

Overview of Research
In the Department of Orthopaedic Surgery

Richard T. Laughlin, MD
Associate Professor
Dept. of Orthopaedic Surgery
Wright State University BSOM

Wright State University Department of Orthopaedic Surgery

Lynn Crosby, MD Chair – Shoulder/Elbow

Richard Laughlin, MD Residency Program Director – Foot and Ankle Reconstruction/Trauma

Michael Prayson, MD - Director Orthopaedic Trauma MVH

Matthew Lawless, MD - Sports Medicine / Knee & Shoulder

L. Joseph Rubino, MD - Sports Medicine/ Knee and Shoulder

Michael Barnett, MD, - Foot and Ankle Reconstruction

Corey Ellis, MD – Primary Care Sports Medicine

Gregory Barbour, DPM – Outpatient Podiatry

Anil Krishnamurthy, MD – Director Orthopaedics VAMC

Why Do We Do Research?

- Scholarly activity as part of the Department's academic mission.
- Required as part of residency training
- Medical students want to participate in research to enhance experience and strengthen residency applications

Resources

Researchers and Staff

Faculty: Tarun Goswami, PhD Biomechanics/Engineering
Ron Markert, PhD – Statistics
Dana Duren, PhD – Community Health
Fels Project

Harold Stills, DVM – Director Animal Laboratory

Residents: Full-time Orthopaedic Research Resident
Residents on Research Rotation

Staff: Part-time clinical research nurse - trauma (1)
shoulder (1)

Clinical Nurse Specialist – trauma
Physician Assistant – trauma
Graduate Students - bioengineering
Undergraduate Students – engineering
Hospital Personnel – Dave Uddin, PhD
Dan Nolan

Forum: Monthly meeting

Resources

Funding

- Unrestricted grants from industry – 200k/yr
- Seed grants through SOM 5-20k/yr
- Graduate Medical Education grants 2-5k/yr
- Specialty Society grants – variable
- Hospital based grants – 1 – 1.5k/yr
- University Seed Grants

Grants for Research

- Impact clinical care of patients with musculoskeletal conditions/injury
- Presentations/publications
- Teach research methods to residents and medical students

Obstacles to Research

- ✓ Time
- ✓ Funding

Current Areas of Research

- Biomechanics
 - Fracture fixation
 - Joint replacement

Current Areas of Research

Clinical –

Outcomes in shoulder replacement & reconstruction

Clinical trials in trauma

Epidemiological – scapholunate injury

ankle instability/injury

knee replacement outcomes in VA
population

arthritis/osteoporosis

Current Areas of Research

Animal Research

- Fatty Infiltration - Shoulder / RC
Gastrocnemius
Hamstrings
- Wound healing - Harmonic scalpel

Current Areas of Research

New Directions

Collaboration with Community Tissue Bank

Shawn Hunter, PhD

- Sterilization & Preservation of Allograft Tissue
- Cartilage Research

Current Areas of Research

- New Directions
 - Education in surgery – surgical skills lab
 - Virtual surgery

Future Directions

- Needs –
 - Improve/expand collaboration with basic scientists [histology/cel biology for cartilage research]
 - Expand relationship with engineering biomechanical studies and modelling
 - Expand relationships with geriatrics/community health to study fragility fractures/osteoporosis and osteoarthritis
 - Collaborative efforts to improve our access to grant money

What Can Orthopaedics Offer You?

- Clinical perspective
- Access to commercial/industry support
- Access to patients