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**WHAT’S NEW?** IN THIS YEAR’S ANNUAL REPORT, WE FEATURE MANY OF THE UNIQUE AND ICONIC LIBRARIES ON THE UNIVERSITY OF CHICAGO CAMPUS. PICTURED ON THE COVER IS THE NEW JOE AND RIKA MANSUETO LIBRARY.
In recognition of the importance of our clinical and academic mission, the Section of Orthopaedic Surgery and Rehabilitation Medicine became the 11th clinical department at the University of Chicago Medicine, the first new clinical department since the 1980s. In my opinion, this is the most significant change in Orthopaedic Surgery at UCM in the past 25 years. In addition, our new inpatient facility, called the Center for Care and Discovery, scheduled to open in February of 2013, has 28 new operative suites. The dean of the Biological Sciences Division and executive vice president for medical affairs of the University of Chicago, Kenneth Polonsky, MD, achieved this and other similar significant changes in a remarkable and efficient manner. Contingent upon approval through the normal academic appointment procedures, Douglas Dirschl, MD, will be the inaugural chair effective January 1, 2013.

Dr. Dirschl will be actively recruiting clinical faculty at all levels in all areas of clinical subspecialty and research, with an early emphasis on joint reconstruction and spine. Our clinical program is projected to double in size. Our clinical and basic research programs will be strengthened, while our superb graduate medical education will be maintained. Significant development and marketing resources will be allocated to the new department. I am sure there will be more and improved communication with our alumni and I hope to see you and introduce you to our new chairman at the Alumni Reception at the AAOS in Chicago on Friday, March 22, 2013, at the Palmer House Hilton, Grant Park Parlor.

Michael A. Simon, MD
INTERIM CHIEF, ORTHOPAEDIC SURGERY + REHABILITATION MEDICINE
THE SECTION OF ORTHOPAEDIC SURGERY AND REHABILITATION MEDICINE CONTINUES TO DISTINGUISH ITSELF IN PATIENT CARE, RESEARCH AND EDUCATION. THE FACULTY PROVIDES EXPERT AND COMPASSIONATE CARE IN A RANGE OF SUBSPECIALTIES, INCLUDING: FOOT AND ANKLE, HAND AND UPPER EXTREMITY, JOINT RECONSTRUCTION, ORTHOPAEDIC ONCOLOGY, PEDIATRIC ORTHOPAEDIC SURGERY, SPINE, SPORTS MEDICINE AND REHABILITATION MEDICINE.

Complementing the clinical practice are the expanded resident and fellowship programs as well as the active clinical and basic science efforts. The Section is committed to growing the body of medical knowledge and creating a lasting contribution in the field of orthopaedic surgery.

**Jovito Angeles, MD** Dr. Angeles specializes in hand and upper extremity surgery with a special interest in biomechanics of the hand, bone stabilization devices and nerve regeneration. He is a Fellow, American Academy for Cerebral Palsy and Developmental Medicine. He is also a member of the International Society for Brachial Plexus and Peripheral Nerve Injury.

**Robert Bielski, MD** Dr. Bielski continues as an examiner for the American Board of Orthopaedic Surgery. Dr. Bielski was appointed as a reviewer for the *Journal of Pediatric Orthopaedics* along with his ongoing role as a reviewer for the *Journal of Bone and Joint Surgery*. He is also a reviewer for the *Journal of the American Medical Association*. Dr. Bielski was also a faculty contributor at the Annual Primary Care Orthopaedics Course in June 2012.

Dr. Bielski is a member of the Comer Operating Committee. He organized a continuing lecture series for the pediatric residency, as well as a monthly lecture series to give comprehensive pediatric orthopaedic review. Dr. Bielski is also director of medical student education for orthopaedic surgery.
Roderick Birnie, MD  Dr. Birnie continues his busy clinical practice in hand and upper extremity at the University of Chicago. He was a faculty contributor for the annual Primary Care Orthopaedics Course chaired by Sherwin Ho, MD, in June 2012. Dr. Birnie was the recipient of the Gerald R. Laros Teaching Award this past year, awarded by the orthopaedic residents for his outstanding teaching skills.

Henry Finn, MD  Dr. Finn continues in his role as medical director of the University of Chicago Bone & Joint Replacement Center at Weiss. He is also professor of surgery at the University of Chicago Medicine’s Section of Orthopaedic Surgery and Rehabilitation Medicine, as well as chief, Section of Orthopaedic Surgery at Louis A. Weiss Memorial Hospital.

As a result of his medical and academic achievements, Dr. Finn has received great acclaim from numerous well-respected publications. He was again named a Top Doctor in the Chicago Metro Area by Castle Connolly Medical Limited and listed among America’s Top Physicians in Orthopaedic Surgery and Joint Replacement in the Consumer’s Research Council of America’s “Guide to America’s Top Physicians.” Most recently, Dr. Finn received the distinguished honor from his peers of “Top Doctor in Chicago” from Chicago magazine.

Rex Haydon, MD, PhD  Dr. Haydon is a monthly lecturer at Loyola University Chicago for the Department of Orthopaedic Surgery on orthopaedic oncology. Dr. Haydon also continues as coinstructor for the annual Musculoskeletal Clinicopathologic Seminar for residents held at the Gleacher Center, Chicago, and is the course director for the orthopaedic basic science curriculum. Dr. Haydon was named program director of the Orthopaedic Oncology Fellowship at the University of Chicago this past year.

Tong-Chuan He, MD, PhD  Dr. He’s molecular oncology lab continues research on cancer, stem cells and bone biology. He continues with collaborative efforts with other faculty in the areas of tendon and ligament repair research, articular cartilage regeneration research and implant wear-induced osteolysis and spine research. Dr. He is a member of the Committee on Molecular Medicine, the Committee on Cancer Biology, the Committee on Genetics, and the Committee on Cell Physiology at the University of Chicago. He is also adjunct professor, School of Bioengineering, Chongqing University, China. Dr. He is also a member of the International Chinese Hard Tissue Society.
HIGHLIGHTS

**Sherwin Ho, MD** Dr. Ho continues in his role as program director for the Sports Medicine Fellowship at the University of Chicago. This was the 19th year of Dr. Ho’s successful University of Chicago annual Primary Care Orthopaedics Conference.

**J. Martin Leland, MD** Dr. Leland is a board-certified orthopaedic surgeon, a specialist in sports medicine and continues to be busy with his clinical and academic endeavors.

One of the highlights of the year for Dr. Leland was his selection for and participation in the Arthroscopy Association of North America (AANA)’s 2012 Traveling Fellowship. The AANA Traveling Fellowship is a highly prestigious honor in the orthopaedic sports medicine community. Dr. Leland traveled to a number of premier institutions to observe surgery, and discuss surgical techniques and research with orthopaedic surgeons including Freddie Fu, MD, at the University of Pittsburgh and James Andrews, MD, at the Andrews Institute.

Dr. Leland continues to teach regionally and nationally on a number of subjects, including new techniques in anterior cruciate ligament (ACL) reconstruction and shoulder surgeries. Dr. Leland serves as a faculty member for numerous “hands-on” teaching courses, and has recently been named the “2012 Associate Master Instructor of the Year” by AANA.

Dr. Leland has been elected to the education committee for the American Orthopaedic Society for Sports Medicine (AOSSM). Dr. Leland continues to serve as a principal reviewer for *The American Journal of Sports Medicine*, the most popular orthopaedic sports medicine publication in the world. He is also co-director for the University of Chicago’s annual Primary Care Orthopaedics Conference, held in June in Chicago. He continues to work actively with Concordia College and numerous local high schools.

**Hue Luu, MD** Dr. Luu continues to have a busy practice in both adult reconstruction and oncology. As an invited physician, Dr. Luu traveled to China this past year to two cities to perform surgeries and give lectures. He continues to review grants for the American Cancer Society, OREF, and the Liddy Shriver Foundation. His research, which has focused on the role of IGF Binding Protein 5 in osteosarcoma development and metastasis, continues to progress.

**John Martell, MD** Dr. Martell continues as director of the Orthopedic Biomedical Imaging Institute at Weiss Memorial Hospital. Dr. Martell continues to network with physicians, medical centers and universities, both nationally and internationally, resulting in numerous publications and presentations related to the wear performance of a variety of total hip replacements.

Dr. Martell continues his collaboration with the ANCHO group (Academic Network for Conservational Hip Outcomes Research). His role was to develop software that standardized the pre- and post-operative interpretation of clinical AP pelvic radiographs while providing more reliable measurement of the anatomic features and biomechanical forces about the hip joint. The hip morphometry software is now being utilized for a variety of other studies (e.g., predicting the incidence of slipped capital femoral epiphysis, squeaking in ceramic-on-ceramic bearings, osteoarthritis, etc.).
Dr. Martell was an invited guest lecturer at the Rush Arthroplasty Alumni Association annual meeting. He also presented “A New Approach to 3D wear Measurements Using the EOS Digital Radiographic System” at the academic lecture for the AOA-ABC Traveling Fellows hosted by the University of Chicago this past year. Dr. Martell was the invited moderator at the Orthopaedic Research Society’s annual meeting in San Francisco for “New Polyethylene Implant Wear.”

