

# Vanderbilt Orthopaedia

VANDERBILT DEPARTMENT OF ORTHOPAEDICS • FALL 2018

## EXPANDING CARE TO FIT AREA NEEDS

### Vanderbilt Bone & Joint in Franklin - More Comprehensive Care for the Area

Vanderbilt Bone & Joint (VBJ) in Franklin remains open for patients, now with extended hours and more comprehensive, extensive care for patients in Williamson and surrounding counties. Conveniently located on Bedford Lane, Vanderbilt Orthopaedics has two Franklin clinic offices as well as an outpatient surgery center to facilitate patient care. The clinics are open six days a week with X-ray, MRI, ultrasound, and physical therapy services on site.



Vanderbilt Orthopaedics brings its brand of nationally-recognized specialists in musculoskeletal care from downtown Nashville directly to Franklin. Twenty providers are available for the convenience and benefit of the community. In contrast to competitors, VBJ offers patients same-day appointments with experts who only care for specific orthopaedic subspecialties such as hand, sports medicine, spine, hip-knee joint preservation, arthritis and muscle-joint-bone problems unique to children and adolescents. The practice of evidence-based medicine and documented quality outcomes are now an everyday experience for patients in Williamson County.

The new Pediatric Orthopaedic service will be at VBJ daily to serve the unique needs of injuries to the growing skeleton, a complement and extension of the services of Monroe Carell Jr. Children’s Hospital at Vanderbilt. A new Comprehensive Spine team will also practice at VBJ, co-located with providers who focus on diagnosis, pain relief, rehabilitation, and non-operative means to recovery. Of course, surgeons from Orthopaedics and Neurosurgery will be present to evaluate and treat as well. This will include a large concussion service to assist young athletes in the community with back-to-school and back-to-play programs. Notably, our quality outcome data in spine care is nationally recognized for excellence, while most competitors do not even monitor such important information. Our Sports Medicine team—including experts who manage the Predators, Vanderbilt Athletics, Nashville Sounds, Nashville Soccer Club, and some Titan players—offers evidence-based treatment to all ages of athletes who come to VBJ. Specialty service in hand problems is led by a surgical team to whom the most difficult cases are referred to. Hip preservation surgery, joint replacement, and complete foot care complement our most up to date services.

In summary, nationally recognized experts in the many disciplines of orthopaedic surgery are available to care for the residents of Williamson and surrounding counties daily. This includes professional and Olympic team doctors, master clinicians, Nashville Best Doctors and researchers who understand and often create the evidence-based guidelines general orthopedists follow. Please let your friends know and invite them to our friendly atmosphere.

Sincerely,

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New Franklin Clinic Benefits Community & Clinicians



The Vanderbilt Bone and Joint Clinic in Franklin opened March 20, 2018, following the departure of a private practice that Vanderbilt acquired in 2008. The immense effort required to care for our patients during the transition and rapidly rebuild our Williamson County practice involved the entire department and medical center, from leadership to clinicians to OR scheduling personnel; many of our faculty and staff put in extra hours to bounce between sites. Ultimately, we chose to close some satellite sites and redirect those resources to enhancing our VBJ Franklin location, including hiring six additional surgeons. After months of dedication, we are proud to now offer more specialized services, an expanded staff, a new surgery center, and extended hours at a convenient Franklin location for our VBJ patients. The care that we provide in Williamson County is now more integrated than ever with our department, facilitating an improved continuum of care between community and campus.

"I am extremely proud of all the tremendous hard work by our department, faculty, and staff and in collaboration with the other departments in the medical center. We have not only continued to treat patients in Williamson county, we have expanded and enhanced the care we provide there," said Herbert S. Schwartz, M.D., Professor and Former Chairman of Orthopaedics and Rehabilitation.

According to Mihir Desai, M.D., M.S., Assistant Professor of Orthopaedic Surgery and Rehabilitation, the primary benefit for VBJ Franklin patients is convenient, local access to nationally-recognized clinical excellence, cutting-edge specialty care, and evidence-based practices. For patients coming from southern Tennessee or northern Alabama, the location saves them from driving all the way to Nashville.

"It's incredibly easy for patients to drive to the VBJ clinic and park in an outdoor parking lot right outside the clinic," Desai said.

