

# OJO

The Oregon Journal  
of Orthopaedics

Volume X June 2021

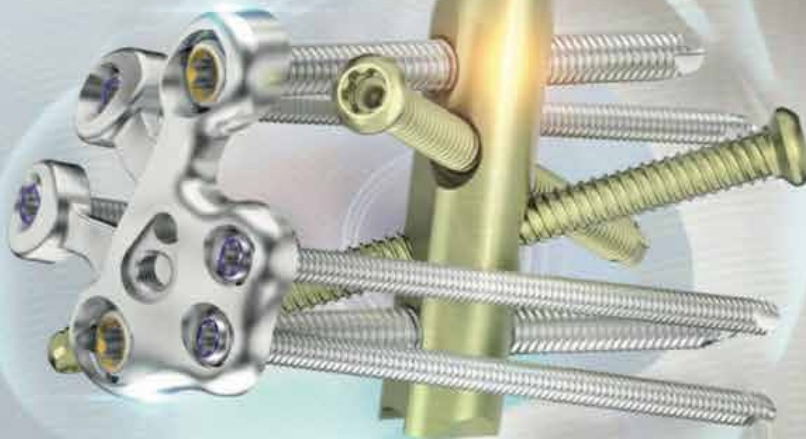


*School of*  
**MEDICINE**



# STABILITY TO DO MORE™

RFN-Advanced™  
System



Locking Attachment Washer  
increases the fixation  
strength by 44%<sup>2\*\*</sup>



Locking Polymer  
reduces screw  
toggle by 80%<sup>1\*</sup>



10° nail for  
Periprosthetic  
Fractures<sup>4</sup>



Condylar Nut  
Peak compression  
233% greater than  
screws alone<sup>3\*\*\*</sup>

## Advanced NAILING SYSTEM

SOLUTIONS FOR THE SIMPLE TO THE COMPLEX<sup>4, 8</sup>



**RFN-Advanced**  
RETROGRADE FEMORAL NAILING SYSTEM



**TN-Advanced**  
TIBIAL NAILING SYSTEM



**FRN-Advanced**  
FEMORAL RECON NAILING SYSTEM



**TFN-Advanced**  
PROXIMAL FEMORAL NAILING SYSTEM

To learn more about the future of nailing, contact your DePuy Synthes Sales Consultant. Please also refer to the package insert(s) or other labelling associated with the devices identified in this brochure for additional information.

CAUTION: Federal Law restricts these devices to sale by or on the order of a physician. Some devices listed on this page may not have been licensed in accordance with Canadian law and may not be for sale in Canada. Please contact your sales consultant for items approved for sale in Canada. Not all products may currently be available in all markets. For full product details and precautions, please consult the Instructions For Use. Manufactured by: Synthes USA, LLC, 1101 Synthes Avenue, Monument, CO 80132. Synthes GmbH, Eimattstrasse 3, 4436 Oberdorf, Switzerland. Note: For recognized manufacturer, refer to the product label. www.jnjmedicaldevices.com ©DePuy Synthes 2021. All rights reserved.

1 DePuy Synthes, RFNA Poly Inlay Angular Stability Test Report, 08/28/2020. Windchill Document #000306551\* 2 DePuy Synthes, RFNA Nail IAW Static Construct Design Verification Report, 04/28/2020. Windchill Document #000293480\* 3 DePuy Synthes test result summary for Secure Retaining Screws, 08/17/2020. Windchill Document #000293305\* 4 DePuy Synthes, RFN-Advanced Retrograde Femoral Nailing System Instructions for Use, 2020. Windchill #07964/GP3113. Agile Document #SE\_793149 5 DePuy Synthes, Tibial Nail Advanced System Instructions for Use, 2020. Windchill #14382/GP3114. Agile Document #SE\_793150 6 DePuy Synthes, Femoral Recon Nail Instructions for Use, 12/05/2017. Windchill #500059335/GP3104, 12/18/2019. Agile Document #SE\_793147 7 DePuy Synthes, Trochanteric Fixation Nail-Advanced System Instructions for Use, 10/04/2017. Windchill #GP2920 12/18/2019. Agile Document #SE\_793148 8 DePuy Synthes, TRAUMACEM V+ Injectable Bone Cement, Sterile Instructions for Use, 08/26/2020. Windchill #GP2997, 02/10/2020. Agile Document #SE\_295424

**DePuy Synthes**  
PART OF THE JOHNSON & JOHNSON FAMILY OF COMPANIES

\*Bench testing may not be indicative of clinical performance  
+ Compared to a nail without locking polymer  
\*\* Compared to nailing alone  
\*\*\* In a poor quality foam model

