

A photograph of surgeons in an operating room. One surgeon in the foreground is wearing a blue surgical cap and mask, looking down. Another surgeon in the background is wearing a white surgical cap and mask, also looking down. The scene is dimly lit, with a red drape visible in the lower left.

# UNPARALLELED EXPERIENCE

---

**DEPARTMENT OF ORTHOPAEDIC  
SURGERY & REHABILITATION MEDICINE**

ANNUAL REPORT 2015-2016



THE UNIVERSITY OF  
**CHICAGO**



## TABLE OF CONTENTS

Overview	1
Faculty	3
Bone Health + Fragility Fractures	5
Foot + Ankle	6
Hand + Wrist	7
Hip + Knee Care + Preservation	8
Bone + Soft Tissue Tumors	9
Shoulder + Elbow	10
Spine	11
Sports Medicine	12
Welcome New Faculty	14
Housestaff	16
Honors & Awards	18
Education	21
NorthShore Orthopaedic Program	22
Weekly Conference Schedule	23
Research	25
Gerald S. Laros Memorial Visiting Professor	30
Alumni	31
Publications	32
Presentations	42
2016–2017 Orthopaedic Residency Program	48

## OVERVIEW



**It has been nearly four years since the creation of the Department of Orthopaedic Surgery and Rehabilitation Medicine at the University of Chicago, and since then we have achieved more than I could have imagined.**

**I extend my sincere gratitude to all in our Department and in the Orthopaedic Service Line who have done so very much and without whom we would not have achieved a fraction of what we have accomplished. I am honored to work with each of these individuals.**

This summer, we added four faculty to our ranks – each will make highly positive contributions to our clinical, scholarly and educational endeavors. Jennifer Wolf, MD, a nationally renowned hand surgeon, came to us from the University of Connecticut. Tessa Balach, MD, is a former fellow in our Department, and we were delighted to recruit her from the University of Connecticut, where she served as residency program director, to strengthen our tumor and total joint programs, as well as to lead our orthopaedic residency program into the future. Kelly Hynes, MD, has just completed a fellowship in foot and ankle surgery at the University of British Columbia and joined our faculty this fall to expand our reach in foot and ankle surgery. Finally, Leonardo Oliveira, MD, has joined us from the University of Central Florida, where he had an outstanding five-year career in primary care sports medicine.

Our ability to analyze large datasets to better answer clinical questions in musculoskeletal care has continued to expand. Manuscripts using big data to assess areas such as shoulder surgery, spine care, fragility fractures, and arthritis care are but a few examples of areas in which our endeavors continue to be published in high-impact journals. Even more exciting is recent progress combining institutional expertise in computerized image analysis of radiographs, virtual reality and deep neural networks; these endeavors will lead to advances in orthopaedic education, the acquisition of clinical skills, and in predicting orthopaedic disease and outcomes.

This year, we will achieve our four-year goal of deploying our clinical enterprise across the southern portion of the greater Chicago marketplace. By the end of this fiscal year, we'll be operating outpatient clinics in the South Loop, Orland Park, Tinley Park and Crown Point, and will be offering outpatient surgical care in the Southwest suburbs. This deployment is

the key to our future clinical success, and follows from our commitment to culture where nearly every patient request is answered with "yes." Finally, we will be a key component of the new adult level I trauma center scheduled to open at the University of Chicago in 2018.

I am delighted with the outstanding progress we have already made, and extremely excited about the opportunities ahead to advance orthopaedics at the University of Chicago and on a national level. I am so very proud to be a part of this outstanding group of faculty and staff, and I am highly confident we will remain on an upward trajectory for many years to come. There is no doubt our future is highly exciting!

**Douglas R. Dirschl, MD**

*Lowell T. Coggeshall Professor of Orthopaedic Surgery*

*Chairman, Department of Orthopaedic Surgery and Rehabilitation Medicine*



## FACULTY

### UNIVERSITY OF CHICAGO FACULTY

#### Professors of Orthopaedic Surgery

Holly Benjamin, MD\*  
Douglas R. Dirschl, MD  
Henry Finn, MD  
John Martell, MD  
Daniel P. Mass, MD  
Anthony Montag, MD\*  
Michael Simon, MD  
Brian Toolan, MD

#### Professor Emeritus of Orthopaedic Surgery

Bruce Reider, MD

#### Associate Professors of Orthopaedic Surgery

Robert Bielski, MD  
Rex Haydon, MD, PhD  
Tong-Chuan He, MD, PhD  
Sherwin S.W. Ho, MD  
Michael Lee, MD  
Hue Luu, MD  
Christopher Sullivan, MD  
Ann Zmuda, DPM\*

#### Assistant Professors of Orthopaedic Surgery

Jovito Angeles, MD  
Aravind Athiviraham, MD  
Roderick Birnie, MD  
Megan Conti Mica, MD  
Richard Kang, MD  
James Mok, MD  
Lewis Shi, MD

#### Clinical Associate Professor of Orthopaedic Surgery

Michelle Gittler, MD

#### Clinical Assistant Professors of Surgery

Mary Lawler, MD  
Lisa Thornton, MD

#### Clinical Associates

Cheryl Benjamin, DO  
Benjamin Domb, MD  
Raymond Lee, MD

#### Visiting Assistant Professors

Jiaming Fan, MD  
Yulong Zou, MD

#### Visiting Scholars

Liqun Chen, MD  
Dan Guo, MD, PhD  
Jiayi Huang, MD, PhD  
Xue Hu, MD, MSC  
Junyi Liao, MD  
Feng Liu, MD, PhD  
Jianxiang Liu, MD, PhD  
Hao Liu, MD, PhD  
Minpeng Lu, MD, PhD  
Chao Ma, MD, PhD  
Xiangyan Qu, MD, PhD  
Dongzhe Song, DDS  
Xin Wang, MD  
Zhengjian Yan, MD  
Yichun Yu, MD, MSC  
Fugui Zhang, MD, DDS, PhD  
Zhonglin Zhang, MD, PhD

#### PhD/MD Student

Mary Rose Rogers

### NORTHSHORE UNIVERSITY HEALTHSYSTEM AFFILIATED FACULTY

#### Clinical Professors

Leon Benson, MD  
Jason Koh, MD

#### Clinical Associate Professors

James Kudrna, MD, PhD  
William Robb III, MD  
Howard Sweeney, MD

#### Clinical Assistant Professors

Joseph Alleva, MD  
Ravi Bashyal, MD  
David Beigler, MD  
Eric Chehab, MD  
Bradley Dunlap, MD  
Miledones Eliades, MD  
Thomas Hudgins, MD  
Eldin Karaikovic, MD  
Rachel Kermen, MD  
Steven Levin, MD  
Seth Levitz, MD  
Robert McMillan, MD  
Craig S. Phillips, MD  
Gary Shapiro, MD  
Anand Srinivasan, MD

#### Pritzker School of Medicine

##### Clinician Educators

Patrick Birmingham, MD  
Lan Chen, MD  
Catherine Choi, MD  
Joseph Feldman, MD  
James Fox, MD  
Mark Mikhael, MD  
Mark Neault, MD  
Gregory Palutsis, MD  
Gregory Portland, MD  
Amy Ptaszek, MD  
Howard Robinson, MD  
Danielle Schiff, MD  
Naila Shaikh, MD  
Rachel Sherman, MD

##### Senior Clinician Educators

Eric Chehab, MD  
Joseph Feldman, MD  
James Fox, MD  
Michael O'Rourke, MD  
Gregory Palutsis, MD  
Gregory Portland, MD  
Amy Ptaszek, MD  
Lalit Puri, MD  
William Robb, MD  
David Shapiro, MD  
Van Stamos, MD  
Craig Williams, MD

\*Secondary appointment



# BONE HEALTH+ FRAGILITY FRACTURES

Osteoporosis, the weakening of the bones due to loss of bone mass, puts older patients at risk for breaking a bone. Fragility fractures — broken bones related to osteoporosis — affect more than two million individuals over age 50 in the U.S. each year. Yet, less than 20 percent of these patients receive appropriate evaluation and treatment for their underlying disease. The surgeons at the University of Chicago Medicine are working to raise awareness about the increasing prevalence of osteoporosis and the consequences of bone loss.

“Fragility fractures are three times more common than heart attacks,” explained orthopaedic surgeon and bone health expert, Douglas R. Dirschl, MD. “This is a huge and under-recognized public health issue.” As president of the American Orthopaedic Association (AOA), Dirschl was instrumental in developing the organization’s Own the Bone™ campaign, a national program designed to bring attention to the increasing prevalence of osteoporosis and the consequences of bone loss.

#### Douglas R. Dirschl, MD

Douglas R. Dirschl, MD, is a highly accomplished surgeon and an expert in fracture care. He specializes in caring for patients with musculoskeletal trauma and fractures, as well as other injuries and diseases of the bones, joints and muscles. Dr. Dirschl has published widely on the assessment of factors that influence reliability in classifying fractures. He currently publishes work delineating the cost-effectiveness and value of musculoskeletal care using population-level data, including the areas of arthritis, fragility fracture and nonsurgical treatment.

#### Rex C. Haydon, MD, PhD

Rex C. Haydon, MD, PhD, is the author of more than 25 articles and book chapters. He has accepted career development awards from both the Orthopaedic Research and Education Foundation and the National Institutes of Health. Additionally, Dr. Haydon’s research has also been supported by the Musculoskeletal Tumor Foundation.

# FOOT+ ANKLE

## Foot + Ankle Team

Roderick Birnie, MD  
Douglas R. Dirschl, MD  
Sherwin S.W. Ho, MD (ankle)  
Kelly Hynes, MD  
Brian C. Toolan, MD

At the University of Chicago Medicine, our foot and ankle team takes an individualized approach to managing foot and ankle problems, whether straightforward or highly complex. We educate patients about their conditions and explain all available treatment options for reducing pain and improving function. We encourage our patients to participate in the decision-making process regarding their care plans.



### Roderick Birnie, MD

Roderick Birnie, MD, specializes in non-operative general orthopaedics. He sees patients with a variety of orthopaedic issues, including both upper and lower extremity conditions.

### Douglas R. Dirschl, MD

A leader in medical education and health policy, Dr. Dirschl teaches medical students, residents and physicians about

orthopaedic trauma, musculoskeletal pathophysiology and fractures. He has authored three books, more than 35 book chapters, and more than 100 peer-reviewed scholarly articles.

### Sherwin S.W. Ho, MD

Dr. Sherwin Ho is an expert in sports medicine, specializing in minimally invasive arthroscopic procedures of the shoulder, elbow, hip, knee and ankle.

He has served as faculty at numerous advanced courses for the American Academy of Orthopaedic Surgeons.

### Kelly Hynes, MD

Dr. Kelly Hynes is an orthopaedic surgeon who is fellowship-trained in adult foot and ankle surgery. She specializes in the diagnosis and treatment of conditions of the foot and ankle such as trauma, sports injuries, forefoot deformity and degenerative disease. She provides skilled, compassionate care to treat pain and restore function for a broad range of common and complex foot and ankle disorders.

### Brian C. Toolan, MD

Dr. Brian Toolan is an orthopaedic surgeon who is an expert in the care of foot and ankle disorders for adults and adolescents. He specializes in post-traumatic, arthritic and inflammatory conditions. Dr. Toolan also treats fractures, tendon and ligament injuries, and sports-related conditions. He provides care for patients with simple and complex problems. Dr. Toolan performed the first agility total ankle replacement in Chicago.

# HAND+ WRIST

## Hand + Wrist Team

Jovito Angeles, MD (adult and pediatric)  
Roderick Birnie, MD  
Megan Conti Mica, MD  
Daniel P. Mass, MD (adult and pediatric)  
Jennifer Wolf, MD

From sporting activities to intricate work, healthy hands and wrists are critical to daily life. At the University of Chicago Medicine, we have orthopaedic experts who are recognized leaders in the treatment of hand and wrist injuries and conditions. Our goal is to relieve pain and discomfort and to restore strength, motion, dexterity, form and function. We have the skill and expertise to treat the full range of conditions affecting the bone, joints and nerves of the hands and wrists.

### Jovito Angeles, MD

Jovito Angeles, MD, is an expert in the surgical treatment of adults and children with orthopaedic conditions, particularly those with musculoskeletal problems of the upper extremities. He is also interested in the treatment of patients with traumatic and birth-related brachial plexus palsies, traumatic nerve injuries and compressive neuropathies.

### Roderick Birnie, MD

Roderick Birnie, MD, specializes in non-operative general orthopaedics. He sees patients with a variety of orthopaedic issues, including both upper and lower extremity conditions. A respected educator, Dr. Birnie teaches medical students and residents in orthopaedic surgery at the University of Chicago.

### Megan Conti Mica, MD

Megan Conti Mica, MD, specializes in the treatment of adults and children, including athletes at all levels, with injuries or disorders of the hand, wrist, elbow and shoulder. Dr. Conti Mica has expertise in the management of traumatic and post-traumatic reconstructions, as well as treatment of congenital, paralytic, arthritic, infectious, tumorous and acquired conditions affecting the upper extremity and brachial plexus. Additionally, she has advanced training in minimally invasive (arthroscopic) and microvascular (microscopic) techniques.

### Daniel P. Mass, MD

Dr. Daniel Mass is a highly regarded expert in orthopaedic surgery of the hand and upper extremities. He has a special interest in the research and treatment of flexor tendon injuries (injuries to the muscles that allow the fingers to bend and flex), and he also studies the mechanics of the hand, wrist and elbow. A popular speaker, Dr. Mass has given numerous presentations on hand surgery to medical audiences around the world. In addition, he has written book chapters on flexor tendon injuries and hand and wrist surgery.

### Jennifer Wolf, MD

Jennifer Moriatos Wolf, MD, is a renowned hand surgeon with expertise in the surgical and non-surgical treatment of bone, nerve, tendon and ligament injuries caused by trauma or overuse. She provides comprehensive care to treat pain and restore form and function in the hand, wrist and elbow. She is also highly skilled in the surgical removal of tumors of the upper extremity, partnering with orthopaedic oncologists to achieve the best possible outcomes.



# HIP+KNEE CARE +PRESERVATION

## Hip + Knee Care + Preservation Team

Aravind Athiviraham, MD  
(sports and knee replacement)  
Tessa Balach  
(hip and knee replacement)  
Sherwin S.W. Ho, MD  
Richard W. Kang, MD, MS  
Hue H. Luu, MD  
(hip and knee replacement)

The orthopaedic specialists at the University of Chicago Medicine offer comprehensive care—non-operative, arthroscopic and joint replacement—for patients with hip pain, instability or disability.

For younger people with hip pain, eventual replacement of the joint is no longer a given. In recent years, significant advances in hip arthroscopy for soft tissue tears, dysplasia and abnormalities have increased treatment options for patients with non-arthritic hip pain. The goal of this treatment is to relieve pain and to preserve the natural joints in order to delay or avoid total hip replacement.

Comprehensive treatment for knee injuries and knee pain that includes arthroscopic care, ligament reconstruction, cartilage restoration, less invasive joint replacement and a rapid recovery program that quickly returns patients to an active lifestyle. Add something about robotic techniques.

### Aravind Athiviraham, MD

A specialist in sports medicine, Aravind Athiviraham, MD, cares for patients with athletic and overuse injuries, as well as other injuries and diseases of the bones, joints and muscles. He is skilled in minimally invasive and arthroscopic procedures of the shoulder, elbow, knee and ankle. In addition, he has received advanced training in reconstructive procedures of the knee and shoulder.

### Tessa Balach, MD

As an orthopaedic oncologist, Tessa Balach, MD, provides comprehensive surgical care for bone and soft tissue tumors. She treats a broad range of benign and malignant tumors in adults and children. As a member of the medical center's multidisciplinary physician team, Dr. Balach works closely with other experts to provide highly specialized, individualized

care for patients with common and rare bone and soft tissue tumors. She also provides surgical care for metastatic bone disease, often stabilizing weak bones to prevent fractures associated with breast, lung, prostate or kidney metastases.

### Sherwin S.W. Ho, MD

Dr. Sherwin Ho is an expert in sports medicine, specializing in minimally invasive arthroscopic procedures of the shoulder, elbow, hip, knee and ankle. He has served as faculty at numerous advanced arthroscopic shoulder and knee courses for the American Academy of Orthopaedic Surgeons.

### Richard W. Kang, MD, MS

Richard W. Kang, MD, MS, is an orthopaedic sports medicine surgeon skilled in a variety of minimally invasive and arthroscopic procedures. He specializes in the diagnosis and management of adolescent and adult hip conditions, including labral tears and

femoroacetabular impingement. He also has expertise in the treatment of cartilage lesions of the hip, knee, and shoulder. Dr. Kang's objective is to delay or prevent the onset of arthritis and the need for a joint replacement. Dr. Kang's work is dedicated towards alleviating pain and restoring patients' quality of life.

### Hue H. Luu, MD

Hue Luu, MD, specializes in joint replacement surgery, including both direct anterior and posterior-lateral hip approaches for hip replacements. His research interests include: the fundamental mechanisms regulating bone biology and bone regeneration, osteolysis in total joint replacement patients, and advances in gene therapy to study applications of bone biology in fracture care.

# BONE+ SOFT TISSUE TUMORS

## Bone + Soft Tissue Team

Tessa Balach, MD  
Rex C. Haydon, MD, PhD  
Hue H. Luu, MD

Bone and soft tissue cancer can be frightening for the children and adults that it strikes. However, the latest treatments available at the University of Chicago Medicine — from innovative chemotherapy to limb-sparing surgery — can reduce pain, fight the disease and preserve the ability to walk, work or play. Our orthopaedic oncology program includes respected experts in orthopaedic surgery, adult and pediatric oncology, diagnostic and therapeutic radiology, radiation oncology and pathology. Together, this multidisciplinary team designs the best treatment for patients with bone cancers and soft tissue sarcomas (e.g. synovial sarcomas, liposarcomas, fibrosarcomas). Weekly multi-disciplinary meetings are held every Tuesday at 4:30 p.m. in the Orthopaedic Conference Room.

### Tessa Balach, MD

As an orthopaedic oncologist, Tessa Balach, MD, provides comprehensive surgical care for bone and soft tissue tumors. She treats a broad range of benign and malignant tumors in adults and children. As a member of the medical center's multidisciplinary physician team, Dr. Balach works closely with other experts to provide highly specialized, individualized care for patients with common and rare bone and soft tissue tumors. She also provides surgical care for metastatic bone disease, often stabilizing weak bones to prevent fractures associated with breast, lung, prostate or kidney metastases.

### Rex C. Haydon, MD, PhD

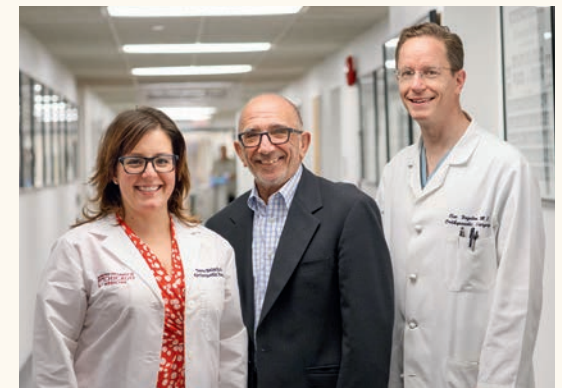
Rex Haydon, MD, PhD, focuses on the comprehensive treatment of malignant and benign tumors in bone or soft tissue. He specializes in the surgical care of bone and soft tissue tumors, including limb-salvage and reconstructive surgery of the upper and lower extremities. Dr. Haydon works with an integrated team

of specialists to ensure that patients have access to the most innovative and effective treatment options available.

Also a skilled physician scientist, his research focuses on advancing the treatment of musculoskeletal tumors. Dr. Haydon has a particular interest in the underlying causes of musculoskeletal neoplasms. Author of more than 25 articles and book chapters, he has accepted career development awards from both the Orthopaedic Research and Education Foundation and the National Institutes of Health. Additionally, Dr. Haydon's research has been supported by the Musculoskeletal Tumor Foundation.

### Hue H. Luu, MD

Hue Luu, MD, is skilled in the surgical care of bone and soft tissue tumors. He also specializes in joint replacement surgery, including both direct anterior and posterior-lateral hip approaches for hip replacements. Dr. Luu works with a multidisciplinary physician team to provide comprehensive care for patients with benign and malignant musculoskeletal



tumors. His research interests include: the fundamental mechanisms regulating bone biology and bone regeneration, osteolysis in total joint replacement patients, and advances in gene therapy to study applications of bone biology in fracture care. Dr. Luu also has an interest in studying genes that control cancer metastasis, for the purpose of identifying new diagnostic and therapeutic approaches for treating malignant cancers.

