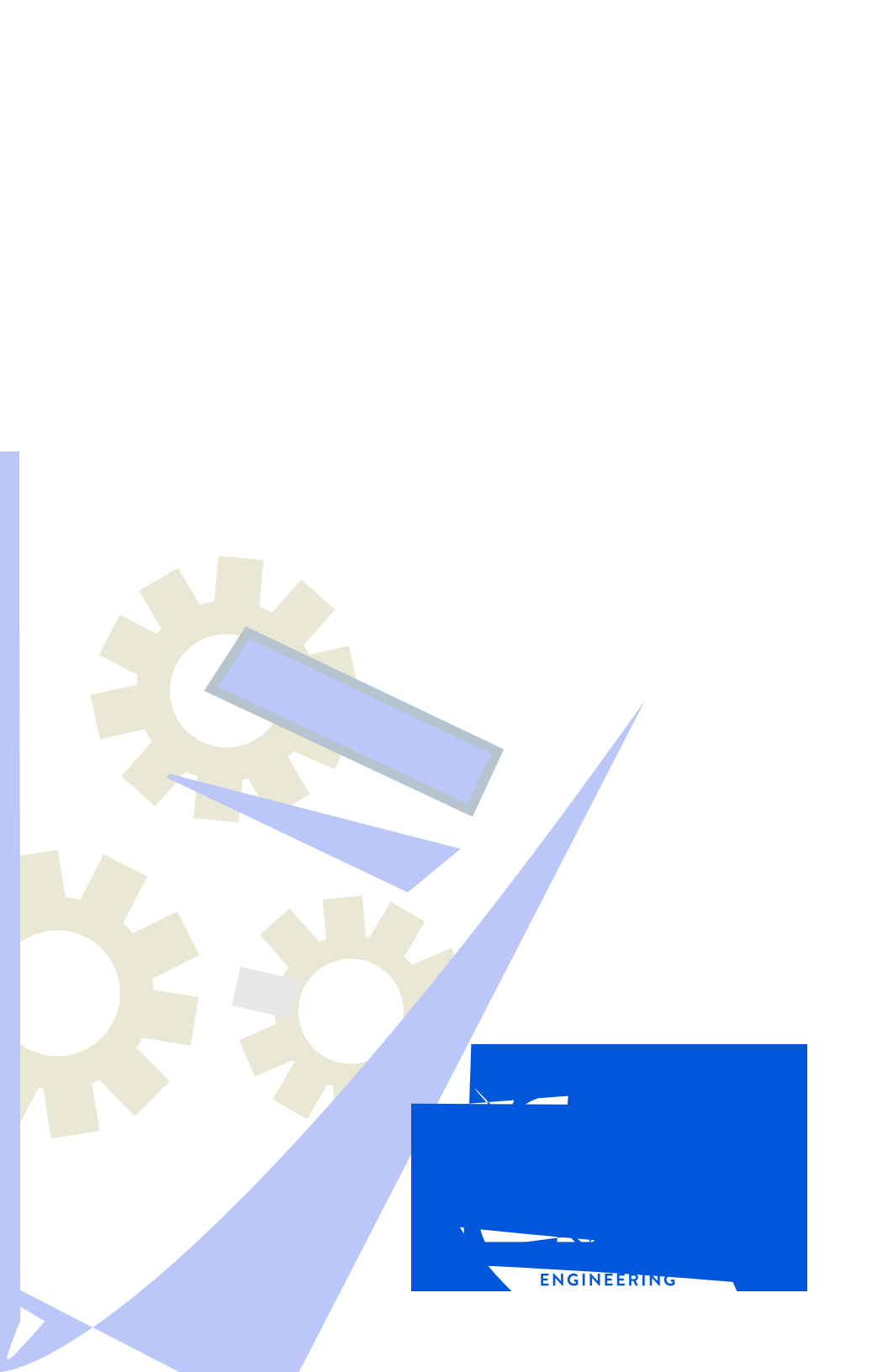
ENGINEERING

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J. GARY BLEDSOE, PH.D.

Professor and Department Chair
Biomedical Engineering

EMAIL:

PHONE:

ADDRESS

Dr. Bledsoe's Interfacial Biomaterials/Biomechanics Lab focuses on those healing phenomena that typically occur at a tissue material interface. While we must consider the biocompatibility of the material, we must also consider device function which is often dependent on the mechanics of the interface. For example, a degenerated vertebral disc can be very painful, and treatment options are limited. Dr. Bledsoe is exploring options for providing mechanical support without generating a response to the material that causes other maladies.

NATASHA CASE, PH.D.