165840-210128

# Table of Contents

Letter from the Editors . . . . .	1
Letter from the OHSU Interim Chairman. . . . .	2
Letter from the OHSU Program Director. . . . .	3
Letter from the Good Samaritan Program Director . . . . .	4
Residency Faculty . . . . .	5
• OHSU Residency Core Faculty . . . . .	5
• Portland VA Medical Center Residency Core Faculty . . . . .	7
• Shriners Hospital for Children Residency Core Faculty . . . . .	7
• Kaiser Permanente Pediatrics Residency Core Faculty. . . . .	7
• Legacy Emanuel Hospital Residency Core Faculty . . . . .	7
• Orthopedic + Fracture Specialists Residency Core Faculty . . . . .	7
• Samaritan Health Services Orthopedic Surgery Core Faculty . . . . .	8
• Program Fellowships 2020-2021 . . . . .	8
Featured Articles . . . . .	10
• New Faculty Spotlight: A Q&A session with Travis Philipp, MD . . . . .	10
• New Faculty Spotlight: A Q&A session with Bopha Chrea, MD . . . . .	11
• Checking in with OHSU . . . . .	12
• Is Less More? Lessons Learned Amidst COVID-19 and the 2021 Orthopaedic Residency Match . . . . .	14
• Program Director Uses Instagram to Highlight OHSU's Strengths During the Pandemic . . . . .	17
• Checking in with the Portland Veterans Hospital . . . . .	19
• Checking in with Pediatric Orthopaedics at Doernbecher Children's Hospital . . . . .	20
• Checking in with Shriners Hospital for Children . . . . .	21
• Checking in with Legacy Emanuel Medical Center. . . . .	22
• Checking in with Geriatric Trauma at Providence St. Vincent . . . . .	23
• Checking in with Samaritan Health Services . . . . .	25
• A Research Update at the Portland VA. . . . .	26
• OHSU's New Orthopaedic Surgery Alumni Association . . . . .	27
• Dr. Robert Orfaly Begins New Leadership Position for AAOS . . . . .	28
• Update on the Hayhurst Endowment . . . . .	29
• OHSU Thanks Dr. Jung Yoo for 15 Years of Service as our Chairman. . . . .	30
Research Publications . . . . .	33
Resident Directory 2020-2021 . . . . .	38
• OHSU Chief Residents and Senior Projects . . . . .	38
• Samaritan Health Services Chief Residents and Senior Projects. . . . .	43
• OHSU Residents (PGY-4 to PGY-1) . . . . .	46
• Samaritan Health Services Residents (PGY-4 to PGY-1) . . . . .	48
Alumni Updates . . . . .	51
Visiting Lectureships. . . . .	59
• OHSU Annual Beals Lectureship . . . . .	59
• Shriners Hospital for Children – Beattie Lecture Series . . . . .	61
• Shriners Hospital for Children – Dillehunt Memorial Lecture . . . . .	61
Grand Rounds Lectures 2020-2021 . . . . .	62
Resident and Teaching Awards . . . . .	63
OHSU Orthopaedic Program Alumni Directory . . . . .	64
Special Thanks and Comments . . . . .	69

Cover Art: Photograph by Derek Bond, MD

## Letter from the Editors

Welcome to the tenth volume of The Oregon Journal of Orthopaedics. We would like to thank the faculty, residents, and alumni whose contributions made this year's edition possible. In this tenth installment, we showcase the academic and professional accomplishments of the OHSU Department of Orthopaedics and Rehabilitation. We also highlight the many ways our department has shown resilience over the past year by continuing to provide world-class orthopaedic care in the face of unprecedented challenges.

In this year's edition, we explore how OHSU adapted to navigate the new logistical hurdles caused by the pandemic. We also check in with our partner institutions to see how the past year has affected them, including updates from the Portland Veterans Affairs Medical Center, Doernbecher Children's Hospital, Shriners Hospital for Children, Legacy Emanuel Medical Center, Providence St. Vincent Medical Center, and Good Samaritan Regional Medical Center – Corvallis.

OHSU faculty and residents continue to make substantial contributions in the academic arena. We highlight the research publications produced over the past year and showcase the senior research projects from the chief residents at OHSU and Samaritan Health Services.

We also report on new developments in our department. We celebrate Dr. Darin Friess being named interim Department Chair and Dr. Kenneth Gundle becoming the new Program Director, as well as Dr. Robert Orfaly being named editor-in chief of AAOS Now magazine for 2021. We also hear about the new ways Dr. Jacqueline Brady is using the Hayhurst Endowment to further resident education and announce the formation of an OHSU Orthopaedic Surgery Alumni Association. OHSU is also privileged to introduce two new faculty members, Dr. Bopha Chrea (Foot & Ankle) and Dr. Travis Philipp (Spine), to the Department of Orthopaedics and Rehabilitation. And while we celebrate OHSU's bright future, we also reflect on the legacy that Dr. Jung Yoo leaves behind as he steps down from his role as Chair of the Department of Orthopaedics & Rehabilitation after 15 outstanding years.

Lastly, the editors would like to recognize and thank Marie Kane for her tireless work over the last decade in bringing The Oregon Journal of Orthopaedics to publication. It's hard to imagine how this journal would make it to print each year without Marie's diligence, coordination, and patience. Her years of selfless service in continuing orthopaedic education truly embody the spirit of the OJO. Thank you for everything you do, Marie.

Faculty Editor: Kenneth Gundle, MD

Senior Editors: Elliott Cole, MD and Connor Pihl, MD

Junior Editors: Laura Sokil, MD, Danielle Peterson, MD and David Cornwell, BS

Editors Emeriti: Trevor Barronian, MD and Erik Woelber, MD

## Letter from the OHSU Interim Chairman



Dear Colleagues:

Welcome to the 10th Volume of the Oregon Journal of Orthopaedics! Enjoy again this delightful collection of research abstracts, photographs, program and alumni updates and a general window into academic orthopedics from the two programs in Oregon. We see another class of accomplished residents graduating and ready to make their mark on the world. So while their chief resident year was marked by the different phases of this pandemic, they leave this challenge ever more ready to face the problems of tomorrow.

The Department of Orthopaedics continues to grow and adapt. We see more patient clinic visits each month than ever before, with now almost 1/3 of the visits in virtual format. This saves patients long travel times for cancer monitoring, physical therapy updates, wound checks, and imaging reviews. We work to make it simpler for referring physicians to obtain a tertiary consultation for complex problems. As the state population grows, there were more trauma activations in July 2020 than any previous month, and this summer looks to be even busier. The 26 rooms of the main OHSU Hospital OR are routinely full. The once small Center for Health & Healing at the bottom of the tram now has 16 busy operating rooms and treats postoperative patients overnight on a beautiful new patient floor. OHSU further works to build patient care partnerships with Hillsboro Medical Center, Mid-Columbia Medical Center, Adventist Health, and Columbia Memorial Hospital. While our orthopaedic residents are not rotating at these hospitals currently, they do see more patient transfers and the results of health care integration. Medical students continue to rotate at new sites around the state each year. We are growing to meet ongoing needs.

To manage this growth, our Department has formed formal subspecialty Sections, each with a new Section Head (you can see these on the faculty picture pages within this Volume). Each Section is learning to manage its growth across a larger healthcare system with multiple clinic sites, additional surgeons and referral patterns to provide better musculoskeletal care. We also recognize the priority to take better care of ourselves, with Dr Nazir stepping into a new role as the Department Director of Wellness and Health. We recognize that the discipline of Orthopaedics is often missing outside perspectives, so to strengthen this initiative Dr Chrea has stepped into a new role as Director of Diversity, Equity and Inclusion. We continue to build our Departmental research roadmap, with 6-8 research assistants, a full time statistician, a medical editor, and hopefully a grant writer. Finally, we have Dr Lieberman stepping into a role directing a new OHSU Orthopaedic Alumni Group that we hope many readers will join. There is a long legacy of leadership in this Department, and I hope that my plans as interim Chair will add to the success of that legacy.