# SHOULDER+ ELBOW

## Shoulder + Elbow Team

Aravind Athiviraham, MD  
Roderick Birnie, MD  
Megan Conti Mica, MD  
Sherwin S.W. Ho, MD  
Daniel P. Mass, MD  
Lewis L. Shi, MD

The shoulder and elbow specialists at University of Chicago Medicine offer the complete range of non-surgical, minimally invasive (arthroscopic) and open surgery for teens, young adults and older adults. We design individual treatment plans tailored to each patient's needs and goals, and we maximize use of non-surgical options prior to considering surgery. When surgery is necessary, our orthopaedic surgeons offer innovative and advanced operative therapies for repair of shoulder and elbow conditions, both minimally invasive and open. We strive to help patients regain full function and to return their daily activities as soon as possible.



### Aravind Athiviraham, MD

A specialist in sports medicine, Aravind Athiviraham, MD, cares for patients with athletic and overuse injuries, as well as other injuries and diseases of the bones, joints and muscles. He is skilled in minimally invasive and arthroscopic

procedures of the shoulder, elbow, knee and ankle. In addition, he has received advanced training in reconstructive procedures of the knee and shoulder.

### Roderick Birnie, MD

Roderick Birnie, MD, specializes in non-operative general orthopaedics. He sees patients with a variety of orthopaedic issues, including both upper and lower extremity conditions.

### Sherwin S.W. Ho, MD

Dr. Sherwin Ho is an expert in sports medicine, specializing in minimally invasive arthroscopic procedures of the shoulder, elbow, hip, knee and ankle. He has served as faculty at numerous advanced arthroscopic shoulder and knee courses for the American Academy of Orthopaedic Surgeons.

### Daniel P. Mass, MD

Dr. Daniel Mass is a highly regarded expert in orthopaedic surgery of the hand and upper extremities. He has a special interest in the research and treatment of flexor

tendon injuries (injuries to the muscles that allow the fingers to bend and flex), and he also studies the mechanics of the hand, wrist and elbow.

### Lewis L. Shi, MD

Lewis Shi, MD, is an orthopaedic surgeon who specializes in shoulder and elbow injuries. He maximizes patients' non-operative management prior to considering surgery. If necessary, he offers minimally invasive (arthroscopic) and open procedures that are appropriate for the patient's disorders. Dr. Shi's research focuses on the molecular basis of rotator cuff tear and biomechanics of shoulder arthritis. He is also part of several national and international multi-center studies to improve diagnostic and treatment protocols of shoulder injuries.

# SPINE

## Spine Team

Michael Lee, MD  
James Mok, MD

The University of Chicago Medicine orthopaedic spine team offers a wide range of non-surgical, minimally invasive and traditional proven surgical techniques for the treatment of back and neck problems. We maximize the use of non-surgical interventions for reducing pain and restoring function. When surgery is chosen, in some instances it can be performed using minimally invasive techniques that involve smaller incisions than those in traditional open surgery. In all cases, patients can expect the most effective solution: a treatment that has the highest probability of providing the most improvement and durability for the longest period of time.

### Michael Lee, MD

An expert spine surgeon, Michael Lee, MD, treats spinal injuries, degenerative conditions and spinal deformity as well as complex tumors of the spinal column. He utilizes cutting edge technology, such as minimally invasive surgical (MIS) techniques and robotic spine surgery. He is dedicated to improving safety and quality measures for spine surgery. Dr. Lee has worked to identify risk factors for post-operative lumbar spondylolisthesis and to enhance lumbar spine surgical techniques. He recently has focused efforts on creating models to predict the likelihood of complication after spine surgery. He is the co-director of the Operative Performance Research Institute at the University of Chicago. In addition to his research, Dr. Lee teaches medical students, residents and fellows about spine surgery. (Past courses have focused on the surgical treatment of complex spinal tumors and minimally invasive surgery.)

### James Mok, MD

James Mok, MD, is a board-certified orthopaedic surgeon who specializes in the diagnosis and treatment of spine conditions, including herniated discs, spinal stenosis, spondylolisthesis and degenerative disc disease. He also cares for patients with cervical stenosis or myelopathy—conditions in which the spinal cord and nerves become compressed in the neck. In addition, Dr. Mok has a special interest in utilizing minimally invasive surgery (MIS) to speed up recovery times after spine surgery.



# SPORTS MEDICINE

## Sports Medicine Team

Aravind Athviraham, MD  
 Holly J. Benjamin, MD  
 (non-surgical in children and adolescents)  
 Sherwin S.W. Ho, MD  
 Richard W. Kang, MD  
 Leonardo Oliveira, MD  
 (non-surgical in adolescents and adults)  
 Lewis L. Shi, MD

The orthopaedic surgeons at the University of Chicago Medicine offer state-of-the-art sports medicine for all ages and skill levels—from young competitors to weekend athletes to professional players. We offer non-surgical, surgical and rehabilitative options designed to return patients to their full ability and level of play.

The most common problems treated by our sports medicine team are:

**Knee problems, including anterior cruciate ligament (ACL) tears, meniscus and cartilage injuries, and problems affecting the kneecap (patella)**

**Shoulder injuries, including dislocation, rotator cuff tears, swimmer’s/volleyball player’s shoulder, throwing injuries**

**Hip injuries, including labral tears and femoral acetabular impingement (hip impingement) related to all sports (including gymnastics and dancing)**

**Hamstring and Achilles tendon injuries**

**Elbow injuries, such as golfer’s elbow and tennis elbow, ulnar collateral ligament injuries (Tommy John surgery)**

**Hand and wrist injuries**

**Sprains and strains**

**Stress fractures**

**Arthritis, bursitis and tendonitis**



### Aravind Athviraham, MD

Dr. Aravind Athviraham is a board certified specialist in orthopedic sports medicine, and cares for patients with athletic and overuse injuries of the knee, shoulder and elbow. He is skilled in minimally invasive and arthroscopic procedures, which optimize patient recovery from surgery and allow early return to sports activity. In addition, he has received advanced training in reconstructive procedures of the knee and shoulder. He currently serves on the education committee of the American Orthopedic Society for Sports Medicine and has served as an Associate Instructor at numerous courses at the Orthopedic Learning Center. He is currently the Head Team Physician for the DuSable High School Panthers and is an Associate Team Physician for Concordia University. Dr. Athviraham’s current research interests include improving the biology of graft incorporation following ACL reconstruction, optimizing rehabilitation protocols following meniscal repair surgery, and evaluating clinical results following procedures for knee cartilage restoration, shoulder labral tears, and elbow ulnar collateral ligament reconstruction (Tommy John) surgery.

### Holly J. Benjamin, MD

**(non-surgical in children and adolescents)**  
 Dr. Holly Benjamin is a specialist in sports medicine and non-surgical musculoskeletal injuries. She has been regionally and nationally recognized for expertise in treating all types of athletic injuries in young patients. She routinely does office consultations discussing sport safety and return to play guidelines following an injury. Dr. Benjamin sees patients to discuss sport “readiness” for activities such as weightlifting and “en pointe” for ballet.

### Sherwin S.W. Ho, MD

Dr. Sherwin Ho is an expert in sports medicine, specializing in minimally invasive arthroscopic procedures of the shoulder, elbow, hip, knee and ankle. He has served as faculty at numerous advanced arthroscopic shoulder and knee courses for the American Academy of Orthopaedic Surgeons. Dr. Ho currently serves on the academy’s Board of Councilors and is an official spokesman for the academy. He has authored numerous medical articles and reference publications. Dr. Ho has served as a co-chief editor of sports medicine for the online publication, *Emedicine*, and is chairman of the annual University of Chicago Primary Care Orthopedics Course. Dr. Ho, an assistant professor of orthopaedic surgery at the University of

Chicago Medicine, is team surgeon for the Chinese Olympic Volleyball Team. A long-time sports medicine specialist, Ho consults several times each week with staff in China and travels to the team’s training base in Beijing at least four times a year.

### Richard W. Kang, MD

Richard Kang, MD, MS, is a board certified orthopaedic sports medicine surgeon skilled in a variety of minimally invasive and arthroscopic procedures. He specializes in the diagnosis and management of adolescent and adult hip conditions, including labral tears and femoroacetabular impingement. He also has expertise in the treatment of cartilage lesions of the hip, knee and shoulder. By utilizing modern techniques to preserve the natural joint, Dr. Kang’s objective is to delay or prevent the onset of arthritis and the need for a joint replacement. Dr. Kang’s work is dedicated towards alleviating pain and restoring patients’ quality of life.

### Leonard Oliveira, MD

**(non-surgical in adolescents and adults )**  
 Leonardo Oliveira, MD, specializes in non-operative sports medicine and musculoskeletal medicine. His goal is to accurately assess musculoskeletal complaints and sports injuries in order to assist patients to return to their modality of

physical activity. With a particular interest in running, Dr. Oliveira strives to get his runners and triathletes to achieve their goals when faced with injuries. Dr. Oliveira also sees patients for sports concussions, in addition to performing procedures under ultrasound guidance to treat tendon tears, tendinopathies and osteoarthritis. He is active scholarly and in the American Medical Society for Sports Medicine, seeking to apply his passion for research towards the patient’s benefit.

### Lewis L. Shi, MD (elbow and shoulder)

Lewis Shi, MD, is an orthopaedic surgeon who specializes in shoulder and elbow injuries. He maximizes patients’ non-operative management prior to considering surgery. If necessary, he offers minimally invasive (arthroscopic) and open procedures that are appropriate for the patient’s disorders. Dr. Shi’s research focuses on the molecular basis of rotator cuff tear and biomechanics of shoulder arthritis. He is also part of several national and international multi-center studies to improve diagnostic and treatment protocols of shoulder injuries. Dr. Shi teaches medical students, residents and fellows. He has won numerous teaching awards and values his role as an educator secondary only to his role as the patient’s advocate.



## WELCOME NEW FACULTY



**JENNIFER WOLF, MD**

**Professor of Orthopaedic Surgery**

Jennifer Moriatis Wolf, MD, is a renowned hand surgeon with expertise in the surgical and non-surgical treatment of bone, nerve, tendon and ligament injuries caused by trauma or overuse. She provides comprehensive care to treat pain and restore form and function in the hand, wrist and elbow. She is also highly skilled in the surgical removal of tumors of the upper extremity, partnering with orthopaedic oncologists to achieve the best possible outcomes.

Dr. Wolf has a special interest in tennis elbow and atypical peripheral nerve problems. She has clinical and research interests in the treatment of arthritis of the base of the thumb. She also received grant funding from the U.S. Department of Defense to study the role of vitamin D in bone and joint problems.

A devoted educator and mentor, Dr. Wolf shares her expertise with fellows, residents and medical students. She also conducts basic and clinical research studies,

investigating strategies to improve patient outcomes in orthopaedic hand, wrist and elbow care.

Dr. Wolf has been awarded the prestigious Bunnell Fellowship from the American Society for Surgery of the Hand, as well as the American-British-Canadian Traveling Fellowship from the American Orthopaedic Association. She serves on the governing council of the American Society for Surgery of the Hand, and is the deputy editor-in-chief of the *Journal of Hand Surgery*.

**CLINICAL INTERESTS**

Orthopaedic hand surgery | Tennis elbow (lateral epicondylitis) | Thumb basilar arthritis | Nerve compression | Wrist arthritis



**KELLY HYNES, MD**

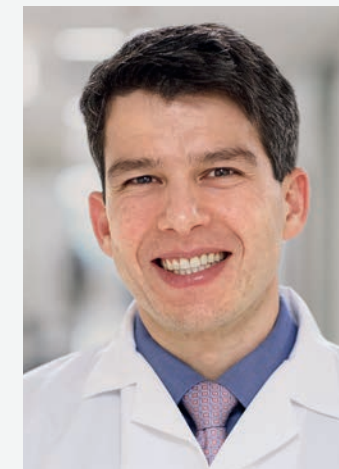
**Assistant Professor of Orthopaedic Surgery**

Kelly Hynes, MD, specializes in the diagnosis and treatment of foot and ankle conditions, including trauma, sports injuries, forefoot deformity and degenerative disease. She provides skilled, compassionate care to treat pain and restore function for a broad range of common and complex foot and ankle disorders.

Dr. Hynes has an interest in looking at value-based quality of care in foot and ankle surgery. She is also committed to the education of future generations of orthopaedic surgeons.

**CLINICAL INTERESTS**

Orthopaedic foot and ankle care | Ankle arthroscopy | Foot and ankle trauma | Foot and ankle arthritis | Forefoot reconstruction



**LEONARDO OLIVEIRA, MD**

**Assistant Professor of Orthopaedic Surgery**

Leonardo Oliveira, MD, is an orthopaedic sports medicine specialist. Dr. Oliveira provides skilled non-surgical care for athletic and musculoskeletal injuries in teens and adults. His specialties include concussion care and ultrasound-guided diagnostic and interventional procedures.

level possible. He incorporates the latest research into individualized care plans designed to help patients achieve an appropriate level of activity and return to their sport of choice. Dr. Oliveira treats sports medicine and musculoskeletal injuries in athletes at Concordia University Chicago. He also provides care for runners during races, such as the Chicago and Cleveland marathons.

With a particular interest in tendon healing and arthritis, Dr. Oliveira's goal is to help each patient perform at the highest

**CLINICAL INTERESTS**

Non operative orthopaedics | Sports medicine | Musculoskeletal ultrasound | Ultrasound-guided procedures | Running injuries | Sports concussions | Overuse injuries | Vitamin D and the musculoskeletal system



**TESSA BALACH, MD**

**Associate Professor of Orthopaedic Surgery**

As an orthopaedic oncologist, Tessa Balach, MD, provides comprehensive surgical care for bone and soft tissue tumors. She treats a broad range of benign and malignant tumors in adults and children.

As a member of the medical center's multidisciplinary physician team, Dr. Balach works closely with other experts to provide highly specialized, individualized care for patients with common and rare

bone and soft tissue tumors. She also provides surgical care for metastatic bone disease, often stabilizing weak bones to prevent fractures associated with breast, lung, prostate or kidney metastases. Additionally, Dr. Balach specializes in joint replacement surgery, with particular expertise in hip and knee replacement. An active researcher, she currently leads and contributes to clinical studies designed to advance the comprehensive treatment

and management of bone diseases and injuries. Dr. Balach serves as a mentor and instructor to medical students, residents and fellows. She has also authored several articles in peer-reviewed journals and medical publications, in addition to delivering presentations at numerous professional meetings

**CLINICAL INTERESTS**

Orthopaedic surgery | Orthopaedic oncology | Joint replacement surgery | Pediatric bone and soft tissue sarcomas | Bone and soft tissue tumors | Metastatic bone and soft tissue tumors | Arthritis | Hip replacement | Joint replacement

# HOUSESTAFF

## ORTHOPAEDIC SURGERY+ REHABILITATION MEDICINE

### ORTHOPAEDIC SURGERY RESIDENTS

#### PGY-1

**Robert Avino, MD**

*Undergraduate/Graduate*

Saint Louis University/Saint Louis University School of Medicine

**Daniel Curtis, MD**

*Undergraduate/Graduate*

Northwestern University/Northwestern University Feinberg School of Medicine

**Jonathan Edgington, MD**

*Undergraduate/Graduate*

Miami University/University of Cincinnati College of Medicine

**Connor King, MD**

*Undergraduate/Graduate*

University of Southern California/Georgetown University School of Medicine

**William Mosenthal, MD**

*Undergraduate/Graduate*

St. Lawrence University/Geisel School of Medicine at Dartmouth

#### PGY-2

**Blake Burkert, MD**

*Undergraduate/Graduate*

Hendrix College/Emory University School of Medicine

**Ravand Khazai, MD**

*Undergraduate/Graduate*

Northwestern University/University of Missouri-Columbia School of Medicine

**David Landy, MD, PhD**

*Undergraduate/Graduate*

Vanderbilt University/Geisel School of Medicine at Dartmouth & University of Miami Leonard M. Miller School of Medicine

**Michael Perrone, MD**

*Undergraduate/Graduate*

University of Florida/University of Florida & USF Health Morsani College of Medicine

**Paul Shultz, MD**

*Undergraduate/Graduate*

University of Colorado at Boulder/The Warren Alpert Medical School of Brown University

#### PGY-3

**Kenneth Chakour, MD**

*Undergraduate/Graduate*

University of Illinois at Urbana-Champaign/University of Illinois College of Medicine

**Srikanth Divi, MD**

*Undergraduate/Graduate*

Johns Hopkins University/University of Pittsburgh School of Medicine

**Patrick Leung, MD**

*Undergraduate/Graduate*

Rutgers University/UMDNJ—Robert Wood Johnson Medical School

**Jonathan Twu, MD**

*Undergraduate/Graduate*

University of Illinois at Urbana-Champaign/University of Illinois College of Medicine

**Noelle Whyte, MD**

*Undergraduate/Graduate*

The University of Western Ontario/Pennsylvania State University College of Medicine

#### PGY-4

**Harpreet Bawa, MD**

*Undergraduate/Graduate*

University of California, Los Angeles/Case Western Reserve University School of Medicine

**Kyle Borque, MD**

*Undergraduate/Graduate*

Texas A&M University/Baylor College of Medicine

**Pranay Patel, MD**

*Undergraduate/Graduate*

Washington University in St. Louis/Southern Illinois University School of Medicine

**Anna Rosenblum, MD**

*Undergraduate/Graduate*

Harvard College/Albany Medical College

**Robert Stewart, MD**

*Undergraduate/Graduate*

University of Washington/Jefferson Medical College of Thomas Jefferson University

#### PGY-5

**Joseph Cohen, MD**

*Undergraduate/Graduate*

University of San Diego/Tufts University School of Medicine

**Ananth Eleswarapu, MD**

*Undergraduate/Graduate*

Columbia University/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

### ORTHOPAEDIC SURGERY FELLOWS— 2016 GRADUATES

**Ryan Durfee, MD**

(Musculoskeletal Oncology)

Center for Orthopaedic Innovations – Miami, FL

**Jimmy Jiang, MD**

(Hand and Upper Extremity)

Northside Cherokee Orthopaedics & Sports Medicine – Woodstock, GA

**Gautam Malhotra, MD**

(Hand and Upper Extremity)

University of Illinois at Chicago – Chicago, IL

**Saravananaraja Muthusamy, MD**

(Adult Reconstruction)

Washington University – St. Louis, MO

**Marc-Olivier Kiss, MD**

(Adult Reconstruction)

Hôpital Maisonneuve-Rosemont – Montreal, Quebec, Canada

**Savan Patel, MD**

(Sports Medicine)

Chicago Hand & Orthopaedic Surgery Center – Schaumburg, IL

**David Saper, MD**

(Sports Medicine)

Orthopaedic and Rehabilitation Centers – Chicago, IL

# HONORS+ AWARDS 2016

## **Dr. Aravind Athiviraham**

Elected to be member of the Education Committee for the American Orthopedic Society for Sports Medicine  
Reviewer, *American Journal of Sports Medicine*  
Reviewer, *Arthroscopy: The Journal of Arthroscopic and Related Surgery*  
Selected Head Team Physician, DuSable Panther Football Team Physician, University of Concordia

## **Dr. Robert Bielski**

Guest editor for two issues of the journal, *Pediatric Annals*

## **Dr. Megan Conti Mica**

2016 ASSH Young Leaders  
Bucksbaum Associate Junior Faculty Scholar 2016  
Funded Fellowship for study in Europe

## **Dr. Douglas R. Dirschl**

Chairman, Finance Committee, Foundation for Orthopaedic Trauma  
Board of Directors, Executive Committee, Foundation for Orthopaedic Trauma  
Treasurer, Foundation for Orthopaedic Trauma International Committee, Osteosynthesis and Trauma Care Foundation

## **Dr. Henry Finn**

Editorial Board, *Journal of Arthroplasty*

## **Dr. Kelly Hynes**

Fellowship in Adult Foot and Ankle Reconstruction, University of British Columbia, Canada, Awarded July 2015