Assistant Professor
Biomedical Engineering

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KEYWORDS

+ H drogel Biomaterials
+ Dr g Deli er , Spectroscop
+ Transport in Comple En ironments
+ Dr g Screening
+ Cell-Matri Interactions,
+ Glioblastoma Spheroid Models

RESEARCH INTERESTS

+ Tissue biomechanics
+ Orthopaedic tissue development & matrix biology
+ Soft orthopaedic tissues and bone
+ Adult stem cells
+ Mechanical regulation of cells in orthopaedic tissues
+ Stem cell regulation by intrinsic and extrinsic cues

HIGHLIGHTS

Dr. Case's research focuses on how mechanical, biophysical, and biochemical stimuli interact to direct orthopaedic tissue development and adaptation, with the results of this work being used to optimize tissue engineering strategies. Tissue development studies are complemented by research on tissue biomechanics and mechanobiology. Her research aims to expand knowledge about structure-function relationships in orthopaedic tissues and to increase understanding about biophysical regulation of these tissues, with the long-term goal of enhancing repair strategies for orthopaedic tissues

YAN GAI, PH.D.

Associate Professor
Biomedical Engineering

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KEYWORDS

+ EEG
+ Speech
+ Brain-Comp ter Interface

[illegible]
technology of improving life quality of paralyzed or hearing-impaired patients. Her recent projects include brain-controlled wheelchairs, next-generation smart hearing aids, and infrared cochlear implants.

RESEARCH INTERESTS

+ Brain-controlled wheelchairs for paralyzed patients
+ Smart cushions
+ Speech intelligibility
+ Mental states of airplane pilots

HIGHLIGHTS

+ Currently advising 4 graduate and 5 undergraduate students
+ [illegible]
+ [illegible]

KOYAL GARG, PH.D.

Associate Professor
Biomedical Engineering

Dr. Garg's research interests include cell and tissue engineering, extracellular matrix based biomaterials, stem cells, immune response, skeletal muscle and neuromuscular junctions. Aged or severely injured skeletal muscle is associated

ANDREW HALL, D.Sc.

Associate Professor
Biomedical Engineering

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KEYWORDS

+ Medical Imaging
+ Medical Robotics
+ Image G ided Therap
+ 3D Printing
+ Inter entional Radiolog

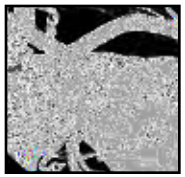
RESEARCH INTERESTS

+ Medical Imaging
+ Image Guided Interventions and Surgery
+ 3D Printing in Medicine
+ Surgical Robotics

HIGHLIGHTS

+ 27 years in industry R&D prior to SLU
+ Advising 3 MS and 3 undergraduate researchers
+ 18 Peer-reviewed publications
+ 15 Patents granted
+ Research grant from Siemens Medical
+ Research grant from Missouri ACC

Dr. Hall's research interests stem from his experience in medical imaging. He works with interventional radiologists to optimize pre-operative imaging protocols to support emerging minimally invasive procedures, such as prostate artery embolization. His lab is also working on image-guided robotic therapies for pedicle screw placement and laminectomy in the spine. His lab uses 3D printing extensively, including the development of 3D-printed objects with controllable radiopacity, and dissolvable 3D printed tissue molds derived from CT images. Finally, he works on the development of smart-phone based medical devices.



SCOTT A. SELL, PH.D.

Professor, Biomedical Engineering
Associate Dean of Undergrad ate St dies,
School of Science and Engineering

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KEYWORDS

+ Tiss e Engineering
+ Regenerati e Medicine
+ Sca old Fabrication
+ Electrospinning
+ Dermal Regeneration
+ Orthopedic Regeneration

Dr. Sell conducts research in the areas of tissue engineering and regenerative medicine, particularly focusing on the potential for electrospinning to create [illegible] has also done extensive research on the incorporation and controlled release of [illegible] dermal regeneration, and ligament repair.

RESEARCH INTERESTS

+ The sustained release of platelet-rich plasma derived biomolecules to [illegible]
+ The use of advanced electrospinning technologies to create structures [illegible]
+ Investigation of the potential use of Manuka honey in the treatment of chronic wounds
+ [illegible]

HIGHLIGHTS

[illegible]

SILVIYA PETROVA ZUSTIAK, PH.D.

Associate Professor
Biomedical Engineering

Dr. Zustiak's primary research interests are in hydrogel biomaterials and tissue ňŞŞţŞňňΦţŞŞ¡╜ SŧδŤ╜ ň ø Σ ŤĠά‡á╜ ° Ş╜ Ńňϵňſ ° ΣţŞŞ╜ Ş ° ϵňſ╜ ¦ ţ ° ø ĠïňΦţ Ġſά╜ Ġά╜ Ľ ňſſ╜ áĽĠΦ ° ſŃά╜ and drug screening platforms, and elucidating matrix structure-property relationships as well as cell-matrix interactions. Biomaterial-based models are crucial for bridging the gap between traditional tissue culture and animal models

MARTA COOPERSTEIN, PH.D.

Instr ctor
Biomedical Engineering

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Dr. Cooperstein did her undergraduate and graduate research at the Center for Biomedical Engineering at the University of New Mexico where she researched fabrication and cytotoxicity of thermoresponsive substrates for tissue engineering. She also studied the mechanism of cell detachment from these substrates. She is a recipient of the highly competitive National Science Foundation Graduate Research Fellowship awarded to top U.S. graduate students.


ENGINEERING