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 will 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 “processed with a ‘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 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
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.
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 is a fellowship-trained orthopedic surgeon who specializes in non-invasive (arthroscopic) and microvascular techniques. He is skilled in the surgical removal of tumors of the upper extremity, partnering with orthopaedic oncologists to achieve the best possible outcomes.

Megan Conti Mica, MD
Megan Conti Mica, MD, specializes in the management of traumatic and post-traumatic reconstructions, as well as treatment of congenital, paralytic, arthritic, infectious, and traumatic conditions affecting the upper extremity and brachial plexus. Additionally, she has advanced training in microsurgical (arthroscopic and microvascular) techniques.

Hand + Wrist Team

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 Montafo Wolf, MD, is a renowned hand surgeon with expertise in the surgical and non-surgical treatment of bone, nerve, tendon, and joint injuries caused by trauma or overuse. She provides comprehensive care to treat hand and wrist pain and function. 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.

Foot + Ankle Team

Douglas R. Dirschl, MD
Douglas R. Dirschl, MD, specializes in non-operative general orthopaedics. He sees patients with a variety of orthopaedic conditions, including those with musculoskeletal problems of the upper extremities. He is also interested in the treatment of patients with traumatic and birth-related brachial plexus palsy, traumatic nerve injuries, and compression neuropathies.

Brian C. Toolan, MD
Brian C. Toolan, MD, is an orthopedic surgeon who is fellowship-trained in adult foot and ankle surgery. He specializes in the diagnosis and treatment of patients with both upper and lower extremity conditions. He provides compassionate care to treat pain and restore function for a broad range of common and complex foot and ankle disorders.

Sherwin S.W. Ho, MD
Sherwin S.W. Ho, MD, specializes in minimally invasive arthroscopic procedures of the shoulder, elbow, hip, knee, and ankle.

Kelly Sterna, MD
Dr. Sterna is an orthopedic surgeon who is fellowship-trained in adult foot and ankle surgery. She provides comprehensive care to treat pain and restore function for a broad range of common and complex foot and ankle disorders.

Hand + Wrist Team

Jovito Angeles, MD
Jovito Angeles, MD, is an expert in the surgical treatment of adults and children with arthritis and related upper extremity 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 palsy, traumatic nerve injuries, and compression neuropathies.

Hand + Wrist Team

Jennifer Wolf, MD
Jennifer Montafo Wolf, MD, is a renowned hand surgeon with expertise in the surgical and non-surgical treatment of bone, nerve, tendon, and joint injuries caused by trauma or overuse. She provides comprehensive care to treat hand and wrist pain and function. 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.

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 Montafo Wolf, MD, is a renowned hand surgeon with expertise in the surgical and non-surgical treatment of bone, nerve, tendon, and joint injuries caused by trauma or overuse. She provides comprehensive care to treat hand and wrist pain and function. 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.

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 dysfunction and to restore strength, motion, 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.

Foot + Ankle Team

Douglas R. Dirschl, MD
Douglas R. Dirschl, MD, specializes in non-operative general orthopaedics. He sees patients with a variety of orthopaedic conditions, including those with musculoskeletal problems of the upper extremities. He is also interested in the treatment of patients with traumatic and birth-related brachial plexus palsy, traumatic nerve injuries, and compression neuropathies.

Brian C. Toolan, MD
Brian C. Toolan, MD, is an orthopedic surgeon who is fellowship-trained in adult foot and ankle surgery. He specializes in the diagnosis and treatment of patients with both upper and lower extremity conditions. He provides compassionate care to treat pain and restore function for a broad range of common and complex foot and ankle disorders.

Sherwin S.W. Ho, MD
Sherwin S.W. Ho, MD, specializes in minimally invasive arthroscopic procedures of the shoulder, elbow, hip, knee, and ankle.

Kelly Sterna, MD
Dr. Sterna is an orthopedic surgeon who is fellowship-trained in adult foot and ankle surgery. She provides comprehensive care to treat pain and restore function for a broad range of common and complex foot and ankle disorders.

Hand + Wrist Team

Jovito Angeles, MD
Jovito Angeles, MD, is an expert in the surgical treatment of adults and children with arthritis and related upper extremity 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 palsy, traumatic nerve injuries, and compression neuropathies.

Hand + Wrist Team

Jennifer Wolf, MD
Jennifer Montafo Wolf, MD, is a renowned hand surgeon with expertise in the surgical and non-surgical treatment of bone, nerve, tendon, and joint injuries caused by trauma or overuse. She provides comprehensive care to treat hand and wrist pain and function. 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.

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 Montafo Wolf, MD, is a renowned hand surgeon with expertise in the surgical and non-surgical treatment of bone, nerve, tendon, and joint injuries caused by trauma or overuse. She provides comprehensive care to treat hand and wrist pain and function. 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.

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 Montafo Wolf, MD, is a renowned hand surgeon with expertise in the surgical and non-surgical treatment of bone, nerve, tendon, and joint injuries caused by trauma or overuse. She provides comprehensive care to treat hand and wrist pain and function. 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.

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 Montafo Wolf, MD, is a renowned hand surgeon with expertise in the surgical and non-surgical treatment of bone, nerve, tendon, and joint injuries caused by trauma or overuse. She provides comprehensive care to treat hand and wrist pain and function. 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.

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 Montafo Wolf, MD, is a renowned hand surgeon with expertise in the surgical and non-surgical treatment of bone, nerve, tendon, and joint injuries caused by trauma or overuse. She provides comprehensive care to treat hand and wrist pain and function. 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.
The orthopaedic specialist at the University of Chicago Medicine offers comprehensive care—non-operative, arthroscopic and joint replacement—for patients with hip pain, instability or disability. Few orthopaedists talk about the potential for joint replacement in a given patient. 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 fractures and diseases of the bones, joints and muscles. He is skilled in performing 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
As an orthopaedic oncologist, Tessa Balach, MD, provides comprehensive care for bone and soft tissue tumors. She treats adult and pediatric bone and soft tissue tumors, including malignant and benign tumors. She also specializes in the surgical care of bone and soft tissue tumors, including limb salvage and reconstructive surgery of the upper and lower extremities.

