NewYork-Presbyterian
COLUMBIA ORTHOPEDICS

Orthopedic Surgery Update
Winter 2014

Dear Colleagues and Columbia Alumni,

It has been an exciting year for Columbia Orthopedics at NewYork-Presbyterian, and I'm pleased to share with you some of the clinical and research highlights achieved by our faculty. Our orthopedic surgeons have been busy with the development, refinement, and application of surgical and non-operative procedures for musculoskeletal disorders. In addition to providing advanced care, we are equally dedicated to providing our patients and their families with personalized attention and compassion. As Columbia University College of Physicians and Surgeons faculty working in an academic medical center environment, we are continually interested in expanding and improving our programs and pursuing important avenues in the development of technologies and techniques that lead to successful outcomes for our patients.

Louis U. Bigliani, MD
Chief, Department of Orthopedic Surgery
NewYork-Presbyterian/
Columbia University Medical Center
lub1@columbia.edu

Faculty News

Charla R. Fischer, MD, who specializes in spinal disorders in adolescents and adults, and *Francis Y. Lee, MD, PhD,* Vice Chairman for Research, received a National Institutes of Health Research Supplements Award to promote Diversity in Health-Related Research. Dr. Fischer, who is mentored by Dr. Lee, has a particular interest in treating the aging spine, leading her to study bone biology related to osteoclastogenesis and osteolysis.

R. Kumar Kadiyala, MD, PhD, has been named Chief of the Orthopedic Service at NewYork-Presbyterian/The Allen Hospital. Dr. Kadiyala provides special expertise in hand and upper extremity surgery, hip and knee replacement, and orthopedic trauma. Dr. Kadiyala completed a residency in orthopedics at the Harvard Combined Orthopaedic Program and fellowships in orthopedic trauma and hand/upper extremity surgery at Massachusetts General Hospital, Brigham & Women's Hospital, and Boston Children's Hospital.

Francis Y. Lee, MD, PhD, has received a $1.7 million, five-year competitive renewal award from the National Institute of Arthritis and Musculoskeletal and Skin Diseases for his R01 grant, ERK Signaling in Inflammatory Bone Loss. Dr. Lee seeks to develop new pharmacologic methods for preserving and enhancing bone mass that will address the future needs of the increasing elderly population. In addition, Dr. Lee received an established investigator award from the Musculoskeletal Transplant Foundation.

At the 7th Annual International Congress on Early Onset Scoliosis, *Michael G. Vitale, MD, MPH,* received an award for Best Paper for The Classification of Early Onset Scoliosis (C-EOS) Identifies Patients at Higher Risk for Complications at 5 Years Follow-Up.

Columbia Orthopedics in Tarrytown, New York
We are pleased to announce the opening of Columbia Orthopedics' newest practice location at 155 White Plains Road, Suite 105, Tarrytown, NY 10591. Call (212) 305-4565.

Trauma Hotline – 855-KIDBONE
Pediatric Orthopedic Surgery has created a Trauma Hotline to coordinate access and treatment for patients of referring physicians.

Program Highlights

The *Weinberg Family Cerebral Palsy Center* is dedicated to transitioning patients with CP from pediatric to adult care. Directed by David P. Roye, Jr., MD, the Center recently received a research grant from the Cerebral Palsy International Research Foundation to further data collection and analysis of quality of life issues, including evaluation of pain, for individuals with CP.

The Department's orthopedic surgeons are collaborating with a multidisciplinary team of specialists, including neurologists, neuropsychologists, and rehabilitation medicine specialists, in the *Columbia Concussion Program,* designed to provide prompt evaluation, treatment, and ongoing care to young athletes who have suffered a concussion or sports-related head injury.

The Trauma Training Center, under the direction of Melvin P. Rosenwasser, MD, Director of Hand and Orthopedic Trauma Services, provides training for physicians from around the world and serves as the primary research laboratory for orthopedic trauma, hand, and upper extremity surgery. The laboratory conducts prospective and retrospective clinical studies, as well as small animal investigations and biomechanical basic science research.

NewYork-Presbyterian

Department of Orthopedic Surgery
NewYork-Presbyterian/Columbia University Medical Center
622 West 168th Street
New York, NY 10032
columbiaortho.org

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In 2013 the Department of Orthopedic Surgery formed the *Sports Medicine Center for the Developing Athlete* under the direction of Charles A. Popkin, MD, in collaboration with Christopher S. Ahmad, MD, Chief of the Sports Medicine Service and Head Team Physician for the New York Yankees. The Center focuses on maximizing performance while minimizing the risk of injuries through services that include personalized treatment regimens; education for coaches, trainers, parents, and athletes on minimizing risk of injuries; and guidance from Certified Athletic Trainers.

In May, the Department hosted the *2013 Musculoskeletal Symposium: Current Trends in Musculoskeletal Medicine and Science,* bringing together speakers representing the fields of orthopedic surgery, medicine, genetics and development, pathology and cell biology, hematology and oncology, endocrinology, rheumatology, and regenerative medicine. The comprehensive program included presentations in bone biology, bone mechanics, tissue regeneration, and bone disease processes, with a focus on fostering collaborative clinical and transitional musculoskeletal research that would ultimately improve patient outcomes.

The development of the Musculoskeletal Symposium followed the announcement of the Department's new *Dr. Robert E. Carroll and Jane Chace Carroll Laboratories.* With construction well underway, the new laboratories will provide a solid foundation for cultivating a multidisciplinary musculoskeletal research center that will enable Columbia scientists to advance clinical and translational musculoskeletal-system related projects.

The *Surgical Computerized Simulation Laboratory* provides state-of-the-art technologies for performing anatomic dissection, anatomic research, and arthroscopic research studies. Under the direction of William N. Levine, MD, and Christopher S. Ahmad, MD, the laboratory is equipped for virtually every arthroscopic procedure – from routine knee procedures to arthroscopic rotator cuff repair. Four fully functional stations make it possible for 12 surgeons to work simultaneously. Live demonstrations also can be telecast.

Research Initiatives

Evaluation and Management of Hamstring Injuries. Christopher S. Ahmad, MD, who serves as the group leader of the Major League Baseball's research focused on hamstring injuries, and colleagues around the country recently studied the causes and impact of hamstring injuries. Their report included considerations for risk reduction and injury prevention, the latest evidence on management of intramuscular and both proximal and distal insertional hamstring injuries, and indications for surgical and non-surgical treatment. [*The American Journal of Sports Medicine*. 2013 Dec;41(12):2933-947.]

Body Mass Index and Operative Time in Total Knee Arthroplasty. Columbia orthopedic researchers, led by Jeffrey A. Geller, MD, Co-Chief, Division of Hip and Knee Reconstruction, have shown that obesity increases operating room time during knee replacement surgery. Every additional minute in the OR raises the risk of infection and impaired wound healing, as the study showed, with the incidence of postoperative skin and wound infections being greatest among patients with a body mass index of 35/kgm2 or more. [*Journal of Arthroplasty.* 2013 Apr:28(4):563-65.]

Glenoid Implant Orientation and Cement Failure in Total Shoulder Arthroplasty. Researchers in the Centers for Orthopedic Research and Shoulder, Elbow and Sports Medicine investigated how the degree of glenoid correction affects potential cement failure. Their study showed that incorporating trabecular bone into the model changed the effect of implant orientation on cement failure. As exposed trabecular bone increased, the risk of cement fracture increased. This may be due to shifting the load-bearing support underneath the cement from cortical bone to trabecular bone. [*Journal of Shoulder and Elbow Surgery.* 2013 Jul;22(7):940-47.]