## **Dr. Rex C. Haydon**

Promoted to full Professor

## **Dr. Tong-Chuan He**

Selected to be an Editorial Board Member of the *Journal of Biological Chemistry*  
Selected to be an Editorial Board Member of the *Current Cancer Drug Targets*  
Selected to be the Editor-in-Chief for *Genes & Diseases*

## **Dr. Sherwin S.W. Ho**

Served as team physician for the China women's volleyball team, who won gold at the 2016 Rio Olympics

## **Dr. Richard W. Kang**

Reviewer for the following journals:  
*Journal of Bone and Joint Surgery*  
*American Journal of Sports Medicine*  
*Journal of Shoulder and Elbow Surgery*  
*Orthopaedic Journal of Sports Medicine*

Team coverage affiliations:

Kennedy King College  
Hillcrest High School  
Bremen High School

## **Dr. Michael Lee**

University of Chicago Gerald Laros Faculty Teaching Award 2016  
University of Chicago Center for Healthcare Delivery Science and Innovation: Inaugural Class of Faculty and Innovators 2016  
University of Chicago Medical Center Bucksbaum Institute for Clinical Excellence  
Selected as Senior Faculty Scholar 2015  
Co-Director of University of Chicago Operative Performance Research Institute

## **Dr. Hue H. Luu**

Completed the American Orthopaedic Association ABC Traveling Fellowship in May of 2015  
Musculoskeletal Tumor Society Research Committee  
Musculoskeletal Tumor Society Evidence Based Medicine Committee  
Director of Perioperative Operations, Department of Orthopaedic Surgery and Rehabilitation Medicine  
Operative Products Evaluation Committee (University of Chicago Hospitals)  
Institute for Translational Medicine Internal Scientific Advisory Panel (University of Chicago)

## **Dr. Daniel P. Mass**

Top Doc, *Chicago*, USA

## **Dr. Leonardo Oliveira**

Editorial Board, *Journal of General Practice & Medical Diagnosis*  
Editorial Board, *Sports Medicine and Rehabilitation Journal*  
Reviewer, *Journal of Strength and Conditioning*  
Reviewer, *Journal of Sports Science*  
Member, Research Committee, American Medical Society for Sports Medicine

## **Dr. Bruce Reider**

Visiting Professor, Norwegian School of Sport Sciences  
Department of Sports Medicine and Oslo Sports Trauma Research Center; Kleivstua, Norway; May 2016  
Invited Speaker, LXI Congreso Nacional de Ortopedia y Traumatologia; Mexico City, Mexico; April 2016

## **Dr. Lewis Shi**

Co-director of Operative Performance Research Institute  
Appointed to be a member of the inaugural AAOS Shoulder/Elbow Content Committee  
Continued UCMC International office work to establish relationships in China and rest of Asia

## **Dr. Michael Simon**

Continues in his role as the associate dean of graduate medical education and DIO at the University of Chicago

## **Dr. Christopher Sullivan**

Reviewer, *Clinical Orthopaedics and Related Research*

## **Dr. Brian Toolan**

Member at Large, AOFAS Board of Directors  
Senior Governing Lead/Governing Committee -  
CORD (Council of Orthopaedic Residency Directors)  
Guest Lecturer, Japanese Society for Surgery of the Foot and Ankle, The Asian Federation of Foot and Ankle Society; Nara, Japan; November 2016

## **Dr. Jennifer Wolf**

Named Deputy Editor-in-Chief of the *Journal of Hand Surgery*  
Served as Council Member-at-Large for the American Society for Surgery of the Hand



## EDUCATION

Working toward fulfilling the Department 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 towards 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 HealthSystem (NSUHS). Through our affiliation with NorthShore, our residents rotate at Evanston Hospital, a designated Level I trauma center, and Glenbrook Hospital, a community hospital in Glenview, Illinois. All members 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 five residents training at NSUHS at a time on the total joint arthroplasty, 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 Medical Center. The clinical education is centered around inpatient units, on-site and off-site outpatient clinics, and the operating room. The management of patients is divided into eight clinical services that include joint reconstruction, including hip preservation, 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 led 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 Department of Orthopaedic Surgery and Rehabilitation Medicine strives toward at every level of education.

## REHABILITATION AND NORTHSHORE



### NORTHSHORE ORTHOPAEDIC PROGRAM

The orthopaedic program at NorthShore University HealthSystem is a valuable and robust component of the orthopaedic surgery graduate medical education program at the University of Chicago. Five residents rotate continually through the NorthShore Orthopaedic Department with subspecialty rotations in total joint, foot and ankle, hand, trauma and spine. Currently U of C and NorthShore Orthopaedic Departments facilitate two combined fellowship programs; Sports Medicine and Hand and Upper Extremity. 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 with hand, trauma, surgical outcomes, arthroscopic correlation, journal club and spine conferences. Residents have the opportunity to interact with numerous clinical faculty and gain experience and exposure through the NorthShore Orthopaedic outpatient clinic, operating rooms, Evanston Hospital (level 1 trauma) ER, Ravine Way surgicenter and clinical offices of the faculty. They also participate in sub-specialty 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 and fellowship programs is the real-world experience gained through managing the NorthShore Community Health Center (CHC) clinics. Residents manage two clinics per week while hand and sports fellows each manage one clinic per month. The Orthopaedic faculty and CHC Co-Directors provide overall supervision for the clinics. The CHC Clinic provides residents and fellows, 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 Dr. Howard J. Sweeney's leadership, the NorthShore Ortho motor skills lab continues to provide surgical motor skills and computer-assisted virtual reality training to local, national and international orthopaedic clinicians at all levels, including students, residents, fellows and attending surgeons. Several programs are offered in the lab: weekly sports medicine labs with regular cadaveric sessions, bi-weekly trauma fracture management labs, daily arthroscopic knot tying sessions, spine labs, and a virtual reality program consisting of three surgical simulators and a Wii system that supports ambidexterity in orthopaedic surgery training. Dr. Sweeney is the Director of the NorthShore Orthopaedic Psychomotor Skills & Virtual Reality Laboratory and also a founding member of the Orthopaedic Learning Center in Rosemont, Illinois.

#### Wavering Lecture Series 2016

This year marks the 19th year for the annual Wavering Lecture Series. Dr. Leon S. Benson, Division Chief of Hand and Upper Extremity and Vice Chair of Academics and Affiliate Affairs at NorthShore, served as faculty host. Dr. Benson invited Dr. Peter J. Stern, Hill Professor of the Department of Orthopaedic Surgery at the University of Cincinnati, to be the 2016 guest lecturer. Dr. Stern is a past President of the American Society for Surgery of the Hand, the American Board of Orthopaedic Surgery, and the American Orthopaedic Association. He is a past Trustee of the Orthopaedic Research and Education Foundation, and a past Chairman of the Orthopaedic RRC. He is a former Deputy Editor of both the *Journal of Bone and Joint Surgery* and the *Journal of Hand Surgery*. He now serves on JBJS Board of Trustees. This year's lecture welcomed over 30 participants.

## 2017 WEEKLY CONFERENCE SCHEDULE

### UNIVERSITY OF CHICAGO ORTHOPAEDIC RESIDENCY PROGRAM

Day	Place	Description	Time
Monday	CCD 7750	OTE Review/Anatomy	6:30–7:00 AM
	CCD 7750	AM Intake Conference	7:00–7:15 AM
Tuesday	CCD 7750	Clinical Conference	6:15–7:00 AM
	CCD 7750	AM Intake Conference	7:00–7:15 AM
Wednesday	J 103/E 302	Basic Science	6:15–7:00 AM
	J 103/E 302	Chairman/PD/Resident Meeting	7:00–7:20 AM
	J 103/E 302	Grand Rounds	7:30–8:15 AM
	J 103/E 302	AM Intake Conference	8:15–8:30 AM
Thursday	CCD 7750	Indications	6:15–7:00 AM
	CCD 7750	AM Intake Conference	7:00–7:15 AM
Friday	CCD 7750	Clinical Conference	6:15–7:00 AM
	CCD 7750	AM Intake Conference	7:00–7:15 AM

### CONFERENCE DETAILS

<b>AM Intake Conference</b>
Pre-Op and Post-Op Discussion
X-Ray Review from Previous Day
ER X-Ray Review
<b>Monthly Conference</b>
<b>Journal Club</b>
Last Wednesday of Each Month
7:00 AM—E 302
<b>Ethics</b>
One Wednesday Quarterly—7:00 AM
<b>Vignettes in Ethics and Professionalism Compliance Education Annually</b>
<b>Liability Education Annually Prosthetic Education Annually</b>
<b>Cultural Competence Vignettes</b>

<b>Wednesday</b>	<b>Basic Science Conference</b>
July–Sept	Anatomy
Sept–Dec	Pathology
Jan–June	Basic Science Curriculum
<b>Thursday</b>	<b>Indications Conference</b>
<i>Topics are covered on a rotating basis</i>	Trauma, Adult Reconstruction, Sports, Hand, Pediatrics and Foot & Ankle
<b>Tuesday &amp; Friday</b>	<b>Clinical Conferences</b>
<i>Topics are covered on a rotating basis</i>	Trauma, Morbidity & Mortality, Adult Reconstruction, Pediatrics, Hand, Sports, Foot & Ankle and Spine



## ORTHOPAEDIC RESEARCH ENDEAVORS

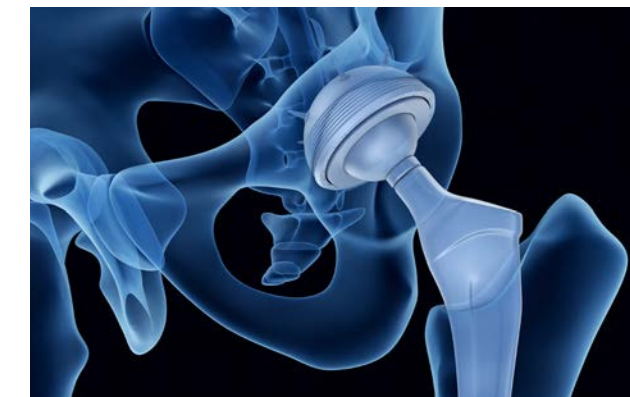
The goals of our research endeavors are to create new knowledge, to inspire others to create new knowledge, to incorporate understanding and application of investigative methods into the fabric of our educational programs, and to make a substantive impact on where orthopaedic care will be in the future. Basic, clinical and translational research in orthopaedic science is an integral 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. Research endeavors have been grouped in thematic areas; for a listing of publications or presentations unique to faculty members, please see the corresponding section of this annual report.

### THE ORTHOPAEDIC BIOMEDICAL IMAGING INSTITUTE

The Orthopaedic Biomedical Imaging Institute, under the direction of Dr. John Martell, continues to shape the present and future of image processing in orthopaedic practice. The Institute's projects have 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 most innovative and accurate techniques for non-invasively measuring polyethylene wear in total hip and knee replacements. Additionally, it will become one of the international leaders, in collaboration with other scientists at the University of Chicago, in linking genomic information to imaging information to musculoskeletal disease to the outcomes of orthopaedic care—an endeavor we are calling "radiomics."

Dr. Martell accommodates requests from academic joint replacement programs to observe the techniques that are used in processing and analyzing films. The Institute has become a world-class resource for the analysis of polyethylene wear in total hip arthroplasty, and researchers, orthopaedic practitioners and implant companies contract with the Institute to do the analysis of polyethylene wear in their total joint implants.

Dr. Martell has recently developed mechanical analysis software that 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; 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.



**Dr. Martell**, in partnership with the Argonne National Laboratories, 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.

**Drs. Douglas Dirschl and Martel**, in collaboration with **Maryellen Giger, PhD**, in Radiology, have recently begun work on a line of investigation that has the potential to change our ability to predict orthopaedic disease and could lead to orthopaedic treatment customized to the individual. This broad line of research, termed radiomics, leverages expertise at the University of Chicago in genomics, image processing, and large data management, and merges these with musculoskeletal expertise in a way that may have a profound impact on patients. There is a wealth of information in the human genome that is largely

untapped; there is also a wealth of morphologic and textural information in x-rays of the human skeleton; finally, the ubiquitous nature of both genomic and imaging information allows the application of big data analytic techniques to these sources of data—all intersecting around the prevalence, progression and treatment of musculoskeletal disease. The collaborators have recently submitted a grant application to the NIH to fund the early and heavily analytical phases of this research.

For example, imagine very large databases of genomic information (DNA) and of pelvic x-rays. By utilizing big data analytic and imaging processing techniques, we will be able to link specific genomic patterns to specific morphological and textural patterns in the pelvis. With a bit of longitudinal data, this will enable the correlation with and prediction of arthritis of the hip joint. Further application of this information will indicate which management techniques (whether surgical or nonsurgical) have the greatest success in individuals with certain genomic and morphologic patterns, which could lead to customized treatments for arthritis in individuals—all based on data that can be obtained from a drop of blood and a pelvic x-ray. We have great enthusiasm for this line of inquiry.

#### TENDON AND LIGAMENT INJURY REPAIR

**Drs. Daniel Mass, Sherwin Ho, Lewis Shi and Jovito Angeles**, in collaboration with **Dr. Tong-Chuan He**, are investigating possible gene therapy approaches to enhancing tendon and ligament healing using recombinant adenoviral vectors expressing BMPs and/or other biological factors. They have demonstrated that BMP-13 can significantly improve the biomechanical properties of lacerated flexor tendons in a rabbit model while BMP-14 is also shown to significantly improve the biomechanical properties of lacerated flexor tendons in a rabbit model. Based on time-course studies of gene expression after tendon injury, they identified several factors that may work alongside BMP-13 and BMP-14 at different stages of tendon healing. **Dr. Shi** is also investigating biological factors that may improve the healing of rotator cuff injuries.

**Dr. Shi** is leading an active shoulder research program, with multiple clinical and translational projects. In collaboration with **Dr. He**, he is investigating biological factors that may improve the healing of rotator cuff injuries. He has an on-going IRB approved study examining patients undergoing shoulder arthroscopy,

correlating the growth factors of the subacromial milieu to the condition and chronicity of cuff tears. The ultimate goal is to identify potential pharmacologic treatment to augment rotator cuff repairs in human patients.

**Dr. Brian Toolan** is interested in developing a better understanding of ruptured Achilles tendon healing process 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 **Dr. He**, 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.

In addition, **Drs. Ho** and **Richard Kang** 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.

**Dr. Bruce 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.

#### ARTICULAR CARTILAGE REGENERATION

The sports medicine research program has been intensively investigating the biological processes in articular cartilage regeneration. 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), 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. Ho** and **Richard Kang** are investigating the possible use of Sox9 and/or other biofactors to facilitate articular cartilage regeneration. Previously, **Drs. He** and **Rex C. 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. Currently, **Drs. Ho** and **Kang** 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. 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.

#### OSTEOSARCOMA IS A "DIFFERENTIATION DISEASE"

Under the direction of **Drs. He, 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  $\beta$ -catenin signaling is activated in approximately 70 percent of human osteosarcoma samples, suggesting that deregulation of  $\beta$ -catenin may play a role in the development of human osteosarcoma. They examined the expression of the S100A6 in human osteosarcoma, and found that approximately 84 percent of the analyzed osteosarcoma specimens stained positive for S100A6. Thus, their findings suggest that S100A6 may be associated with the pathogenesis of osteosarcoma. More recently, **Drs. Haydon, Luu** and **He** found that, while in mesenchymal stem cells BMP-2 and BMP-9 induce osteogenic differentiation, osteosarcoma cells are refractory to BMP-induced bone formation with increased cell proliferation, 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. They hypothesize that osteosarcoma may

represent a “disease of differentiation,” possibly caused by the defects in the terminal differentiation pathway of pre-osteoblast and/or osteoblasts. They are attempting to reconstruct osteosarcoma-like cells from mesenchymal stem cells by disrupting the differentiation pathway and enhancing proliferation activity of the progenitors. Consistent with the “disease of differentiation” model, generic differentiation agents, such as PPAR agonists and retinoic acids were shown to promote osteogenic differentiation and inhibit osteosarcoma tumor growth.

**Drs. He, Haydon and Luu** developed a novel orthotopic tumor model for osteosarcoma progression and pulmonary metastasis. This model highlights different stages of primary bone tumor progression and the eventual development of pulmonary metastasis. They 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. They have recently reported that insulin-like growth factor binding protein 5 (IGFBP5) suppresses tumor growth and metastasis of human osteosarcoma.

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.

The **He, Haydon and Luu group** previously demonstrated that Wnt/ $\beta$ -catenin signaling is de-regulated in over 70 percent of human osteosarcomas. The **He, Haydon and Luu** lab has demonstrated that normal Wnt/ $\beta$ -catenin signaling is required for BMP9 signaling in MSCs. 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 plays an important role in regulating osteogenic differentiation. Furthermore, **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.

#### **MOLECULAR BIOLOGY OF BONE FORMATION AND THE ROLE OF BMP-9**

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 **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. They have concluded several rounds of in vivo studies and found that BMP-2, BMP-6 and BMP9 are the most potent osteogenic BMPs at inducing orthotopic bone formation in athymic mice. Interestingly, they have also found that osteogenic BMPs can induce adipogenic differentiation of mesenchymal stem cells. They have demonstrated that TGF $\beta$ /BMP type I receptors ALK1 and ALK2 are essential for BMP9-induced osteogenic signaling 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., BMP2, 6 and 9) and two inhibitory/non-osteogenic BMPs (i.e., BMP3 and 12). Through the microarray analysis 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. 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. 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), Hey1 and growth hormone. Their studies thus far have demonstrated that Ids, CTGF, Hey1 and growth hormone all play an important role in BMP-9 induced osteogenic signaling.

#### **EVALUATING THE VALUE OF MUSCULOSKELETAL CARE: CLINICAL EFFECTIVENESS AND OUTCOMES RESEARCH**

We endeavor to be leaders in shaping the national discussion of the future direction of musculoskeletal care. In collaboration with other centers within the BSD (the Center for Health and the Social Sciences, the Department of Public Health Sciences and the Center for Research Informatics) across the UChicago campus (Booth School, Harris School and others), we have embarked on a program of investigation, presentation, discussion and publication of a wide variety of projects aimed at, in a variety of ways, making meaningful statements about the value of musculoskeletal and orthopaedic care in the United States.

**Dr. Shi** is leading several multi-centered shoulder clinical outcome studies. These are prospective randomized control trials studying the optimal methods of treatment for rotator cuff tears, biceps tendonitis and labrum tears.

**Dr. Dirschl** is a participant in numerous multi-center outcome studies of a variety of orthopaedic traumatic conditions, including mangled limbs, blast injuries, chronic infections of bone and high energy fractures of the tibia.

A number of faculty, residents and fellows have conducted, presented and published research projects that provide answers to important clinical questions in orthopaedic surgery – and do so with a power and statistical significance that is outstanding, due to the use of large data sets that enable sample sizes that can number in the hundreds of thousands or even millions. In the past academic year, departmental members have presented or published projects derived from a large variety of sources of national data: the National Inpatient Sample (NIS), the National Surgical Quality Improvement Project (NSQIP), the MarketScan Commercial and Medicare Claims Database, the National Transportation Safety Board (NTSB) database, and many others. These large databases enable careful examination of very large numbers of subjects: for example, 130,000 patients who sustained fragility fractures, 244,000 patients who underwent knee replacements, 88,000 patients who suffered peritrochanteric femur fractures, and so on. Detailed information on not only the clinical course of subjects, but of the healthcare costs associated with each treatment and each diagnosis, allow researchers to make very powerful statements about the value of orthopaedic care and to compare various forms/techniques of care.

Additionally, we have assembled patient-reported outcomes data from a variety of national sources as well. This information has enabled us to investigate, with a power that we could not replicate with a multi-center prospective trial, topics such as the outcomes of physical therapy for back and neck pain, patient perceptions about shoulder or knee surgery, and how various orthopaedic treatments affect patient-perceived health and well-being.

Numerous department members have been engaged in these efforts, and more become engaged with each passing month. Faculty members actively participating in this line of investigation in the past academic year include **Drs. Douglas Dirschl, Lewis Shi and Michael Lee**. Residents engaged include **Drs. Harpreet Bawa, Jimmy Jiang, Min Lu, Joseph Cohen, David Landy, Ananth Eleswarapu and Srikanth Divi**. Approximately 15 Pritzker School of Medicine students also participated in these investigations.