So please read on. View the pictures. Join us for virtual OHSU Orthopaedic Grand Rounds on a Monday morning. Follow us on Instagram. Send a text to a former resident. Enjoy this journal and we look forward to connecting with you over the next year.

Darin Friess, MD MPH  
Interim Chair,  
OHSU Dept of Orthopaedics & Rehabilitation

## Letter from the OHSU Program Director



### 諸行無常

This spring, as with last spring, I was grateful for the cherry blossoms outside Mackenzie Hall. Cherry blossoms remind us that the only permanence is change.

A year ago, we were dealing with a remarkable degree of uncertainty. Together we reconfigured the residency and clinical services to minimize COVID-19 exposure risk while continuing critical patient care and education missions. A vivid memory of mine: sitting down with graduating chief resident Dr. Michael Robbins and writing out a platooning matrix to get us through some exposure quarantines, and then joining a virtual meeting with those who were stuck at home yet still so keen to learn and contribute. For a while, I kept hundreds of homemade masks and shields in my office, just in case.

We endured, together, and I am grateful to the residents and faculty and staff for all that was done and all that was missed to make it happen.

As a new Program Director, this past year is really all I know. In the spring we made a virtual clerkship for medical students, who were kept out of the hospital for months. In the summer, we welcomed PA students to clinical services alongside re-entering medical students instead of visiting rotators. To help stay connected and show more of what we are about to the world, we stepped into the world of social media. In the fall and winter our recruitment of new residents went entirely virtual. We sent welcome gift boxes to our amazing soon-joining interns to celebrate a great Match –and we will really have to show them around, as several have only ever seen the OHSU campus on Google Earth.

We lost a lot, individually and collectively. The losses include an entire year of Safety Meetings, and evening Journal Clubs. We have missed over a year of in-person Grand Rounds and other conferences, replaced with virtual formats that lose a lot of connection. There were no Chart House Coconut Crunch Shrimp for pre-interview gatherings. VirtuOHSU labs were decreased, clinical schedules altered, and people we might normally see every week suddenly might be out of sight for months. In large and small ways, we have borne witness to the tumult of 2020 and 2021.

Doors have also been opened. Virtual Visiting Grand Rounds brought Dr. Brooks and Dr. Jain to our midst from afar. Out of quarantine purgatory emerged the Intern School of Dr. Working. Our graduating Chiefs and all the residents have found additional ways to look out for each other. Thanks to institutional reinvestment, we will be adding additional lead supplies as well as a state-of-the-art haptic surgical simulator. The lunch bowls at Sam's Café are actually pretty good. And with 30 presentations at OHSU Research Week, we have found a way to keep the light of research burning.

Where we can find some continuity, we will take it. I am impressed every day with the dedication and self-deprecating excellence of our residents. It is a joy to support them in training. They are certainly my rock, even as each one tumbles along and through and beyond the stream of training.

Now it is spring again. Again, the cherry blossoms bloomed and have since fallen. The Beforetimes are gone. Struggles remain, and new challenges undoubtedly lurk on the horizon. The only permanence is change.

May we all have a chance to catch our breath. May the Mackenzie Hall Cafeteria reopen and bring back the spicy chicken wraps. And together, may we move onwards.

Kenny Gundle



## Good Samaritan Regional Medical Center Orthopedic Surgery Residency Program Letter from the Program Director



"May you live in interesting times." Though the actual origin of this is apocryphal, it's no less applicable today. These have been interesting times. Who would have thought the pandemic would still be going on with yet another surge happening as we speak? Who would have thought wearing a mask to protect your neighbors would become political? Who would have thought an ID doc would become famous?

Even before the pandemic and all that has come with it, resilience was a buzz word. It falls in with wellness, self-care, grit, and other words that no one used when I was a resident. Resilience is defined by Merriam-Webster as "the capability of a strained body to recover its size and shape after deformation caused especially by compressive stress." That sounds like a basic science question on the OITE. Merriam -Webster's second definition is "an ability to recover from or adjust easily to misfortune or change." Both definitions feel pretty applicable to our lives right now. Our lives have been compressed and made smaller. Residency is a time of change but learning during Covid is above and beyond. So how do we remain resilient? Simply acknowledging the compressive stress and the misfortune and change is the first step. I don't mean saying Covid sucks and I'm tired of wearing a mask. I mean acknowledging that we miss our families and friends. We aren't sure we're really learning what we should be or could be learning right now. There are mutations circling the globe that might extend all the restrictions. It helps to identify what it is that's actually causing your stress.

The second step is creating a family where you are. I describe my residency as having occurred back in the day. As a resident in Milwaukee from 1992-1997, there were no work hour restrictions. We took in house call and usually stayed up all night then worked the next day. As a chief resident rotating at the County, you took call M-W-F-S-Su-T-Th-repeat. We didn't know any better, so we weren't particularly unhappy. We were resilient without knowing it. We were one big dysfunctional family. When you knew the hand resident had been up all night doing replants, you came over from trauma call and relieved them so they could get dinner and finish rounds. You socialized on your nights off with other residents even if they weren't the guys you would have chosen in college to be your best buddy. We drank way too much. OK, maybe that one isn't a good example. The point is that we banded together. I always felt loved and supported. I wouldn't trade those days for anything.

The final step is to remember the pandemic really is temporary and has some redeeming qualities. We won't be wearing masks forever. We will get to dine out with friends and family again – it's already starting. Dress codes are different on Zoom meetings, and you can wear your leggings or boxer shorts while you go to education sessions in residency. We have had a chance to reset and evaluate our priorities. For me, I got to watch all the available episodes of the Handmaid's Tale and Ozark.