VBJ can offer patients same-day appointments with specialists, and seamless clinical care with main campus provides access to experts in a range of fields.

"The strength of Vanderbilt is certainly our affiliation with world-class leaders in various subspecialties. At my fingertips I have access to great endocrinologists, primary care providers, oncologists—leaders in basically every specialty. It's an integrated system, and that's a real advantage over a practice that is more segregated," said Byron Stephens, M.D., Assistant Professor of Orthopaedics and Rehabilitation.

The VBJ Surgery Center, meanwhile, offers a space unlike anything in Nashville, and has facilitated increased efficiency in treating cases.

"The VBJ Surgery Center allows us to see more patients in less time with the same quality of care," said Douglas Weikert, M.D., Associate Professor of Orthopaedics and Rehabilitation and Division Director of Hand and Upper Extremity Center. "Having an efficient system is critical for people who have mature practices because our time becomes so important as we are expected to see more patients, conduct research, and write papers. The VBJ Surgery Center has allowed us to become increasingly effective in how we care for our patients."



As opposed to a private, general orthopaedic practice, VBJ also offers Franklin patients the benefits of an evidence-based academic medical practice that monitors outcomes and often participates in advancing standards of care.

"We generate a lot of clinical volume, which generates a lot of outcomes data, so our ability to provide outcomes in a more scientific manner is an important strength for us and for our patients. Our level of care isn't just because we're clinically experienced but because we are also experienced in interpreting outcomes," Weikert said.

The new VBJ clinic additionally offers an important experience for orthopaedic residents and fellows to see a broader range of cases, while many that present in the campus clinic are complex traumas requiring specialty care.

"The Franklin clinic provides an opportunity for residents to see more of an elective, outpatient type of practice and a higher volume practice. This is a huge benefit to their education," Desai said.

For surgeons, the new VBJ has been a welcomed experience that complements their campus practice. "I think it feels like a complete home," Weikert said. "For me personally, this is my fourth stop in Williamson County. Each of the three prior sites had components of a clinic but not the full complement. And I was there

basically by myself. Part of the fun part of being in clinic and working your tail off is that you have your partners there to share the experience with. If you're practicing on an island it's not nearly as much fun. For me the Franklin clinic has the complete feel in terms of what I can provide to my patients and what I can get out of as a practicing orthopaedic surgeon."

*"Our level of care isn't just because we're clinically experienced but because we are also experienced in interpreting outcomes."*

- Douglas Weikert, M.D.



Portrait Unveiling of Neil E. Green, M.D.



Dr. Green's family with his portrait. Left to right: Son-in-law Charlie Brock, daughter Lisa Brock, wife Lesley Green, and grandchildren Lynn and Grant Brock.



Herbert S. Schwartz, M.D., Professor and Former Chairman of Orthopaedics, and Gregory A. Mencio, M.D., Neil E. Green Professor and Vice Chairman of Orthopaedics unveil portrait of Neil E. Green, M.D.



Dr. Green's friend and former Hillman guest lecturer, Robert N. Hensinger, M.D., Professor Emeritus of Orthopaedic Surgery at the University of Michigan, speaks at portrait unveiling.

A portrait unveiling of Neil E. Green, M.D., former director and chief of the Division of Pediatric Orthopaedics, took place on June 22nd during the 6th Annual Neil E. Green Lecture. Steven Frick, M.D., Chief and Professor of Orthopaedic Surgery at Stanford University, was guest speaker at the lecture series and David S. Raiford, M.D., Senior Associate Dean of Faculty Affairs at VUMC presented the portrait. Green's son, Bruce, who, at the time was biking across the U.S. to raise funds for Children's Hospital in honor of his late father at the time was able to call in to the ceremony. To read more about Bruce's 3,400-mile bike journey click [here](#).



Vanderbilt Orthopaedics is among the top-ranked orthopaedic departments in the country, jumping 15 spots in the 2018 *U.S. News and World Report's Best Hospital's* ranking to number 30, the highest ranking we have ever received. We were specifically recognized as high-performing in hip replacement and knee replacement.