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

Rex Haydon, MD, PhD
Rex Haydon, MD, PhD, focuses on the surgical care of bone and soft tissue tumors. He specializes in the surgical care of bone and soft tissue tumors, including malignant and benign tumors. He also specializes in joint replacement procedures for patients with common and rare bone and soft tissue tumors. He also provides surgical care for malignant bone disease, often stabilizing weak bones to prevent fractures associated with breast, lung, prostate or kidney metastases.

Richard W. Kang, MD, MS
Richard W. Kang, MD, MS, is an orthopaedic surgeon, specializing in minimally invasive and arthroscopic hip, hip and knee procedures. He has served as faculty on numerous advanced arthroscopic shoulder and elbow courses for the American Academy of Orthopaedic Surgeons.

Hue H. Luu, MD
Dr. Hue Luu, MD specializes in joint replacement procedures, 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, strategies in total joint replacement procedures, and advancements in gene therapy. He has accepted career development awards from both the Orthopaedic Research and Education Foundation and the National Institutes of Health. Additionally, Dr. Luu’s research has been supported by the MusculoSkeletal Tumor Foundation.

Tessa Balach, MD
As an orthopaedic oncologist, Tessa Balach, MD, provides comprehensive surgical care for bone and soft tissue tumors. She treats adult and pediatric bone and soft tissue tumors, including malignant and benign tumors. She specializes in the surgical care of bone and soft tissue tumors, including limb salvage and reconstructive surgery of the upper and lower extremities.

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 provides surgical care for malignant bone disease, often stabilizing weak bones to prevent fractures associated with breast, lung, prostate or kidney metastases.

Richard W. Kang, MD, MS
Richard W. Kang, MD, MS, is an orthopaedic surgeon, specializing in minimally invasive and arthroscopic hip, hip and knee procedures. He has served as faculty on numerous advanced arthroscopic shoulder and elbow courses for the American Academy of Orthopaedic Surgeons.

Hue H. Luu, MD
Dr. Hue Luu, MD specializes in joint replacement procedures, 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, strategies in total joint replacement procedures, and advancements in gene therapy. He has accepted career development awards from both the Orthopaedic Research and Education Foundation and the National Institutes of Health. Additionally, Dr. Luu’s research has been supported by the MusculoSkeletal Tumor Foundation.

Tessa Balach, MD
As an orthopaedic oncologist, Tessa Balach, MD, provides comprehensive surgical care for bone and soft tissue tumors. She treats adult and pediatric bone and soft tissue tumors, including malignant and benign tumors. She specializes in the surgical care of bone and soft tissue tumors, including limb salvage and reconstructive surgery of the upper and lower extremities.

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 provides surgical care for malignant bone disease, often stabilizing weak bones to prevent fractures associated with breast, lung, prostate or kidney metastases.

Richard W. Kang, MD, MS
Richard W. Kang, MD, MS, is an orthopaedic surgeon, specializing in minimally invasive and arthroscopic hip, hip and knee procedures. He has served as faculty on numerous advanced arthroscopic shoulder and elbow courses for the American Academy of Orthopaedic Surgeons.

Hue H. Luu, MD
Dr. Hue Luu, MD specializes in joint replacement procedures, 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, strategies in total joint replacement procedures, and advancements in gene therapy. He has accepted career development awards from both the Orthopaedic Research and Education Foundation and the National Institutes of Health. Additionally, Dr. Luu’s research has been supported by the MusculoSkeletal Tumor Foundation.

Tessa Balach, MD
As an orthopaedic oncologist, Tessa Balach, MD, provides comprehensive surgical care for bone and soft tissue tumors. She treats adult and pediatric bone and soft tissue tumors, including malignant and benign tumors. She specializes in the surgical care of bone and soft tissue tumors, including limb salvage and reconstructive surgery of the upper and lower extremities.

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 provides surgical care for malignant bone disease, often stabilizing weak bones to prevent fractures associated with breast, lung, prostate or kidney metastases.
The shoulder and elbow specialists at University of Chicago Medicine offer the complete range of non-surgical, minimally invasive and arthroscopic procedures for the treatment 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.

**Shoulder + Elbow Team**

**Aravind Athiviraham, MD**
A specialist in sports medicine. Aravind Athiviraham, MD, treats patients with a variety of orthopaedic issues, including both upper and lower extremity conditions.

**Daniel P. Mass, MD**
Dr. Mass is a highly regarded expert in 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.

**Sherwin S.W. Ho, MD**
A specialist in sports medicine, specializing in minimally invasive arthroscopic procedures of the shoulder, elbow, hip, knee and ankles. He has served as faculty at numerous advanced arthroscopic shoulder and elbow courses for the American Academy of Orthopaedic Surgeons.

**Roderick Birnie, MD**
A specialist in general orthopaedics. He sees patients with a variety of orthopaedic issues, including both upper and lower extremity conditions.

**Lewis L. Shi, MD**
Lewis L. 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 disorder. 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.

**Megan Conti Mica, MD**
Megan Conti Mica, MD, is a highly regarded expert in sports medicine, specializing in minimally invasive arthroscopic procedures of the shoulder, elbow, hip, knee and ankles. She has served as faculty at numerous advanced arthroscopic shoulder and elbow courses for the American Academy of Orthopaedic Surgeons.

**Roderick Birnie, MD**
A specialist in general orthopaedics. He sees patients with a variety of orthopaedic issues, including both upper and lower extremity conditions.

**Lewis L. Shi, MD**
Lewis L. 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 disorder. 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.

**Megan Conti Mica, MD**
Megan Conti Mica, MD, is a highly regarded expert in sports medicine, specializing in minimally invasive arthroscopic procedures of the shoulder, elbow, hip, knee and ankles. She has served as faculty at numerous advanced arthroscopic shoulder and elbow courses for the American Academy of Orthopaedic Surgeons.

**Roderick Birnie, MD**
A specialist in general orthopaedics. He sees patients with a variety of orthopaedic issues, including both upper and lower extremity conditions.

**Lewis L. Shi, MD**
Lewis L. 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 disorder. 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.

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 improving 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**
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 laminectomy syndrome and to enhance further spine surgical techniques. He recently has focused efforts on creating models to predict the likelihood of complications 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**
A board-certified orthopaedic spine 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 spondylosis 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.