TL;DR? Hang in there. It's going to get better. Hang out with your coresidents. Call your mom. Call me and I'll talk to you like your mom. Live in interesting times.

Sincerely,  
Jacque Krumrey, MD  
Residency Program Director  
Samaritan Health Services

# Residency Faculty

## OHSU Residency Core Faculty

### Adult Reconstruction



**Thomas Huff, MD**  
Fellowship Director



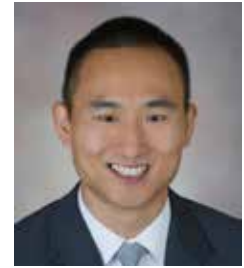
**Ryland Kagan, MD**



**Kathryn Schabel, MD**  
Director Comprehensive  
Joint Replacement,  
Section Head



**Matthew Halsey, MD**  
Section Head



**Scott Yang, MD**

### Pediatrics

### Orthopaedic Oncology



**Yee-Cheen Doung, MD**  
Director of Clinical  
Operations



**Kenneth Gundle, MD**  
Residency Program  
Director



**James Hayden, MD, PhD**  
Section Head



**Hans Carlson, MD**  
Section Head



**Nels Carlson, MD**  
Assistant Dean of  
Continuing Professional  
Development

### Physical Medicine & Rehabilitation

### Foot & Ankle



**Lara Atwater, MD**



**Bopha Chrea, MD**  
Director of Diversity,  
Equity & Inclusion



**James Meeker, MD**  
Section Head

### Podiatry



**Trish Ann Marie Otto, DPM**



# Residency Faculty

## OHSU Residency Core Faculty

### Research / Basic Science



**Brian Johnstone, PhD**  
Section Head



**Lynn Marshall, ScD**  
Program Director,  
PhD in Epidemiology,  
OHSU-PSU School of  
Public Health



**Clifford Lin, MD**  
Fellowship Director,  
Section Head



**Travis Philipp, MD**



**Jung Yoo, MD**  
Director of Spine  
Center

### Sports Medicine (Surgical)



**Jacqueline Brady, MD**  
Associate Residency  
Program Director,  
John & Susan Hayhurst  
Distinguished Scholar in  
Orthopaedic Research  
and Innovation;  
Section Head



**Dennis Crawford, MD,  
PhD**



**Andrea Herzka, MD**



**Darin Friess, MD**  
Interim Chair



**Zachary Working, MD**  
Section Head

### Trauma

### Upper Extremity



**Adam Mirarchi, MD**  
Fellowship Director



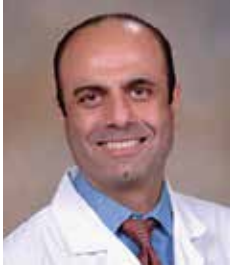
**Omar Nazir, MD**  
Director of Wellness  
& Health;  
Section Head