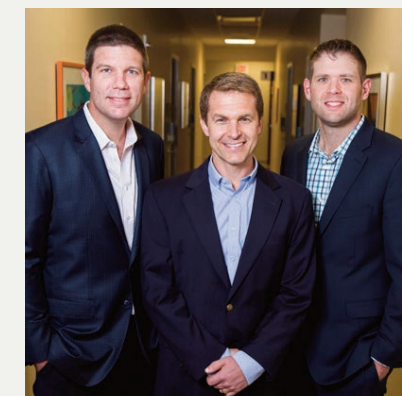
"I hope that everyone involved with our department feels equally proud of these rankings. They are a reflection of achieving the highest standards in medicine, whether in our patient care, research, or education and

training. I am deeply appreciative to our team for their hard work and to our alumni and colleagues for this recognition," said Herbert S. Schwartz, M.D., Professor and Former Chairman of Orthopaedics and Rehabilitation.

In a separate ranking released in June, U.S. News named Monroe Carell Jr. Children's Hospital at Vanderbilt among the nation's 'Best Children's Hospitals,' with Orthopaedics ranking 16th in the country.

The Hip Preservation Clinic

The Hip Preservation Clinic is an innovative model of pairing pediatric and adult reconstructive surgeons in real-time collaborations to avoid or delay a total hip replacement. To read more, click [here](#).



The Hip Preservation Clinic team includes, from left, Gregory Polkowski, M.D., Jonathan Schoenecker, M.D., Ph.D., and Stephen Engstrom, M.D.

Remarkable Recovery after 22 Surgeries



Douglas Weiker, M.D.

An Antioch woman who nearly lost her arms after a pit bull attack ten years ago has made a remarkable recovery after 22 surgeries by a Vanderbilt team including Douglas Weiker, M.D., Associate Professor of Orthopaedics and Rehabilitation. To watch a video of her recovery, click [here](#).



Safe Stars



Alex Diamond, D.O., M.P.H.

Safe Stars, a collaboration between the Tennessee Department of Health and the Program for Injury Prevention in Youth Sports (PIPYS) at Monroe Carell Jr. Children’s Hospital at Vanderbilt, kicked off on May 2nd. Safe Stars is the nation’s first statewide rating system for how closely youth sports leagues follow state-recommended safety protocols. A committee headed by Rebecca Dickinson, P.T., D.P.T., of youth league coaches, VUMC experts, and Tennessee Department of Health Officials agreed upon the actions required for the star designations. To read more, click [here](#).

Osso VR Training

The Vanderbilt University School of Medicine Orthopaedic Residency program now has eight programs deploying the OSSO VR Training solution. Read more [here](#).



The leg is virtual, the tools are real in Osso VR’s orthopaedic surgery simulations for medical residents. Photo from Osso VR

Top Surgeons *Nashville Lifestyles*

Ten Vanderbilt Orthopaedic surgeons ranked as top surgeons by *Nashville Lifestyles Magazine*.

Hand Surgery

- Donald H. Lee, M.D.
- Douglas R. Weikert, M.D.

Orthopaedic Surgery

- Charles L. Cox III, M.D.
- Ginger E. Holt, M.D.
- A. Alex Jahangir, M.D.
- Gregory A. Mencio, M.D.
- Herbert S. Schwartz, M.D.
- Andrew A. Shinar, M.D.

Sports Medicine

- Andrew J. Gregory, M.D.
- John E. Kuhn, M.D.

Hillman Lecture



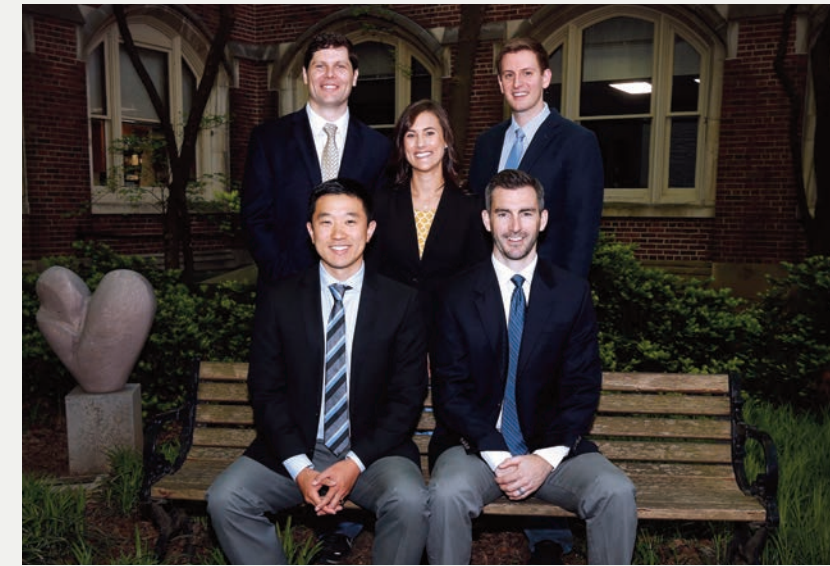
Kurt P. Spindler, M.D.