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 improving 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**
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 laminectomy syndrome and to enhance further spine surgical techniques. He recently has focused efforts on creating models to predict the likelihood of complications 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**
A board-certified orthopaedic spine 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 spondylosis 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.

**James Mok, MD**
A board-certified orthopaedic spine 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 spondylosis 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

The orthopaedic surgeons at the University of Chicago Medicine offer state-of-the-art sports medicine for all ages and skill levels—from young competitive to weekend athletes. We offer nonsurgical, 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)
- Elbow injuries, such as golfer’s elbow and tennis elbow, ulnar collateral ligament injuries (Tommy John surgery)
- Ankle problems, including sprains and strains
- Arthritis, bursitis and tendinitis

Aravind Athiviraham, MD
- Dr. Athiviraham is a board-certified specialist in orthopaedic 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 in the knee and shoulder. He currently serves on the education committee of the American Orthopaedic Society for Sports Medicine (AOSSM) and is an Associate Instructor at numerous courses at the Orthopaedic Learning Center. He is currently the Head Team Physician for the Outland High School Panthers and is an Associate Team Physician for Concordia University. Dr. Athiviraham’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 lower cartilage reconstruction, shoulder labral tear, and elbow ulnar collateral ligament reconstruction (Tommy John surgery).

Anand A. Khanna, MD
- Dr. Khanna is an orthopaedic sports medicine specialist who is trained in the areas of sports medicine, knee and shoulder injuries. He has expertise in the treatment of cartilage lesions of the hip, knee and shoulder. By utilizing modern techniques, he preserves the natural joint. Dr. Khanna’s goal is to delay or prevent the onset of arthritis and the need for a joint replacement. Dr. Khanna is well educated towards alleviating pain and restoring patients’ quality of life.

Leonard Oliveira, MD
- Dr. Oliveira specializes in non-surgical and minimally invasive procedures of the shoulder, elbow, hip, knee and ankle. He has expertise in the treatment of cartilage lesions of the hip, knee and shoulder.

Holly J. Benjamin, MD
- Dr. Holly Benjamin is a specialist in sports medicine and cares for patients with athletic and overuse injuries of the knee, shoulder and elbow. She has been regionally and nationally recognized for expertise in minimally invasive and arthroscopic procedures in a variety of joint types, including athletic injuries in young and young patients. She routinely does offices consults discussing sport safety and play guideline following an injury. Dr. Benjamin sees patients to discuss sport “readiness” for activities such as weightlifting and “return to play” for bilateral total knee replacement (Tommy John) surgery.

Kang, MD
- Dr. Kang is a board-certified specialist in orthopaedic sports medicine with expertise in the treatment of cartilage lesions of the hip, knee and shoulder. He specializes in the diagnosis and management of adult and pediatric hip conditions, including labral tears and femoral acetabular impingement. He has expertise in the treatment of cartilage lesions of the hip, knee and shoulder. By utilizing modern techniques, he preserves the natural joint. Dr. Kang’s goal is to delay or prevent the onset of arthritis and the need for a joint replacement. Dr. Kang is well educated towards alleviating pain and restoring patients’ quality of life.

Kang, MD
- Dr. Kang is a board-certified specialist in orthopaedic sports medicine with expertise in the treatment of cartilage lesions of the hip, knee and shoulder. He specializes in the diagnosis and management of adult and pediatric hip conditions, including labral tears and femoral acetabular impingement. He has expertise in the treatment of cartilage lesions of the hip, knee and shoulder. By utilizing modern techniques, he preserves the natural joint. Dr. Kang’s goal is to delay or prevent the onset of arthritis and the need for a joint replacement. Dr. Kang is well educated towards alleviating pain and restoring patients’ quality of life.

Holly J. Benjamin, MD
- Dr. Benjamin is a specialist in sports medicine and cares for patients with athletic and overuse injuries of the knee, shoulder and elbow. She has been regionally and nationally recognized for expertise in minimally invasive and arthroscopic procedures in a variety of joint types, including athletic injuries in young and young patients. She routinely does offices consults discussing sport safety and play guideline following an injury. Dr. Benjamin sees patients to discuss sport “readiness” for activities such as weightlifting and “return to play” for bilateral total knee replacement (Tommy John) surgery.

Holly J. Benjamin, MD
- Dr. Benjamin is a specialist in sports medicine and cares for patients with athletic and overuse injuries of the knee, shoulder and elbow. She has been regionally and nationally recognized for expertise in minimally invasive and arthroscopic procedures in a variety of joint types, including athletic injuries in young and young patients. She routinely does offices consults discussing sport safety and play guideline following an injury. Dr. Benjamin sees patients to discuss sport “readiness” for activities such as weightlifting and “return to play” for bilateral total knee replacement (Tommy John) surgery.

Holly J. Benjamin, MD
- Dr. Benjamin is a specialist in sports medicine and cares for patients with athletic and overuse injuries of the knee, shoulder and elbow. She has been regionally and nationally recognized for expertise in minimally invasive and arthroscopic procedures in a variety of joint types, including athletic injuries in young and young patients. She routinely does offices consults discussing sport safety and play guideline following an injury. Dr. Benjamin sees patients to discuss sport “readiness” for activities such as weightlifting and “return to play” for bilateral total knee replacement (Tommy John) surgery.

Holly J. Benjamin, MD
- Dr. Benjamin is a specialist in sports medicine and cares for patients with athletic and overuse injuries of the knee, shoulder and elbow. She has been regionally and nationally recognized for expertise in minimally invasive and arthroscopic procedures in a variety of joint types, including athletic injuries in young and young patients. She routinely does offices consults discussing sport safety and play guideline following an injury. Dr. Benjamin sees patients to discuss sport “readiness” for activities such as weightlifting and “return to play” for bilateral total knee replacement (Tommy John) surgery.

Dr. Benjamin is a specialist in sports medicine and cares for patients with athletic and overuse injuries of the knee, shoulder and elbow. She has been regionally and nationally recognized for expertise in minimally invasive and arthroscopic procedures in a variety of joint types, including athletic injuries in young and young patients. She routinely does offices consults discussing sport safety and play guideline following an injury. Dr. Benjamin sees patients to discuss sport “readiness” for activities such as weightlifting and “return to play” for bilateral total knee replacement (Tommy John) surgery.
JENNIFER WOLF, MD
Professor of Orthopaedic Surgery

Jennifer Morabito 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.