Over the past two years, Dr. Martell has worked with scientists at Argonne National Laboratory as a principal investigator on a project to develop tactile feedback for the daVinci and other surgical robots. The initial stage of the project was partially supported through the BIASE group (Biomedical Institute for Advanced Surgery and Endoscopy). This collaboration remains vital, and he is excited to continue to work with Young Park, PhD, and Sami Gopalsami, PhD, with the goal of successfully translating video processing algorithms into the clinical arena. The preliminary efforts have been published in the *Journal of Computational and Mathematical Methods in Medicine* this year. They are currently seeking external funding (corporate and grant) for the translational phase of the project, which will provide the robotic surgeon with realtime (in situ) feedback.

**Daniel Mass, MD** Dr. Mass continues on the University of Chicago Alumni Board of Governors, a position he has held since 2008. In the community, he is Temple board president of his synagogue. Dr. Mass has also been noted to be a “Top Doctor” by *Chicago* magazine. Dr. Mass is also the Chair for “Doctors Demystify Shoulders” for OTs and PTs.

**Bruce Reider, MD** Dr. Reider continues to serve as the Editor-in-Chief of the *American Journal of Sports Medicine* (AJSM), again ranked #2 in two-year impact factor and #1 in five-year impact factor among all orthopaedic journals. Dr. Reider serves on the Medical Publishing Board of Trustees and the Board of Directors for the American Orthopaedic Society for Sports Medicine. Dr. Reider is also the leader of the University of Chicago Orthopaedic Journal Club.

**Michael Simon, MD** Dr. Simon is currently the interim chief for the Section of Orthopaedic Surgery and Rehabilitation Medicine in addition to his role as associate dean of graduate medical education. Dr. Simon provides historical perspective and mentors both faculty and residents in the Section of Orthopaedic Surgery and Rehabilitation Medicine. Dr. Simon was the invited visiting professor at Indiana University as the Garceau-Wray Lectureship in Indianapolis, Indiana, June 15, 2012.

**Christopher Sullivan, MD** Dr. Sullivan continues his busy pediatric practice at the University of Chicago and many off-site clinics. Dr. Sullivan is a reviewer for *Clinical Orthopaedics and Related Research*.

**Brian Toolan, MD** Dr. Toolan is an expert in the care of foot and ankle disorders for adults and adolescents. He is an American Board of Orthopaedic Surgery examiner for the Part II (Oral boards) and Maintenance of Certification. Dr. Toolan continues in his role as program director for the orthopaedic surgery residency program. He was also a selected moderator for instructional course lecture at the 79th annual meeting of the American Academy of Orthopaedic Surgeons in February 2012.
HONORS AND AWARDS

JOVITO ANGELES, MD
Member, Reader Advisory Board of the Journal of Bone and Joint Surgery

ROBERT BIELSKI, MD
Board Examiner, American Board of Orthopaedic Surgery
Reviewer, Journal of Bone and Joint Surgery
Reviewer, Journal of Foot and Ankle Surgery
Reviewer, Journal of the American Medical Association
Reviewer, Journal of Pediatric Orthopaedics
Book Reviewer, Journal of the American Medical Association

RODERICK BIRNIE, MD
Dr. Birnie was the recipient of the Gerald R. Laros, MD Teaching Award for 2012.

HENRY FINN, MD
The Blue Distinction Program Award for Knee/Hip Replacement
Chicago Magazine’s Top Docs for Jocks (Orthopaedics), April 2011
Editorial Board, Journal of Arthroplasty
Oral Examiner, American Board of Orthopaedic Surgery

REX HAYDON, MD, PHD
Associate Editor, Current Orthopaedic Practice
Reviewer, Journal of Bone and Joint Surgery
Reviewer, Clinical Orthopaedics and Related Research
Reviewer, Journal of Orthopaedic Research
Reviewer, Journal of Gene Medicine
Reviewer, American Journal of Sports Medicine
Reviewer, LifeScience
Reviewer, Cancer Research
Grant Reviewer, Musculoskeletal Transplant Foundation
Grant Reviewer, Orthopaedic Research and Education Foundation
Grant Reviewer, Italian Association for Cancer Research
TONG-CHUAN HE, MD, PHD
Reviewer, American Journal of Sports Medicine
Reviewer, American Journal of Human Genetics
Reviewer, Cancer Research
Reviewer, Clinical Cancer Research
Reviewer, Critical Reviews in Oncology/Hematology
Reviewer, EMBO
Reviewer, EMBO Report
Reviewer, Gastroenterology
Reviewer, Genomics
Reviewer, Genes & Development
Reviewer, Journal of Clinical Investigation
Reviewer, Journal of Orthopaedic Research
Reviewer, Laboratory Investigation
Reviewer, Molecular and Cellular Biology
Reviewer, Nature Biotechnology
Reviewer, Nucleic Acids Research
Reviewer, Oncogene
Reviewer, PLoS Series Journals
Reviewer, Proceedings National Academy of Science, USA
Reviewer, Science
Reviewer, Stem Cells
Reviewer, Stem Cells and Development
Reviewer, Special Emphasis Panel/NIH ZRG1 ONC-K (03) M, June 2010
Reviewer, Biomedical Research Council of Agency for Science, Technology and Research of Singapore (A*STAR), July 2010
Reviewer, the Wellcome Trust Senior Fellowships, UK, February 2011
Charter member, the Drug Discovery and Molecular Pharmacology (DMP) Study Section, NIH/NCI, Bethesda, MD
Editorial Board, Recent Patent Reviews on Anti-Cancer Drug Discovery
Editorial Board, Laboratory Investigation
Editorial Board, The Open Cancer Journal
Editorial Board, The Open Tissue Engineering & Regenerative Medicine Journal
HONORS AND AWARDS

TONG-CHUAN HE, MD, PHD (CON’T)
Guest Editor, Current Gene Therapy
Editorial Board, World Journal of Stem Cells
Editorial Board, World Journal of Biological Chemistry
Editorial Board, World Journal of Orthopaedics
Editorial Board, American Journal of Stem Cells

SHERWIN HO, MD
Dr. Sherwin Ho is the official spokesperson for the American Academy of Orthopaedic Surgeons.
Board of Directors (Education Committee) of the Illinois Association of Orthopaedic Surgeons
Team Physician for Concordia University

J. MARTIN LELAND, MD
Member, American Orthopaedic Society for Sports Medicine Self Assessment Committee
Instructor, Orthopaedic Learning Center in Rosemont, IL (AANA)
Principal Reviewer, American Journal of Sports Medicine
Team Physician for Concordia University and numerous local high schools (Hillcrest High, Bremen High, Lincoln-Way High)

HUE H. LUU, MD
Grant Reviewer, American Cancer Society Cell Structure and Metastasis (CSM) Study Section (Ad Hoc) (Atlanta, GA)
Grant Reviewer, Orthopaedic Research and Education Foundation
Grant Reviewer, University of Chicago Internal Scientific Advisory Panel
Grant Reviewer, Liddy Schriver Sarcoma Initiative (Ossining, NY) (Ad Hoc)
Advisory Committee, Operative Products Evaluation Committee, University of Chicago
Advisory Committee, Institute for Translational Medicine Internal Scientific Advisory Panel, University of Chicago
Advisory Panel, American Academy of Orthopaedic Surgeons/American Dental Association work group on Guidelines on Antibiotic Prophylaxis for Patients with Permanent Implants

JOHN MARTELL, MD
Tribology Award, European Federation of National Associations of Orthopaedic and Traumatology (EFFORT), “A Multi-center Study of the Mid-term Wear Results of Highly Cross-linked Polyethylene THR Components,” Copenhagen, Denmark
Abstract Reviewer, Orthopaedic Research Society, Section of Arthroplasty
Reviewer, Journal of Wear
Reviewer, Journal of Bone and Joint Surgery
Manuscript Reviewer, Clinical Orthopaedics and Related Research
Grant Submission Reviewer, National Institutes of Health
Manuscript Reviewer, Journal of Biomechanics
Manuscript Reviewer, Computer Methods in Biomechanics and Biomedical Engineering
Manuscript Reviewer, *Journal of Biomaterials*
Manuscript Reviewer, *Journal of American Academy of Orthopaedic Surgeons*
Principal investigator for the Harris Foundation’s Mid-term Longevity Study: A Multicenter Study for Wear Analysis of Longevity in Total Hip Arthroplasty

**DANIEL MASS, MD**
President of his synagogue.
Selected as top orthopaedic surgeon by *Leading Physicians of the World*
Selected as top orthopaedic surgeon by *Who’s Who*

**BRUCE REIDER, MD**
Dr. Bruce Reider continues in his role as Editor of the American Journal of Sports Medicine. Dr. Reider is also on the Board of Directors of the American Orthopaedic Society for Sports Medicine.
Reviewer, *The Physician and Sportsmedicine*
Reviewer, *World Book Encyclopedia*
Reviewer, *Journal of Orthopaedic Research*
Consultant Editor, *Post-Grad Advances in Sports Medicine*, Publisher Forum Medicus, Inc.
Reviewer, *American Journal of Sports Medicine*
Reviewer, *Clinical Journal of Sports Medicine* (Canada)
Reviewer, AAOS Sports Medicine Evaluation
Editorial Board, *Operative Techniques in Sports Medicine*
Reviewer, *Orthopaedics Today*
Reviewer, *Arthroscopy*
Reviewer, *Clinical Orthopaedics and Related Research*

Executive Editor, *Sports Health: A Multidisciplinary Approach*

**MICHAEL SIMON, MD**
Dr. Michael Simon continues in the role of Interim Chief of the Section of Orthopaedic Surgery and Rehabilitation Medicine while the Dean’s office completes their national search for a new Department Chairman. He continues in his role as the Associate Dean of Graduate Medical Education.