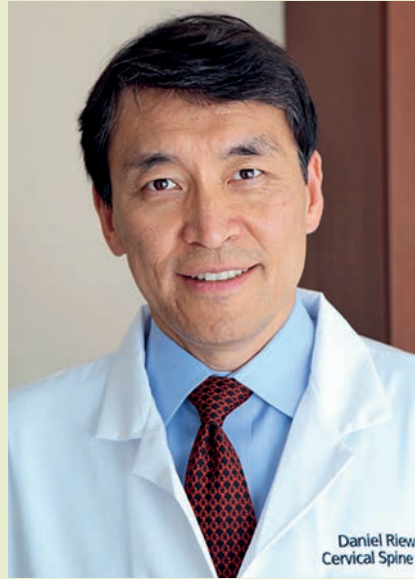
This line of inquiry will continue to grow as we continue to assemble more and more sources of clinical and financial information. Along with our collaborators, we are currently actively pursuing statistical methods by which we can marry data from a variety of large databases to make even more impactful statements about orthopaedic care that we feel will help inform providers and policymakers nationally about what are the most appropriate and successful treatment interventions.

#### **OPERATIVE PERFORMANCE RESEARCH INSTITUTE**

In 2016, **Drs Shi and Lee** became co-directors of the **Operative Performance Research Institute** at the University of Chicago. In addition to overlapping with the value-based research as described previously, the mission of this institute is to identify mechanisms for improvement in quality, cost effectiveness and care specifically surrounding the operative experience. Current studies underway include: examining cost disparity in similar operative procedures and identifying mechanisms for improved efficiency, patient perceptions on common surgical practices, and exploration of potential quality metrics for the future. OPRI seeks to have many collaborative partners including the Orthopedic Biomedical Imaging Institute, Booth School of Business and Health Delivery Science Institute.



## GERALD S. LAROS MEMORIAL VISITING PROFESSOR



### Daniel Riew, MD

Dr. Riew is a Professor of Orthopedic Surgery at Columbia University Medical Center's College of Physicians and Surgeons in NYC. He is also the Co-Chief, Spine Division, Director of Cervical Spine Surgery and Co-Director of the Columbia Spine Fellowship. He joined the Columbia Faculty in July of 2015. Previously, he was at Washington University in St. Louis where he was the Mildred B. Simon Distinguished Professor in the Department of Orthopaedic Surgery, Professor of Neurological Surgery and Chief of Cervical Spine Surgery. Dr. Riew graduated from Harvard College, where he was awarded the Class Ames Award for Character and Leadership; and from Case Western Reserve University Medical School, where he was inducted into the Alpha Omega Alpha honorary medical society for top students in his junior year. He finished residency in Internal Medicine at Cornell Medical Center and Orthopedics at George Washington University. He then completed fellowship training under the world-renowned cervical spine surgeon, Dr. Henry Bohlman in Cleveland. He is board-certified in Internal Medicine as well as Orthopaedic Surgery.

In 1995, he was recruited by Washington University School of Medicine to start the cervical spine service in the newly formed Department of Orthopaedic Surgery. Starting with only a dozen or less cervical procedures in 1994, he developed it into one of the largest cervical spine practices in the world. His practice is exclusively devoted to the operative treatment of the cervical spine, a rarity among spine surgeons. He has been recognized in the lists of America's Top Doctors and Best Doctors in America since 2002. He is also listed as a Vitals Top 10 Doctor (top 1%, based on patient ratings and reviews); *Orthopedics This Week* Journal's Top 28 Spine Surgeons in North America 2012, 2013 ("He is an outstanding surgeon, teacher, and researcher. He is a leader in the cervical spine world, has done great research in this area, and has great vision. If someone says, 'cervical spine surgery,'

you think of Dan."), Top 18 Spine Surgeons in North America 2014 ("A brilliant cervical spine surgeon, he has defined many of the techniques we are utilizing. He has lectured extensively nationally and internationally, improving the treatment of these disorders in other portions of the globe.")

He is active in research and has published over 240 peer-reviewed papers and over 60 chapters and other manuscripts. He has received multiple outstanding research paper awards from the Cervical Spine Research Society and the North American Spine Society, as well as the Hibbs Outstanding Paper award from the Scoliosis Research Society. He has operated in several countries and has served as a visiting professor, grand rounds speaker, key or named lecturer over 95 times in more than 17 countries on six continents. He has served and has been the Director or Chair of over 35 surgical courses, including those sponsored by the Cervical Spine Research Society, American Academy of Orthopaedic Surgeons, North American Spine Society and the Scoliosis Research Society. He serves on the Board of Directors of the Cervical Spine Research Society and was President from 2012-13. He also serves on the board of AOSpine International, served as its International Research Commission Chair (2012-15) and currently is the Chair of the International Board (2015-18). He is a member of the American Orthopaedic Association, the Interurban Orthopedic Club, and the Association of Bone and Joint Surgeons, all honorary orthopaedic societies. He serves as a Deputy or Associate Editor of the *Global Spine Journal*, *Clinics in Orthopedic Surgery*, *Spine*, and *Neurosurgery* journals.

## GRADUATING RESIDENTS



### Joseph Cohen, MD

University of San Diego/Tufts University School of Medicine

Joe will be going to Harborview Medical Center in Seattle, WA for an Orthopaedic Trauma Fellowship under David P. Barei, MD, Program Director.



### Ananth Eleswarapu, MD

Columbia University/University of Pittsburgh School of Medicine

Ananth will be heading to the University of California, Davis for a Spine Surgery Fellowship under Eric O. Klineberg, MD, Program Director.



### Oliver Schipper, MD

Bucknell University/Georgetown University School of Medicine

Oliver will be going to OrthoCarolina in Charlotte, NC for a Foot and Ankle Fellowship under Carroll P. Jones, MD, Program Director.



### Jason Somogyi, MD

Illinois Wesleyan University/Loyola University of Chicago Stritch School of Medicine

Jason will be returning to the University of Chicago for a Hand and Upper Extremity Fellowship under Daniel P. Mass, MD, Program Director.



### Cory Stewart, MD

Calvin College/Wayne State University School of Medicine

Cory will be heading to Harvard in Boston, MA for a Shoulder and Elbow Surgery Fellowship under Jon J.P. Warner, MD, Program Co-Director.

This year's AAOS Annual Meeting will be held in San Diego, California, March 14-18, 2017. The University of Chicago Department of Orthopaedic Surgery and Rehabilitation Medicine Annual Alumni Reception is being held at the Hilton San Diego Bayfront, 1 Park Blvd., Room Indigo 2027, San Diego, CA on Friday, March 17th from 6:30 to 8:30 p.m. I hope to see you there.

Sincerely,

### Douglas R. Dirschl, MD

Lowell T. Coggeshall Professor and Chairman  
Department of Orthopaedic Surgery and Rehabilitation Medicine  
The University of Chicago Medicine and Biological Sciences

# PUBLICATIONS 2016

## Athiviraham, Aravind

Mohammed MK, Shao C, Wang J, Wei Q, Wang X, Collier Z, Tang S, Liu H, Zhang F, Huang J, Guo D, Lu M, Liu F, Liu J, Ma C, Shi LL, Athiviraham A, He TC\* and Lee MJ\* (\*co-corresponding authors). Wnt/ $\beta$ -catenin signaling plays an ever-expanding role in stem cell self-renewal, tumorigenesis and cancer chemoresistance. *Genes & Diseases* 2016 Mar; 3(1): 11-40.

Denduluri SK, Scott B, Lamplot JD, Yin L, Yan Z, Wang Z, Ye J, Wang J, Wei Q, Mohammed MK, Haydon RC, Kang R, He TC, Athiviraham A, Ho SH\*, and Shi LL\*. Immortalized Mouse Achilles Tenocytes Demonstrate Long-Term Proliferative Capacity while Retaining Tenogenic Properties. *Tissue Engineering, Part C: Methods. Genes & Diseases Mar; 22(3): 280-9, 2016.*(\*corresponding authors).

Li R, Yan Z, Ye J, Huang H, Wang Z, Wei Q, Wang J, Zhao L, Lu S, Wang X, Tang S, Fan J, Zhang F, Zou Y, Song D, Shi LL, Athiviraham A, Lee MJ, He TC\*, and Zhang Z\*. The Prodomain-Containing BMP9 Produced from a Stable Line Effectively Regulates the Differentiation of Mesenchymal Stem Cells. *International Journal of Medical Sciences* 2016; 13(1): 8-18.

Green JD, Tollemar V, Dougherty M, Yan Z, Yin L, Ye J, Collier Z, Mohammed MK, Haydon RC, Luu HH, Kang R, Lee MJ, Ho SH, He TC, Shi LL\* and Athiviraham A\*. Multifaceted signaling regulators of chondrogenesis: Implications in cartilage regeneration and tissue engineering. *Genes & Diseases* Dec 2015; 2(4): 307-327.

Shao C, Shen C, Lu E, Haydon RC, Luu HH, Athiviraham A, He TC\*, and Lee MJ\*. Damage control: Harnessing prostaglandin E2 as a potential healing factor of tissue injuries. *Genes & Diseases* Dec 2015; 2(4) 295-298 (\*corresponding authors).

Ramkumar PN, Chu CT, Harris JD, Athiviraham A, Harrington MA, White DL, Berger DH, Naik AD, Li LT. Causes and Rates of Unplanned Readmissions After Elective Primary Total Joint Arthroplasty: A Systematic Review and Meta-Analysis. *Am J Orthop (Belle Mead NJ)*. Sept 2015; 44(9): 397-405.

Athiviraham A, Zellner B, Hunt S, Ma B, Luenam S, Pichora D, and Watters C. Buddy Taping for Treatment of Ulnar Collateral Ligament Injuries: A Cadaveric Study. *Texas Orthopedic Journal* 2015 1: 23-28.

## Balach, Tessa

O'Sullivan MB, Saha D, Clement JM, Dowsett RJ, Pacheco RA, Balach T. Team Approach: The Treatment of Metastatic Tumors of the Femoral Diaphysis. 2016. *JBJS Reviews* – in press.

The PARITY Investigators. Prophylactic antibiotic regimens in tumour surgery (PARITY): a pilot multicentre randomised controlled trial. *Bone Joint Res*. 2015 Sep; 4(9): 154-62. PMID: 26423584.

Balach T, Baldwin P, Intravia J. Atypical Femur Fractures Associated with Bisphosphonate Use. *J Am Acad Orthop Surg*. 2015 Sep; 23 (9): 550-7. PMID: 26195566.

Miller BJ, Rajani R, Leddy L, Carmody Soni EE, White JR, the Musculoskeletal Oncology Research Initiative. How Much Tumor Surgery Do Early-career Orthopaedic Oncologists Perform? *Clin Orthop Relat Res*. 2015 Feb; 473(2): 695-702. PMID: 25224820.

Miller BJ, Avedian RS, Rajani R, Leddy L, Cummings J, Balach T, MacDonald K on behalf of the Musculoskeletal Oncology Research Initiative. The Use of Advanced Imaging Before Referral to an Orthopaedic Oncologist: A Prospective, Multi-Center Investigation. *Clin Orthop Relat Res* 2015 Mar; 473(3): 868-74. PMID: 24777726.

## Bielski, Robert

Denduluri SK, Lu M, Bielski RJ. Development of genu valgum after removal of osteochondromas from the proximal tibia. *J Pediatric Orthop B*. (epub ahead of print) April 2016.

Cohen-Rosenblum A, Bielski RJ. Elbow Pain After a Fall: Nursemaids Elbow or Fracture? *Pediatr Ann*. 2016 Jun 1;45(6): e214-7.

Eleswarapu AS, Yamini B, Bielski RJ. Evaluating the Cavus Foot. *Pediatr Ann*. 2016 Jun 1; 45(6): e 218-22.

Whyte NS, Bielski RJ. Acute Hematogenous Osteomyelitis in Children. *Pediatr Ann*. 2016 Jun 1;45(6): e 204-8.

Divi SN, Bielski RJ. Legg- Calve- Perthes Disease. *Pediatr Ann*. 2016 Apr; 45(4): e144-9.

Denduluri SK, Lu M, Bielski RJ. Development of genu valgum after removal of osteochondromas from the proximal tibia. *J Ped Ortho B*. 2015.

## Birnie, Roderick

Dr. Roderick Birnie devised and implemented a motor skills course, which is evolving into a standard hands-on curriculum with pre- and post-course assessments. This system employs dedicated training and practice in a controlled environment through simulation to help interns become highly skilled orthopaedic surgeons. Topics include: suturing and knot tying; soft tissue handling and dissection using pigs feet; joint aspiration and injections; K-wire techniques on saw bones; practicing drilling, depth measurement and insertion of cortical screws on PVC piping; application of DCP plates on saw bones; lag screw practice; ex fix techniques; use of C-arm and fluoroscan and learning to determine compartment pressures.

## Conti-Mica, Megan Anne

Meislin MA, Wagner ER, Shin AY: Comparison of Elbow Range of Motion Measurements: Smartphone-Based Digital Photography Versus Goniometric Measurements. *J Hand Surg Am*. 41(4):510-515, 2016.

## Dirschl, Douglas

Bawa HS, Weick JW, Dirschl DR. Gender Disparities in Osteoarthritis-Related Health Care Utilization Before Total Knee Arthroplasty. *J Arthroplasty*. 2016 Oct; 31(10):2115-2118.e1. doi: 10.1016/j.arth.2016.03.044.

Weick JW, Bawa HS, Dirschl DR. Hyaluronic Acid Injections for Treatment of Advanced Osteoarthritis of the Knee: Utilization and Cost in a National Population Sample. *J Bone Joint Surg Am*. 2016 Sep 7; 98(17): 1429-35. doi: 10.2106/JBJS.15.01358.

Eleswarapu AS, Divi SN, Dirschl DR, Mok JM, Stout C, Lee MJ. How Effective is Physical Therapy for Common Low Back Pain Diagnoses?: A Multivariate Analysis of 4597 Patients. *Spine*. 2016 Aug 15;41(16):1325-9. doi: 10.1097/BRS.0000000000001506.

Hensley CP, Dirschl DR. Diagnosis and Rehabilitation of a Middle Cuneiform Fracture in a Hockey Player. *Am J Phys Med Rehabil*. 2016 Jul; 95(7): e98-e102. doi: 10.1097/PHM.0000000000000459.

Lodhia P, Gui C, Chandrasekaran S, Suarez-Ahedo C, Dirschl DR, Domb BG. The Economic Impact of Acetabular Labral Tears: A Cost-effectiveness Analysis Comparing Hip Arthroscopic Surgery and Structured Rehabilitation Alone in Patients Without Osteoarthritis. *Am J Sports Med*. 2016 Jul; 44(7): 1771-80. doi: 10.1177/0363546516645532.

Jiang JJ, Somogyi JR, Patel PB, Koh JL, Dirschl DR, Shi LL. Obesity is Not Associated with Increased Short-term Complications After Primary Total Shoulder Arthroplasty. *Clin Orthop Relat Res*. 2016; 474(3): 787-95. doi: 10.1007/s11999-015-4584-3.

Lin CA, Bhandari M, Guyatt G, Walter SD, Schemitsch EH, Swiontkowski M, Sanders D, Tornetta P 3rd, SPRINT Investigators. Does Participation in a Randomized Clinical Trial Change Outcomes? An Evaluation of Patients Not Enrolled in the SPRINT Trial. *J Orthop Trauma*. 2016 Mar; 30(3): 156-61.

Obremskey W, Agel J, Archer K, To P, Tornetta P 3rd, SPRINT Investigators. Character, Incidence, and Predictors of Knee Pain and Activity After Infrapatellar Intramedullary Nailing of an Isolated Tibia Fracture. *J Orthop Trauma*. 2016; 30(3): 135-41. doi: 10.1097/BOT.0000000000000475.

Dirschl DR. Surgical Irrigation of Open Fractures--A Change in Practice? *N Engl J Med*. 2015. 31; 373(27): 2680-1.

Bawa HS, Weick J, Dirschl DR. Anti-Osteoporotic Therapy After Fragility Fracture Lowers Rate of Subsequent Fracture: Analysis of a Large Population Sample. *J Bone Joint Surg Am*. 2015 Oct 7; 97(19): 1555-62. doi: 10.2106/JBJS.N.01275.

## Finn, Henry

Farid, Y., Thakral, R., Finn, H. Intermediate-Term Results of 142 Single-Design, Rotating-Hinge Implants: Frequent Complications May Not Preclude Salvage of Severely Affected Knees. *The Journal of Arthroplasty*. 30(12): 2173-80. 2015.

## Gittler, Michelle

Rabi J, Jones V, Abad H, Naji ZA, Khudeira Z, Gittler MS. The Over Utilization of PPLs in an Acute Rehabilitation Hospital and How to Fix it! *PM R*. 2016 Sep;8(9S):S170. doi: 10.1016/j.pmrj.2016.07.072.

Massagli TL, Gittler MS, Raddatz MM, Robinson LR. Does the Physical Medicine and Rehabilitation Self-Assessment Examination for Residents Predict the Chances of Passing the Part 1 Board Certification Examination? *PM R*. 2016 Jun 16. pii: S1934-1482(16)30191-5. doi: 10.1016/j.pmrj.2016.06.012.

## Haydon, Rex

H Zhang, J Wang, F Deng, E Huang, Z Yan, Z Wang, Y Deng, Q Zhang, Z Zhang, J Ye, M Qiao, R Li, J Wang, Q Wei, G Zhou, H Luu, RC Haydon, TC He and F Deng (2015) Canonical Wnt signaling acts synergistically on BMP9-induced osteo/odontoblastic differentiation of stem cells of dental apical papilla (SCAPs). *Biomaterials* 39: 145-154.

X Chen, J Cui, Z Yan, H Zhang, X Chen, N Wang, P Shah, F Deng, C Zhao, N Geng, M Li, S K. Denduluri, RC Haydon, H Luu, R Reid and TC He (2015) Sustained high level transgene expression in mammalian cells mediated by the optimized piggyBac transposon system. *Genes & Diseases* 2(1): 96-105.

P Cruz, K Rezanian, P Pytel, RC Haydon and R Roos (2015) Post-denervation muscle hypertrophy: a rare complication of brachial plexopathy. *Neurology* 84 (14) Supplement P3.177.

## He, Tong-Chuan

Hongmei Zhang, Jinhua Wang, Fang Deng, Enyi Huang, Zhengjian Yan, Zhongliang Wang, Youlin Deng, Qian Zhang, Zhonglin Zhang, Jixing Ye, Min Qiao, Ruifang Li, Jing Wang, Qiang Wei, Guolin Zhou, Hue H. Luu, Rex C. Haydon, Tong-Chuan He\* and Feng Deng\* (2015) Canonical Wnt signaling acts synergistically on BMP9-induced osteo/odontoblastic differentiation of stem cells of dental apical papilla (SCAPs). *Biomaterials* 39: 145-154, PMID: 25468367 (\*corresponding authors).

Maureen Beederman, Stephanie H. Kim, M. Rose Rogers, Sarah Lyon, Tong-Chuan He, and Russell R. Reid (2015) Osteoprotegerin Deficiency Results in Disruption of Posterofrontal Suture Closure in Mice: Implications in Nonsyndromic Craniosynostosis. *Plastic and Reconstructive Surgery* 135(6):990e-999e PMID: 26017615.

Xiang Chen, Jing Cui, Zhengjian Yan, Hongmei Zhang, Xian Chen, Ning Wang, Palak Shah, Fang Deng, Chen Zhao, Nisha Geng, Melissa Li, Sahitya K. Denduluri, Rex C. Haydon, Hue H. Luu, Russell R. Reid, and Tong-Chuan He (2015) Sustained high level transgene expression in mammalian cells mediated by the optimized piggyBac transposon system. *Genes & Diseases* 2(1): 96-105 PMID: 25815368.

Chunhao Yu, Xiao-Dong Wen, Zhiyu Zhang, Chun-Feng Zhang, Xiao-Hui Wu, Adiba Martin, Wei Du, Tong-Chuan He, Chong-Zhi Wang, Chun-Su Yuan (2015) American ginseng attenuates azoxymethane/dextran sodium sulfate-induced colon carcinogenesis in mice. *Journal of Ginseng Research* 39(1):14-21 PMID: 25535472 PMID: 25535472 PMID: 25535472

Chong-Zhi Wang, Zhiyu Zhang, Jin-Yi Wan, Chun-Feng Zhang, Samantha Anderson, Xin He, Chunhao Yu, Tong-Chuan He, Lian-Wen Qi and Chun-Su Yuan (2015) Protopanaxadiol, an Active Ginseng Metabolite, Significantly Enhances the Effects of Fluorouracil on Colon Cancer. *Nutrients* 7: 799-814 PMID: 25625815.