CLINICAL INTERESTS
- Orthopaedic hand surgery
- Tennis elbow (lateral epicondylitis)
- Thumb basilar arthritis
- Nerve compression
- Wrist arthritis

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 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 fracture associated with breast, lung, prostate or kidney metastases. Additionally, Dr. Balach specializes in joint replacement surgery, with particular expertise in hip and knee replacement. As an active researcher, she currently leads and contributes to clinical studies designed to advance the comprehensive treatment and management of osteosarcoma and Ewing sarcoma.

CLINICAL INTERESTS
- Orthopaedic oncology
- Joint replacement surgery
- Pediatric bone and soft tissue sarcomas
- Bone and soft tissue infection
- Metastatic bone and soft tissue tumors
- Arthritis
- Hip replacement
- Joint replacement

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. With a particular interest in tendon healing and arthritis, Dr. Oliveira’s goal is to help each patient perform at the highest possible level. 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 Cleveland University Chicago. He also provides care for runners, during races, such as the Chicago and Cleveland marathons.

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

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, bunions, 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.

CLINICAL INTERESTS
- Orthopaedic foot and ankle care
- Arthritis
- Joint replacement
- Foot and ankle arthritis
- Foot and ankle fracture

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, bunions, 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.

CLINICAL INTERESTS
- Orthopaedic foot and ankle care
- Arthritis
- Joint replacement
- Foot and ankle arthritis
- Foot and ankle fracture
<table>
<thead>
<tr>
<th>PGY-1</th>
<th></th>
<th>Undergraduate/Graduate</th>
<th>Institution/University</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROBYN AVINO, MD</td>
<td>Saint Louis University/Saint Louis University School of Medicine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DANNY CУRТIS, MD</td>
<td>Northwestern University/Northwestern University Feinberg School of Medicine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JONATHAN EДGINGTON, MD</td>
<td>Miami University/University of Cincinnati College of Medicine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONNER KING, MD</td>
<td>University of Southern California/Georgetown University School of Medicine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WILLIAM MESAERTHAL, MD</td>
<td>St. Lawrence University/C limb School of Medicine at Dartmouth</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PGY-2</th>
<th></th>
<th>Undergraduate/Graduate</th>
<th>Institution/University</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLAKE BУRKЕRT, MD</td>
<td>Hendrix College/Emory University School of Medicine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RAVAND KHАЗAI, MD</td>
<td>Northwestern University/University of Missouri-Columbia School of Medicine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DAVID LEONI, MD, PhD</td>
<td>Vanderbilt University/Guest School of Medicine at Dartmouth &amp; University of Miami Leonard M. Miller School of Medicine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MICHAEL PЕRNOS, MD</td>
<td>University of Florida/University of Florida &amp; LSU Health Monroe College of Medicine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PAUL SHUТA, MD</td>
<td>University of Colorado at Boulder/The Warren Alpert Medical School of Brown University</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PGY-3</th>
<th></th>
<th>Undergraduate/Graduate</th>
<th>Institution/University</th>
</tr>
</thead>
<tbody>
<tr>
<td>KENNETH CHАDУOR, MD</td>
<td>University of Illinois at Urbana-Champaign/University of Illinois College of Medicine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SIKHAНТ DУ, MD</td>
<td>Johns Hopkins University/University of Pittsburgh School of Medicine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PATRICK LЕаNG, MD</td>
<td>Rutgers University/New Jersey Medical School/Robert Wood Johnson Medical School</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JONATHAN TАВ, MD</td>
<td>University of Illinois at Urbana-Champaign/University of Illinois College of Medicine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOАL WЕITH, MD</td>
<td>The University of Western Ontario/University of Western Ontario College of Medicine</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PGY-4</th>
<th></th>
<th>Undergraduate/Graduate</th>
<th>Institution/University</th>
</tr>
</thead>
<tbody>
<tr>
<td>HARPREET BАWA, MD</td>
<td>University of California, Los Angeles/Columbia University School of Medicine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>KYLELEУNG, MD</td>
<td>Texas A&amp;M University/ Texas A&amp;M University System Medical School</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RАNAY PАTEL, MD</td>
<td>Washington University in St. Louis/Southern Illinois University School of Medicine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANNA RОSENBLOМ, MD</td>
<td>Harvard Medical School/Boston University School of Medicine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROBERT SТEWАRT, MD</td>
<td>University of Southern California/University of Southern California School of Medicine</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PGY-5</th>
<th></th>
<th>Undergraduate/Graduate</th>
<th>Institution/University</th>
</tr>
</thead>
<tbody>
<tr>
<td>JOSEPH COНEN, MD</td>
<td>University of San Diego/Tufts University School of Medicine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANRETH EМINO,RU, MD</td>
<td>Columbia University/University of Pittsburgh School of Medicine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OLIVER SЕPP, MD</td>
<td>Rutgers University/New Jersey Medical School/Robert Wood Johnson Medical School</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JASON SОМЕGЕ, MD</td>
<td>University of Illinois at Urbana-Champaign/University of Illinois College of Medicine</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| HOUSESTAFF ORTHOPAEDIC SURGERY + REHABILITATION MEDICINE |                      |

<table>
<thead>
<tr>
<th>PGY-4</th>
<th></th>
<th>Undergraduate/Graduate</th>
<th>Institution/University</th>
</tr>
</thead>
<tbody>
<tr>
<td>RАY SОСТА, MD</td>
<td>University of California, Los Angeles/University of California, Los Angeles School of Medicine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SARVANARАJ МУТУSАМ, MD</td>
<td>Adult Rehabilitation Medicine/University of Illinois College of Medicine</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| ORTHOPAEDIC SURGERY FELLOWS—2016 GRADUATES |                      |