**CHRISTOPHER SULLIVAN, MD**
Reviewer, *Clinical Orthopaedics and Related Research*

**BRIAN TOOLAN, MD**
Oral examiner for Part II Oral Boards and Oral Recertification for the American Board of Orthopaedic Surgery
Current Concepts & Topical Reviews Committee, Assistant Editor for *Foot and Ankle International*
Member, Education Committee, Mid-America Orthopaedic Association (MAOA)
Member, Evidence-Based Practice Committee for the American Orthopaedic Foot and Ankle Society (AOFAS)
Member, Foot and Ankle Subcommittee for the American Academy of Orthopaedic Surgeons (AAOS)
Member, Selection and Fund Raising Committee for the Louis August Jonas Foundation
Member, Knowledge & Skills Subcommittee for the American Orthopaedic Association (AOA)
Rehabilitation Medicine physicians work with other rehab professionals to restore or maximize each patient’s functional skills, self-sufficiency and mobility. That is why Physical Medicine and Rehabilitation (PM&R) is often thought of as the “quality of life” specialty, adding both life to years and years to life. Our physiatrists lead interdisciplinary teams that include nurses, physical therapists, occupational therapists, speech-language pathologists, case managers and others. These teams develop individualized treatment plans to address each patient’s rehab needs. Treatment plans also focus on the patient’s longer term functional goals once they’re home in the community.

These doctors provide patient care on an inpatient and outpatient basis. They also participate in various teaching activities for Schwab’s fully accredited residency training program in PM&R with the University of Chicago Pritzker School of Medicine.

At the University of Chicago, our PM&R specialists are involved in many educational and clinical pursuits. Mary Lawler, MD, serves as advisor to Pritzker students who are interested in PM&R as a specialty. Dr. Lawler also works with Cheryl Benjamin, MD, covering inpatient physiatry consultations at the University of Chicago. Lisa Thornton, MD, is president of the medical staff at Schwab Rehabilitation Hospital. Michelle Gittler, MD, is the resident program director at Schwab Rehabilitation Hospital and clinical associate professor at the University of Chicago. She also teaches annually at the Primary Care Orthopaedics Course.

Michelle Gittler, MD, Schwab Rehabilitation Hospital has recently been recognized for the care she provides to patients and the community. Dr. Gittler, Physical Medicine and Rehabilitation—spinal cord injury, was again named in the “Top Doctors” list in the January 2010 issue of Chicago magazine, and was featured on the cover. This is the fourth time Dr. Gittler has received this designation.

Says Alan Channing, Sinai Health System CEO, “Dr. Gittler’s compassion and dedication to her patients have brought this well-deserved recognition to her and Schwab again and again, exemplifying our mission of improving the health of the individuals and communities we serve.”
FACULTY

UNIVERSITY OF CHICAGO

Professors of Surgery
Henry Finn, MD
Daniel P. Mass, MD
Anthony Montag, MD*
Michael Simon, MD
Brian Toolan, MD

Professor Emeritus of Surgery
Bruce Reider, MD

Associate Professors of Surgery
Tong-Chuan He, MD, PhD
Sherwin Ho, MD
John Martell, MD
Rex Haydon, MD, PhD

Assistant Professors of Surgery
Jovito Angeles, MD
Holly Benjamin, MD*
Robert Bielski, MD
Roderick Birnie, MD
J. Martin Leland, MD
Hue Luu, MD
Christopher Sullivan, MD
Ann Zmuda, DPM*

Clinical Associate Professor of Surgery
Michelle Gittler, MD

Clinical Professors
Leon Benson, MD

Clinical Associate Professor
Jason Koh, MD
James Kudrna, MD
William Robb III, MD
Howard Sweeney, MD

Clinical Assistant Professor
Joseph Allegra, MD
David Beigler, MD
Eric Chehab, MD
Bradley Dunlap, MD
Miledones Eliades, MD
Thomas Hudgins, MD
Eldin Karaikovic, MD
Steven Levin, MD
Seth Levitz, MD
Robert McMillan, MD
Craig Phillips, MD
Gary Shapiro, MD

Pritzker Titles
Senior Clinician Educator
Joseph Feldman, MD
James Fox, MD
Michael O’Rourke, MD
Gregory Palutsis, MD
Gregory Portland, MD
Ami Jo Ptaszek, MD
David Shapiro, MD
Van Stamos, MD
Craig Williams, MD

Clinical Educator
Mark Mikhail, MD
Mark Neault, MD
Howard Robinson, MD
Danielle Schiff, MD
Naila Shaikh, MD

Clinical Associates
Sung-Lana Kim, MD
Edward Park, MD
Suzan Rayner, MD
Lisa Thornton, MD

Postdoctoral Scholars
Xiang (Sean) Chen, MD, PhD
Ke (Candy) Yang, MD, PhD
Jian-Li (Jenny) Gao, PhD

Postdoctoral Fellows
Hong Liu, MD, PhD
Jing Cui, MD
Ning Hu, MD, PhD
Ruidong Li, MD
Wenwen Zhang, MD
Jiye (Andy) Zhang, MD
Yuhan Kong, MD
Linyuan (Cecilia) Wang, MD
Jinhua Wang, MD
Ning Wang, MD
Chen Zhao, MD

PhD/MD Students
Enyi Huang
Stephanie Kim
Mary Rose Rogers

* Secondary appointment
RESIDENTS

**PGY-1**
Joseph Cohen, MD  
Undergraduate/Graduate  
University of San Diego/Tufts University School of Medicine

Ananth Eleswarapu, MD  
Undergraduate/Graduate  
Columbia University/The University of Pittsburgh School of Medicine

Oliver Schipper, MD  
Undergraduate/Graduate  
Bucknell University/Georgetown University School of Medicine

Jason Somogyi, MD  
Undergraduate/Graduate  
Illinois Wesleyan University/Loyola University Stritch School of Medicine

Cory Stewart, MD  
Undergraduate/Graduate  
Calvin College/Wayne State University School of Medicine

**PGY-2**
Erwin Bennett, MD  
Undergraduate/Graduate  
Santa Clara University/University of Chicago Pritzker School of Medicine

Jimmy Jiang, MD  
Undergraduate/Graduate  
Georgia Tech/University of Alabama School of Medicine

**PGY-3**
Min Lu, MD  
Undergraduate/Graduate  
University of Chicago/University of Chicago Pritzker School of Medicine

Gautam Malhotra, MD  
Undergraduate/Graduate  
UCLA/University of Chicago Pritzker School of Medicine

Zachary Sisko, MD  
Undergraduate/Graduate  
University of Notre Dame/St. Louis University School of Medicine

Aneet Toor, MD  
Undergraduate/Graduate  
UCLA/Ohio State University College of Medicine

**PGY-4**
Kevin Hardt, MD  
Undergraduate/Graduate  
University of Notre Dame/Indiana University School of Medicine

Tyler Krummenacher, MD  
Undergraduate/Graduate  
University of Notre Dame/St. Louis University School of Medicine

Deepak Reddy, MD  
Undergraduate/Graduate  
University of Michigan/University of Chicago Pritzker School of Medicine

Christian Skjong, MD  
Undergraduate/Graduate  
Carleton College/University of Chicago Pritzker School of Medicine

Timothy Vanderbilt, MD  
Undergraduate/Graduate  
West Point/University of Chicago Pritzker School of Medicine

Kashif Ali, MD  
Undergraduate/Graduate  
University of Michigan/Case Western Reserve University School of Medicine

James Cameron, MD  
Undergraduate/Graduate  
Furman University/Emory University School of Medicine

Michael Chioffe, MD  
Undergraduate/Graduate  
University of Florida/University of Chicago Pritzker School of Medicine

Jay Diemel, MD  
Undergraduate/Graduate  
University of Notre Dame/Loyola University Stritch School of Medicine

Amrish Patel, MD  
Undergraduate/Graduate  
Rice University/Loyola University Strich School of Medicine
The orthopaedic surgery residents were named “Outstanding Consultants of 2012” by the University of Chicago Emergency Medicine Residency.

