza, Richard and Joanne Grigg Associate Professor, Mechanical Engineering, [dsouza@uwm.edu](mailto:dsouza@uwm.edu)**

- 4D cardiovascular flow MRI
- Complex systems simulation
- Computational biology



**Yongjin Sung, Associate Professor, Mechanical Engineering and Biomedical Engineering, [ysung4@uwm.edu](mailto:ysung4@uwm.edu)**

- 3D imaging flow cytometry
- Near-infrared chemical, x-ray phase contrast and radioluminescence imaging
- Non-invasive diagnostics

**Qingsu Cheng, Assistant Professor, Biomedical Engineering, [chengq@uwm.edu](mailto:chengq@uwm.edu)**

- Bioimaging and nanotechnology
- *Interaction between* microenvironmental factors and diseases
- Breast cancer early detection, risk assessment and treatment

**Jun Zhang, Professor, Electrical Engineering & Computer Science, [junzhang@uwm.edu](mailto:junzhang@uwm.edu)**

- Cardiovascular disease intervention
- Image processing and computer vision

**Mahsa Dabagh, Assistant Professor, Biomedical Engineering, [dabaghme@uwm.edu](mailto:dabaghme@uwm.edu)**

- Diagnosis, prevention, and treatment of cancer and vascular diseases
- Large-scale biomedical models
- Mechanosensors in cancer metastasis, wound healing, and progression of atherosclerosis cardiovascular diseases



**Woo Jin Chang, Associate Professor, Mechanical Engineering, [wjchang@uwm.edu](mailto:wjchang@uwm.edu)**

- Bionanotechnology
- BioMEMS and biosensors
- Environmental and biomedical monitoring