Zhiyu Zhang, Zejuan Li, Xiaohui Wu, Chun-Feng Zhang, Tyler Calway, Tong-Chuan He, Wei Du, Jianjun Chen, Chong-Zhi Wang, Chun-Su Yuan (2015) TRAIL pathway is associated with inhibition of colon cancer by protopanaxadiol. *Journal of Pharmacological Sciences* 127(1): 83-91; PMID: 25704023.

Li Li, Qian Dong, Yufeng Wang, Qiaoling Feng, Pengfei Zhou, Xinying Ou, Qiorong Meng, Tong-Chuan He, Jinyong Luo (2015) Hedgehog signaling is involved in the BMP9-induced osteogenic differentiation of mesenchymal stem cells. *International Journal of Molecular Medicine*. 35(6):1641-1650. PMID: 25872645.

Qian Zhang, Jing Wang, Fang Deng, Zhengjian Yan, Yinglin Xia, Zhongliang Wang, Jixing Ye, Youlin Deng, Zhonglin Zhang, Min Qiao, Ruifang Li, Sahitya K. Denduluri, Qiang Wei, Lianggong Zhao, Shun Lu, Xin Wang, Shengli Tang, Hao Liu, Hue H. Luu, Rex C. Haydon, Tong-Chuan He\* and Li Jiang\* (2015) TqPCR: A Touchdown qPCR Assay with Significantly Improved Detection Sensitivity and Amplification Efficiency of SYBR Green qPCR. *PLOS ONE* 10(7): e0132666, PMID: 26172450 (\*corresponding authors).

Zhan Liao, Guoxin Nan, Zhengjian Yan, Liyi Zeng, Youlin Deng, Jixing Ye, Zhonglin Zhang, Min Qiao, Ruifang Li, Sahitya Denduluri, Jing Wang, Qiang Wei, Nisha Geng, Lianggong Zhao, Shun Lu, Xin Wang, Guolin Zhou, Hue H. Luu, Rex C. Haydon, Tong-Chuan He\*, and Zhongliang Wang\* (2015) The Anthelmintic Drug Niclosamide Inhibits the Proliferative Activity of Human Osteosarcoma Cells by Targeting Multiple Signal Pathways. *Current Cancer Drug Targets* 15(8):726-738 PMID: 26118906.

Chunhao Yu, Xiao-Dong Wen, Zhiyu Zhang, Chun-Feng Zhang, Xiaohui Wu, Xin He, Yang Liao, Ningning Wu, Chong-Zhi Wang, Wei Du, Tong-Chuan He, Chun-Su Yuan (2015) American ginseng significantly reduced the progression of high-fat-diet-enhanced colon carcinogenesis in ApcMin/+ mice. *Journal of Ginseng Research* 39(3):230-237, PMID: 26199554.

Hongyu Zhang, Li Li, Qian Dong, Yufeng Wang, Qiaoling Feng, Xinying Ou, Pengfei Zhou, Tongchuan He, and Jinyong Luo (2015) Activation of PKA/CREB Signaling is Involved in BMP9-Induced Osteogenic Differentiation of Mesenchymal Stem Cells. *Cellular Physiology and Biochemistry*. 37:548-562, PMID: 26328889.

Zhengjian Yan, Liangjun Yin, Zhongliang Wang, Jixing Ye, Zhonglin Zhang, Ruifang Li, Sahitya K. Denduluri, Jing Wang, Qiang Wei, Lianggong Zhao, Shun Lu, Xin Wang, Shengli Tang, Lewis L. Shi, Michael J. Lee, Tong-Chuan He\* and Zhong-Liang Deng\* (2016) A novel organ culture model of mouse intervertebral disc tissues. *Cells Tissues Organs*. 201(1):38-50, PMID: 26447649 (\*corresponding authors).

Shunkang Rong, Hui Zhu, Dichuan Liu, Jun Qian, Kun Zhou, Que Zhu, Yonghong Jiang, Gang Yang, Changming Deng, Dengqing Zhang, Qi Zhou, Han Lei, Tong-Chuan He, Zhibiao Wang, Jing Huang (2015) Noninvasive Renal Denervation for Resistant Hypertension Using High-Intensity Focused Ultrasound. *Hypertension*. 66(4): e22-25 PMID: 26238444.

Shi-Mei Yuan, Huan Li, Min Yang, He Zha, Hui Sun, Xue-Ru Li, Ai-Fang Li, Yue Gu, Liang Duan, Jin-Yong Luo, Chong-Yan Li, Yan Wang, Zhi-Biao Wang, Tong-Chuan He, and Lan Zhou (2015) High intensity focused ultrasound enhances anti-tumor immunity by inhibiting the negative regulatory effect of miR-134 on CD86 in a murine model of B16 melanoma. *Oncotarget*. 6(35):37626-37637; PMID: 26485753.

Youlin Deng\*, Junhui Zhang\*, Zhongliang Wang, Zhengjian Yan, Min Qiao, Jixing Ye, Qiang Wei, Jing Wang, Xin Wang, Lianggong Zhao, Shun Lu, Shengli Tang, Maryam K. Mohammed, Hao Liu, Jiaming Fan, Fugui Zhang, Yulong Zou, Junyi Liao, Hongbo Qi, Rex C. Haydon, Hue H. Luu, Tong-Chuan He#, and Liangdan Tang#: (2015) Antibiotic monensin synergizes with EGFR inhibitors and oxaliplatin to suppress the proliferation of human ovarian cancer cells. *Scientific Reports*. 5: 17523. PMID: 26639992 (\*equal contributions; #corresponding authors).

Ruifang Li, Zhengjian Yan, Jixing Ye, He Huang, Zhongliang Wang, Qiang Wei, Jing Wang, Lianggong Zhao, Shun Lu, Xin Wang, Shengli Tang, Jiaming Fan, Fugui Zhang, Yulong Zou, Dongzhe Song, Lewis L. Shi, Aravind Athiviraham, Michael J. Lee, Tong-Chuan He\*, and Zhonglin Zhang\* (2016) The Prodomain-Containing BMP9 Produced from a Stable Line Effectively Regulates the Differentiation of Mesenchymal Stem Cells. *International Journal of Medical Sciences*. 13(1): 8-18 PMID: 26816490 (\*corresponding authors).

Yasha Li, Eric R. Wagner, Zhengjian Yan, Zhongliang Wang, Gaurav Luther, Wei Jiang, Jixing Ye, Qiang Wei, Jing Wang, Lianggong Zhao, Shun Lu, Xin Wang, Maryam K. Mohammed, Shengli Tang, Hao Liu, Jiaming Fan, Fugui Zhang, Yulong Zou, Dongzhe Song, Junyi Liao, Rex C. Haydon, Hue H. Luu\*, and Tong-Chuan He\* (2015) The Calcium-Binding Protein S100A6 Accelerates Human Osteosarcoma Growth by Promoting Cell Proliferation and Inhibiting Osteogenic Differentiation. *Cellular Physiology and Biochemistry* 37(6): 2375-2392; PMID: 26646427 (\*corresponding authors).

Sahitya K. Denduluri, Bryan Scott, Joseph D. Lamplot, Liangjun Yin, Zhengjian Yan, Zhongliang Wang, Jixing Ye, Jing Wang, Qiang Wei, Maryam K. Mohammed, Rex C. Haydon, Richard Kang, Tong-Chuan He, Aravind Athiviraham, Sherwin H. Ho\*, and Lewis L. Shi\* (2016) Immortalized Mouse Achilles Tenocytes Demonstrate Long-Term Proliferative Capacity while Retaining Tenogenic Properties. *Tissue Engineering, Part C: Methods*. 22(3): 280-289, PMID: 26959762 (\*corresponding authors).

Shun Lu, Junwei, Wu, Baisheng Fu, Jinlei Dong, Yongliang Yang, Maoyuan Xin, Guodong Wang, Tong-Chuan He, and Dongsheng Zhou (2016) Transiliac Osteotomy in Surgical Management of Pelvic Post-Traumatic Malunions: A Retrospective Study. *Medicine (Baltimore)* 95(13):e3144. PMID: 27043674.

Jixing Ye, Jing Wang, Yunxiao Zhu, Qiang Wei, Xin Wang, Jian Yang, Shengli Tang, Hao Liu, Jiaming Fan, Fugui Zhang, Evan M. Farina, Maryam K. Mohammed, Yulong Zou, Dongzhe Song, Junyi Liao, Jiayi Huang, Dan Guo, Minpeng Lu, Feng Liu, Jianxiang Liu, Li Li, Chao Ma, Xue Hu, Rex C. Haydon, Michael J. Lee, Russell R. Reid, Guillermo A. Ameer, Li Yang\*, and Tong-Chuan He\* (2016) A thermoresponsive polydiolcitrate-gelatin scaffold and delivery system mediates effective bone formation from BMP9-transduced mesenchymal stem cells. *Biomedical Materials* 11(2):025021 PMID: 27097687 (\*corresponding authors).

Lu S, Wu J, Xu S, Fu B, Dong J, Yang Y, Wang G, Xin M, Li Q, He TC, Wang F, Zhou D (2016) Medial approach to treat humeral mid-shaft fractures: a retrospective study. *J Orthop Surg Res*. 11(1):32, PMID: 26988227.

Shun Lu, Jing Wang, Jixing Ye, Yulong Zou, Yunxiao Zhu, Qiang Wei, Xin Wang, Shengli Tang, Hao Liu, Jiaming Fan, Fugui Zhang, Evan M. Farina, Maryam K. Mohammed, Dongzhe Song, Junyi Liao, Jiayi Huang, Dan Guo, Minpeng Lu, Feng Liu, Jianxiang Liu, Li Li, Chao Ma, Xue Hu, Michael J. Lee, Russell R. Reid, Guillermo A. Ameer, Dongsheng Zhou\*, and Tong-Chuan He\* (2016) Bone morphogenetic protein 9 (BMP9) induces effective bone formation from reversibly immortalized multipotent adipose-derived (iMAD) mesenchymal stem cells. *American Journal of Translational Research* [in press] (\*corresponding authors).

Xiaoyan Ren, Daniel W. Weisgerber, David Bischoff, Michael S. Lewis, Russell R. Reid, Tong-Chuan He, Dean T. Yamaguchi, Timothy A. Miller, Brendan A.C. Harley, Justine C. Lee (2016) Nanoparticulate Mineralized Collagen Scaffolds and BMP-9 Induce a Long Term Bone Cartilage Construct in Human Mesenchymal Stem Cells. *Advanced Healthcare Materials* 5(14):1821-1830, PMID: 27275929.

Li H, Yuan SM, Yang M, Zha H, Li XR, Sun H, Duan L, Gu Y, Li AF, Weng YG, Luo JY, He TC, Wang Y, Li CY, Li FQ, Wang ZB, Zhou L (2016)

High intensity focused ultrasound inhibits melanoma cell migration and metastasis through attenuating microRNA-21-mediated PTEN suppression. *Oncotarget*. 2016 Jul 6. doi: 10.18632/oncotarget.10433. [Epub ahead of print], PMID: 27391071.

Zhao B, Shah P, Qiang L, He TC, Budanov A, He YY (2016) Distinct Role of Sesn2 in Response to UVB-induced DNA Damage and UVA-induced Oxidative Stress in Melanocytes. *Photochem Photobiol*. 2016 Jul 27. doi: 10.1111/php.12624. [Epub ahead of print] PMID: 27463837.

Youlin Deng, Zhongliang Wang, Fugui Zhang, Min Qiao, Zhengjian Yan, Qiang Wei, Jing Wang, Hao Liu, Jiaming Fan, Yulong Zou, Junyi Liao, Xue Hu, Liqun Chen, Xinyi Yu, Rex C. Haydon, Hue H. Luu, Hongbo Qi, Tong-Chuan He\* and Junhui Zhang\* (2016) A Blockade of IGF Signaling Sensitizes Human Ovarian Cancer Cells to the Anthelmintic Niclosamide-Induced Anti-Proliferative and Anticancer Activities. *Cellular Physiology and Biochemistry* 39:871-888, PMID: 27497986 (\*corresponding authors).

Kazuhiko Uchiyama, Toshio Sakiyama, Takumu Hasebe, Mark W. Musch, Hiroyuki Miyoshi, Yasushi Nakagawa, Tong-Chuan He, Lev Lichtenstein, Yuji Naito, Yoshito Itoh, Toshikazu Yoshikawa, Bana Jabri, Thaddeus Stappenbeck and Eugene B. Chang (2016) Butyrate and bioactive proteolytic form of Wnt-5a regulate colonic epithelial proliferation and spatial development. *Scientific Reports* 6: 32094 PMID: 27561676, doi:10.1038/srep32094.

Sarah M. Lyon, Anoop Mayampurath, M. Rose Rogers, Donald J. Wolfgeher, Sean M. Fisher, Samuel L. Volchenboum, Tong-Chuan He, and Russell R. Reid (2016) A Method for Whole Protein Isolation from Human Cranial Bone. *Analytical Biochemistry* 2016 Sep 24. pii: S0003-2697(16)30310-4. doi: 10.1016/j.ab.2016.09.021. [Epub ahead of print] PMID: 27677936.

Jian-Li Gao\*, Yan-Mei Shui, Wei Jiang, En-Yi Huang, Qi-Yang Shou, Xin Ji, Bai-Cheng He, Gui-Yuan Lv and Tong-Chuan He\* (2016) Hypoxia Pathway and Hypoxia-mediated Extensive Extramedullary Hematopoiesis are involved in Ursolic Acid's anti-metastatic effect in 4T1 Tumor Bearing Mice. *Oncotarget* [in press] (\*corresponding authors).

Sahitya K. Denduluri, Zhongliang Wang, Zhengjian Yan, Jing Wang, Qiang Wei, Maryam K. Mohammed, Rex C. Haydon, Hue, H. Luu, and Tong-Chuan He (2016) Molecular Pathogenesis and Therapeutic Strategies of Human Osteosarcoma. *Journal of Biomedical Research* 2015 Aug 30;30. doi: 10.7555/JBR.29.20150075, PMID: 26496981..

Jing Wang, Qiang Wei, Jixing Ye, Sahitya K. Denduluri, Xin Wang, Maryam K. Mohammed, Hue H. Luu, Rex C. Haydon, Tong-Chuan He (2015) Insider information: Testing cancer drug sensitivity for personalized therapy. *Genes & Diseases*. 2 (3): 219–221 doi:10.1016/j.gendis.2015.05.004.

Li F, Hu J, Xie K, He TC (2015) Authentication of experimental materials: A remedy for the reproducibility crisis? *Genes & Diseases* 2(4):283, PMID: 26900588.

Hu J, He TC, Li F (2015) For your eyes only: Harnessing human embryonic stem cell-derived retinal pigment epithelial cells to improve impaired vision. *Genes & Diseases* 2(4):293-294, PMID: 26819964.

Jordan D. Green, Viktor Tollema, Mark Dougherty, Zhengjian Yan, Liangjun Yin, Jixing Ye, Zachary Collier, Maryam K. Mohammed, Rex C. Haydon, Hue H. Luu, Richard Kang, Michael J. Lee, Sherwin H. Ho, Tong-Chuan He, Lewis L. Shi,\* and Aravind Athiviraham\* (2015) Multifaceted signaling regulators of chondrogenesis: Implications in cartilage regeneration and tissue engineering. *Genes & Diseases* 2(4):307-327, PMID: 26835506 (\*corresponding authors).

Teven CM, Fisher S, Ameer GA, He TC, Reid RR (2015) Biomimetic approaches to complex craniofacial defects. *Ann Maxillofac Surg*. 5(1): 4-13. doi: 10.4103/2231-0746.161044. PMID: 26389027.

Maryam K. Mohammed, Connie Shao, Jing Wang, Qiang Wei, Xin Wang, Zachary Collier, Shengli Tang, Hao Liu, Fugui Zhang, Jiayi Huang, Dan Guo, Minpeng Lu, Feng Liu, Jianxiang Liu, Chao Ma, Lewis L. Shi, Aravind Athiviraham, Tong-Chuan He\* and Michael J. Lee\* (2016) Wnt/ $\beta$ -catenin signaling plays an ever-expanding role in stem cell self-renewal, tumorigenesis and cancer chemoresistance. *Genes & Diseases* 3(1): 11-40 (\*co-corresponding authors).

Ke Yang, Xin Wang, Hongmei Zhang, Zhongliang Wang, Guoxin Nan, Yasha Li, Fugui Zhang, Maryam K. Mohammed, Rex C. Haydon, Hue H. Luu, Yang Bi\* and Tong-Chuan He\* (2016) The evolving roles of canonical WNT signaling in stem cells and tumorigenesis: Implications in targeted cancer therapies. *Laboratory Investigation* 96(2):116-136, PMID: 26618721 (\*corresponding authors).

Connie Shao, Christine Shen, Emily Lu, Rex C. Haydon, Hue H. Luu, Aravind Athiviraham, Tong-Chuan He\*, and Michael J. Lee\* (2015) Damage control: Harnessing prostaglandin E2 as a potential healing factor of tissue injuries. *Genes & Diseases* 2(4):295-298 (\*co-corresponding authors).

Chong-Zhi WANG, Samantha ANDERSON, Wei DU, Tong-Chuan HE, and Chun-Su YUAN (2016) Red ginseng and cancer treatment. *Chinese Journal of Natural Medicines* 14(1):7-16, PMID: 26850342.

Wang, Qiang Wei, Xin Wang, Shengli Tang, Hao Liu, Fugui Zhang, Maryam K Mohammed, Jiayi Huang, Dan Guo, Minpeng Lu, Feng Liu, Jianxiang Liu, Chao Ma, Xue Hu, Rex C Haydon, Tong-Chuan He\*, and Hue H Luu\* (2016) Transition to resistance: An unexpected role of the EMT in cancer chemoresistance. *Genes & Diseases* 3(1): 3-6 (\*co-corresponding authors).

#### Ho, Sherwin

Lamplot JD, Liu B, Yin L, Zhang W, Wang Z, Luther G, Wagner E, Li R, Nan G, Shui W, Yan Z, Rames R, Deng F, Zhang H, Liao Z, Liu W, Zhang J, Zhang Z, Zhang Q, Ye J, Deng Y, Qiao M, Haydon RC, Luu HH, Angeles J, Shi LL, He TC, Ho SSW: Reversibly Immortalized

Mouse Articular Chondrocytes Acquire Long-Term Proliferative Capability While Retaining Chondrogenic Phenotype. *Cell Transplantation* 24(6):1053-1066, 2015.

#### Kang, Richard

Denduluri SK, Scott B, Lamplot JD, Yin L, Yan Z, Wang Z, Ye J, Wang J, Wei Q, Mohammed MK, Haydon RC, Kang RW, He TC, Athiviraham A, Ho SH, Shi LL. Immortalized Mouse Achilles Tenocytes Demonstrate Long-Term Proliferative Capacity While Retaining Tenogenic Properties. *Tissue Eng Part C Methods*. 2016 Mar; 22(3): 280-9.

Fabricant PD, Taylor SA, McCarthy MM, Gausden EB, Moran CJ, Kang RW, Cordasco FA. Open and Arthroscopic Shoulder Stabilization. *Journal of Bone and Joint Surgery Reviews*. 2015. Feb 3; 3(2):e4.

#### Lee, Michael

Wei Q, Liao J, Yu X, Wang EJ, Wang C, Luu HH, Haydon RC, Lee MJ, He TC. An NgAgo tool for genome editing: did CRISPR/Cas9 just find a competitor? *Genes & Diseases* [in press].

Lee MJ. Technology: Safer Surgeries, but worse surgeons? *Clinical Orthopaedics and Related Research*. (In press).

Lus, Wang J, Ye J, Zou, Y, Zhu Y, Wie Q, Wang X, Tang S, Liu H, Fan J, Zhang F, Farina EM, Mohammed MM, Song D, Liao J, Huang J, Guo D, Lu M, Liu F, Liu J, Li L, Ma C, Hu X, Lee MJ, Reid RR, Ameer GA, Zhoe D, He TC. Bone Morphogenetic protein 9 (BMP9) induces effective bone formation from reversibly immortalized multipotent adipose-derived (iMAD) mesenchymal stem cells. *American Journal of Translational Medicine*. (in press).