The 41st Annual J. William Hillman Lecture was held on May 18th, 2018 with Kurt P. Spindler, M.D., Adjoint Clinical Professor, serving as Hillman Professor.

In Memory of Paul P. Griffin, M.D.

Former Chairman of Vanderbilt Orthopaedic Surgery, Paul P. Griffin, M.D., passed away at his Greenville, SC home on June 4, 2018 at the age of 91. A renowned and beloved surgeon, he served as Chairman from 1971 – 1981. In his more than 50-year career, he also taught and practiced at Harvard, Johns Hopkins, MUSC, and Greenville Memorial.

Orthopaedics Resident Graduating Class of 2018



Congratulations to the Class of 2018. Top row, left to right: Phillip M. Mitchell, M.D., Sandra S. Gebhart, M.D., Schuyler J. Halverson, M.D. Seated, left to right: Elliott J. Kim, M.D., William J. Grantham, M.D.

Archer Leads Research on Psychologically-Informed Rehab for ACL Injury



Kristin Archer, Ph.D., D.P.T.

Kristin Archer, Ph.D., D.P.T., Associate Professor of Orthopaedics and Rehabilitation, is the first recipient of the American Orthopaedic Society for Sports Medicine /Aircast Foundation Return to Play Clinical Research Grant for a study investigating psychologically-informed rehabilitation can improve return to play after an ACL injury.

The randomized clinical trial, conducted at Vanderbilt and Cleveland Clinic, will focus on addressing fear of returning to sports in athletes between age 14-35 who have undergone ACL reconstruction. The recovery time following surgery, which takes six months or longer, sets the stage for fear and doubt, Archer said. She worked closely with Vickie Woosley, PsyD, a Vanderbilt University sports psychologist, in designing the study.

Half of the randomized participants will receive a psychological intervention delivered by a physical therapist, while the other half will be given educational information by a physical therapist that highlights the

physical challenges of returning to play.

“Some athletes are physically able to go back to sport, but why aren’t they going back?” Archer said. “We are honing in on this issue of people who don’t want to go back because they are fearful. There has been a lot in the popular press about athletes being afraid, that they just don’t trust their knee.”

The study interventions include a pre-operative session to set expectations, followed by weekly check-ins for a month and then every two weeks for a total of six post-operative sessions.

Embedded within the study is a validation project to determine the best assessment tool for return to sport in patients following ACL reconstruction.

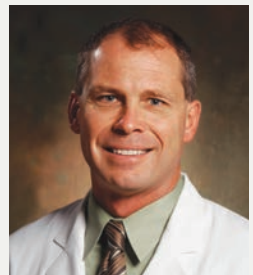
There’s a scarcity of research on the efficacy of psychosocial interventions after ACL surgery, according to review of medical literature published March 2018 in *Clinical Rehabilitation*. Archer is the senior author of that article. Read more [here](#).

The research also received support from the Vanderbilt Institute for Clinical and Translational Science.

## Obremskey Leads DOD Study to Explore Guidelines for Ankle, Knee Surgery Patients

Although military personnel often suffer ankle and knee fractures requiring surgery, there's no definitive consensus on when they should stop using crutches and start putting weight on their injured limbs again.

Vanderbilt Orthopaedics is leading a study to come up with recommendations.



William Obremskey, M.D., M.P.H., M.M.H.C.

William Obremskey, M.D., M.P.H., Professor of Orthopaedic Surgery and Rehabilitation, is the lead investigator on the \$4.5 million multicenter study to develop recommendations for when military personnel should stop using crutches and start bearing weight on their injured limbs following ankle and knee surgery.