PGY-5

Reginald Alexander, MD
Undergraduate/Graduate
Howard University/Howard University College of Medicine

Mark Bergin, MD
Undergraduate/Graduate
University of Michigan/Wayne State University Medical School

Kyle Hazelwood, MD
Undergraduate/Graduate
Gonzaga University/Loyola University Stritch School of Medicine

Thomas O’Hagan, MD
Undergraduate/Graduate
University of Notre Dame/New York Medical College

Noah Shaftel, MD
Undergraduate/Graduate
Miami University, Oxford, OH/Ohio State University College of Medicine

FELLOWS-2012 GRADUATES

Andre Spiguel, MD (Musculoskeletal Oncology)
Fellowship at Washington University St. Louis

Yogesh Kolwadkar, MD (Adult Reconstruction)
Fellowship at Penn State Hersey Medical Center

Rishi Thakral, MD (Adult Reconstruction)
Fellowship at University Hospital (UVA), Charlottesville, Virginia

Benedict Figuerres, MD (Sports Medicine)
Private practice in Topeka, Kansas

Jovan Laskovski, MD (Sports Medicine)
Private practice in Akron, OH

Jacob Bosley, MD (Hand and Upper Extremity)
Private practice in Greenville, NC

Yesenia Rodriguez-Alvarez, MD (Hand and Upper Extremity)
Private practice in Bayamón, Puerto Rico
EDUCATION

WORKING TOWARD FULFILLING THE SECTION OF ORTHOPAEDIC SURGERY AND REHABILITATION MEDICINE’S MISSION TO COMMUNICATE KNOWLEDGE THROUGH MEDICAL EDUCATION, OUR FACULTY CONTINUE TO BE ACTIVE IN ALL LEVELS OF MEDICAL EDUCATION.
DURING THE M3 YEAR, WE PROVIDE A CORE COURSE FOR THREE HOURS, WHICH INCLUDES INSTRUCTION IN CASTING AND SPLINTING, AND A SERIES OF INTERACTIVE LECTURES ON ORTHOPAEDIC TOPICS.

During their surgery clerkship, third year medical students are given the option of selecting orthopaedic surgery as their subspecialty rotation for 2.5 weeks. During this 2.5 week rotation, the junior medical students are introduced to the field of orthopaedics and given the opportunity to experience first-hand the rewarding yet challenging work we do.

During the M4 year, we offer a four-week elective inpatient rotation. Students are exposed to the various orthopaedic subspecialties during this rotation. In addition to our own students from Pritzker, this rotation is very popular with visiting students from other institutions as well. We also offer an outpatient elective, which is aimed toward students entering into primary care fields. Year after year, we continue to see many of our own students choose orthopaedics as a career.

Our residency program continued to flourish over the past year and has been greatly strengthened by the academic affiliation with the NorthShore University Health System (NSUHS). Through this affiliation, our residents rotate at Evanston Hospital, a designated Level I trauma center, and Glenbrook Hospital, a community hospital in Glenview, IL. All members are of the NSUHS faculty are fellowship-trained subspecialty surgeons in well-established community practices. The individual practices of the faculty collectively provide an extensive, subspecialty-driven ambulatory experience in the evaluation and management of outpatient orthopaedic conditions. We have six residents training at NSUHS at a time on the sports medicine, foot and ankle, trauma, hand and spine services.

The majority of the resident educational program in orthopaedic surgery continues to occur at the University of Chicago Medicine. The clinical education is centered around inpatient units, on- and off-site outpatient clinics and the operating room. The management of patients is divided into seven clinical services that include joint reconstruction, spine, oncology, pediatrics, foot and ankle, hand and upper extremity, and sports medicine. Our curriculum is organized through these subspecialties and teams of residents are assigned to each service.

The didactic portion of the residents’ education occurs mainly through the morning clinical conferences. Our 6:15 am conference is a monthly rotating conference on pediatric orthopaedics, trauma, basic science, morbidity and mortality, quality assurance, sports medicine, adult reconstruction, spine, hand and upper extremity, and surgical indications for musculoskeletal diseases. All of our conferences are attended and lead by attendings. Following the 6:15 am conferences, every weekday morning from 7:00 to 7:30 am, the junior resident on-call presents the emergency room cases from the evening before. This serves as quality control and an educational experience for residents. After the emergency room review, all faculty are required to present their operative cases for the day and explain their operative indications. Following the faculty presentation, residents show radiographs of patients who were operated on the day before, so that all individuals can see some of the technical results from the previous day’s surgery. In addition to our daily morning conferences, we also have a weekly Grand Rounds on Wednesdays and a monthly Journal Club. We are fortunate to have a large number of outside guest speakers present at our Grand Rounds.

Our four fellowship programs, Hand & Upper Extremity, under the direction of Dr. Daniel Mass; Sports Medicine, under the direction of Dr. Sherwin Ho; Musculoskeletal Oncology, under the direction of Dr. Rex Haydon; and Adult Reconstruction, based at Weiss Memorial Hospital, under the direction of Dr. Henry Finn, continue to train some of the nation’s brightest emerging orthopaedic subspecialists. Staying at the forefront of orthopaedic medical education is a goal the Section of Orthopaedic Surgery and Rehabilitation Medicine strives toward at every level of education.
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<tr>
<th>DAY</th>
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<th>DESCRIPTION</th>
<th>FACULTY</th>
<th>TIME</th>
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<tr>
<td>MONDAY</td>
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<td>E-302</td>
<td>AM Conference</td>
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<td>TUESDAY</td>
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<td>Drs. Simon/Toolan</td>
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<td>Grand Rounds</td>
<td>(AM Conference to follow)</td>
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<td>AM Conference</td>
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**DAILY AM CONFERENCE:**
- Pre-op & Post-op Discussion
- X-ray Review from Previous Day
- E.R. X-ray Review

**MONTHLY CONFERENCE:**
- Journal Club
- Last Wednesday of each month
  - 7:00 a.m.—E-302

**ETHICS:**
- One Wednesday quarterly—7:00 a.m.

**WEDNESDAY**
- Basic Science Conference:
  - July–Sept.
  - Sept.–Dec.
  - Jan.–June
  - Anatomy
  - Pathology—Simon/Haydon/Luu
  - Basic Science Curriculum

**THURSDAY**
- Indications Conference: (on a rotating basis)
  - 1st week
  - 2nd week
  - 3rd week
  - 4th week
  - 5th week
  - 6th week
  - Trauma
  - Adult Reconstruction
  - Sports
  - Hand
  - Pediatrics
  - Foot and Ankle

**CLINICAL CONFERENCES:**

**TUESDAY**
- 1st week
- 2nd week
- 3rd week
- 4th week
- Trauma—Toolan/Mass/Birnie
- Morbidity & Mortality—Martell
- Adult Reconstruction—Martell/Luu
- Pediatrics—Sullivan/Bielski

**FRIDAY**
- 1st week
- 2nd week
- 3rd week
- 4th week
- Hand—Mass/Birnie
- Sports—Leland/Ho
- Adult Reconstruction—Martell
- Foot & Ankle—Toolan
BONE AND SOFT TISSUE TUMOR CONFERENCE

AN UNDERSTANDING OF THE BASIC BIOLOGY AND PATHOLOGY OF BONE AND SOFT-TISSUE TUMORS IS ESSENTIAL FOR APPROPRIATE PLANNING OF TREATMENT. A DETAILED DESCRIPTION OF THE CLINICAL, RADIOGRAPHIC AND PATHOLOGICAL CHARACTERISTICS IS PRESENTED FOR EACH CASE. PARTICIPANTS INCLUDE ORTHOPEDIC ONCOLOGY SURGEONS, SURGICAL ONCOLOGISTS, RADIOLOGISTS AND MEDICAL ONCOLOGISTS.

THE PRIMARY OBJECTIVE OF TUMOR CONFERENCE IS TWO FOLD:
To educate healthcare professionals on the latest clinical trials and research and to give each physician the opportunity to get input from his or her peers on their experiences with a multitude of protocols on many different tumor sites
To examine the benefits of each treatment as it relates to quality of life issues

SPECIFIC OBJECTIVES:
Review and discuss diagnostic studies and pathology
Assess available clinical consultation for optimal management of patients
Define treatment and management options for pre- and post-surgery cases
Implement treatment plans to optimize better outcomes
Differentiation between diagnosis and follow-up modalities for various types of cancer
Review new procedures, technology and treatments for patients
Assess available clinical trials
Describe accurate staging of cancer patients

HOW DOES TUMOR CONFERENCE WORK?
Patients are placed on the agenda by their physician. Any physician who wants another opinion about the best course of treatment for his or her patient can have that patient’s case scheduled on the Tumor Conference agenda. This means that our patients are often getting a second, third or fourth opinion of the most effective treatment for their disease. The care of the patient from presentation of the illness to treatment and recovery is discussed. In each case, there will be a review of all lab results specific to each patient’s cancer, pathology (biopsy and surgical) results and radiology work-up (CT, MRI, PET scan and/or X-ray) results.