<table>
<thead>
<tr>
<th>RАY DURFEЕ, MD</th>
<th>(Musculoskeletal Oncology)</th>
</tr>
</thead>
<tbody>
<tr>
<td>JENNY JОNG, MD</td>
<td>(Hand and Upper Extremity)</td>
</tr>
<tr>
<td>MARC-OLIVIER KИS, MD</td>
<td>(Adult Reconstruction)</td>
</tr>
</tbody>
</table>

| HOUSESTAFF ORTHOPAEDIC SURGERY + REHABILITATION MEDICINE |                      |

<table>
<thead>
<tr>
<th>PGY-5</th>
<th></th>
<th>Undergraduate/Graduate</th>
<th>Institution/University</th>
</tr>
</thead>
<tbody>
<tr>
<td>RАY DURFEЕ, MD</td>
<td>University of California, Los Angeles/University of California, Los Angeles School of Medicine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JENNY JОNG, MD</td>
<td>Universi- t y of Illinois at Urbana-Champaign/University of Illinois College of Medicine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MARC-OLIVIER KИS, MD</td>
<td>Adult Reconstruction/University of California, Los Angeles School of Medicine</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| ORTHOPAEDIC SURGERY FELLOWS—2016 GRADUATES |                      |

<table>
<thead>
<tr>
<th>RАY DURFEЕ, MD</th>
<th>(Musculoskeletal Oncology)</th>
</tr>
</thead>
<tbody>
<tr>
<td>JENNY JОNG, MD</td>
<td>(Hand and Upper Extremity)</td>
</tr>
<tr>
<td>MARC-OLIVIER KИS, MD</td>
<td>(Adult Reconstruction)</td>
</tr>
</tbody>
</table>

| HOUSESTAFF ORTHOPAEDIC SURGERY + REHABILITATION MEDICINE |                      |

<table>
<thead>
<tr>
<th>PGY-5</th>
<th></th>
<th>Undergraduate/Graduate</th>
<th>Institution/University</th>
</tr>
</thead>
<tbody>
<tr>
<td>RАY DURFEЕ, MD</td>
<td>University of California, Los Angeles/University of California, Los Angeles School of Medicine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JENNY JОNG, MD</td>
<td>Universi- t y of Illinois at Urbana-Champaign/University of Illinois College of Medicine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MARC-OLIVIER KИS, MD</td>
<td>Adult Reconstruction/University of California, Los Angeles School of Medicine</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| ORTHOPAEDIC SURGERY FELLOWS—2016 GRADUATES |                      |

<table>
<thead>
<tr>
<th>RАY DURFEЕ, MD</th>
<th>(Musculoskeletal Oncology)</th>
</tr>
</thead>
<tbody>
<tr>
<td>JENNY JОNG, MD</td>
<td>(Hand and Upper Extremity)</td>
</tr>
<tr>
<td>MARC-OLIVIER KИS, MD</td>
<td>(Adult Reconstruction)</td>
</tr>
</tbody>
</table>
HONORS+ AWARDS 2016

Dr. Aravind Athiviraham
Elected to be member of the Education Committee for the American Orthopaedic 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 2016
Musculoskeletal Tumor Society Research Committee
Musculoskeletal Tumor Society Evidence Based Medicine Committee
Director of Prospective Operations, Department of Orthopaedic Surgery and Rehabilitation Medicine
Operative Products Evaluation Committee (University of Chicago Hospital)
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 Centre
Invited Speaker, LXI Congreso Nacional de Ortopedía y Traumatología; Mexico City, Mexico; April 2016

Dr. Lewis Ski
Co-director of Operative Performance Research Institute
Appointed to be a member of the inaugural AAO 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 ED of the University of Chicago

Dr. Christopher Sullivan
Reviewer, Clinical Orthopaedics and Related Research

Dr. Brian Tostee
Member of Large, ADKS Board of Directors
Senior Governing Lead/Governing Committee
CSBD (Council of Orthopaedic Residents’ Day)

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
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 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. Toward the end of this four-week rotation, 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 and outpatient clinics, and the operating room. The management of patients is divided into eight clinical services that include pediatric orthopaedics, trauma, basic science, morbidity and mortality, quality assurance, sports medicine, adult reconstruction, spin, hand and upper extremity, and surgical indications for musculoskeletal diseases. All of our conferences are attended and led by attendings.

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.
ORTHOPAEDIC SURGERY + REHABILITATION MEDICINE 2015–2016 ANNUAL REPORT

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. Free 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, OR, Rehab, pain, and Virtual Reality Laboratory.

Psychomotor Skills Lab & Virtual Reality Laboratory

Under the leadership of Dr. Howard J. Sweeney, the Psychomotor Skills Lab is the Director of 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.

In 2017, the NorthShore Orthopaedic Psychomotor Skills Lab will support surgical motor 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.

ORTHOPAEDIC PROGRAM

The NorthShore Orthopaedic Program is an integral component of the residency and fellowship programs. 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.

In 2017, the NorthShore Orthopaedic Psychomotor Skills Lab will support surgical motor 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.

ORTHOPAEDIC PROGRAM

The NorthShore Orthopaedic Program is an integral component of the residency and fellowship programs. 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.

In 2017, the NorthShore Orthopaedic Psychomotor Skills Lab will support surgical motor 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.
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 arthritic 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 bipolar 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. Martel, in partnership with the Argonne National Laboratories, has received $20,000 through the BIASE initiative in partnership with the Argonne National Laboratories, has received $20,000 through the BIASE initiative. She will use this funding to develop a system for in vivo strain measurement that incorporates real-time data and patient-specific patient data.

Dr. Douglas Dirschl and Drs. Giger, PhD, Dr. Martell, Dr. Shi and Dr. He, have used an in vitro model to investigate the effects of BMP-14 and other factors on Achilles tendon healing, finding that healing takes place in tension strength at two weeks. In addition, Drs. Ho and Richard Kang are investigating the potential use of BMP-14 and rIPR (platelet rich plasma) for rotator cuff repair using an animal model, as possible treatment options for patellar tendons.

Dr. Bruce Reider is also engaged in an ongoing clinical prospective cohort study of patellar tendon repair in collegiate soccer and basketball players. Dr. Reider’s previous research has shown that athletes with ACL tears have abnormally increased proprioception of the knee that return 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.

TENDON AND LIGAMENT INJURY REPAIR

Tendon and ligament injuries are a common source of disability, pain, and decreased function. These injuries can result from a variety of mechanisms, including trauma, overuse, and degenerative processes. Diagnosing and treating these injuries requires a comprehensive understanding of the underlying pathophysiology.