**Robert Orfaly, MD,  
FRCS(C)**  
Quality Medical  
Director

# Residency Faculty

## Portland VA Medical Center Residency Core Faculty



**Lucas Anissian, MD, PhD**



**Mark Berkson, MD**  
Section Chief for  
Orthopedic Surgery



**Kenneth Gundle, MD**



**Ryan Wallenberg, MD**

## Shriners Hospital for Children Residency Core Faculty



**Jeremy Bauer, MD**  
Director of Education



**Robert Bernstein, MD**  
Chief of Staff

## Legacy Emanuel Hospital Residency Core Faculty



**Steve Madey, MD**  
Hand/Upper Extremity  
Site Director



**Corey Vande Zandschulp, MD**  
Trauma

## Kaiser Permanente Pediatrics Residency Core Faculty



**Stephen Renwick, MD**



**Ronald Turker, MD**

## Orthopedic + Fracture Specialists Residency Core Faculty



**Alex DeHaan, MD**  
Joint Replacement/  
Trauma & Fracture



**Richard Southgate, MD**  
Joint Replacement/  
Trauma & Fracture

# Residency Faculty

Samaritan Health Services Orthopedic Surgery Core Faculty



Erin Campaigniac, MD



Wael Ghacham, MD



Jacqueline Krumrey, MD  
Program Director



Jason Lin, MD



Christopher Noonan, MD



Donald Pennington, DO



Nicholas Tedesco, MD



Luis Vela, DO, FAOAO

## Program Fellowships 2020-2021

### Sports Medicine Primary Care Fellows



Derek Blok, MD



Kamran Karim, DO

### Spine Fellows

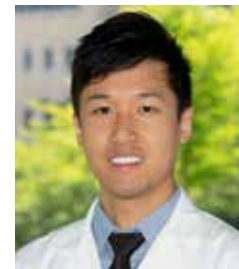


Stephen Hoge, MD



Michael Wheeler, MD

### Hand Fellow



Kai Yang, MD

### Joints Fellow

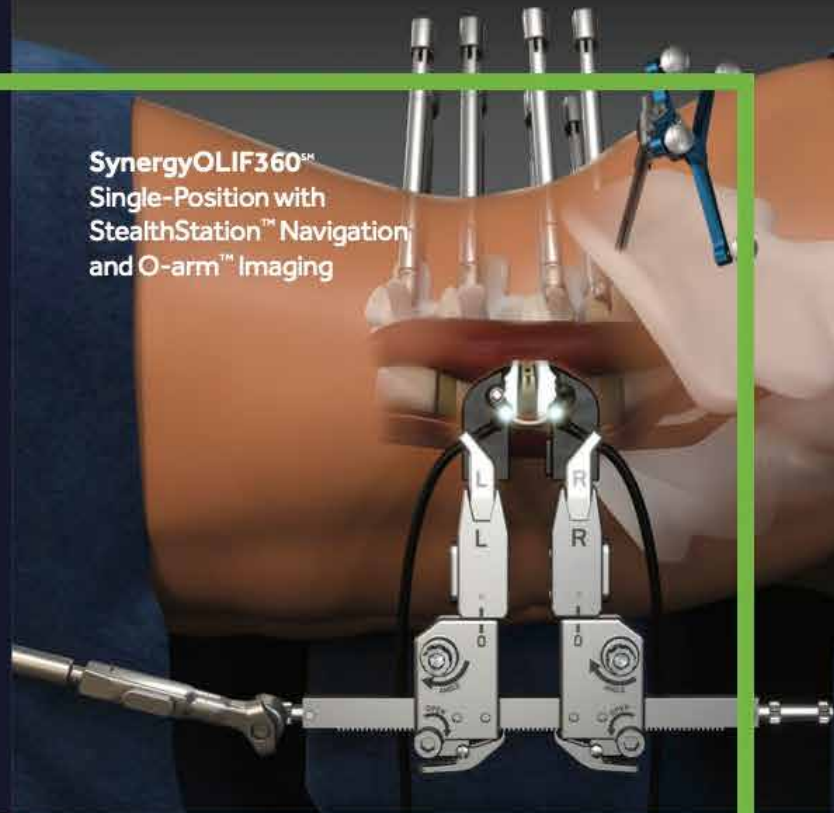


David Putnam, MD

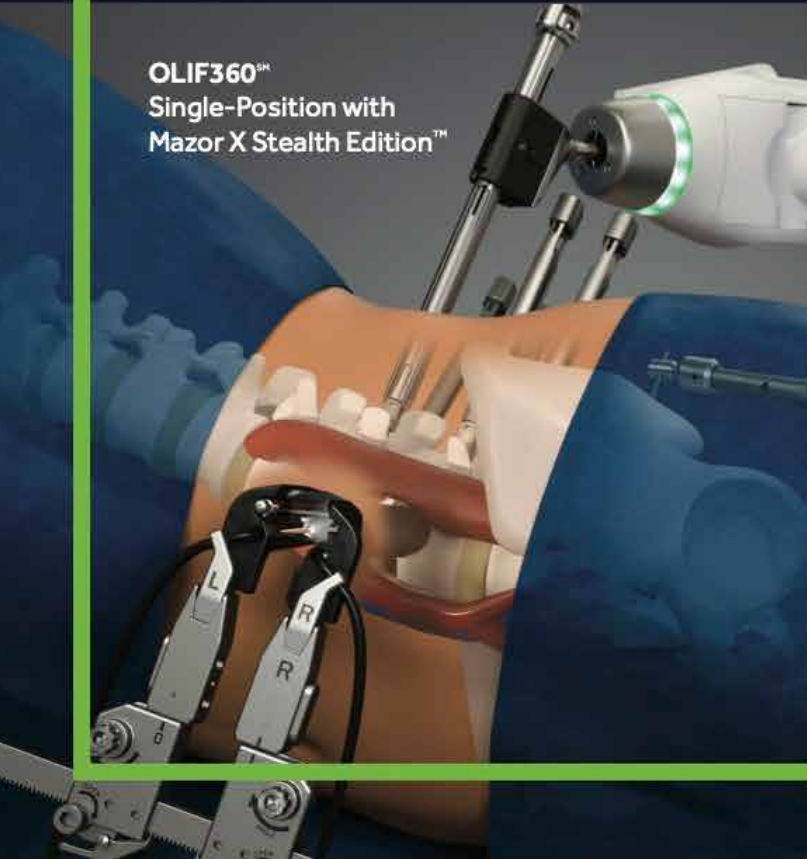


# SINGLE POSITION. START TO FINISH.

**SynergyOLIF360™**  
Single-Position with  
StealthStation™ Navigation  
and O-arm™ Imaging



**OLIF360™**  
Single-Position with  
Mazor X Stealth Edition™



## Ready to skip the flip?

OLIF360™ navigated and robotic-guided workflows enable you to enhance efficiency without the need for patient repositioning. These innovative, minimally invasive procedures empower you to effectively place bilateral pedicle screw fixation and perform oblique lateral interbody fusion through a muscle-sparing approach—without the added time, cost, and disruption of patient repositioning.<sup>1,2,3,4</sup>

**Put more flow in your workflow  
with OLIF360 Single-Position.**

#### Enabling Technology Products

Please refer to product indication manual/package insert for instructions, warnings, precautions, and contraindications.

#### REFERENCES

1. As compared to lateral interbody fusion with posterior screw fixation requiring a patient flip.
2. Associated costs may include costs of OR time, personnel, and draping.
3. Ziino, et al. Single position versus lateral-then-prone positioning for lateral interbody fusion and pedicle screw fixation. *J Spine Surgery* 2018;4(4):717-724.
4. Whitecloud et al. TLIF vs Anterior-Posterior Interbody Fusion of the Lumbar Spine: A Financial Analysis. *J Spine Disorders* 2001; 14(2):100-103.

© 2020 Medtronic. All rights reserved. Medtronic, Medtronic logo and Further, Together are trademarks of Medtronic. All other brands are trademarks of a Medtronic company. UC202013319.4 EN PMD024182-1.0

Find out more by visiting  
**[medtronic.com/OLIF](https://www.medtronic.com/OLIF)**

**Medtronic**  
Further, Together





### New Faculty Spotlight:

A Q&A session with Travis Philipp, MD

By: Elliot Cole, MD

**Hometown:** Olathe, KS; **Medical School:** OHSU

**Residency:** OHSU; **Fellowship:** NYU

**Favorite Restaurant in Portland?** Mediterranean Exploration Company

**What's your go-to OR music?** Whatever the resident/fellow I am working with wants

**What show(s) are you streaming right now?** I recently watched a couple of episodes of *Yellowstone*

#### Tell us a little about yourself.

I moved to Portland after finishing college at the University of Kansas. Having done both medical school and residency here, I've been in the area for about a decade now and love it. I have a wonderful wife, Christian. No kids yet. We take full advantage of living in the PNW by hiking or going to the coast or mountains whenever we have the chance to.

#### What brought you back to OHSU?

We have a great department - I've learned a lot from both Dr. Yoo and Dr. Lin and jumped at the chance to be their Jr. Partner. I also like the opportunity to take care of people from all over the state and from all walks of life. Lastly, my wife and I really like Portland.

#### What made you choose Spine as a specialty?

I really like the breadth of the field. In the same day you can do a small MIS discectomy using the microscope and then a large multilevel open procedure. You see patients with degenerative issues, deformity issues, tumors, infections and trauma.