The four-year study, which began in September, is supported by the U.S. Department of Defense (DOD) and conducted through the Major Extremity Trauma Research Consortium (METRC). Established in 2009 with DOD funding, the METRC consists of medical centers that work collectively to establish guidelines for

optimal care.

Patients with unicondylar proximal tibia fractures and bimalleolar ankle fractures will be eligible to participate.

"Lots of military personnel jump out of airplanes or are young active people who hurt their ankles," Obremskey said. "The question is, when can they really return to weight bearing? Historically, orthopaedic surgeons have said sometime between six weeks and three months, but there is no firm data on when the right time is."

Some research on timing has been conducted but lacked sufficient numbers of participants to be conclusive. For this study, a dozen participating METRC medical centers will follow the same protocols, randomizing half of patients to early weight bearing and half to not. Some of the participants will be footed with a special insole that will monitor in real time the amount of weight they put on the injured limb.

"These injuries are also applicable to the general public in determining when you can return to work, when you can get back on your feet and get back to your normal activities," Obremskey said.

Read more [here](#).

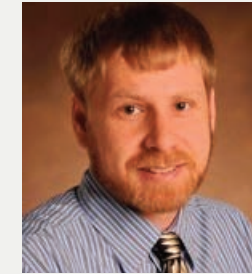
*"Lots of military personnel jump out of airplanes or are young active people who hurt their ankles. The question is, when can they really return to weight bearing?"*

*William Obremskey, M.D., M.P.H.*

## Awards

## Nyman, Schoenecker Receive Federal Funds for Research

### Nyman receives VA and NIH funding



Jeffrey Nyman, Ph.D.

Jeffrey Nyman, Ph.D., Associate Professor of Orthopaedics and Biomedical Engineering, received two NIH R21 awards and funding is approved for his VA MERIT Award in October.

In March, Nyman and Florent Elefteriou, Ph.D., of Baylor University, (former Director of the Vanderbilt Center for Bone Biology), received a multi-PI award, R21 AR072483, titled *Matrix-Sensitive Tools for Detecting NF1-Related Changes in Bone Quality*. This research builds on their previous neurofibromatosis type 1 (NF1) research. Current diagnostic instruments cannot predict whether a NF1 patient will experience tibia bowing, fracture and pseudarthrosis. Nyman and Elefteriou propose to test clinically translatable techniques that are sensitive to bone matrix properties as potentially new informative predictors of NF1-related deficits in bone quality. If successful, useful instruments can be developed to identify NF1 patients requiring an intervention to prevent pseudarthrosis and to monitor the response of the bone matrix to the therapy.

Nyman was also awarded R21 R073133, *Advancing Raman spectroscopy toward the clinical assessment of bone quality*, in July. Anita Mahadevan-Jansen, Ph.D., Professor of Biomedical Engineering at Vanderbilt University, an expert in Raman spectroscopy, is Co-investigator on this award. This project seeks to determine Raman-derived predictors of fracture resistance, as current diagnostic instruments cannot assess whether patient-specific changes in the bone matrix are increasing the likelihood of fracture. Therefore, the proposed research will assess the ability of several clinically feasible strategies for acquiring Raman spectra to provide predictors of fracture resistance of human cortical bone as determined from material

properties (independent of structure but not porosity). Moreover, characteristics of the bone matrix such as, sugar-mediated collagen crosslinks and percentage of denatured collagen, could be identified as determinants of the Raman-derived predictors of the fracture resistance.

Nyman will receive funding this fall through a VA MERIT Award, for his project titled *Diabetes-related Changes Affecting Bone Quality*. According to Nyman's research, although low bone mineral density and strength is the basis for current clinical diagnosis of osteoporosis, elevated fracture risk among those with type 2 diabetes (T2D) is not necessarily a problem of low bone mineral density and strength. The risk of bone fracture and subsequent high morbidity increases with the progression of T2D, and the clinical assessment of bone mineral density (BMD) is not particularly effective in diagnosing this risk. Moreover, lowering fracture risk among patients with T2D requires an understanding of the changes in the bone that affect fracture resistance.