Recent advances in the understanding of the molecular and cellular mechanisms involved in tendon and ligament healing have led to the development of novel therapies aimed at improving the outcomes of these injuries. For example, the use of platelet-rich plasma (PRP) has shown promise in promoting tendon healing in experimental models and clinical trials.

Additional research efforts are focused on investigating the role of growth factors and stem cells in the repair process. The integration of these approaches could potentially lead to improved clinical outcomes for patients with tendon and ligament injuries.

OSTEOSARCOMA IS A “DIFFERENTIATION DISEASE”

Osteosarcoma is a malignant bone tumor that arises from the osteoblasts, the cells responsible for bone formation. It is the most common primary bone sarcoma in children and adolescents. The prognosis for osteosarcoma is determined by several factors, including the type of tumor, the stage of the disease, and the patient’s age.

The current standard of care for osteosarcoma includes surgery, chemotherapy, and radiation therapy. However, despite advances in these treatment modalities, the survival rate for patients with osteosarcoma remains relatively low, with a 5-year survival rate of approximately 60%.

Recent studies have demonstrated that osteosarcoma is a “differentiation disease,” meaning that the disease is characterized by a lack of normal differentiation of osteoblast precursors. This abnormal differentiation is thought to be driven by the dysregulation of transcription factors, such as SOX9, which play a critical role in regulating the differentiation of osteoblasts.

The identification of SOX9 as a key regulator of osteoblast differentiation has led to the development of new therapeutic strategies targeted at modulating the expression of SOX9 and other transcription factors. For example, small interfering RNA (siRNA) technology has been used to inhibit the expression of SOX9 in osteosarcoma cell lines, resulting in a decrease in osteoblast differentiation and an increase in the apoptotic rate of osteosarcoma cells.

In addition, the development of novel therapeutic strategies, such as bone marrow mesenchymal stem cell therapy, has shown promise in preclinical studies. These therapies, which aim to promote bone formation and improve the differentiation of osteoblasts, are currently being explored in clinical trials.

However, despite these advances, there remains a significant unmet need for effective therapeutic strategies for osteosarcoma. Further research is needed to identify novel therapeutic targets and develop effective treatment strategies for this disease.
Dr. He, Haydon, and Luu (University of Chicago) have investigated the potential synergistic effect of other BMPs on osteosarcoma tumor growth. Although several BMPs (mostly BMP-2 and BMP-7) have been found to induce bone formation, it is unclear whether the current use of BMPs has represented the most osteogenic BMP. Through a comprehensive analysis of the 14 types of human BMPs, the He, Haydon, and Luu lab previously determined that BMP-2 and BMP-6 have the highest potential to induce osteogenic progenitor cells. They have identified several rounds of in vitro and in vivo knockdown studies that identified the most potent osteogenic BMPs at inducing osteogenic bone formation in athymic mice. Interestingly, they have also found that osteogenic BMPs can induce adipogenic differentiation of mesenchymal stem cells. They have determined that TGFs' (i.e., BMP2, 4, and 6) have a central role in adipogenic signaling in mesenchymal stem cells.

To identify potentially important mediators of BMP-induced osteogenic signaling, Drs. He, Haydon, and Luu have determined the transcriptional differences between three osteogenic BMPs (i.e., BMP2, 6, and 9) and two inhibitory/non-osteogenic BMPs (i.e., BMP1, and Bmp1) and through the microarray analysis in pre-osteoblastic cell lines, they have confirmed that over 203 genes (105 up-regulated and 98 down-regulated) were altered >2-fold upon osteogenic BMP stimulation. Gene ontology analysis revealed that osteogenic BMPs, but not inhibitory/non-osteogenic, active genes were involved in the proliferation of pre-osteoblast progenitor cells, osteogenic differentiation, and simultaneously, inhibited myoblast specific gene expression. In addition, further in vitro and in vivo studies identified that osteogenic BMPs and growth hormone all play an important role in BMP-9 induced osteogenic signaling.

The 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 UChicago (the Center for the Health and Social Sciences, the Department of Public Health Sciences and the Center for Research Information across the UChicago campus (DI), UIC, and Rush University Medical Center), 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. Dorsch is a leader in this initiative. Among the several ongoing research projects associated with this line of investigation is the (Steelman et al. 2012). Further functional characterization of gene expression patterns between non-metastatic and metastatic osteosarcoma provided a more comprehensive model for osteosarcoma progression and pulmonary metastasis. Drs. He, Haydon, and Luu (University of Chicago) have investigated the potential synergistic effect of other BMPs on osteosarcoma tumor growth. Although several BMPs (mostly BMP-2 and BMP-7) have been found to induce bone formation, it is unclear whether the current use of BMPs has represented the most osteogenic BMP. Through a comprehensive analysis of the 14 types of human BMPs, the He, Haydon, and Luu lab previously determined that BMP-2 and BMP-6 have the highest potential to induce osteogenic progenitor cells. They have identified several rounds of in vitro and in vivo knockdown studies that identified the most potent osteogenic BMPs at inducing osteogenic bone formation in athymic mice. Interestingly, they have also found that osteogenic BMPs can induce adipogenic differentiation of mesenchymal stem cells. They have determined that TGFs’ (i.e., BMP2, 4, and 6) have a central role in adipogenic signaling in mesenchymal stem cells.

To identify potentially important mediators of BMP-induced osteogenic signaling, Drs. He, Haydon, and Luu have determined the transcriptional differences between three osteogenic BMPs (i.e., BMP2, 6, and 9) and two inhibitory/non-osteogenic BMPs (i.e., BMP1, and Bmp1) and through the microarray analysis in pre-osteoblastic cell lines, they have confirmed that over 203 genes (105 up-regulated and 98 down-regulated) were altered >2-fold upon osteogenic BMP stimulation. Gene ontology analysis revealed that osteogenic BMPs, but not inhibitory/non-osteogenic, active genes were involved in the proliferation of pre-osteoblast progenitor cells, osteogenic differentiation, and simultaneously, inhibited myoblast specific gene expression. In addition, further in vitro and in vivo studies identified that osteogenic BMPs and growth hormone all play an important role in BMP-9 induced osteogenic signaling.