Ye J, Wang J, Zhu Y, Qiang W, Wang X, Yang J, Tang S, Liu H, Fan J, Fugui Z, Farina EM, Mohammed MK, Zou Y, Song D, Liao J, Huang J, Guo D, Lu M, Liu F, Liu J, Li L, Ma C, Hu X, Haydon RC, Lee MJ, Reid RR, Ameer, GA, Yang L, He TC. A thermoresponsive polydiolcitrate gelating scaffold and delivery system mediates effective bone formation from BMP9-transduced mesenchymal stem cells. *Biomedical Materials*. 2016 Apr 21; 11(2): 025021.

Eleswarapu AS, Divi SN, Dirschl DR, Mok JM, Stout C, Lee MJ. How Effective is Physical Therapy for Common Low Back Pain Diagnoses? A multivariate analysis of 4597 patients. *Spine* (in press).

Green JD, Tollema V, Dougherty M, Yan Z, Yin L, Ye J, Collier Z, Mohammed MK, Haydon RC, Luu HH, Kang R, Lee MJ, Ho SH, He TC, Shi LL, Athiviraham A. Multifaceted signaling regulators of chondrogenesis: Implications in cartilage regeneration and tissue engineering. *Genes Dis*. 2015 Dec;2(4):307-327. Epub 2015 Nov 6.

Shao C, Shen C, Lu E, Haydon RC, Luu HH, Athiviraham A, He TC, Lee MJ. Damage control: Harnessing prostaglandin E2 as a potential healing factor of tissue injuries. *Genes Dis*. 2015 Dec;2(4):295-298. Epub 2015 Sep 30.

Lee MJ. On Patient Safety: When are we too old to operate? *Clin Orthop Relat Res*. 2016 Apr;474(4):895-8. doi: 10.1007/s11999-016-4722-6. Epub 2016 Jan 27.

Mohammed MK, Shao X, Wang J, Wei Q, Wang X, Collier Z, Tang S, Liu H, Zhang F, Huang J, Guo D, Lu M, Liu F, Liu J, Ma C, Shi LL, Athiviraham A, He TC, Lee MJ. Wnt/Beta-catenin signaling plays an ever-expanding role in stem cell self-renewal, tumorigenesis and cancer chemoresistance. *Genes and Diseases*. In Press.

Li R, Yan Z, Ye J, Huang H, Wang Z, Wei Q, Wang J, Zhao L, Lu S, Wang X, Tang S, Fan J, Zhang F, Zou Y, Song D, Shi LL, Athiviraham A, Lee MJ, He TC, Zhang Z: The Prodomain-Containing BMP9 Produced from a Stable Line Effectively Regulates the Differentiation of Mesenchymal Stem Cells. *International Journal of Medical Sciences*. 2016 Jan 1;13(1):8-18. doi: 10.7150/ijms.13333. eCollection 2016.

Lee MJ. On Patient Safety: Have The ACGME Resident Work Hour Reforms Improved Patient Safety? *Clin Orthop Relat Res*. 2015 Nov;473(11):3364-7. doi: 10.1007/s11999-015-4547-8.

Stewart R, Landy D, Lee MJ. Unilateral acute angle-closure glaucoma after lumbar spine surgery: a case report and systematic review of the literature. *Spine* (Phila Pa 1976). 2015 Oct 15.

Yan Z, Yin L, Wang Z, Ye J, Zhang Z, Li R, Denduluri SK, Wang J, Wei Q, Zhao L, Lu S, Wang X, Tang S, Shi LL, Lee MJ, He TC, Deng ZL. A novel organ culture model of mouse intervertebral disc tissues. *Cells Tissues Organs*. 2016;201(1):38-50. doi: 10.1159/000439268. Epub 2015 Oct 9.

Ehlers AP, Khor S, Shonnard N, Oskuian RJ, Sethi RK, Cizik AM, Lee MJ, Bederman S, Dellinger EP, Flum DR. Intra-wound Antibiotics in Spine Fusion Surgery: A Report from the SCOAP-CERTAIN Collaborative. *Surg Infect (Larchmt)*. 2016 Apr;17(2):179-86. doi: 10.1089/sur.2015.146.

Lee MJ. On Patient Safety: Is there a gun in the home? *Clin Orthop Relat Res*. 2015 Sep;473(9):2765-8. doi: 10.1007/s11999-015-4307-9. \*Selected by Editor in Chief for Springer Nature Change the World One Article at a Time Most Impactful articles of 2015 campaign.

Zhonglin Zhang, Ruifang Li, Zhengjian Yan, Jixing Ye, Zhongliang Wang, Jian-Li Gao, Wei Jiang, Youlin Deng, Min Qiao, Qiang Wei, Jing Wang, Melissa Li, Nisha Geng, Lianggong Zhao, Shun Lu, Hue H. Luu, Rex C. Haydon, Lewis L. Shi, Russell R. Reid, Michael J. Lee\*, and Tong-Chuan He: BMP9 Protein Generated from a Stable Producer Line Effectively Regulates the Differentiation of Mesenchymal Stem Cells. *PLOS ONE* (in revision).

Qian Zhang, Fang Deng, Zhengjian Yan, Zhongliang Wang, Ruifang Li, Youlin Deng, Jixing Ye, Zhonglin Zhang, Min Qiao, Sahitya Denduluri, Jing Wang, Qiang Wei, Lianggong Zhao, Shun Lu, Xin Wang, Guolin Zhou, Nisha Geng, Melissa Li, Hue H. Luu, Rex C. Haydon, Michael J. Lee, Tong-Chuan He\* and Li Jiang: Reprogramming mouse glia cells to neural crest cell lineages by SV40 large T antigen. (in submission).

Fang Deng, Jixing Ye, Qian Zhang, Zhengjian Yan, Zhongliang Wang, Youlin Deng, Zhonglin Zhang, Min Qiao, Ruifang Li, Sahitya Denduluri, Jing Wang, Qiang Wei, Lianggong Zhao, Shun Lu, Xin Wang, Guolin Zhou, Nisha Geng, Melissa Li, Hue H. Luu, Rex C. Haydon, Michael J. Lee, Tian Yang, and Tong-Chuan He: SV40 large T antigen reprograms mouse melanocytes to neural crest cell lineages. (in submission).

The SCOAP-CERTAIN Collaborative: Lee MJ, Shonnard N, Farrokhi F, Martz D Chapman J, Baker R, Hsiang J, Lee C, Gholish R, Flum D. The Spine Surgical Care and Outcomes Assessment Program (Spine SCOAP): A Surgeon-led Approach to Quality and Safety. *Spine* (accepted for publication).

Child Z, Rau D, Lee MJ, Ching R, Bransford R, Chapman JR, Bellabarba C. The Provocative Radiographic Traction Test for Diagnosing Craniocervical Dissociation: A Cadaveric Biomechanical Study and Reappraisal of the Pathogenesis of Instability. *Journal of Spinal Disorders and Techniques*. (Submitted for publication).

#### Luu, Hue

Durfee RA, Mohammed M, Luu HH. Review of Osteosarcoma and Current Management. *Rheumatol Ther*. 2016 Oct 19. [Epub ahead of print] Review.

Patel AA, Brophy RH, Gandhi R, Luu HH, Mulpuri K, Shah SA, Kakar S. The 2015 American-British-Canadian Traveling Fellows Report. *J Bone Joint Surg Am*. 2016 Aug 17;98(16):e68. doi: 10.2106/JBJS.15.01378.

Yang K, Wang X, Zhang H, Wang Z, Nan G, Li Y, Zhang F, Mohammed MK, Haydon RC, Luu HH, Bi Y, He TC. The evolving roles of canonical WNT signaling in stem cells and tumorigenesis: implications in targeted cancer therapies. *Lab Invest*. 2016 Feb;96(2):116-36. doi: 10.1038/labinvest.2015.144.

Wang, Qiang Wei, Xin Wang, Shengli Tang, Hao Liu, Fugui Zhang, Maryam K Mohammed, Jiayi Huang, Dan Guo, Minpeng Lu, Feng Liu, Jianxiang Liu, Chao Ma, Xue

Hu, Rex C Haydon, Tong-Chuan He\*, and Hue H Luu\* (2016) Transition to resistance: An unexpected role of the EMT in cancer chemoresistance. *Genes & Diseases* 3(1): 3-6 (\*co-corresponding authors).

Deng Y, Wang Z, Zhang F, Qiao M, Yan Z, Wei Q, Wang J, Liu H, Fan J, Zou Y, Liao J, Hu X, Chen L, Yu X, Haydon RC, Luu HH, Qi H, He TC, Zhang J. A Blockade of IGF Signaling Sensitizes Human Ovarian Cancer Cells to the Anthelmintic Niclosamide-Induced Anti-Proliferative and Anticancer Activities. *Cell Physiol Biochem*. 2016; 39(3): 871-88. doi: 10.1159/000447797.

Deng Y, Zhang J, Wang Z, Yan Z, Qiao M, Ye J, Wei Q, Wang J, Wang X, Zhao L, Lu S, Tang S, Mohammed MK, Liu H, Fan J, Zhang F, Zou Y, Liao J, Qi H, Haydon RC, Luu HH, He TC, Tang L. Antibiotic monensin synergizes with EGFR inhibitors and oxaliplatin to suppress the proliferation of human ovarian cancer cells. *Sci Rep*. 2015 Dec 7;5:17523. doi: 10.1038/srep17523.

Green JD, Tollemar V, Dougherty M, Yan Z, Yin L, Ye J, Collier Z, Mohammed MK, Haydon RC, Luu HH, Kang R, Lee MJ, Ho SH, He TC, Shi LL, Athviraham A. Multifaceted signaling regulators of chondrogenesis: Implications in cartilage regeneration and tissue engineering. *Genes Dis*. 2015 Dec; 2(4): 307-327.

Shao C, Shen C, Lu E, Haydon RC, Luu HH, Athviraham A, He TC, Lee MJ. Damage control: Harnessing prostaglandin E2 as a potential healing factor of tissue injuries. *Genes Dis*. 2015 Dec;2(4):295-298.

Ren L, Mendoza A, Zhu J, Briggs JW, Halsey C, Hong ES, Burkett SS, Morrow J, Lizardo MM, Osborne T, Li SQ, Luu HH, Meltzer P, Khanna C. Characterization of the metastatic phenotype of a panel of established osteosarcoma cells. *Oncotarget*. 2015 Oct 6;6(30):29469-81. doi: 10.18632/oncotarget.5177.

Lamplot JD, Luther G, Mawdsley EL, Luu HH, Manning D. Modified Protocol Decreases Surgical Site Infections after Total Knee Arthroplasty. *J Knee Surg*. 2015 Oct;28(5):e1. doi: 10.1055/s-0035-1549102.

Lamplot JD, Luther G, Mawdsley EL, Luu HH, Manning D. Modified Protocol Decreases Surgical Site Infections after Total Knee Arthroplasty. *J Knee Surg*. 2015 Oct;28(5):395-403. doi: 10.1055/s-0035-1544974. Erratum in: *J Knee Surg*. 2015 Oct;28(5):e1.

Wang J, Wei Q, Ye J, Denduluri SK, Wang X, Mohammed MK, Luu HH, Haydon RC, He TC. Insider information: Testing cancer drug sensitivity for personalized therapy. *Genes Dis*. 2015 Sep;2(3):219-221.

Denduluri SK, Wang Z, Yan Z, Wang J, Wei Q, Mohammed MK, Haydon RC, Luu HH, He TC. Molecular pathogenesis and therapeutic strategies of human osteosarcoma. *J Biomed Res*. 2015 Aug 30;30. doi: 10.7555/JBR.29.20150075.

Zhang Q, Wang J, Deng F, Yan Z, Xia Y, Wang Z, Ye J, Deng Y, Zhang Z, Qiao M, Li R, Denduluri SK, Wei Q, Zhao L, Lu S, Wang X, Tang S, Liu H, Luu HH, Haydon RC, He TC, Jiang L. TqPCR: A Touchdown qPCR Assay with Significantly Improved Detection Sensitivity and Amplification Efficiency of SYBR Green qPCR. *PLoS One*. 2015 Jul 14;10(7):e0132666. doi: 10.1371/journal.pone.0132666.

Denduluri SK, Idowu O, Wang Z, Liao Z, Yan Z, Mohammed MK, Ye J, Wei Q, Wang J, Zhao L, Luu HH. Insulin-like growth factor (IGF) signaling in tumorigenesis and the development of cancer drug resistance. *Genes Dis*. 2015 Mar 1;2(1):13-25.

Chen X, Cui J, Yan Z, Zhang H, Chen X, Wang N, Shah P, Deng F, Zhao C, Geng N, Li M, Denduluri SK, Haydon RC, Luu HH, Reid RR, He TC. Sustained high level transgene expression in mammalian cells mediated by the optimized piggyBac transposon system. *Genes Dis*. 2015 Mar; 2(1): 96-105.

Zhang H, Wang J, Deng F, Huang E, Yan Z, Wang Z, Deng Y, Zhang Q, Zhang Z, Ye J, Qiao M, Li R, Wang J, Wei Q, Zhou G, Luu HH, Haydon RC, He TC, Deng F. Canonical Wnt signaling acts synergistically on BMP9-induced osteo/odontoblastic differentiation of stem cells of dental apical papilla (SCAPs). *Biomaterials*. 2015 Jan;39:145-54. doi: 10.1016/j.biomaterials.2014.11.007.

Li Y, Wagner ER, Yan Z, Wang Z, Luther G, Jiang W, Ye J, Wei Q, Wang J, Zhao L, Lu S, Wang X, Mohammed MK, Tang S, Liu H, Fan J, Zhang F, Zou Y, Song D, Liao J, Haydon RC, Luu HH, He TC. The Calcium-Binding Protein S100A6 Accelerates Human Osteosarcoma Growth by Promoting Cell Proliferation and Inhibiting Osteogenic Differentiation. *Cell Physiol Biochem*. 2015; 37(6): 2375-92. doi: 10.1159/000438591.

Lamplot JD, Liu B, Yin L, Zhang W, Wang Z, Luther G, Wagner E, Li R, Nan G, Shui W, Yan Z, Rames R, Deng F, Zhang H, Liao Z, Liu W, Zhang J, Zhang Z, Zhang Q, Ye J, Deng Y, Qiao M, Haydon RC, Luu HH, Angeles J, Shi LL, He TC, Ho SH. Reversibly Immortalized Mouse Articular Chondrocytes Acquire Long-Term Proliferative Capability While Retaining Chondrogenic Phenotype. *Cell Transplant*. 2015; 24(6):1053-66. doi: 10.3727/096368914X681054.

Liao Z, Nan G, Yan Z, Zeng L, Deng Y, Ye J, Zhang Z, Qiao M, Li R, Denduluri S, Wang J, Wei Q, Geng N, Zhao L, Lu S, Wang X, Zhou G, Luu HH, Haydon RC, He TC, Wang Z. The Anthelmintic Drug Niclosamide Inhibits the Proliferative Activity of Human Osteosarcoma Cells by Targeting Multiple Signal Pathways. *Curr Cancer Drug Targets*. 2015; 15(8):726-38.

#### Mass, Daniel

Malik T, Mass D, Cohn S. Postoperative Analgesia in a Prolonged Continuous Interscalene Block Versus Single-Shot Block in Outpatient Arthroscopic Rotator Cuff Repair: A Prospective Randomized Study. *Arthroscopy*. 2016 Apr 20. pii: S0749-8063(16)00074-8. doi: 10.1016/j.arthro.2016.01.044.

#### Mok, James

Weick JW, Kang H, Lee L, Kuether J, Liu X, Hansen EN, Kandemir U, Rollins MD, Mok JM. Direct Measurement of Tissue Oxygenation as a Method of Diagnosis of Acute Compartment Syndrome. *J Orthop Trauma*. 2016 Nov;30(11):585-591.

Mok JM, Martinez M, Smith HE, Sciubba DM, Passias PG, Schoenfeld A, Isaacs RE, Vaccaro AR, Radcliff KE; Association for Collaborative Spine Research Investigators. Impact of

a Bundled Payment System on Resource Utilization During Spine Surgery. *Int J Spine Surg*. 2016 May 16; 10: 19. doi: 10.14444/3019.

Eleswarapu AS, Divi SN, Dirschl DR, Mok JM, Stout C, Lee MJ. How Effective is Physical Therapy for Common Low Back Pain Diagnoses? A Multivariate Analysis of 4597 Patients. *Spine* (Phila Pa 1976). 2016 Aug 15;41(16):1325-9. doi: 10.1097/BRS.0000000000001506.

Molinales DM, Davis TT, Fung DA, Liu JC, Clark S, Daily D, Mok JM. Is the lateral jack-knife position responsible for cases of transient neurapraxia? *J Neurosurg Spine*. 2016 Jan; 24(1): 189-96. doi: 10.3171/2015.3.SPINE14928.

#### Oliveira, Leonardo Protasio Jorge De

Townsend J, Stout JR, Jajtner AR, Church DD, Oliveira LP, Beyer KB, Lamonica MB, Riffe JJ, Muddle TW, Wang R, Baker KB, Boone CH, Varanoske AN, Redd MJ, Fukuda DH, Hoffman JR. The Effects of Acute Resistance Exercise on Apoptotic Signaling in Untrained Males: 123 June 1, *Med Sci Sports Exerc*. 2016 May; 48 (5 Suppl 1): 15.

Townsend JR, Stout JR, Jajtner AR, Church DD, Beyer KS, Oliveira LP, La Monica MB, Riffe JJ, Muddle TW, Baker KM, Fukuda DH, Roberts MD, Hoffman JR. Resistance exercise increases intramuscular NF-kb signaling in untrained males. *Eur J Appl Physiol*. 2016 Aug 31. [Epub ahead of print] PubMed PMID: 27582262.

Wells AJ, Hoffman JR, Jajtner AR, Varanoske AN, Church DD, Gonzalez AM, Townsend JR, Boone CH, Baker KM, Beyer KS, Mangine GT, Oliveira LP, Fukuda DH, Stout JR. The Effect of Post-Resistance Exercise Amino Acids on Plasma MCP-1 and CCR2 Expression. *Nutrients*. 2016 Jul 2; 8(7).

Wells AJ, Hoffman JR, Jajtner AR, Varanoske AN, Church DD, Gonzalez AM, Townsend JR, Boone CH, Baker KM, Beyer KS, Mangine GT, Oliveira LP, Fukuda DH, Stout JR. Monocyte Recruitment Following High-intensity And High-volume Resistance Exercise: 1461 Board #114 June 2, 8:00 AM - 9:30 AM. *Med Sci Sports Exerc*. 2016 May; 48 (5 Suppl 1): 393-4.

Gonzalez A, Hoffman JR, Townsend JR, Jajtner AR, Boone CH, Beyer KS, Baker KM, Wells AJ, Mangine GT, Robinson EH 4th, Church DD, Oliveira LP, Fukuda DH, Stout JR. MAPK Signaling Following High Volume And High Intensity Resistance Exercise Protocols In Trained Men: 127 June 1, 11: 00 AM - 11: 15 AM. *Med Sci Sports Exerc*. 2016 May; 48 (5 Suppl 1): 17.

Gonzalez AM, Hoffman JR, Townsend JR, Jajtner AR, Boone CH, Beyer KS, Baker KM, Wells AJ, Mangine GT, Robinson EH 4th, Church DD, Oliveira LP, Fukuda DH, Stout JR. Intramuscular MAPK signaling following high volume and high intensity resistance exercise protocols in trained men. *Eur J Appl Physiol*. 2016 Sep; 116 (9): 1663-70.

Wells AJ, Hoffman JR, Jajtner AR, Varanoske AN, Church DD, Gonzalez AM, Townsend JR, Boone CH, Baker KM, Beyer KS, Mangine GT, Oliveira LP, Fukuda DH, Stout JR. Monocyte Recruitment after High-Intensity and High-Volume Resistance Exercise. *Med Sci Sports Exerc*. 2016 Jun; 48(6): 1169-78. doi: 10.1249/MSS.0000000000000878. PubMed PMID: 26784277.

Gonzalez AM, Hoffman JR, Jajtner AR, Townsend JR, Boone CH, Beyer KS, Baker KM, Wells AJ, Church DD, Mangine GT, Oliveira LP, Moon JR, Fukuda DH, Stout JR. Protein supplementation does not alter intramuscular anabolic signaling or endocrine response after resistance exercise in trained men. *Nutr Res*. 2015 Nov; 35 (11): 990-1000.