FREQUENCY: EVERY TUESDAY AT 4:00 P.M.
LOCATION: ORTHOPAEDIC SURGERY CONFERENCE ROOM E-302
NORTHSHERE ORTHOPAEDIC PROGRAM

The orthopaedic residency program at NorthShore University HealthSystem is a valuable and dynamic part of the University of Chicago residency program. Six residents rotate continually through the NorthShore campus with specialty rotations in spine, hand, foot and ankle, trauma and sports surgery. Live daily interactive video provides linkage and continuity to the University of Chicago campus. Daily conferences on the NorthShore campus complement the U of C programs, including: hand, trauma, events, arthroscopic correlation, journal club and spine conferences. Residents have the opportunity to interact with more than 20 clinical faculty and gain clinical experiences through the NorthShore Orthopaedic clinic, NorthShore ORs, Evanston Hospital (level 1 trauma) ER, Ravine Way surgicenter and clinical offices of the faculty. They also participate in subspecialty specific motor skills education programs in the NorthShore Orthopaedic Psychomotor Skills & Virtual Reality Laboratory featuring state-of-the-art skills education in trauma and arthroscopic surgery. Another integral component of the residency program is the real-world experience gained through managing the outpatient department (OPD) clinics twice per week under the supervision of orthopaedic faculty and the OPD co-directors. The OPD clinic provides resident surgeons the opportunity to assess and treat varying orthopaedic conditions from a wide patient population in preparation for their future practices.

PSYCHOMOTOR SKILLS & VIRTUAL REALITY LABORATORY

Under the guidance of Howard Sweeney, MD, director of the Psychomotor Skills & Virtual Reality Laboratory, the Department of Orthopaedic Surgery at NorthShore continued regular motor skills training with the orthopaedic residents. Several programs run concurrently in the lab, including weekly sports labs culminating in cadaveric sessions that focus on knee or shoulder based on the preceding curriculum, bi-weekly sawbones trauma fracture management labs, daily arthroscopic knot-tying sessions, sawbones spine labs conducted twice per rotation and a virtual reality program consisting of three surgical simulators and a Wii system to support ambidexterity for the resident surgeon-in-training.

Academic year goals for 2012-2013 include formalizing and validating the current curricula and extending the learning activities in the lab to cover all subspecialties.

SPRING TRAUMA CADAVER COURSE

Spring of 2012 welcomed more than 20 orthopaedic resident and physician assistant learners to the first biannual trauma cadaver course led by David Beigler, MD, division chief (trauma), Department of Orthopaedic Surgery at NorthShore. The two-day interactive course focused on teaching orthopaedic residents the fundamentals of surgical dissection for orthopaedic trauma, with a focus on lower and upper extremities. Surgeons from Loyola as well as NorthShore partnered to deliver this dynamic course. In addition to University of Chicago orthopaedic residents and fellows, Loyola residents and Schwab PM&R residents attended the course. The next course has been scheduled for December 14–15, 2012, with the goal being to provide this educational experience twice a year. Ultimately, the course will move into a focus on trauma fracture management and implants for more senior residents.

The course was supported partly by unrestricted industry educational grants and partly by the Department of Orthopaedic Surgery at NorthShore.
NorthShore University HealthSystem hosted the 2012 Waving Lecture Series on Saturday, October 6, 2012, at Evanston Hospital in the NorthShore Center for Simulation and Innovation (NCSI). The topic of this year’s event was complex spinal osteotomies and was co-chaired by Gary Shapiro, MD, and Mark Mikhael, MD. World-renowned spine surgeon Lawrence Lenke, MD, from Washington University in St. Louis, was the visiting professor. The event was attended by approximately 50 people, consisting of both orthopedic surgery and neurosurgery attendings, residents and physician assistants. The day consisted of case presentations, lectures and an interactive cadaver lab led by Dr. Lenke, and provided a valuable educational experience for all attendees.

The annual fall Wavering Lecture Series is sponsored by the NorthShore University HealthSystem (NorthShore) Department of Orthopaedic Surgery. The lectureship was established in 1984 by a grant from Mr. and Mrs. Elmer Wavering. Since its inception, the lecture has featured well-known speakers representing all subspecialties of orthopaedic surgery.

CHANGE IN ORTHOPAEDIC SURGERY LEADERSHIP
On October 1, 2012, the Department of Orthopaedic Surgery wished a fond farewell to William Robb, MD, and extended a warm welcome to our new chairman, Jason Koh, MD.

Dr. Robb served as chairman for seven years and under his leadership, the successful collaboration with the University of Chicago orthopaedic surgery residency program was achieved. Dr. Robb believes the department’s future is bright and plans to remain involved in years to come. He will return to his practice full-time.

Dr. Koh has been a member of the Department of Orthopaedic Surgery since 2009, serving as vice-chair. He is also the director of the orthopaedic fellowship program and chairman of the orthopaedic research committee. Department members congratulate Dr. Koh on becoming chairman and look forward to working with him to achieve his goals for the Department.
RESEARCH ACTIVITIES

OUR MISSION IS TO INSPIRE COLLEAGUES TO CREATE NEW KNOWLEDGE, TO COMMUNICATE KNOWLEDGE THROUGH MEDICAL EDUCATION, AND TO PROVIDE SUPERIOR AND COMPASSIONATE HEALTHCARE IN A COLLEGIAL ATMOSPHERE.
BASIC, CLINICAL AND TRANSLATIONAL RESEARCH IN ORTHOPAEDIC SCIENCE IS AN INTEGRATED PART OF OUR GRADUATE MEDICAL EDUCATION. THUS, IN ADDITION TO THE CLINICAL AND EDUCATIONAL COMMITMENTS, OUR FACULTY IS ACTIVELY INVOLVED IN A BROAD RANGE OF RESEARCH ON BONE AND MUSCULOSKELETAL DISEASES, WHICH HAVE BEEN HIGHLIGHTED IN THE FOLLOWING AREAS:

THE ORTHOPAEDIC BIOMEDICAL IMAGING INSTITUTE
As the Director of The Orthopaedic Biomedical Imaging Institute at Weiss Memorial Hospital, in affiliation with the University of Chicago, Dr. John Martell continues to develop collaborations with implant manufacturers and individual investigators. Dr. Martell’s research has been funded by grants from The Harris Foundation, NIH/NIAMS, Smith & Nephew, Stryker, Biomet and Zimmer. The Orthopaedic Biomedical Imaging Institute is known nationally and internationally as a resource for the design and implementation of polyethylene wear studies and has been involved in the analysis of cross-linked polyethylene.

Dr. Martell accommodates requests from academic joint replacement programs to observe the techniques that are used in processing and analyzing films. The Orthopaedic Biomedical Imaging Institute has become a world-class resource for the analysis of polyethylene wear in total hip arthroplasty. The Institute has furthered its commitment to orthopaedic research by sponsoring the Geraldine Mary Maley Research Award, an annual research award for projects developed by faculty/residents in the Section of Orthopaedic Surgery at the University of Chicago or Weiss Memorial Hospital.

Dr. Martell has recently developed several important and innovative biomedical imaging tools. First, mechanical analysis software allows investigators to estimate the joint reaction force and stress in normal and prosthetic hips. Using the joint stress as a predictor variable in combination with patient activity indicators (speed of walking, UCLA score or pedometer data) he has developed a multiple logistic regression model that can identify patients with total hips that are at risk for high wear and osteolysis in the long term. This model is now 87 percent accurate and has no false negatives in a series of 300 hips with minimum eight year follow-up.

Dr. Martell has partnered with Dr. Christian Heisel at Heidelberg University in Germany to investigate the biomechanical factors predisposing women to hip arthritis. Preliminary results show a significantly higher contact stress in the native hips of women patients compared to men. Factors that play a role in this finding are: a wider female pelvis, causing the body weight momentum to be larger, and smaller femoral offset in women and smaller femoral heads, which increases contact stress. Dr. Martell is also working with Dr. William Walters from Australia to investigate the biomechanics of ceramic total hip arthroplasty to identify factors leading to squeaking in ceramic total hip arthroplasty.

As an extension of the mechanical analysis software, Dr. Martell developed preoperative templating software.
which allows the surgeon to template pre-operatively using knowledge of the impact choices for stress and wear performance of the implanted prosthetic hip joint. This identifies reconstructive options that put the patient at risk for high wear, and assists the surgeon in choosing prosthetic positions and designs to minimize this significant complication. Another modification of the mechanical analysis software allows the estimation of shear forces in the capital femoral epiphysis that predispose to slipped capital femoral epiphysis (SCFE) in children. These shear forces, in conjunction with the skeletal age of the pelvis, have a predictive value of 90% for the risk of SCFE.