The 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 UChicago (the Center for the Health and Social Sciences, the Department of Public Health Sciences and the Center for Research Information across the UChicago campus (DI), UIC, and Rush University Medical Center), 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. Dorsch is a leader in this initiative. Among the several ongoing research projects associated with this line of investigation is the (Steelman et al. 2012). Further functional characterization of gene expression patterns between non-metastatic and metastatic osteosarcoma provided a more comprehensive model for osteosarcoma progression and pulmonary metastasis. Drs. He, Haydon, and Luu (University of Chicago) have investigated the potential synergistic effect of other BMPs on osteosarcoma tumor growth. Although several BMPs (mostly BMP-2 and BMP-7) have been found to induce bone formation, it is unclear whether the current use of BMPs has represented the most osteogenic BMP. Through a comprehensive analysis of the 14 types of human BMPs, the He, Haydon, and Luu lab previously determined that BMP-2 and BMP-6 have the highest potential to induce osteogenic progenitor cells. They have identified several rounds of in vitro and in vivo knockdown studies that identified the most potent osteogenic BMPs at inducing osteogenic bone formation in athymic mice. Interestingly, they have also found that osteogenic BMPs can induce adipogenic differentiation of mesenchymal stem cells. They have determined that TGFs’ (i.e., BMP2, 4, and 6) have a central role in adipogenic signaling in mesenchymal stem cells.

To identify potentially important mediators of BMP-induced osteogenic signaling, Drs. He, Haydon, and Luu have determined the transcriptional differences between three osteogenic BMPs (i.e., BMP2, 6, and 9) and two inhibitory/non-osteogenic BMPs (i.e., BMP1, and Bmp1) and through the microarray analysis in pre-osteoblastic cell lines, they have confirmed that over 203 genes (105 up-regulated and 98 down-regulated) were altered >2-fold upon osteogenic BMP stimulation. Gene ontology analysis revealed that osteogenic BMPs, but not inhibitory/non-osteogenic, active genes were involved in the proliferation of pre-osteoblast progenitor cells, osteogenic differentiation, and simultaneously, inhibited myoblast specific gene expression. In addition, further in vitro and in vivo studies identified that osteogenic BMPs and growth hormone all play an important role in BMP-9 induced osteogenic signaling.

As a result of these findings, the researchers have developed a novel approach to osteosarcoma treatment. Instead of relying on traditional chemotherapy, they have focused on targeting specific signaling pathways that are involved in the development of osteosarcoma. This approach has led to promising results, including a significant reduction in tumor growth and improved survival rates for patients with osteosarcoma. In addition, the researchers have also made progress in developing a targeted therapy for osteosarcoma, which has the potential to revolutionize the way this disease is treated.
GERALD S. LAROS MEMORIAL VISITING PROFESSOR

Dr. 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-Chair, Spine Division, Director of Cervical Spine Surgery and Co-Chair 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 Chauncey 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 as well as Orthopaedic Surgery. At Washington University, he is a Professor of Neurological Surgery and Chief of Spine Surgery. Dr. Riew has developed a unique cervical spine surgical practice that is internationally-recognized. He has been recognized for his surgical treatment of cervical spine disorders with over 35 surgical courses, including those sponsored by the Cervical Spine Research Society, as well as the Hibbs Outstanding Paper award from the Spine Research Society. He has been named as one of the “Top 100” in the world for the number of papers and over 60 chapters and other manuscripts. He has served as a visiting professor, grand rounds speaker, key- or named lecturer over 150 times in 27 countries on six continents. He has served and has been the President-Elect or Chair of over 25 surgical courses, including those sponsored by the Cervical Spine Research Society, American Academy of Orthopaedic Surgeons, North American Spine Society and the Spinal 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 Directors for the International Spine Research Society (2012-15) and currently is the Chair of the International Research Commission (2015-19). He is a member of the American Orthopaedic Association, the International Society for the Study of the Cervical Spine, and the Association of Bone and Joint Surgeons, all honorary orthopaedic societies. He serves as a Deputy or Associate Editor of the Spine Journal, Clinics in Orthopaedic Surgery, Spine, and Neurological Surgery journals.

You think of Dan.” Top 10 Spine Surgeons in North America 2016: (“A brilliant cervical spine surgeon, he has defined many of the principles we are using today. 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 in other manuscripts. He has been recognized with 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 Spine Research Society. He has operated in several countries and has served as a visiting professor, grand rounds speaker, key- or named lecturer over 150 times in 27 countries on six continents. He has served and has been the President-Elect or Chair of over 25 surgical courses, including those sponsored by the Cervical Spine Research Society, American Academy of Orthopaedic Surgeons, North American Spine Society and the Spinal 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 Directors for the International Spine Research Society (2012-15) and currently is the Chair of the International Research Commission (2015-19). He is a member of the American Orthopaedic Association, the International Society for the Study of the Cervical Spine, and the Association of Bone and Joint Surgeons, all honorary orthopaedic societies. He serves as a Deputy or Associate Editor of the Spine Journal, Clinics in Orthopaedic Surgery, Spine, and Neurological Surgery journals.

To be so well known and respected within the cervical spine world is a rarity among spine surgeons. He has been recognized for his surgical treatment of cervical spine disorders with over 35 surgical courses, including those sponsored by the Cervical Spine Research Society, as well as the Hibbs Outstanding Paper award from the Spine Research Society. He has been named as one of the “Top 100” in the world for the number of papers and over 60 chapters and other manuscripts. He has served as a visiting professor, grand rounds speaker, key- or named lecturer over 150 times in 27 countries on six continents. He has served and has been the President-Elect or Chair of over 25 surgical courses, including those sponsored by the Cervical Spine Research Society, American Academy of Orthopaedic Surgeons, North American Spine Society and the Spinal 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 Directors for the International Spine Research Society (2012-15) and currently is the Chair of the International Research Commission (2015-19). He is a member of the American Orthopaedic Association, the International Society for the Study of the Cervical Spine, and the Association of Bone and Joint Surgeons, all honorary orthopaedic societies. He serves as a Deputy or Associate Editor of the Spine Journal, Clinics in Orthopaedic Surgery, Spine, and Neurological Surgery journals.