Townsend JR, Hoffman JR, Fragala MS, Oliveira LP, Jajtner AR, Fukuda DH, Stout JR. A Microbiopsy Method for Immunohistological and Morphological Analysis: A Pilot Study. *Med Sci Sports Exerc*. 2016 Feb; 48(2): 331-5.

Gonzalez AM, Hoffman JR, Townsend JR, Jajtner AR, Boone CH, Beyer KS, Baker KM, Wells AJ, Mangine GT, Robinson EH 4th, Church DD, Oliveira LP, Willoughby DS, Fukuda DH, Stout JR. Intramuscular anabolic signaling and endocrine response following high volume and high intensity resistance exercise protocols in trained men. *Physiol Rep*. 2015 Jul; 3(7).

Gonzalez AM, Hoffman JR, Wells AJ, Mangine GT, Townsend JR, Jajtner AR, Wang R, Miramonti AA, Pruna GJ, LaMonica MB, Bohner JD, Hoffman MW, Oliveira LP, Fukuda DH, Fragala MS, Stout JR. Effects of time-release caffeine containing supplement on metabolic rate, glycerol concentration and performance. *J Sports Sci Med*. 2015 May 8; 14(2): 322-32.

Gonzalez AM, Hoffman JR, Townsend JR, Jajtner AR, Wells AJ, Beyer KS, Willoughby DS, Oliveira LP, Fukuda DH, Fragala MS, Stout JR. Association between myosin heavy chain protein isoforms and intramuscular anabolic signaling following resistance exercise in trained men. *Physiol Rep*. 2015 Jan 27; 3(1).

Stout JR, Fragala MS, Hoffman JR, Robinson EH 4th, McCormack WP, Townsend JR, Jajtner AR, Emerson NS, Oliveira LP, Fukuda DH. C-terminal agrin fragment is inversely related to neuromuscular fatigue in older men. *Muscle Nerve*. 2015 Jan; 51(1): 132-3.

Fragala MS, Jajtner AR, Townsend JR, Gonzalez AM, Wells AJ, Oliveira LP, Hoffman JR, Stout JR, Fukuda DH. Leukocyte IGF-1 receptor expression during muscle recovery. *Med Sci Sports Exerc*. 2015 Jan; 47(1): 92-9.

#### Shi, Lewis

Shi LL, Cahill KE, Ek ET, Tompson JD, Higgins LD, Warner JJ. Latissimus Dorsi and Teres Major Transfer With Reverse Shoulder Arthroplasty Restores Active Motion and Reduces Pain for Posterosuperior Cuff Dysfunction. *Clin Orthop Relat Res*. 2015 Jul 3. DOI 10.1007/s11999-015-4433-4.

Yan Z, Yin L, Wang Z, Ye J, Zhang Z, Li R, Denduluri SK, Wang J, Wei Q, Zhao L, Lu S, Wang X, Tang S, Shi LL, Lee MJ, He TC, Deng ZL. A novel organ culture model of mouse intervertebral disc tissues. *Cells Tissues Organs*. Oct. 9, 2015. DOI: 10.1159/000439268.

Jiang JJ, Somogyi JR, Patel PB, Koh JL, Dirschl DR, Shi LL. Obesity is not associated with increased short-term complications after primary total shoulder arthroplasty. *Clin Orthop Relat Res*. Oct 9 2015.

Li R, Yan Z, Ye J, Huang H, Wang Z, Wei Q, Wang J, Zhao L, Lu S, Wang X, Tang S, Fan J, Zhang F, Zou Y, Song D, Shi LL, Athiviraham A, Lee MJ, He TC, Zhang Z. The Prodomain-Containing BMP9 Produced from a Stable Line Effectively Regulates the Differentiation of Mesenchymal Stem Cells. *International Journal of Medical Sciences*. 2016. Jan 1;13(1):8-18. doi: 10.7150/ijms.13333.

Denduluri SK, Scott B, Lamplot JD, Yin L, Yan Z, Wang Z, Ye J, Wang J, Wei Q, Mohammed MK, Haydon RC, Kang RW, He TC, Athiviraham A, Ho SH, Shi LL. Immortalized Mouse Achilles Tenocytes Demonstrate Long-Term Proliferative Capacity While Retaining Tenogenic Properties. *Tissue Eng Part C Methods*. 2016 Mar; 22(3): 280-9. doi: 10.1089/ten.tec.2015.0244.

Green JD, Tollemar V, Dougherty M, Yan Z, Yin L, Ye J, Collier Z, Mohammed MK, Haydon RC, Luu HH, Kang R, Lee MJ, Ho SH, He TC, Shi LL, Athiviraham A. Multifaceted signaling regulators of chondrogenesis: Implications in cartilage regeneration and tissue engineering. *Genes Dis*. 2015 Dec; 2(4): 307-327. Epub 2015 Nov 6.

Mohammed MK, Shao C, Wang J, Wei Q, Wang X, Collier Z, Tang S, Liu H, Zhang F, Huang J, Guo D, Lu M, Liu F, Liu J, Ma C, Shi LL, Athiviraham A, He TC, Lee MJ. Wnt/ $\beta$ -catenin signaling plays an ever-expanding role in stem cell self-renewal, tumorigenesis and cancer chemoresistance. *Genes & Diseases*. 2016. Mar;3(1):11-40. Epub 2016 Jan 14.

Zhang Q, Shi LL, Ravella KC, Koh JL, Wang S, Liu C, Li G, Wang J. Distinct geometric characteristics of Chinese Proximal Humeri and the Clinical Relevance. *J Bone Joint Surg Am*. Accepted July 2016.

#### **Toolan, Brian**

Jiang JJ, Schipper ON, Whyte N, Koh JL, Toolan BC. Comparison of perioperative complications and hospitalization outcomes after ankle arthrodesis versus total ankle arthroplasty from 2002 to 2011. *Foot Ankle Int*. 2015 Apr; 36(4): 360-8. doi: 10.1177/1071100714558511.

Schipper ON, Jiang JJ, Chen L, Koh J, Toolan BC. Effect of diabetes mellitus on perioperative complications and hospital outcomes after ankle arthrodesis and total ankle arthroplasty. *Foot Ankle Int*. 2015 Mar; 36(3): 258-67. doi: 10.1177/1071100714555569.

#### **Wolf, Jennifer Moriatis**

Webber T, Patel SP, Pensak MJ, Fajolu O, Rozental TD, Wolf JM. Correlation between radial cortical thickness and bone mineral density. *J Hand Surg*. 40(3): 493-499, 2015.

Wolf JM, Cannada LK, Lane JM, Sawyer AJ, Ladd AL. A comprehensive overview of osteoporotic fracture treatment. *Instr Course Lect* 64:25-36, 2015.

Dukas AG, Wolf JM. Management of complications of periarticular fractures of the distal interphalangeal, proximal interphalangeal, metacarpophalangeal, and carpometacarpal joints. *Hand Clin* 31(2): 179-192, 2015.

Wolf JM, Cannada L, Van Heest AE, O'Connor MI, Ladd AL. Male and female differences in musculoskeletal disease. *JAAOS* 23(6): 339-347, 2015.

Owens BD, Williams AE, Wolf JM. Risk factors for surgical complications in rotator cuff repair in a veteran population. *J Shoulder Elbow Surg* 24(11): 1707-12, 2015.

Rozental TD, Zurakowski D, Herder L, Whalley KC, Coyle K, Boussein M, Wolf JM. 25-Hydroxy-Vitamin D and bone turnover marker levels in patients with distal radius fractures. *J Bone Joint Surg Am*. 97(20): 1685-1693, 2015.

Owens BD, Wolf JM, Clifton K, Svoboda SJ, Cameron KL. The association between serum relaxin and subsequent shoulder instability. *Orthopedics*, e-pub ahead of print, 2016.

Rohde R, Wolf JM, Adam JE. Where are the women in orthopaedic surgery? *Clin Orthop Rel Res*. 474(9): 1950-6, 2016.



# PRESENTATIONS 2016

## Athiviraham, Aravind

ACL Reconstruction, Presentation at Athletico South Loop, IL, September 27, 2016

ACL Reconstruction, Presentation at ATI Orland Park, IL, June 30, 2016

ACL Reconstruction: Primary and Revision, Arthrex/MedWest Orthopedics, Chicago, IL, June 22, 2016

Pediatric Knee Sports Pathology, University of Chicago, Department of Orthopedic Surgery, Resident AM Conference, June 21, 2016

The Long Head of Biceps, China Orthopedics Association of Medical Association, Peking Union Medical College Hospital, Beijing, China, June 18, 2016

Shoulder Instability, China Orthopedics Association of Medical Association, Peking Union Medical College Hospital, Beijing, China, June 18, 2016

Degenerative Knee Problems, 22nd Annual Primary Care Orthopaedics Conference, June 8, 2016, Chicago, IL

Tendons and Tendinopathy, 22nd Annual Primary Care Orthopaedics Conference, June 8, 2016, Chicago, IL

Knee Exam workshop, 22nd Annual Primary Care Orthopaedics Conference, June 8, 2016, Chicago, IL

Knee Overuse Injuries, University of Chicago, Department of Orthopedic Surgery, Resident AM Conference, May 24, 2016

The Anterior Cruciate Ligament: Current Concepts. Athletico Orland Park, Chicago, IL, May 19, 2016

Cubicle to 5K Speaker, Common Knee and Shoulder Injuries, University of Chicago, May 4, 2016

Presentation for Students, West Side Health Authority Youth Department, Chicago, IL, April 20, 2016

Injuries in the Throwing Athlete, University of Chicago, Department of Orthopedic Surgery, Resident AM Conference, April 13, 2016

Associate Instructor, Arthroscopy Association of North America, Resident/Fellow Arthroscopy Course 402, February 4-7, 2016. Orthopedic Learning Center, Chicago, IL

Articular Cartilage, ACL, Rotator Cuff. Athletico University Grand Rounds Presentation. October 6, 2015. Athletico Hyde Park, Chicago, IL

Articular Cartilage, ACL, Rotator Cuff. University of Chicago Medicine Physical Therapy Grand Rounds Presentation. September 21, 2015. Chicago, IL

Associate Instructor, Arthroscopy Association of North America, Resident/Fellow Arthroscopy Course 403, May 14-17, 2015, Orthopedic Learning Center, Chicago, IL

University of Texas Medical Branch-Galveston, Orthopedic Grand Rounds: The Long Head of Biceps Tendon in the Setting of Rotator Cuff Tears, Galveston, TX, February 5, 2015

University of Chicago, Orthopedic Grand Rounds: The Long Head of Biceps Tendon in the Setting of Rotator Cuff Tears, Chicago, IL, January 28, 2015

## Balach, Tessa

White JR, Stoner J, Miller BJ, Balach T, Leddy L, MacDonald K, Rajani R, Spiguel AR, Avedian R, Greenberg D. The Influence of Diabetes, Obesity & Anatomic Location on the Development of Post-operative Wound Infections Following Soft Tissue Sarcoma Resection: A Multi-Institutional Study. Musculoskeletal Tumor Society / International Society of Limb Salvage Annual Meeting, Orlando, FL, October 2015

Hartford Hospital – Department of Medicine Grand Rounds, Current Approaches to Metastatic Bone Disease: An Orthopaedic Perspective, December 2015

Surgical Skills Training Throughout Residency. American Orthopaedic Association, Council of Residency Directors Annual Meeting, Providence, RI. June 2015

White JR, Stoner J, Avedian R, Leddy L, MacDonald K, Rajani R, Spiguel AR, Greenberg D, Balach T, Miller BJ. The Variability of Margin Definitions Used In the Clinical Treatment of Soft Tissue Sarcomas: A Multi-Institutional Study. Musculoskeletal Tumor Society / International Society of Limb Salvage Annual Meeting. Orlando, FL. October 2015

Michelle Ghert for the PARITY Investigators. Prophylactic Antibiotics Regimens in Tumor Surgery (PARITY): A pilot multi-center randomized controlled trial. Musculoskeletal Tumor Society / International Society of Limb Salvage Annual Meeting. Orlando, FL. October 2015

Kuchel, GA, Fragala MS, Zhou, X, Wu Q, Polkowski, G, Balach T, Kenny AM, Grady J. Frailty Phenotypie is Associated with Declines in Muscle Mass, Performance, Quality and Integrity, with Suggestion of Compensatory Hypertrophy. 4th International Conference on Frailty and Sarcopenia Research, Boston, MA. April 2015

## Bielski, Robert

Monthly series of lectures to the Pediatric Residents

Managing Fractures in Pediatric Trauma Patients CRASH: Injury and the Child Symposium, University of Chicago, Chicago, IL, May 15, 2015

## Birnie, Roderick

Faculty moderator for core curriculum series on Hand Surgery for Plastic Surgery Residents January/February 2015  
Doctors Demystify Cartilage, Ligaments and Fascia for OTs and PTs April 18th 2015 Upper Extremity Joint Stiffness

21st Annual Primary Care Orthopaedics Course, June 2015, Adult Elbow and Shoulder (non-sports related), Spotlight Lecture: Workplace Injuries: Worker Compensation and Occupational Medicine

Plastic Surgery Grand Rounds August 12th 2015, Acquired Finger Deformities

## Conti Mica, Megan Anne

Wagner E, Meislin M, Shin AY. A Comparison of Elbow Range of Motion Measurements: Smartphone Based Digital Photography versus Goniometric Measurements. ASSH Annual Meeting; 2015. Seattle, Washington

O'Shaughnessy M, Meislin M, Rizzo M. The Role of First Metacarpal Osteotomy in the Management of Basilar Thumb Arthritis. AAHS Annual Meeting; 2016. Scottsdale, Arizona

Meislin M, Moran S. Long Term Outcome after Treatment of Pediatric Lipofibromatous Hamartoma of the Median Nerve at the Wrist. ASPN Annual Meeting; 2016. Scottsdale, Arizona

Meislin M, Wagner E, Shin AY. A Comparison of Elbow Range of Motion Measurements: Smartphone Based Digital Photography versus Goniometric Measurements. AAHS Annual Meeting; 2016. Scottsdale, Arizona

Comparison of Elbow Range of Motion Measurements: Smartphone-Based Digital Photography Versus Goniometric Measurements. Chicago Society for Surgery of the Hand, January, 2016, Chicago, Illinois

## Dirschl, Douglas

Osteosynthesis and Trauma Care Annual Meeting, Verona, Italy

American Orthopaedic Association Resident Leadership Forum, Seattle, WA

American Orthopedic Association, "Own the Bone" Annual Symposium, Seattle, WA

## He, Tong-Chuan

Differentiation Defects and Tumorigenesis, The First International Genes & Diseases Symposium, Chongqing, China, April 9-10, 2015

Organoids: What can we do with them? The University of Chicago GI Research Conference, Chicago, IL, USA, May 7, 2015

How to make tumors of bone: when stem cell differentiation goes awry, The University of Chicago Comprehensive Cancer Center Translational Research Seminars, Chicago, IL, USA, April 8, 2016

Current understanding of osteosarcoma, Shandong Provincial Hospital Affiliated with Shandong University School of Medicine, Jinan, China, May 13, 2016

Toolkits for stem cell biologists, the Cardiovascular Sciences Training Program, Department of Medicine Section of Cardiology, The University of Chicago Medical Center, Chicago, IL, USA, May 27, 2016

From Bone Biology to Bone Tumorigenesis, OREF Board of Trustee Annual Meeting, Orthopaedic Research and Education Foundation, Rosemont, IL, USA, June 3, 2016

Noncoding RNAs, Stem Cell Differentiation, and Bone Tumorigenesis, 2016 International Symposium on Health and Development, hosted by the Children's Hospital of Chongqing Medical University, Chongqing, China, July 2, 2016

Missing links between stem cell differentiation and tumorigenesis, Department of Biomedical Sciences, the City University of Hong Kong, Hong Kong, China, September 29, 2016

Ginseng metabolites and gut microbiome, the Fifth International Conference on Modernization of Traditional Chinese Medicine, Chengdu, China, October 24, 2016

## Ho, Sherwin

Emergency Nurses Association Spring Symposium, Hip Arthroscopy & Common Hip Problems in Adults. Advanced Clinical Program, Lisle, IL, April 16-17, 2015

21st Annual Primary Care Orthopaedics, University of Chicago Annual Primary Care Orthopaedics Course, Common Adult Sports Shoulder Injuries, Course Director. Common Adult Sports Knee Injuries, Chicago, Illinois, June 16, 2015

## Hynes, Kelly

Canadian Orthopedic Association Annual Meeting: A Tice, K Hynes, K Zhao, K Goulding, H Abdelbary, S. Verma, J Werier. Case Study of A Regional Cancer Centre's Experience With Paraneoplastic Leukemoid Reaction in Sarcoma, June 2015

Dealing with the Consequences of Failed Hallux Valgus Surgery, University of British Columbia Orthopaedic Department Grand Rounds, Kelly Hynes and Alastair Younger, April 2016

Diagnostic accuracy of synovial biopsy for implant related shoulder infection. Quon J, Lapner P, Hynes K, Sheikh MA, 78th Canadian Association of Radiologist Annual Scientific Meeting, Montreal, Canada, May 2015

Synovial Biopsy: A New Diagnostic Test for the Diagnosis of Infection in Shoulder Arthroplasty. Sheikh MA, Quon J, Hynes K, Lapner P, University of Ottawa Radiology Research Day, June 2015

Synovial Biopsy: A Pilot Feasibility Study of a New Diagnostic Test for the Diagnosis of Infection in Shoulder Arthroplasty, Hynes, K., Lapner, P., Sheikh, A. Canadian Orthopedic Association Podium Presentation, June 2015

#### **Kang, Richard**

AAOS Fundamentals of Knee and Shoulder Arthroscopy for Orthopaedic Residents, Clinical Lab Faculty for September 18-20, 2015

AANA Resident/Fellow Course Fundamentals in Arthroscopy, Clinical Lab Faculty for February 4-7, 2016

Evaluation of Knee Pain. Current Concepts in Primary Care Sports Medicine, Chicago, IL, March 5-7, 2015

Knee Examination Workshop. Current Concepts in Primary Care Sports Medicine, Chicago, IL, March 5-7, 2015

Pros and Cons of Bracing for Athletes. Current Concepts in Primary Care Sports Medicine, Chicago, IL, March 5-7, 2015

Non-Arthritic Hip Problems. 21st Annual Primary Care Orthopaedics, Chicago, IL, June 15-17, 2015

Joint Injection Workshop. 21st Annual Primary Care Orthopaedics, Chicago, IL, June 15-17, 2015

Common Adult Sports Knee Injuries. 21st Annual Primary Care Orthopaedics, Chicago, IL, June 15-17, 2015

Workup and Management of Femoroacetabular Impingement, Orthopaedic Surgery Department Educational Conference, University of Chicago, Chicago, IL, February 1, 2016

Meniscus Basic Science, Orthopaedic Surgery Department Educational Conference, University of Chicago, Chicago, IL, February 3, 2016

Hip Pain in Athletes: A Practical Approach. Current Concepts in Primary Care Sports Medicine, Chicago, IL, March 3-5, 2016

Hip Examination Workshop. Current Concepts in Primary Care Sports Medicine, Chicago, IL, March 3-5, 2016

Joint Injection Workshop. 22nd Annual Primary Care Orthopaedics, Chicago, IL, June 7-9, 2016

Common Adult Sports Knee Injuries. 22nd Annual Primary Care Orthopaedics, Chicago, IL, June 7-9, 2016

Hip Examination Workshop. 22nd Annual Primary Care Orthopaedics, Chicago, IL, June 7-9, 2016

Non-Arthritic Hip Problems. 22nd Annual Primary Care Orthopaedics, Chicago, IL, June 7-9, 2016

#### **Lawler, Mary**

Introduction to Prosthetics and the Amputee, Resident Lecture Series, Schwab Rehabilitation Hospital  
Introduction to Physical Medicine and Rehabilitation, University of Chicago - Pritzker School of Medicine, Department of Surgery - Core Curriculum Series

Medical Comorbidities and Acute Stroke Rehabilitation, University of Chicago, Department of Neurology, Neurology resident lecture series

Geriatric Rehabilitation, University of Chicago, Department of Medicine, Section of Geriatrics and Palliative Medicine