Dr. Martell has partnered with Argonne National Laboratories, and has received $20,000 through the BIASE initiative to fund a pilot project to develop a visual-tactile feedback system for use in minimally invasive robotic surgery. Preliminary testing of this video processing image analysis system has shown the capability to detect real time suture strain rates that are 100 times lower than the strain to failure. Work now continues on perfecting the video processing, including measuring strains in sutures from archived clinical videos.

TENDON AND LIGAMENT INJURY REPAIR
Drs. Daniel Mass, Brian Toolan, Martin Leland, Sherwin Ho, and Jovito Angeles, in collaboration with Drs. T.-C. He, Rex C. Haydon and Hue H Luu, are investigating possible gene therapy approaches to enhancing tendon and ligament healing using recombinant adenoviral vectors expressing BMPs and/or other biological factors. With funding from the Orthopaedic Research and Education Foundation (OREF), Drs. Mass, Toolan and colleagues have demonstrated that BMP-13 can significantly improve the biomechanical properties of lacerated flexor tendons in a rabbit model. Drs. Mass and Toolan and colleagues have also demonstrated that BMP-14 can significantly improve the biomechanical properties of lacerated flexor tendons in a rabbit model. Based on time-course studies of gene expression after tendon injury, Dr. Mass has identified several factors that may work alongside BMP-13 and BMP-14 at different stages of tendon healing. Dr. Mass is currently collaborating with Dr. Yu of the Department of Chemistry to develop bio-degradable nanocapsules that can be used for time-released delivery vehicles for bio-active proteins to sites of tendon injury. This delivery system will be used to test the effect of TGFβ1 and BMP14 on tendon healing in a rat model of Achilles tendon repair (J Hand Surg Am 30: 136–141).

FOOT AND ANKLE RESEARCH
Dr. Brian Toolan has completed several clinical projects related to foot and ankle disorders. In the past, he studied the effects of acquired flatfoot deformity on tibiotalar contact pressures in a cadaveric model, and performed a follow-up study on the effects of UCBL orthotics and surgical techniques on joint contact characteristics in the same model. Both of these studies were published in Foot & Ankle International. He recently published a retrospective study in Foot & Ankle International comparing lateral column lengthening to a medial calcaneal osteotomy in the treatment of adult acquired flatfoot. He is currently conducting a similar comparison in a prospective clinical study that is ongoing. Lastly, he is retrospectively evaluating the results of a new procedure for salvaging malunited ankle fractures with chronic syndesmotic disruption using a distal fibular arthrodesis and soft tissue reconstructions.

In addition to his interests on flatfoot deformity, Dr. Toolan is interested in developing a better understanding of ruptured Achilles tendon healing processes and potentially developing new means in treating patients with this injury. Achilles tendon ruptures are common injuries and both surgical and non-surgical treatments have frequent complications such as wound dehiscence and re-rupture. Therefore, Dr. Toolan, in collaboration with Drs. He, Haydon and Luu, has used a rat model to investigate the effects of BMP-14 and other factors on Achilles tendon healing, finding a 70 percent increase in tensile strength at two weeks. This study was funded by a research grant to Dr. Toolan from the American Orthopaedic Foot & Ankle Society, and was published in the Journal of Bone and Joint Surgery.

ARTICULAR CARTILAGE REGENERATION AND ANTERIOR CRUCIATE LIGAMENT REPAIR
The Sports Medicine Services, consisting of Drs. Sherwin Ho, Martin Leland and Bruce Reider has been intensively investigating the biological processes in articular cartilage regeneration, anterior cruciate ligament repair and rotator cuff tear repair. Articular cartilage has little intrinsic capacity to repair itself after
injury, prompting many researchers to explore new methods to facilitate and augment cartilage regeneration. Currently, a variety of approaches have been developed, including chondroplasty, osteochondral transfer procedures (autologous and allograft procedure), and microfracture and autologous cultured chondrocyte implant (ACCI). Each of these techniques is useful when utilized in appropriate conditions; however, a significant cohort of patients still fail to achieve good to excellent results even when surgical, pharmacologic and physical therapy are optimal by current standards. These clinical failures suggest that new biologic strategies, including gene therapy, may be a useful adjunct to current treatments to further improve clinical outcome.

**Drs. Sherwin Ho and Martin Leland** are investigating the possible use of Sox9 and/or other biofactors to facilitate articular cartilage regeneration. Previously, **Drs. T.-C. He and Rex Haydon** successfully transduced intervertebral disc cells with Sox9, a transcription factor necessary for chondrogenesis and Type II collagen synthesis. They observed that human degenerative intervertebral disc cells transfected with Sox9 genes led to chondrocyte proliferation with increased production of Type II collagen ([Spine](Spine%2028%3A%20755–763)). Currently, **Drs. Ho, Leland and Reider** are investigating whether exogenous expression of Sox9 in articular cartilage cells or in mesenchymal stem cells will augment articular cartilage repair in a rabbit model. **Dr. Ho** received the AOSSM Young Investigator Award to carry out the Sox9 gene therapy for articular cartilage repair. This research has included experiments comparing different man-made scaffolds that can be used to implant these genetically altered cartilage cells back into the host knee defects. In addition, **Drs. Ho, Leland, and Haydon** are investigating the potential use of BMP-13 and/or PRP (platelet-rich plasma) for rotator cuff tears using a rat model, as possible treatment options for patellar tendonitis, and a unique approach to rehabilitation following ACL reconstruction surgery.

The **Sports Medicine Service** has developed a surgical skills laboratory for medical students, residents and fellows to develop their arthroscopic and minimally-invasive surgical skills using a state-of-the-art virtual reality arthroscopy simulator (MIST) developed by the Spanish aerospace company GMV (based in Madrid), as well as with cadavers. Such virtual and simulated surgery represents important new educational tools for training medical students, residents and fellows. A study to quantitate the learning of these skills was presented at the Arthroscopy Association of North America’s Annual Meeting in San Francisco this year, as well as at the Mid-America Orthopaedic Society’s Annual Meeting in Marco Island, Florida and has been submitted for publication.

**Dr. Reider** is also engaged in an ongoing clinical prospective cohort study of possible links between knee proprioception in collegiate soccer and basketball players. **Dr. Reider’s** previous research has shown that athletes with ACL tears have abnormal proprioception of the knee that returns to normal after ACL reconstruction. The current project prospectively measures proprioception in a large number of healthy athletes to see if those who go on to tear their ACLs have deficient proprioception prior to the injury. **Dr. Reider** has also completed a study of degenerative meniscal tears, which has been submitted for publication.

**OSTEOSARCOMA IS A “DIFFERENTIATION DISEASE”**

Under the direction of **Drs. T.-C. He, Rex C. Haydon, and Hue H. Luu**, the **Molecular Oncology Laboratory** has focused on the molecular aspects of bone and soft tissue tumors through collaborations with **Drs. Michael A. Simon** and **Anthony Montag**. They previously found that β-catenin signaling is activated in approximately 70 percent of human osteosarcoma samples, suggesting that deregulation of β-catenin may play a role in the development of human osteosarcoma. More recently, they have found that STI-571/Gleevec effectively inhibits β-catenin signaling in human colon cancer cells, as well as in human osteosarcoma and chondrosarcoma cells. Their findings suggest that inhibition of this signaling pathway by STI-571 may be further explored as an important target for adjuvant treatments for human cancer ([Cancer Letters](Cancer%20Letters%20193:%20161–170)). **Dr. Luu** also investigated the possible role of S100 proteins in human osteosarcoma. **Dr. Luu** recently examined the expression of the S100A6 in human osteosarcoma, and found that approximately 84 percent (42 of 50) of the analyzed osteosarcoma specimens stained positive for S100A6. Thus, their findings suggest that S100A6 may be associated with the pathogenesis of osteosarcoma ([International...](International...))
Drs. Haydon, Luu and He examined the impact of osteogenic BMPs on osteosarcoma. In mesenchymal stem cells, BMP-2 and BMP-9 induce osteogenic differentiation; however, in osteosarcoma cell lines, they induce increased cell proliferation, without any evidence of bone formation. BMPs are commonly expressed in osteosarcoma, and have been associated with a poorer prognosis, suggesting that blocks to normal BMP-induced differentiation must exist. Downstream targets of the osteogenic BMPs include several key inhibitors of differentiation that are commonly expressed in human tumors. Their preliminary studies strongly suggest that osteosarcoma may represent a “disease of differentiation”, possibly caused by the defects in the terminal differentiation pathway of pre-osteoblast and/or osteoblasts. (Laboratory Investigation 88: 1264–1277; Clinical Orthopaedics and Related Research 466: 2114–2130; Clinical Orthopaedics and Related Research 454: 237–246; Clinical Cancer Research 16: 2235–2245; Clinical Cancer Research 8: 1288–1294).

