McKay Orthopaedic Research Laboratory

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The McKay Orthopaedic Research Laboratory of the Department of Orthopaedic Surgery in the Perelman School of Medicine continues to explore important problems in musculoskeletal research. The research facility, including labs and offices, occupies just over 15,000 sq. ft. of space on the 3rd, 4th and 5th Floors of Stemmler Hall. There are over 85 full- and part-time staff and trainees now in the labs. It is an active, thriving research and educational environment.

Currently, the lab has an annual research budget from extramural grants, gifts, and endowments over $7,000,000 and has risen to the number 3 position in NIH rankings for Orthopaedic Surgery Departments in the country in terms of funding from the National Institutes of Health (NIH). This past year has seen a very impressive and continued rise in new grant activity amongst the faculty.

We have had several new grants awarded this year. These are:

Carl Brighton, M.D.

- PI of a Genestim, LLC, SRA titled, "Electrical Stimulation of (i) Vascular Endothelial Cells for Treatment of: Peripheral Vascular Disease and Ischemic Heart Disease; (ii) Dermal Cells in Connection with Wound Healing, and (iii) Tumor Cells for Prevention of Tumor Metastasis".

Robert Mauck, Ph.D.

- PI of an AO Foundation grant titled, "A Novel Platform for Optimizing Material Design for Cartilage Tissue Engineering and Enabling Drug Discovery for Cartilage Restoration".

Ling Qin, Ph.D.

- PI of an ASBMR grant titled, "The Novel Role of EGFR in Growth Plate Development".

Eileen Shore, Ph.D.

- PI of a NIH R01 grant (with Frederick Kaplan, M.D.) titled, "Molecular Genetics of Progressive Osseous Heteroplasia".

Louis Soslowsky, Ph.D.

- PI of a NIH P30 grant titled, "Core Center for Musculoskeletal Disorders".

Stephen Thomas, Ph.D.

- PI of a NIH F32 grant, titled "The Pathophysiology of Rotator Cuff Tendon Injury and Healing in the Presence of Type II Diabetes".

In addition to the above-mentioned new grants this year, each of the McKay Laboratory faculty remains well-funded through existing research grants not identified in this new grants list. Further, there were several new grants and clinical trials for our surgeon faculty this year. These are:

Jaimo Ahn, M.D., Ph.D.

- PI of a NIH R03, titled, "Role of Notch signaling in fracture healing as a function of aging".
- PI of American Geriatric Society's 2011 Dennis W. Jahnigen Career Development Award (JCDA/GEMSSTAR Program).

Nicole Belkin, M.D.

- PI of an OREF grant titled, "In Vivo Full-Thickness Cartilage Defect Repair with Stem-Cell Laden Hyaluronic Acid Hydrogels".

James Carey, M.D.

- PI of a subcontract with Vanderbilt University titled, "Impact of Postoperative Management on Outcomes and Healing of Rotator Cuff Repairs".

Gwo-Chin Lee, M.D.

- PI of a R01 subcontract with Drexel/NIH titled, "Mechanics and Performance of Traceable UHMWPE Implants".

Samir Mehta, M.D.

- PI of a clinical trial with Medtronic titled, "A Prospective, Randomized, Multicenter Pivotal Clinical Trial of the INFUSE/MASTERGRAFT™ Delayed Healing Device with Rigid Internal Fixation in the Treatment of Tibial Delayed Healing".

Mara Schenker, M. D.

- PI of an OREF Young Investigator grant, titled, "Revisiting the Six-Hour Rule in Open Fracture Management: The Effects of Antibiotics and Debridement on Soft Tissue Infections".

We have also received several grants from Synthes for resident tuition and travel to attend various courses, and a Residency Enhancement Grant from OREF.

This year, we continued recruitment for additional research faculty through funds provided by the Perelman School of Medicine, in coordination with our Penn Center for Musculoskeletal Disorders. Growing musculoskeletal research, not only within the Department of Orthopaedic Surgery, but across the Penn campus has been a primary objective for our program and these efforts have been particularly successful thus far. We look forward to another exciting year.