Overview of Research
In the Department of Orthopaedic Surgery

Richard T. Laughlin, MD
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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/cell 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