Drs. Haydon, Luu and He are investigating whether overexpression of the genes involved in repopulating early MSCs and/or removal of the genes involved in promoting osteoblast terminal differentiation would convert mesenchymal stem cells into osteosarcoma-like tumor cells. This osteosarcoma reconstruction system should shed insights into the early events of bone tumor development. Drs. Haydon, Luu and He are also conducting thorough microarray analyses in order to identify the potential differentiation defects in osteosarcoma. They have recently conducted in vivo studies and demonstrated that activated PPARγ and retinoid signaling can promote osteogenic differentiation and inhibit osteosarcoma tumor growth. (Clinical Cancer Research 16: 2235–2245; PPAR Research 2010: 956427; PLoS ONE 5: e11917).

Drs. He, Haydon and Luu have recently investigated the potential synergistic effect of other factors on BMP9-mediated osteogenic differentiation and bone formation. Such factors include retinoid receptors and IGFs (PLoS ONE 5: e11917 and Journal of Bone and Mineral Research 25: 2447–59). They have also begun to examine the role of Wnt-signaling in osteosarcoma, and its impact on CTGF expression. Given the frequency of beta-catenin dysregulation in osteosarcoma and the diverse biological functions of CTGF in both normal cells and tumors, this may offer new insights into how osteosarcomas develop, and explain why osteosarcoma responds differently from stem cells to stimuli that promote differentiation. Secondly, it may lead to methods to circumvent these blocks to normal differentiation. (Histology and Histopathology 25: 795–806).

Dr. Luu developed a novel orthotopic tumor model for osteosarcoma progression and pulmonary metastasis. (Clin Exp Metastasis, 22: 319-329). This model highlights different stages of primary bone tumor progression and the eventual development of pulmonary metastasis. Drs. He, Haydon and Luu are currently using this model to investigate several genes for their role in controlling bone tumorigenesis and metastasis. Meanwhile, they have conducted gene profiling analysis of gene expression patterns between non-metastatic and highly metastatic osteosarcoma cells, and have identified several promising candidate genes associated with pulmonary metastasis of osteosarcoma. Further functional characterization of these target genes is currently ongoing (Clinical & Experimental Metastasis 26: 599–610). They have recently reported that insulin-like growth factor binding protein 5 (IGFBP5) suppresses tumor growth and metastasis of human osteosarcoma Oncogene 30(37): 3907–17.

Effects of natural products and herbal extracts on cancer cells and stem cell differentiation: As natural products and herbs represent a great deal of resources for drug discovery, we have collaborated with Dr. Chun-Su Yuan of the Tang Center for Herbal Medicine Research and investigated the effect of several herbal products, such as Berberine and ginseng extracts, on cancer growth and proliferation as well as on stem cell differentiation. Dr. He was one of the PIs on a P01 grant from the NIH to study the role of herbal products in cancer (International Journal of Oncology 32: 975–983, Oncol Rep 22: 943–952; Biol Pharm Bull 32: 1552–1558, Cancer Lett 289: 62-70; Mol Pharmacol 79(2): 211–9).
Mechanisms underlying bone formation is pivotal for understanding the pathogenesis of bone diseases, as well as for developing effective approaches to bone regeneration. Although several BMPs (mostly BMP-2 and BMP-7) have been shown to induce bone formation, it is unclear whether the ones currently used represent the most osteogenic BMPs. Through a comprehensive analysis of the 14 types of human BMPs, the Drs. He, Haydon and Luu lab previously demonstrated that BMP-2, BMP-6, and BMP-9 are the most potent osteogenic BMPs in osteoblastic progenitor cells in vitro, which was published in the Journal of Bone and Joint Surgery with over 300 citations so far. They have concluded several rounds of in vivo studies and found that BMP-2, BMP-6 and BMP-9 are the most potent osteogenic BMPs at inducing orthotopic bone formation in athymic mice (Gene Therapy 11: 1312–1320; J Orthop Res 25: 665–677; and Front Biosci 13: 2001–2021). Interestingly, they have also found that osteogenic BMPs can induce adipogenic differentiation of mesenchymal stem cells (Stem Cells and Development 18: 545–559; and Cellsciences Reviews 3: 342–360). They have recently demonstrated that TGFβ/BMP type I receptors ALK1 and ALK2 are essential for BMP-9-induced osteogenic signaling in mesenchymal stem cells (J Biol Chem. 285(38): 29588–98).

Molecular mechanisms of BMP-regulated osteogenesis in mesenchymal stem cells: To identify potentially important mediators of BMP-induced osteogenic signaling, Drs. He, Haydon and Luu determined the transcriptional differences between three osteogenic BMPs (i.e., BMP-2, -6 and -9) and two inhibitory/non-osteogenic BMPs (i.e., BMP-3 and -12). Through the microarray analysis of ~12,000 genes in pre-osteoblast progenitor cells, they found that expression level of 203 genes (105 up-regulated and 98 down-regulated) was altered >2-fold upon osteogenic BMP stimulation. BMP-regulated expression of the selected target genes was confirmed by RT-PCR and CodeLink microarray analysis. Gene ontology analysis revealed that osteogenic BMPs, but not inhibitory/non-osteogenic BMPs, activate genes involved in the proliferation of pre-osteoblast progenitor cells towards osteoblastic differentiation, and simultaneously inhibit myoblast-specific gene expression. Their findings are consistent with the notion that osteogenesis and myogenesis are two divergent processes (Journal of Cellular Biochemistry 90: 1149–1165). The Molecular Oncology Lab identified several potentially signaling mediators of BMP-induced osteogenesis. Several such downstream targets are the Inhibitors of DNA binding/Differentiation helix-loop-helix (a.k.a., Id proteins), Connective Tissue Growth Factor (a.k.a., CTGF), and Hey1, which are known to play important roles in regulating cell proliferation and differentiation, as well as in tumorigenesis. Their studies thus far have demonstrated that both Ids and CTGF play an important role in BMP-9 induced osteogenic signaling (Journal of Biological Chemistry 279: 32941–32949; Journal of Biological Chemistry 279: 55958–55968; and Journal of Biological Chemistry 284: 649–659).

Role of Wnt/β-catenin signaling in osteogenic differentiation of mesenchymal stem cells: The He, Haydon and Luu lab previously demonstrated that Wnt/beta-catenin signaling is deregulated in over 70 percent of human osteosarcomas. Recent studies also suggest that Wnt signaling may play an important role in regulating bone density, and one of the Wnt signaling antagonists Dkk1 may be implicated in the development of osteolytic lesion in multiple myeloma patients. He, Haydon and Luu lab have demonstrated that normal Wnt/β-catenin signaling is required for BMP-9 signaling in MSCs (Journal of Cellular and Molecular Medicine 13:2448–2464). They have completed a microarray analysis on the genes regulated by Wnt3A in mesenchymal stem cells, and found that CTGF is also highly regulated by Wnt. They have recently finished a study, in which they demonstrate that CTGF is a mutual target of Wnt and BMP-9 and play an important role in regulating osteogenic differentiation (Journal of Biological Chemistry 279: 55958–55968; Molecular and Cellular Biology 26: 2955–2964).
DR. BIELSKI


DR. BIRNIE

DR. FINN

DR. HAYDON
BC He*, JL Gao*, BQ Zhang, Q Luo, Q Shi, SH Kim, E Huang, Y Gao, K Yang, ER Wagner, L Wang, N Tang, J Luo, X Liu, M Li, Y Bi, J Shen, G Luther, N Hu, Q Zhou, HH Luu, RC Haydon, Y Zhao, and TC He (2011) Tetrandrine Inhibits Wnt/β-Catenin Signaling and Suppresses Tumor Growth of Human Colorectal Cancer. Molecular Pharmacology 79(2): 211–219


CM Teven, X Liu, N Hu, N Tang, SH Kim, E Huang, K Yang, M Li, JL Gao, H Liu, RB Natale, G Luther, Q Shi, L Wang, R Rames, BQ Zhang, Q Luo, HH Luu, RC Haydon, RR Reid and TC He (2011) Epigenetic Regulation of Mesenchymal Stem Cells: A Focus on Osteogenic and Adipogenic Differentiation. Stem Cells International Volume 2011.


DR. HE


Kristy Townsend, Ryo Suzuki, Tian Lian Huang, Enxuan Jing, Tim Schulz, Kevin Lee, Taniguchi Cullen, Daniel O ...


DR. MARTELL

DR. REIDER


DR. TOOLAN

Louis U. Bigliani, MD, is a nationally and internationally renowned expert in the treatment of shoulder disorders. He attended the Loyola Stritch School of Medicine in Maywood, IL and completed his residency and fellowship training in Orthopaedic Surgery at the New York Orthopaedic Hospital, Columbia-Presbyterian Medical Center, New York, NY.