#### Favorite thing about Portland/PNW?

It's a beautiful area of the country with easy access to the outdoors, mountains and ocean.

#### What are some goals you have for your practice?

The cases that come to OHSU from the community are often complex and offer challenges from both a diagnostic and operative standpoint. I am adding to my operative and diagnostic skills to manage these

complicated cases efficiently and effectively. I would like to bring robotic assist technology to OHSU as this technology matures, bringing expanded benefits for patient care.

#### What are some lessons learned while helping treat COVID patients during your fellowship year in New York?

Stay humble. As an orthopaedic spine fellow I certainly didn't expect that I would spend part of my fellowship year working as a medicine doctor, but 2020 was an odd year. I really had to lean on the more junior medicine residents I was working with. It was inspiring to see how the hospital mobilized to deal with the huge influx of COVID patients.

#### Do you have any research interests or projects you're looking forward to pursuing?

I would like to get OHSU enrolled and active with the American Spine Registry - a joint registry between the AAOS and AANS. This would add value both from a research standpoint and a quality standpoint. The spine center has already done a lot of great work in terms of rolling out PROs and getting involved with this registry is the next step. I am also interested in exploring the effects of our bundled payments initiative for spine surgery and the effects of being in a bundle vs not. I am currently working on evaluating the effects of a short steroid course after fusion procedures on postoperative outcomes - a project started by Dr. Yoo.

#### Any advice for the graduating chiefs?

Keep working hard as fellows as the jump from fellow to attending is a big one even. Think carefully about how you would manage each patient you see. If your attending makes a different decision, be sure to know why. Keep a print or digital log of your cases that you add to throughout the year. Note the subtle things your attending may do to make the procedure go smoother- things that you won't be able to find in a textbook etc. Enjoy the year!



### New Faculty Spotlight:

A Q&A session with Bopha Chrea, MD

By: Connor Pihl

**Hometown:** Tillsonburg, Ontario, Canada

**Medical School:** Trinity College

**Residency:** University of Mississippi Medical Centre

**Fellowship:** Foot and Ankle Surgery, Hospital for Special Surgery, New York, NY

**Favorite Restaurant in Portland:**

I wish I knew (Re: COVID)

**Go-To OR Music:** Hip Hop BBQ

#### Tell us a little about yourself.

I was born in a refugee camp in Thailand, but grew up in a small rural town in Ontario, Canada. My husband grew up in the Pacific Northwest. We have two small children (3 years old and 8 months old).

#### What brought you to OHSU?

I knew early on in my orthopedic training that I wanted to pursue an academic job. Mentors and educators have meant everything to my career and I wanted to work where I could teach and provide the same mentorship to others. On top of that, OHSU also allows me to maintain my involvement in research and continue to push our field into the future. Our extended family is also concentrated in WA and OR so we are very happy to be back home.

#### What drew you to Foot & Ankle as a subspecialty?

I enjoy helping my patients get back on solid footing so they can live, work, and play to their full potential. On top of this, Foot and Ankle encompasses so many of the respective orthopedic subspecialties (arthroplasty, trauma, sports, peds, oncology) that we perform a myriad of different procedures. Foot and Ankle is also still a young field and as such there is a rich spirit of collaboration with my colleagues at OHSU and in the broader community across the world.

#### What are some goals you have for your practice?

My practice goals include a concentrated mix of soft tissue procedures, trauma, and sports. I'd love

to continue my involvement in research as well as education both with the medical students and residents. I have a strong desire to make an annual mission trip to provide medical services to underserved patients abroad a part of my practice.

#### Do you have any research interests or projects which you are looking forward to pursuing?

I am in the process of publishing a peroneal tendon reconstruction study, minimally invasive vs open bunion analysis, and weightbearing CT study that was a collaborative effort with surgeons in the US, Brazil, and China. After that, I always have a long list of research questions I hope to pursue.

#### What has been the greatest challenge in transitioning from fellowship to being an attending?

While residency and fellowship prepare you with the surgical tools and medical decision making skills necessary to operate at a high level, only experience teaches you how to shoulder the heavy weight of responsibility that comes with being an attending surgeon.

#### Favorite things about Portland/PNW so far?

I'm loving the trees and beautiful outdoors, great food and drink, and the general attitude of openness and acceptance of others.



# Checking in with OHSU - Orthopaedic Adaptations in Undergraduate Medical Education during COVID-19

By: David Cornwell, BS; Stephanie Zhao, MSL; Zachary Working, MD; Lara Atwater, MD; Kenneth R Gundle, MD

The COVID-19 pandemic has been an incredible disruption to the American medical education system. During the initial months of the pandemic, medical schools across the nation weighed the decision to allow medical students to continue their hospital training. Questions of adequate spacing, personal protective equipment supplies, and the risk of COVID-19 exposure swirled, especially in the spring of 2020. While medical students were able to return to the wards and operating rooms by the summer, restrictions remained. Two of the most impactful decisions made during this time were the cancellation of in-person residency interviews, and the cancellation of visiting sub-internships. These changes required responses, both for our residency program, and in our support of OHSU students applying for orthopaedic surgery residency.

Orthopaedic surgery residency spots are competitive, with the 2020 NRMP data showing 1,192 applicants for a total of 849 positions, or 1.4 applicants per position. Due to this, students typically complete three to four sub-internships at different institutions. These sub-internships not only prepare students for an orthopaedic residency, but also allow institutions to evaluate applicants on their clinical acumen, work ethic, and attitude. With COVID-19 forcing many hospitals to preserve PPE and limit unnecessary patient interaction, many medical students were not only unable to attend rotations away from their home rotation, they were also unable to practice the requisite skills needed to excel on an orthopaedic sub-internship rotation.