"Rehabilitation after Lower Limb Amputation," The University of Chicago Department of Surgery, Section of Vascular Surgery

"Adult Onset Ataxia-Telangiectasia with Left Lower Leg Malignant Sarcoma Requiring Left Knee Disarticulation Amputation: A Case Report," Annual Assembly AAPMR Poster Presentation, Boston, MA

"Cord Compression Secondary to Spinal Epidural Lipomatosis in the Setting of Chronic Steroid Use: A Case Report," Annual Assembly AAPMR Poster Presentation, Boston, MA

"Methotrexate CNS Toxicity Improved with Dextromethorphan," Annual Assembly AAPMR Poster Presentation, Boston, MA

#### **Lee, Michael**

Weekly Spine conference at UCMC

Lumbar Spine Research Society Instructional Course Lecture Moderator 2016

AAOS Program Moderator 2016

Bone Grafting Options. Advancements in TLIF. Miami FL. Sept 16, 2016

Costo-transversectomy. Future Leaders Workshop: Spine Pre-Fellowship Bioskills Workshop. Raynham MA. July 22-24, 2016

The Influence of BMP9 on the Spinal Column. ABC Travelling Fellowship Host Site. University of Chicago Medical Center, Chicago IL. June 9, 2016

The Adult Cervical and Thoracic Spine. 22nd Annual Primary Care Orthopaedics: A review of basic and current concepts. Chicago IL. June 7, 2016

Principles of Cervical Spine Surgery. Introduction to Cervical Spine Approaches. Burr Ridge IL. June 4, 2016

Anterior Cervical Exposure: anatomy and decompression. Introduction to Cervical Spine Approaches. Burr Ridge IL. June 4, 2016

Robotic Spine Surgery. University of Chicago Medical Center Department of Radiology/ Division of Neuroradiology Guest Fellows Lecture. Chicago IL. May 27, 2016

AAOS Orthopaedic Oral Boards Review Course. Invited Faculty. Rosemont IL. May 13-14, 2016

Traditional Lumbar Decompression and Risk For Developing Post Surgical Instability. Lumbar Spine Research Society Instructional Course Lecture. April 15, 2016 Chicago IL

The Argument for TLIF. Lumbar Spine Research Society. April 14, 2016 Chicago IL

Low Back Pain and the Spine: When Surgery is Indicated. West Suburban Medical Center Internal Medicine Grand Rounds. April 6, 2016 Oak Park IL

Cervical Radiculopathy. AOSpine North America Principles and Treatments of Spinal Disorders for Residents Course. Oct 17, 2015. Las Vegas NV

Cervical Myelopathy. AOSpine North America Principles and Treatments of Spinal Disorders for Residents Course. Oct 17, 2015. Las Vegas NV

Degenerative Scoliosis. AOSpine North America Principles and Treatments of Spinal Disorders for Residents Course. Oct 16, 2015. Las Vegas NV

The Role of BMP9 in Regulating the Proliferation and Survival of the Intervertebral Nucleus Pulposus Cells. North American Spine Society. Oct 16, 2015. Chicago IL

The Influence of BMP9 Activity on the Spinal Column. AOA North American Travelling Fellowship Host Site. Oct 13, 2015. Chicago IL

Cervical Radiculopathy. AOSpine North America Principles and Treatments of Spinal Disorders for Residents Course. Aug 22, 2015. Las Vegas NV

Degenerative Scoliosis. AOSpine North America Principles and Treatments of Spinal Disorders for Residents Course. Aug 21, 2015. Las Vegas NV

Invited Faculty. University of Chicago CHeSS Research Proposal Development Workshop Summer Program in Outcomes Research Training (SPORT) for residents and junior faculty. July-Aug 2015

The Adult Cervical and Thoracic Spine. 21st Annual Primary Care Orthopaedics: A review of basic and current concepts. Chicago IL. June 15-17, 2015

MIS TLIF: Advantages and Limitations. Advanced Techniques in Less Invasive Spine Surgery. Seattle, WA. June 12, 2015

AAOS Orthopaedic Oral Boards Review Course. Rosemont IL. Invited Faculty. May 15-16, 2015

Low Back Pain and the Spine: When Surgery is Indicated. University of Chicago Department of Rheumatology Grand Rounds. April 21, 2015

MIS TLIF- Indications, Techniques and Outcomes. Lumbar Spine Research Society. Chicago IL. April 9, 2015

Low Back Pain and the Spine: When Surgery is Indicated. University of Chicago Department of Neurology Grand Rounds. February 26, 2015

Spondylolisthesis. University of Chicago Medical Center Department of Orthopaedic Surgery. Chicago IL March 10, 2016

Spinal Infections. University of Chicago Medical Center Department of Orthopaedic Surgery. Chicago IL Nov 19, 2015

Sports Injuries in the Cervical Spine. University of Chicago Medical Center Division of Sports Medicine. Nov 16, 2015

Cervical Myelopathy. University of Chicago Medical Center Department of Orthopaedic Surgery. Chicago IL Nov 6, 2016

Surgical Treatment Options for Low Back Pain. Athletic Physical Therapy Lecture. May 13, 2015. Chicago IL

MIS Deformity. University of Chicago Department of Orthopaedic Surgery. March 13, 2015 Chicago IL

Post Decompression Instability. University of Chicago Department of Orthopaedic Surgery. March 10, 2015 Chicago IL

Indirect Decompression. University of Chicago Department of Orthopaedic Surgery. March 10, 2015 Chicago IL

Cervical Radiculopathy and Myelopathy. Athletic Physical Therapy Lecture. February 9, 2015. Chicago IL

#### **Mass, Daniel**

Jiang JJ, Mass DP, Shi LL, Angeles JG. Septic Arthritis of Shoulder: A comparison of treatment methods. Poster. Mid-America Orthopaedic Association annual meeting. April 2015, Hilton Head Island, SC

Invited speaker: Hand Trauma for the Occupational Medicine physician. Central States Occupational and Environmental Medicine Association, 2015

Host & Instructor: Doctors Demystify - The University of Chicago, 2015

Instructor: Management of Acute Hand Injuries, 21st Annual Primary Care Orthopaedics Course, The University of Chicago, 2015

Host & Instructor: Doctors Demystify – The University of Chicago, 2016

#### **Oliveira, Leonardo Protasio Jorge De**

American Medical Society for Sports Medicine Annual Meeting Show Case Talk - Myth or Fact: Fish Oil Supplementation Facilitates Recovery Before and After Concussion, 5/2017

12th Annual Cutting Edge Concepts in Orthopaedics and Sports Medicine Common Running Injuries, 2/1016

Florida Medical Association Annual Meeting Concussion Update 7/2015

Florida Geriatric Society Annual Meeting Use of the Electronic Medical Record in Healthcare Quality – Focusing on Meaningful Use and PQRS, 7/2015

University of Central Florida Judo Summit Skin Infections in Grappling Sports, 6/2015

Florida Health Innovators Forum Health IT and Care Delivery – The Quality Transformation 3/2015

Adibnazari O, Oliveira LP, Johnson T, Fragala MS. Personal and Institutional Factors Affecting Physical Activity Participation in University Students. Abstract presented at the American College of Sports Medicine 62nd Annual Meeting. San Diego, California. Published in Medicine Science Sports & Exercise, May 2015

Jajtner AR, Hoffman J, Fragala M, Townsend JR, Gonzalez AM, Beyer K, Wells AJ, Boone CH, Wang R, Robinson EH, Mangine GT, Oliveira LP, Fukuda DH, Stout J. Increased Proportion Of Lymphocytes Expressing Androgen And Interferon-gamma Receptors Following High Volume Resistance. Abstract presented at the American College of Sports Medicine 62nd Annual Meeting. San Diego, California. Published in Medicine Science Sports & Exercise, May 2015



#### Shi, Lewis

Jiang J, Toor AS, Shi LL, Koh JL. Reverse Total Shoulder Arthroplasty Patients With A Proximal Humerus Fracture Have Significantly Worse Perioperative Outcomes Than Other Indications: An Analysis Of 5644 Cases. AAOS/ASES Specialty Day, March 2015. Las Vegas, NV

Delaney RA, Shi LL, Miller L, Higgins LD, Warner JJP. Outcome of total shoulder arthroplasty with posterior glenoid bone grafting. E-poster. ASES 2014 closed meeting

Hussain M, Hussain W, Hussaine H, Leland JM, Dirschl DR, Shi LL. Analyses Of 22,833 Orthopaedic Surgeons' Scores From 2 Major Physician-Rating Websites. Medicine 2.0: Social Media, Mobile Apps, and Internet/ Web 2.0 in Health, Medicine, and Biomedical Research. Poster. Maui, HI. Nov 2014

Shi LL, Mullen M, Freehill MT, Lin A, Warner JJP, Higgins LD. Long head of biceps subluxation as predictor for subscapularis tears. Podium. AAOS Annual meeting. March 2015. Las Vegas, NV

Delaney RA, Shi LL, Miller L, Higgins LD, Warner JJP. Outcome of total shoulder arthroplasty with posterior glenoid bone grafting. Podium. AAOS Annual meeting. March 2015. Las Vegas, NV

Stewart RJ, Jiang JJ, Pilonov HI, Koh JL, Dirschl DR, Shi LL. Complications after Shoulder Arthroscopy. Poster. AAOS Annual meeting. March 2015. Las Vegas, NV

Stewart C, Shi LL, Dirschl DR. Narcotic pain medication usage after operative vs nonoperative treatment of proximal humerus fractures. Podium. AAOS Annual meeting. March 2015. Las Vegas, NV

Somogyi J, Cohen J, Pilonov HI, Koh JL, Lafosse L, Shi LL. Treatment of shoulder instability. Scientific exhibit. AAOS Annual meeting. March 2015. Las Vegas, NV

Stewart C, Schipper O, Pilonov HI, Koh JL, Millett PJ, Shi LL. Glenohumeral osteoarthritis in young patients. Scientific exhibit. AAOS Annual meeting. March 2015. Las Vegas, NV

Stewart C, Shi LL, Dirschl DR. Narcotic pain medication usage after operative vs. nonoperative treatment of proximal humerus fractures. Podium. Mid-America Orthopaedic Association annual meeting. April 2015. Hilton Head Island, SC

Hussain M, Hussain W, Hussain H, Leland JM, Dirschl DR, Shi LL. Analyses of Distribution of 26,287 U.S. Orthopedic Surgeons Based on Population Density and Per Capita Income. Poster. Mid-America Orthopaedic Association annual meeting. April 2015. Hilton Head Island, SC

Hussain M, Hussain W, Hussain H, Leland JM, Dirschl DR, Shi LL. Analyses of 22,833 Orthopedic Surgeons' Scores from Two Major Physician-Rating Websites. Podium presentation. Mid-America Orthopaedic Association annual meeting. April 2015. Hilton Head Island, SC

Jiang JJ, Mass DP, Shi LL, Angeles JG. Septic Arthritis of Shoulder: A comparison of treatment methods. Poster. Mid-America Orthopaedic Association annual meeting. April 2015. Hilton Head Island, SC

Jiang JJ, Toor AS, Shi LL, Koh JL. Reverse Total Shoulder Arthroplasty Patients with a Proximal Humerus Fracture Have Worse Perioperative Outcomes: An Analysis of 5,644 Cases. Poster. Mid-America Orthopaedic Association annual meeting. April 2015. Hilton Head Island, SC

Jiang JJ, Patel P, Koh JL, Dirschl DR, Shi LL. The Impact of BMI on Short-Term Complications Following Total Shoulder Arthroplasty. Podium presentation. Mid-America Orthopaedic Association annual meeting. April 2015. Hilton Head Island, SC

Jiang JJ, Toor AS, Shi LL, Koh JL. Patients Undergoing Total Elbow Arthroplasty for Elbow Fracture Have Higher Perioperative Complications: A Nationwide Analysis of 3,797 Cases. Podium presentation. Mid-America Orthopaedic Association annual meeting. April 2015. Hilton Head Island, SC

Pilonov HI, Jiang JJ, Differding P, Koh JL, Shi LL. Patient Outcome Scores after Shoulder Surgeries: A Prospective Longitudinal Study. Closed American shoulder and elbow surgeons meeting. E-poster. Asheville, NC. October 2015

Jiang JJ, Landy D, Pilonov HI, Shi LL, Koh JL. Trends in TEA and ORIF for distal humerus fracture in the US 2002 to 2011. Podium presentation. AAOS Annual meeting. Orlando, FL. March 2016

Borque K, Pipinov HI, Olumuyiwa I, Koh JL, Shi LL. The Majority of Shoulder MRIs Ordered by Non-Orthopaedic providers do not meet national guidelines: a single institution study. Podium presentation. AAOS Annual meeting. Orlando, FL. March 2016

Hussain M, Hussain W, Hussaine H, Dirschl DR, Shi LL. Analyses Of 22,833 Orthopaedic Surgeons' Scores From 2 Major Physician-Rating Websites. Podium presentation. AAOS Annual meeting. Orlando, FL. March 2016

Bawa H, Divi S, Koh JL, Sperling JW, Shi LL. Presentation, Diagnosis, and Treatment of Postoperative Shoulder Infection. Scientific Exhibit. AAOS Annual meeting. Orlando, FL. March 2016

Chakour KS, Somogyi J, Cohen JB, Jackson S, Koh JL, Warner JJ, Shi LL. Evidenced based approach to rotator cuff rehabilitation after repair. Scientific Exhibit. AAOS Annual meeting. Orlando, FL. March 2016

Stewart RJ, Borque KA, Ek ET, Koh JL, Shi LL. Muscle Changes Following Rotator Pathology – Implications for Treatment. Scientific Exhibit. AAOS Annual meeting. Orlando, FL. March 2016

Mosenthal, W, Borque K, Stewart C, Ek ET, Koh JL, Shi LL. Massive rotator cuff tears in young patients: What is the state of the art? Scientific Exhibit. AAOS Annual meeting. Orlando, FL. March 2016

Jiang JJ, Landy D, Pilonov HI, Shi LL, Koh JL. Trends in TEA and ORIF for distal humerus fracture in the US 2002 to 2011. Poster. Mid-America Orthopaedic Association meeting. Bonita Springs, FL. April 2016

Jiang JJ, Landy D, Pilonov HI, Shi LL, Koh JL. Perioperative Complications following Total Elbow Arthroplasty and Open Reduction and Internal Fixation for Distal Humerus Fractures in Patients over 65 years old: A Nationwide Analysis. Podium presentation. Mid-America Orthopaedic Association meeting. Bonita Springs, FL. April 2016

"History of Shoulder Arthroplasty"; Taipei Medical University Hospital, Taipei, Taiwan, 1/27/16

"Reverse Shoulder Arthroplasty: Expanding Indications and Complications;" Taipei Medical University Hospital, Taipei, Taiwan, 1/27/16

#### Thornton, Lisa

"Crash: Injury and the Child: Rehabilitation of Concussion," University of Chicago Comer Children's Hospital, May 15, 2015

"Acute Paraplegia secondary to Spinal Epidural Lipomatosis in a Child with Obesity: A Case Report." Kremm, L., Thornton, L. AAPM&R National Conference. Presented in New Orleans, LA in October 2016

#### Toolan, Brian

Moderator, Scientific Session: Foot & Ankle II, American Academy of Orthopaedic Surgeons Annual Meeting, Las Vegas, NV, 2015

Plenary Lecture, Symposium IV: Case Reviews of Controversies in Foot and Ankle Surgery: Arthrodesis of the Syndesmosis: A Successful Salvage of Diastasis. Annual Winter Meeting of the American Orthopaedic Foot & Ankle Society, Las Vegas, NV, 2015

Moderator, Scientific Session: Gastrocs and Midfeet, Annual Meeting of the American Orthopaedic Foot & Ankle Society, Long Beach, CA, 2015

Invited Speaker, "Chronic Syndesmosis Instability" Michigan Foot and Ankle Course. Department of Orthopaedic Surgery, University of Michigan, Ann Arbor, MI, 2015

Invited Speaker, "Instructional Course 23: The Art of Teaching Orthopaedic Surgery: The Current State of Teaching Strategies." Annual Meeting of the American Academy of Orthopaedic Surgeons, Orlando, FL, 2016

Invited Speaker, "The Lapidus Procedure," 2016 Combined MAOA & ICJR Pre- Course, The Foot & Ankle; Current Concepts on Reconstruction, Sports and Trauma, Mid-America Orthopaedic Association and the International Congress of Joint Reconstruction, Bonita Springs, FL, 2016

Invited Speaker, "Syndesmosis, Acute and Chronic Instability," 2016 Combined MAOA & ICJR Pre-Course, The Foot & Ankle; Current Concepts on Reconstruction, Sports and Trauma, Mid-America Orthopaedic Association and the International Congress of Joint Reconstruction, Bonita Springs, FL, 2016

#### Wolf, Jennifer Moriatis

Owning Osteoporosis Care in Your Practice. Instructional Course Lecture, American Academy of Orthopaedic Surgeons Annual Meeting, New Orleans, LA, February 2015

Hand and Wrist Injuries in Gymnasts. Italian Society for Surgery of the Hand. Viterbo, Italy. October 8-10, 2015

Quality Is in the Eye of the Beholder: What's Measured, What Matters, and How Do We Reconcile This? Symposium, American Academy of Orthopaedic Surgeons Annual Meeting, March 10, 2016, Orlando, Florida

Ulnar Collateral and Radial Collateral Ligament Repair and Reconstruction. AAOS Complex Wrist and Hand Trauma Course, April 15, 2016, Rosemont, Illinois

Radial Tunnel Syndrome. AAOS Complex Wrist and Hand Trauma Course, April 15, 2016, Rosemont, Illinois

Webber T, Patel SP, Pensak M, Fajolu O, Rozental TD, Wolf JM. Correlation between distal radius cortical thickness and bone mineral density. Hand Wrist Biomechanics International Meeting, Milan, Italy, June 16, 2015

Rohde RS, Wolf JM, Adams JE. Where are the Women in Orthopaedic Surgery? Special Interest Poster, American Orthopaedic Association Annual Meeting, Providence, Rhode Island, June 24-27, 2015

Rozental TD, Walley K, Herder L, Coyle K, Bouxsein M, Wolf JM. 25-Hydroxy-Vitamin D and bone turnover marker levels in patients with distal radius fractures. American Society for Surgery of the Hand Annual Meeting, Seattle, Washington. September 8-12, 2015

Rohde RS, Wolf JM, Adams JE. Where are the Women in Orthopaedic Surgery? American Academy of Orthopaedic Surgeons Annual Meeting, March 2-4, 2016

Marchese J, Coyle K, Cote M, Wolf JM. Prospective evaluation of single corticosteroid injection on outcomes in patients with radial tunnel syndrome. Joint Australian and American Society for Surgery of the Hand Meeting, Sydney, Australia. March 31, 2016

Common Issues in Hand Surgery: Grand Rounds. Department of Medicine Grand Rounds, University of Connecticut Health Center, April 16, 2015

Lateral Epicondylitis in 2015. New England Orthopaedic Society, May 29, 2015, Rockport, Maine

Unusual Compressive Neuropathies: Hartford Hand Surgery Fellowship Conference, Hartford Hospital. March 10, 2016, Hartford, Connecticut

## 2016-2017 ORTHOPAEDIC RESIDENCY PROGRAM

PGY5



*Harpreet Bawa, MD*



*Kyle Borque, MD*



*Pranay Patel, MD*



*Anna Cohen-Rosenblum, MD*



*Robert Stewart, MD*

PGY4



*Kenneth Chakour, MD*



*Srikanth Divi, MD*



*Patrick Leung, MD*



*Jonathan Twu, MD*



*Noelle Whyte, MD*

PGY3



*Blake Burkert, MD*



*Ravand Khazai, MD*



*David Landy, MD*



*Michael Perrone, MD*



*Paul Shultz, MD*

PGY2



*Robert Avino, MD*



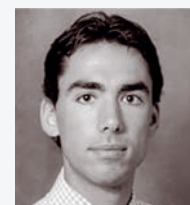
*Daniel Curtis, MD*



*Jonathan Edgington, MD*



*Connor King, MD*



*William Mosenhal, MD*

PGY1



*Jason Dickherber, MD*



*Manoj Reddy, MD*



*Bradley Saitta, MD*



*Bryan Scott, MD*



*J. Ben St. Clair, MD, PhD*



DESIGN: WORDS&PICTURES, INC.



THE UNIVERSITY OF  
CHICAGO