GRADUATING RESIDENTS

Joe Cohen, MD
University of San Diego/Tulsa University School of Medicine
Joe will be going to Harvard-McKinley Media Center in Seattle, WA for an Orthopaedic Trauma Fellowship under Dr. David B. Barnes, MD. Program Director.

Ananth Eleswarapu, MD
Columbia University, University of Pittsburgh School of Medicine
Ananth will be going to OrthoCarolina for a Spine Surgery Fellowship under Eric C. Klekner, MD. Program Director.

Jason Somogyi, MD
Bucknell University/Georgetown University School of Medicine
Jason will be returning to the University of Chicago for a Hand and Upper Extremity Fellowship under Daniel F. Mass, MD. Program 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.
Sodium sulfate-induced colon carcinogenesis

Martin, Wei Du, Tong-Chuan He, Chong-Zhi Wang, Qiang Wei, Xiang Chen, Jing Cui, Zhengjian Yan, and Russell R. Reid (2015)

Disruption of Posterofrontal Suture Closure Osteoprotegerin Deficiency Results in

Kim, M. Rose Rogers, Sarah Lyon, Tong-Chuan He, M. Farina, Maryam K. Mohammed, Yulong Zou, Dongzhe Song, Lewis L. Shi, Aravind A. Mani,(*corresponding authors).

High intensity focused ultrasound ablates melanoma cell migration and invasion.


Ko, Chao-Ming Yuan, Chao-Ming Wang, Jiayi Huang, Hao Liu, Jiaming Fan, Yulong Zou, Dongzhe Song, Lewis L. Shi, Aravind A. Mani,(*corresponding authors).


Hedgehog signaling is involved in the differentiation of mesenchymal stem cells. Biomedical Materials 2016 11(3): 034019, PMID: 27546068 (*corresponding authors).

Wang, Jianjun Chen, Chong-Zhi Wang, Wei Fu, Minpeng Lu, Feng Liu, Jiaming Fan, Fugui Zhang, Yulong Zou, Dongzhe Song, Lewis L. Shi, Aravind A. Mani,(*corresponding authors).


Zhang, Zhen Zeng, Yao Yang, Herniating Zhanhong Wang, Qing Gao, Jing Jing Long, Xin Wang, Ling Jing Tang, Jinyong Luo, Tong-Chuan He, and Junhui Zhang* (2016) Melanocytes.


Calcium-Binding Protein S100A6 Accelerates Cell Proliferation and Inhibiting Osteogenic Differentiation of Human Mesenchymal Stem Cells in a Murine Model of B16 Melanoma. Cellular Physiology and Biochemistry. 2015 39: 871-888, PMID: 27497986

Cell Proliferation and Inhibiting Osteogenic Differentiation of Human Mesenchymal Stem Cells in a Murine Model of B16 Melanoma. Cellular Physiology and Biochemistry. 2015 39: 871-888, PMID: 27497986


26389027.


Surgical Site Infections after Total Knee Arthroplasty.


Genes Dis.


Biomaterials.


JBR.29.20150075.


JBR.29.20150075.


JBR.29.20150075.
2016

PRESENTATIONS 2016

Attirapong, A.
ACL Reconstruction, Presentation at Athletic Surgery Conference, Chicago, IL, June 5, 2016.

Presentations at Orthopaedic Surgery Resident AM Conference, Chicago, IL, June 21, 2016.

Pediatric Knee Pathology, University of Chicago, Chicago, IL, Department of Orthopaedic Surgery Resident AM Conference, Chicago, IL, June 21, 2016.

Surgical Pathology, China Orthopaedic Association of Medical Association, Peking Union Medical College Hospital, Beijing, China, June 18, 2016.

Surgical Pathology, China Orthopaedic Association of Medical Association, Peking Union Medical College Hospital, Beijing, China, June 18, 2016.

Presentation at 2nd Annual Primary Care Orthopaedics Course 402, February 4-7, 2016. Orthopedic Surgical Skills Training Throughout Residency.

Presentation as Associate Instructor, Arthroscopy Association of North America Resident AM Conference, April 13, 2016.

Resident AM Conference, April 13, 2016.

Injuries in the Throwing Athlete, University of Chicago, Orthopedic Grand Rounds, April 15, 2015.

Presentation for Students, West Side Health Foundation, Rosemont, IL, USA, June 3, 2016.

Frailty and Sarcopenia Research, Boston, MA. June 2015. Frailty Phenotypie is Associated with Declines in Fat-free Mass.

Polkowski, G, Balach T, Kenny AM, Grady J. Frailty Phenotypie is Associated with Declines in Fat-free Mass.

Balach, T.


Lafosse L, Shi LL. Treatment of shoulder fractures. Podium. AAOS Annual meeting.

Nonoperative treatment of proximal humerus fractures. Podium. AAOS Annual meeting.


Liu Y, Borque KA, Ek ET, Dirschl DR, Koh JL, Shi LL. The Majority of Shoulder MRIs are Not Ordered by Non-Orthopaedic providers. Podium presentation. AAOS Annual meeting. Orlando, FL. March 2016.


Lafosse L, Shi LL. Treatment of shoulder fractures. Podium. AAOS Annual meeting.


Stewart RJ, Borque KA, Ek ET, Koh JL, Shi LL. The Majority of Shoulder MRIs are Not Ordered by Non-Orthopaedic providers. Podium presentation. AAOS Annual meeting. Orlando, FL. March 2016.


Stewart RJ, Borque KA, Ek ET, Koh JL, Shi LL. The Majority of Shoulder MRIs are Not Ordered by Non-Orthopaedic providers. Podium presentation. AAOS Annual meeting. Orlando, FL. March 2016.

Shi LL. Treatment of shoulder fractures. Podium. AAOS Annual meeting.

Stewart RJ, Borque KA, Ek ET, Koh JL, Shi LL. The Majority of Shoulder MRIs are Not Ordered by Non-Orthopaedic providers. Podium presentation. AAOS Annual meeting. Orlando, FL. March 2016.

Stewart RJ, Borque KA, Ek ET, Koh JL, Shi LL. The Majority of Shoulder MRIs are Not Ordered by Non-Orthopaedic providers. Podium presentation. AAOS Annual meeting. Orlando, FL. March 2016.