In June 2008, he was inducted as the 121st President of the American Orthopaedic Association (AOA)—the oldest and most distinguished orthopaedic association in the world. Only those who have made a significant contribution to education, research and the practice of orthopaedic surgery achieve membership in the AOA. As a leader and innovator in his field, Dr. Bigliani lectures around the world and has written hundreds of articles and abstracts for peer-reviewed journals.

As president of the AOA, he represented that prestigious organization at orthopaedic meetings in England, New Zealand, Australia and South America.

Some of his other honors and awards include:

- Stritch School of Medicine AOA Alumnus of the Year, Loyola University Stritch School of Medicine, June 7, 2002
- Physician of the Year, New York Presbyterian Hospital, 2011

Reginald Alexander, MD, will be going to UCLA for a Sports Medicine Fellowship under the direction of David McAllister, MD, Program Director.

Mark Bergin, MD, will be headed to the University of Pittsburgh Medical Center for a fellowship in Sports Medicine and Shoulder Surgery under the direction of Dr. Christopher Harner, Program Director.
ALUMNI

NEXT YEAR’S AAOS MEETING IS BEING HELD IN CHICAGO.

THE UNIVERSITY OF CHICAGO’S ALUMNI RECEPTION WILL BE HELD AT THE PALMER HOUSE HILTON, GRANT PARK PARLOR, 17 E. MONROE STREET, CHICAGO, ON FRIDAY, MARCH 22, 2013, FROM 6:30 TO 8:30 P.M. I LOOK FORWARD TO SEEING YOU AT THE ANNUAL MEETING.

Sincerely,

MICHAEL A. SIMON, MD
Associate Dean of Graduate Medical Education
Interim Chief, Section of Orthopaedic Surgery and Rehabilitation Medicine

Kyle Hazelwood, MD, will be going to Luke Air Force Base in Phoenix, AZ for general orthopaedics.

Thomas O’Hagan, MD, will be going to Thomas Jefferson University in Philadelphia, PA for a Sports Medicine Fellowship under Dr. Michael G. Ciccotti, Program Director.

Noah Shaftel, MD, will be going to the NYU Hospital for Joint Diseases for a Hand Fellowship under the direction of Dr. Martin A. Posner, Program Director.
Phillip K. Kwong, MD
Graduate 1977
Phillip K. Kwong, MD, is a clinical associate professor in the Department of Orthopedic Surgery at the University of Southern California School of Medicine. He is a board certified orthopaedic surgeon specializing in the treatment of foot and ankle conditions. Dr. Kwong is certified by the American Board of Orthopedic Surgery and the National Board of Medical Examiners. He is an active member in the medical professional community as a member of the American Board of Orthopedic Surgery, American Academy of Orthopedic Surgeons (AAOS), American Academy of Orthopedic Surgeons Foot and Ankle Society and California Orthopedic Association. Dr. Kwong has contributed to and authored a number of publications, research activities and lectures.

Young Hoo Kim, MD
Graduate 1979
Young-Hoo Kim, MD, is a professor and clinical director of The Joint Replacement Centre of Korea, Ewha Womans University, School of Medicine, MokDong Hospital, 911-1 MokDong, YangChun-Gu, Seoul 158-710, Korea. He is a member of the American Academy of Orthopaedic Surgeons, the Orthopaedic Research Society, S.I.C.O.T., the American Association of Hip and Knee Surgeons, the Association for Arthritis Hip and Knee Surgery, the Texas Orthopaedic Association, the Asian Pacific Orthopaedic Association and the Korean Orthopaedic Association.

Matthew Malerich, MD
Graduate 1976
Matthew Malerich, MD, is a faculty member at Mercy Hospital of Bakersfield, California’s Spine and Hand Center. Dr. Malerich attended Loyola University of Chicago Stritch School of Medicine and completed the University of Chicago Orthopaedic Surgery Residency Program in 1976. Dr. Malerich’s specialty is hand surgery.
PRESENTATIONS

JOVITO ANGELES, MD
Subacute and Chronic Hand Problems, 19th Annual Primary Care Orthopaedics, Chicago, IL, June 20, 2012

ROBERT BIELSKI, MD
Diagnosis and Management of Common Pediatric Foot Problems, Resurrection Medical Center, Chicago, IL, April 19, 2012

Pediatric Fractures and Dislocation, 19th Annual Primary Care Orthopaedics, Chicago, IL, June 19, 2012

Pediatric Bone and Joint Infections, 19th Annual Primary Care Orthopaedics, Chicago, IL, June 19, 2012

REX HAYDON, MD, PHD


TONG-CHUAN HE, MD, PHD
The Wonders of BMP-9. School of Bioengineering, Chongqing University, Chongqing, China, May 2012
Differentiation and Tumorigenesis. The 4th International Conference of Tumor Targeted Therapy and the 1st Conference of Personalized Cancer Therapy, Suzhou, China, November 9–12, 2012
Cancer as a Differentiation Disease. The Tumor Cell Biology Seminar of the Robert H. Lurie Comprehensive Cancer Center of Northwestern University, Chicago, IL, November 15, 2012

SHERWIN HO, MD
Course Co-Director, The 19th Annual Primary Care Orthopaedics Course, a comprehensive CME review course of primary care orthopaedics, Chicago, IL, June 2012.

J. MARTIN LELAND, MD
Invited speaker, Golf Exposition, Tinley Park Convention Center, IL, February 2012

Invited speaker, Athletico Physical Therapy Lecture Series, Matteson, IL, March 2012
Invited speaker, “General Surgery Qualifying Review Course,” Rosemont, IL, April 2012
Invited speaker, University of Pittsburgh Orthopaedic Grand Rounds, Pittsburgh, PA, May 2012
Invited speaker, New England Baptist Orthopaedic Grand Rounds, Boston, MA, May 2012
Invited speaker, Andrews Institute Orthopaedic Grand Rounds, Gulf Breeze, FL, May 2012
Invited speaker, Product Workshops, AANA Annual Meeting, Orlando, FL, May 2012

HUE LUU, MD

JOHN MARTELL, MD
Rush University Arthroplasty Alumni Association Annual Meeting, Comparative Performance of Various Hip Bearing Surface Couplings, Chicago, IL.
Orthopaedic Grand Rounds, The University of Chicago Medical Center, Assessment of Radiographic Interpretation and Measurement, Chicago IL, May 2012.
In 1948, during his year as president of the AOA, Robert I. Harris, MD, of Toronto, Canada, developed the concept of the ABC Traveling Fellowship. Thirteen orthopaedic surgeons from Great Britain visited orthopaedic centers in North America in a time of post-World War II difficulties.

The Traveling Fellows for 2012 were: Piers Yates, MBBS, BSc, MRCS, FRCS, FRACS; James Huntley, MA Hons MCh DPhil (Oxon) MB BChir (Cantab) MRCSEd FRCPEdin FRCSGlas FRCSEd (TR&Orth); Mike Reed, MD, FRCS; Catherine Kellett, FRCS, BM CGh, BSc; Duncan Whitwell, BMedSci BMBS FRCS (Lom) FRCS (Orth); Gordon Beadel, MB ChB, FRACS (Ortho); Christian Hugo Snyckers, MB ChB, MMED (Orth) (UP).

The University of Chicago Orthopaedic Surgery hosted an Academic Session of presentation by the faculty and AOA Traveling Fellows attended by faculty and residents.
RODERICK BIRNIE, MD, IS A LONG-TIME FACULTY MEMBER AT THE UNIVERSITY OF CHICAGO WITH AN EXPERTISE IN HAND AND UPPER EXTREMITY SURGERY. MOST MORNINGS YOU CAN SEE DR. BIRNIE BICYCLING HIS WAY TO CAMPUS DOWN THE MIDWAY PLAISANCE. HE IS KNOWN FOR HIS LOVE OF RUGBY, AND FOR YEARS WAS THE TEAM PHYSICIAN FOR THE UNIVERSITY OF CHICAGO RUGBY TEAM.

Dr. Birnie is well known among his peers and was named the President for the Chicago Society for Surgery of the Hand in 2009. He was also awarded the Laros Teaching Award last year by the University of Chicago orthopaedic residents. This was the third time he had been awarded the Laros Award, which speaks volumes of his teaching ability and interaction with the residents. Dr. Birnie has also been a major contributor for the Annual Primary Care Course in Chicago chaired annually by Dr. Sherwin Ho.

In July of this year, Dr. Birnie elected to take on a non-operative role. He will continue his busy clinical practice both here and at the Matteson, IL office. Teaching is a passion for Dr. Birnie and the orthopaedic residents will continue to learn from his expertise as a rotation on his service. We thank Dr. Birnie for his years of dedication to the educational program for orthopaedic surgery at the University of Chicago. We are happy that he has elected to remain here as a clinical instructor to teach the orthopaedic leaders of the future.