During this time of change, the OHSU Department of Orthopaedics & Rehabilitation

took several steps to mitigate the impact of COVID restrictions. The first was to create enough home-institution sub-internships to allow our OHSU fourth-year medical students ample opportunities for rotations without completing travel to other institutions. Rather than one 4-week rotation, we were able to ensure at least 3 months of rotation opportunities. This measure, alongside faculty advising and their hard work, was thankfully successful. There were six aspiring orthopaedists who began their final year of medical school at OHSU during the pandemic; all successfully matched into orthopaedic surgery residencies - more than any other year in the past decade per the publicly available Match lists provided by OHSU School of Medicine.

Another step taken by the Orthopaedics department was to increase their online presence. This effort was multifocal, and included the effective utilization of social media networks such as Instagram and Twitter. The OHSUOrtho Instagram page which highlighted research accomplishments, resident and faculty adventures, and orthopaedic events quickly collected over 1,000 followers in less than 9 months. There is a separate article in this edition about the online expansion, which included efforts to improve the online presence of OJO.

While an immediate focus was the Class of 2021, the OHSU School of Medicine Class of 2022 was also impacted by a multi-month cancellation of clinical rotations. For those in both classes that were interested in exploring orthopaedic surgery in the spring of 2020, a "Remote Introduction to Orthopaedics Surgery" clerkship was created. Multiple faculty came together in a period of less

than a month to build an open-ended curriculum guided by overarching objectives to immerse students in the practices of orthopaedics, and prepare them for sub-internships. Many of its objectives were essential to all practices of medicine: familiarity with high impact research and landmark literature, as well as efficient collection and organization of patient data into concise, directed presentations. Other goals, such as interpreting radiographic imaging and classifying fractures, were more specific to orthopaedics. Students were also encouraged to practice suturing and knot tying, fundamental skills that are historically taught in the operating room. Students uploaded their suturing, knot-tying, and fracture descriptions onto an online video sharing platform. Their progress was supervised by faculty surgeons, as well as fellow students, who were able to view each other's suturing techniques. On a weekly basis, students received fracture radiographs from the course directors, and would practice presenting these fractures orally. These recorded oral presentations were then drawn by fellow students both to give feedback as to the accuracy of the oral presentation and to practice translation of a presentation into a mental image. The actual radiographs were later uploaded so students could compare with their drawings. The Department of Orthopaedics & Rehabilitation allowed students to remotely join in a variety of Departmental lectures, and orthopaedic residents who were present at many of these talks were excited to mentor medical students through difficult concepts as well as the pathway to residency.

The OHSU Class of 2023 was least clinically impacted by the pandemic, but nonetheless had setbacks in their education. One of the hallmarks of the Orthopaedic Surgery Interest Group was monthly research meetings, which took place in person prior to the pandemic. These research meetings were a valuable resource for students with emerging interest in orthopaedic surgery, and allowed them to find research projects and connect with mentors. Thankfully, the new faculty advisor for OSIG, alongside Dr. Natalie Zusman

and other residents, were able to successfully transition these meetings online, maintaining the consistency of student research. The ongoing success of OSIG is well shown by at least 30 accepted abstracts from the Department at the 2021 OHSU Research Week, accounting for over 15% of all presentations.

While medical students are thankfully back on rotation, ongoing impacts remain. The 2021-2022 application cycle will have its own challenges and responses. We have learned much in the past year; with flexibility and a determination to continue our educational missions, we will be able to meet what follows.



# Is Less More? Lessons Learned Amidst COVID-19 and the 2021 Orthopaedic Residency Match

By: Henry M. Fox, MD; Kenneth R. Gundle, MD

### Framing the Issue

The famous mathematician John Von Neumann, in his 1928 “minimax theory,” established the concept of zero-sum games—in which each participant’s gain or loss of utility is precisely balanced by the utility gains or losses of other participants.<sup>1,2</sup> Several of Von Neumann’s tenets can be applied to the high-stakes orthopaedic surgery match. Two key stages of the Match process, the Roth-Peranson algorithm,<sup>3</sup> are conceivably “zero-sum”: interview positions, and residency positions. Applicants vie for a finite number of positions, and the benefit to one applicant (occupying a spot) is directly proportional to the loss of another (being unable to occupy said spot).

In order for an applicant to attain residency positions, interview invitations must be obtained. The competition amongst applicants for invitations is decidedly not zero-sum: the relative value of an interview invitation for applicant A is likely disproportional to the relative value of that same invitation for applicant B. Applicant A may have a small gain of utility from this invitation, if he or she already has

fifteen invitations. Applicant B may have a large gain of utility from the invitation, if he or she has a fewer-than-desired number of invitations. This is reinforced by the National Residency Matching Program (NRMP) “Charting Outcomes in the Match.”<sup>4</sup> Above 14-15 ranked programs, an applicant’s probability of matching only incrementally increases with each additional interview, whereas for applicants with fewer interviews, each additional interview can drastically increase the probability of matching. Herein we propose an alternative strategy for applicants to obtain a satisfactory number of interview invitations, in a manner that is simultaneously conscientious of programs.

YEAR	2019-2020 APPLICATION CYCLE	2020-2021 APPLICATION CYCLE
Total number of U.S. MD Applicants	804 <sup>4</sup>	1,120 <sup>10</sup>
Total number of U.S. MD Applicants with a USMLE Step 1 Score <240*	231 (28.73%)	332** (28.73%)
Total number of U.S. MD applicants with a USMLE Step 1 Score >240*	573 (71.27%)	798 ** (71.27%)
Average number of residency programs applied to by U.S. MD applicants	88.00	84.98

*Table 1.* USMLE: United States Medical Licensing Exam. \* Note that due to limitations in data granularity (i.e., distributions of Step 1 exam scores reported in increments of 10) we could not choose the precise AOA/CORD Recommendations cutoff of a 235 Step 1 score. Instead, we chose a higher cutoff of 240.

\*\* Note that for the 2020-2021 cycle, the total number of applicants with a given exam score is extrapolated from the distributions of exam scores from the 2019-2020 cycle. We assumed that this distribution remained comparable across these two years.