Addressing these unmet needs, the proposed project aims i) to determine the primary biomechanical reason for the increase in fracture risk with T2D, ii) to identify molecular changes in the bone matrix that can significantly affect fracture resistance, and iii) to ascertain the ability of matrix-sensitive tools to assess significant differences in bone quality between age-matched non-diabetics and diabetic individuals.

Daniel S. Perrien, Ph.D. Research Assistant Professor of Medicine, Clinical Pharmacology, an expert in bone physiology and Paul Voziyan, Ph.D, Research Associate Professor of Medicine, Nephrology serve as Co-investigators. Dr. Voziyan's lab characterizes biochemical modifications to collagen and such effects on protein structure and function.



### Schoenecker to receive DoD Applied Research Award



Jonathan Schoenecker, M.D., Ph.D.

Jonathan Schoenecker, M.D., Ph.D., Associate Professor of Orthopaedics, Pediatrics, Pathology, and Pharmacology, has received notice of funding for a Fiscal Year 2017 Department of Defense Peer Reviewed Orthopaedic Research Program (PRORP) Applied Research Award. The PRORP Focus Area

addressed by this work, *Plasmin Therapy to Prevent Post-Traumatic Heterotopic Ossification in the Upper Extremity After Severe Injury*, is the prevention of Heterotopic Ossification (HO) in the upper extremity. This research focuses on pathologic tissue repair of muscle in the setting of a severe injury-provoked acute phase response. When muscle is injured in conjunction with an injury known to prompt an exuberant and prolonged acute response, such as blast, burn or neurologic injury, it often heals improperly including the development of myofibrosis and HO.

Plasmin is an essential protease that initiates repair during the acute phase response for musculoskeletal tissue including skin, muscle, nerve and bone. Schoenecker’s team has determined that plasmin plays two essential roles in preventing HO in muscle following injury. First, it prevents the development of calcification within injured muscle. Second, it is required for removal of calcification prior to muscle repair. Importantly, if not removed, calcification within muscle is sufficient to instigate endochondral ossification in muscle leading to HO. They also have determined that following severe injury, plasmin is consumed below critical levels required to prevent calcification. As a result, injured muscle develops calcification and, if not removed prior to repair, undergoes endochondral ossification.

Taken together, Schoenecker’s team hypothesizes that restoring plasmin activity during a critical therapeutic

window following severe injury effectively reduces HO and therefore improves function of the upper extremity. The objective of this study is to define the therapeutic window during which restoration of plasminogen and targeting plasmin’s inhibitor is most effective at restoring plasmin’s activity after severe injury and therefore preventing HO.

Jason McCarthy, Ph.D., Associate Professor at the Masonic Medical Research Institute, is Co-investigator on this study. Dr. McCarthy, an expert in synthetic chemistry and the synthesis of novel imaging agents, will direct the synthesis and characterization the agents that are required and the invitro analysis of fibrin binding.

### 2018-19 Surgical Fellowships Funding

Omega Medical Grants has awarded fellowship funding for 2018-19 to:

- Division of Hand and Upper-Extremity Fellowship Program, Donald Lee, M.D., Director  
*Depuy Synthes and Zimmer Biomet generously support this fellowship.*
- Division of Pediatric Orthopaedics, Gregory Mencio, M.D., Director  
*Medtronic and Depuy Synthes generously support this fellowship.*
- Division of Orthopaedic Trauma, William Obremskey, M.D., Director  
*Depuy Synthes and Zimmer Biomet generously support this fellowship.*

### Other Funding

The Division of Orthopaedic Trauma has received additional funds from the Center for Orthopaedic Trauma Association (COTA) and AO North America/Trauma, in support of our Orthopaedic Trauma Fellowship program.

Sports Medicine has received funds from the Arthroscopy Association of North America and Smith and Nephew to support sports medicine surgical fellowships. Charles Cox, M.D., serves as Sports Medicine Surgical Fellowship Director.

