



# Thompson Laboratory for Regenerative Orthopaedics

## “Discovering Better”

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<http://thompsonlab.missouri.edu>

### Current Projects

- Mizzou BioJoint® Outcomes
- Novel Total Elbow Arthroplasty System
- Amnion for Improved ACL Reconstruction
- Biologic Joint Restoration vs TKA
- Biomarkers for IVD Disease
- Electromagnetic Stim for Cartilage Healing
- Enhanced BMC for Bone Healing
- Intervertebral Disc Transplants
- BioJoint Flex Knee Rehab System
- Knee Arthrometer Testing System
- Novel Scope Irrigation Solution
- Early Diagnosis of Hip Dysplasia

### Last quarter’s “top 5”

1. *U.S New & World Report* recognizes Mizzou Ortho as high performing
2. TLRO Students represent the lab at the KC Area Life Sciences Institute Dinner
3. TLRO submits 32 scientific abstracts for 2018 Orthopaedic Research Society Meeting
4. Matthew Hirabayashi recognized for exceptional research with Dr. Emily Leary
5. TLRO’s *AJSM* paper on BMC for OCA healing makes international news

### Thompson Lab Researchers Receive Two Coulter Program Awards

Drs. Trent Guess & Jimi Cook were awarded two Coulter Grants for their innovative healthcare technologies, MKATS and BioJoint Flex, designed to improve diagnosis and treatment of patients with knee injuries and disorders.



### Thompson Lab Recognized in *MU Health Magazine*

**Thompson Lab for Regenerative Orthopaedics**

A cornerstone of the Missouri Orthopaedic Institute expansion is the Thompson Center for Regenerative Orthopaedics, made possible by a generous gift of \$3 million from William and Nancy Thompson.

The Thompson Center for Regenerative Orthopaedics is the world's largest comprehensive orthopaedic research center housed within a stand-alone orthopaedic hospital. The lab provides approximately 12,000 square feet of research space for a 37-member research team comprised of engineers, physicians, molecular biologists, anthropologists, anatomists, pathologists and veterinarians.

Here, researchers collaboratively pursue discoveries in orthopaedic medicine. By working side-by-side at this center, surgeons and researchers are able to translate their discoveries directly to patient care.

Recent research into regenerative orthopaedics at MU includes the development of a better method to store donor tissue, and improved procedures for repairing torn knee ligaments and other joint injuries. These breakthroughs led to the establishment of the Mizzou BioJoint® Center, where patients can have joint replacements using natural tissue grafts of tendons, ligaments, cartilage, meniscus and bone.

Since the Missouri Orthopaedic Institute opened in 2010, patient volumes have steadily increased. The recent expansion added clinical space for surgical, inpatient, outpatient and physical therapy services.

**Missouri Orthopaedic Institute EXPANSION BY THE NUMBERS**

- 4 STORIES
- 85,462 SQUARE FEET (The Missouri Orthopaedic Institute totals nearly 200,000 square feet)
- \$40 MILLION DOLLARS
- 5 ADDITIONAL OPERATING ROOMS, 2 fully equipped and operational and 3 more to be equipped as patient volumes grow (for a total of 12 operating rooms)
- 22 ADDITIONAL PRIVATE INPATIENT ROOMS (for a total of 42 private inpatient rooms)
- 3 ADDITIONAL DIGITAL X-RAY ROOMS (for a total of 7 digital X-ray rooms)
- 19 ADDITIONAL OUTPATIENT EXAMINATION ROOMS, both finished and shelled (for 70 exam rooms total)
- HOUSES APPROXIMATELY 500 STAFF, including 53 physicians who specialize in sports medicine, joint replacement, pediatrics, hip and knee, foot and ankle, shoulder, hand, spine, limb preservation, oncology and trauma care.
- THOMPSON CENTER FOR REGENERATIVE ORTHOPAEDICS with a team of 37 researchers representing 13 different specialties.
- A LARGER AND RELOCATED PHARMACY
- A LARGER RESTAURANT for patients and visitors
- ADDITION OF A COFFEE KIOSK in the main entrance lobby

### Recent Pubs

1. Stoker AM, et al. Validation of MOPS for maintenance of OCA quality during prolonged storage. *Am J Sports Med* 2017
2. Kuroki K, et al. Biologic joint repair strategies: The Mizzou BioJoint Story. *Tox Pathol* 2017
3. Oladeji LO, et al. Effect of autogenous BMC on radiographic integration of femoral condyle OCAs. *Am J Sports Med* 2017
4. Smith MJ, et al. Rotator cuff healing using demineralized cancellous bone matrix sponge in a preclinical model. *J Orthop Res* 2017
5. Oladeji LO, et al. Large fresh OCAs for the hip: Growing the evidence. *Hip Int* 2017
6. Stoker AM, et al. BMC vs PRP to enhance osseous integration potential for osteochondral allografts. *J Knee Surg* 2017
7. Capito NM, et al. Safety and efficacy of hyperosmolar irrigation solution in shoulder arthroscopy. *J Shoulder Elbow Surg* 2017
8. Monibi FA, et al. Tissue-derived ECM bioscaffolds: Emerging applications in cartilage and meniscus repair. *Tiss Eng* 2017
9. Franklin SP, et al. Comparison of ultrasonography and MRI to arthroscopy for diagnosing medial meniscal lesions. *JAVMA* 2017
10. Guess TM, et al. Function of the anterior intermeniscal ligament. *J Knee Surg* 2017
11. Cook JL, et al. Meniscal biology in health and disease. *Conn Tiss Res* 2017