### Vanderbilt Orthopaedics and Rehabilitation FY 18 Awards and Recognitions

Date	Category	Award Sponsor or Foundation	Award Name	Recipient
Feb-18	Lectureship	American Physical Therapy Association	Moderator & Speaker	Kristin Archer
Jul-17	Lectureship	University of Colorado	Invited Lecture-Physical Therapy Program	
Nov-17	Lectureship	St. Elizabeth Healthcare	Invited Lecture	
Apr-18	Lectureship	East TN State University	Invited Lecture	
Oct-17	Lectureship	Johns Hopkins	Lee H Riley, Jr. Visiting Professor Lecture	
Jul-17	Award	American Orthopaedic Society for Sports Medicine (AOSSM)	O'Donoghue Sports Injury Research Award	Charles Cox
Jan-18	Award	American Orthopaedic Association	Fellow	
Sep-17	Award	American Association for Hand Surgery	Best Paper	Mihir Desai
Jan-18	Election/ Appointment	Adventure Science Center	Board of Directors, Chairman	Alex Jahangir
Jan-18	Election/ Appointment	Metropolitan Board of Health of Nashville	Board of Directors	
Jan-18	Election/ Appointment	ThinkTennessee	Board of Directors, Chair, Policy Committee	
Jul-17	Award	American Orthopaedic Society for Sports Medicine (AOSSM)	O'Donoghue Sports Injury Research Award	Laura Huston
Jan-18	Election/ Appointment	NHL Team Physician Society	Vice President NHL Team Physician Society	John Kuhn
Jan-18	Election/ Appointment	American Shoulder Elbow Surgeons	American Shoulder Co-Chair, Neer Circle Task Force	
Jul-17	Lectureship	Cleveland Clinic	Invited Lecture	
Sep-17	Lectureship	University of Michigan	Invited Lecture	
May-18	Lectureship	University of Michigan	Invited Lecture	
Jul-17	Election/ Appointment	American Society for Surgery of the Hand	Chair, Membership Committee	Donald Lee
Jul-17	Election/ Appointment	Association of Bone & Joint Surgeons	Chair, Annual Meeting Program Committee	
Jul-17	Election/ Appointment	American Orthopaedic Association	Delegate-at-Large, Executive Committee	
Jul-17	Election/ Appointment	American Society for Surgery of the Hand	Council Member-at-Large	
Jul-17	Election/ Appointment	Clinical Orthopaedics & Related Research	Board of Trustees	
Jul-17	Election/ Appointment	Association of Bone & Joint Surgeons	Executive Committee	
Jul-17	Award	POSNA (Pediatric Orthopaedic Society of North America)	POSNA Special Effort & Excellence Award	Jeffrey Martus
May-18	Lectureship	Society for Pediatric Radiology	Invited Lecture-Keynote	
Oct-17	Lectureship	Children's Mercy Hospital	Diveley Pediatric Orthopaedic Lectureship	
Apr-18	Lectureship	University of Michigan	Frederick J. Fischer Pediatric Orthopaedic Lectureship	
Jul-17	Election/ Appointment	POSNA (Pediatric Orthopaedic Society of North America)	E-Editorial committee	
Jul-17	Lectureship	Scottish Rite Hospital for Children	Brandon Carrell Visiting Professor	Gregory Mencio
Oct-17	Election/ Appointment	American Board of Orthopaedic Surgery	Chair, ABOS Credentials Committee	
Oct-17	Election/ Appointment	American Board of Orthopaedic Surgery	Chair, ABOS Research Committee	
Apr-18	Award	Lipscomb University	JS Award	Manish Sethi
Jun-18	Award	United States Congress	Congressional Award of Honor	
Nov-17	Lectureship	Washington University St. Louis, MO	Invited Lecture, Musculoskeletal Research Center	Jeffry Nyman
Nov-17	Lectureship	Materials Research Society	Invited Lecture, Symposium, Multiscale Mechanobiology & Biomechanics	
Jan-18	Election/ Appointment	International Society for Clinical Densitometry	Scientific Advisory Council	
Jul-17	Election/ Appointment	POSNA (Pediatric Orthopaedic Society of North America)	Director of Research	Jonathan Schoenecker
Jul-17	Election/ Appointment	Orthopediatrics	Educational Advisory Board	
Jul-17	Election/ Appointment	International Pediatric Orthopaedic Symposium	Advisory Board	
Sep-17	Lectureship	American Society for Surgery of the Hand	Invited Lecture	Douglas Weikert
May-18	Election/ Appointment	Legacy Society	Chair, Director, Annual Meeting	

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