With the average number of programs applied to and the number of 2020-2021 applicants, the total number of orthopaedic applications is 95,177.6. Assume that each applicant with a Step 1 score >240 applied to 40 programs.  $95,177.6 = x(322) + 40(798)$ , where x equals the number of programs that applicants with a Step 1 score <240 would have needed to apply to for the total number of applications to equal 95,177.6.  $x = 196.45$ ; thus, if all applicants with a Step 1 Score > 240 applied to 40 schools, then the average applicant with a Step 1 Score <240 would have had to apply to 196.45 training programs. There were 190 participating programs in 2021.

### Changes (and Sequelae) in the 2020-2021 Orthopaedic Application Cycle

In response to this year's sweeping changes to the application cycle,<sup>5</sup> in May of 2020 the American Orthopaedic Association's Council of Orthopaedic Residency Directors (CORD) urged allopathic applicants with United States Medical Licensing Exam (USMLE) Step 1 scores greater than 235 to apply to fewer than forty programs.<sup>6</sup> If a decreased volume of applications per program were to occur, then applicants would theoretically benefit from a more holistic review of their application.<sup>7-9</sup>

It appears that the CORD recommendations were not widely heeded (Table 1). Preliminary 2021 ERAS data demonstrates that the average number of orthopaedic programs applied to—for U.S. allopathic students—was 84.98, down from 88.00 in 2020.<sup>10</sup> While this is a downturn in the average number of applications trendline<sup>7</sup> the average number of applications per program increased, from 590.27 applications in 2020 to 619.59 in 2021.<sup>10</sup> This increase is not attributable to the combined DO and MD match. While further data is surely forthcoming, the collective decision of applicants to widely apply will have harmful sequelae. The American Association of Medical Colleges (AAMC) announced in December 2020 that a maldistribution of interview invitations had occurred.<sup>11</sup>

### Perspectives of an Applicant and a Program Director

From an applicant perspective, the inequity of interview invitations can be countered by proactively getting to know programs that one is truly interested in—and limiting applications to these programs alone. One author (HMF) applied to 39 orthopaedic residency programs during the 2020-2021 cycle. He had average USMLE Step 1 and Step 2 Clinical Knowledge (CK) scores for matched orthopaedic applicants, strong clinical grades, and a relatively strong research background; he was selected into the Gold Humanism Honor Society (GHHS) but not Alpha Omega Alpha (AOA). He wrote a program-specific paragraph in each personal statement. His application also included, "I have followed the

AOA/CORD recommendations and submitted applications to no more than 40 programs." He declined several interviews and interviewed at twelve institutions; in nine interviews either the chairperson, program director, or associate program director specifically commented on his adherence to the AOA/CORD guidelines.

Prior analyses have attempted to calculate the number of applications required to obtain twelve interviews, based on applicant features like AOA membership and board exam scores.<sup>12</sup> However, these analyses are unable to account for the critical importance of a) students interfacing with programs prior to applying, b) writing genuine, thoughtful program-specific paragraphs in personal statements, and c) signaling that the applicant is only applying to programs he or she is truly interested in. This can be done in concert with away rotations, which will hopefully resume in August of 2021.<sup>13</sup>

From a program director's perspective (KRG) there is value in knowing the number of programs that an applicant is applying to. In concert with other factors, it allows one to gauge an applicant's degree of interest. In typical years, away rotations are the gold standard of an applicant indicating interest. Away rotations are educational, and an opportunity for programs and applicants to get to know each other on the ground. These rotations are ascribed significant weight in the applicant evaluation process and have been shown to correlate with Match success.<sup>14-16</sup> Yet the number of away rotators is relatively limited in comparison to the total number of distributed interview invitations. To fill this program interest void between away rotators and the remaining applicant pool, knowledge of the number of submitted applications could help program directors further evaluate and gradate the interest of applicants.

### Future Considerations and Actions for Stakeholders

While individual decisions must be made by each future applicant, we urge applicants and their mentors to consider a more targeted approach in

future application cycles. There is little correlation between an orthopaedic applicant's qualifications and the number of programs applied to<sup>17</sup>; strong applicants should feel empowered to adopt a more deliberate tactic. We also suggest that applicants (and/or Letter of Recommendation writers) consider reporting the number of programs to which an applicant has applied.

In future years, we urge the AAMC's Electronic Residency Application Service (ERAS) to report the number of programs applied to by each applicant. The addition of this pressure—which would encourage more targeted applications—will become increasingly important as the USMLE Step 1 exam transitions to Pass/Fail grading, and programs strive for a more holistic application review of applicants.<sup>8,18–20</sup> Hopefully we could avoid the added work, for applicants and programs alike, of secondary essay requirements.<sup>7</sup> Currently there are simply too few mechanisms that encourage or reward applicants who thoughtfully select a smaller number of programs of interest. If one believes in the holistic review of applications, then he or she should support such efforts to change the procedural landscape.

Orthopaedic surgery is perennially one of medicine's most competitive specialties.<sup>4</sup> Unless action is taken, a yearly deluge of applications upon programs—and an inequitable distribution of interview invitations for applicants—will likely persist. These consequences harm residency programs and applicants alike. The orthopaedics community must leverage its position to explore, alongside other stakeholders such as the NRMP and ERAS, how to best refine the application process. We hope that in the future, the alignment of interests will facilitate an improved orthopaedic Match process for all.

#### References

1. von Neumann J. Zur Theorie der Gesellschaftsspiele. *Math Ann.* 1928;100:295–320.
2. Kjeldsen TH. John von Neumann's Conception of the Minimax Theorem: A Journey Through Different Mathematical Contexts. *Arch Hist Exact Sci.* 2001;56(1):39–68.
3. Maaz M. A Primer on the Game Theory Behind the National Resident Matching Program for the Medical Educator and Student. *Med Sci Educ.* 2020;30(2):965–969.
4. Charting Outcomes in the Match: Senior Students of U.S. MD Medical Schools. Characteristics of U.S. MD Seniors Who Matched to Their Preferred Specialty in the 2020 Main Residency Match. Published online July 2020. Accessed January 25, 2021. <https://www.nrmp.org/main-residency-match-data/>
5. Aiyer AA, Granger CJ, McCormick KL, et al. The Impact of COVID-19 on the Orthopaedic Surgery Residency Application Process. *J Am Acad Orthop Surg.* 2020; Publish Ahead of Print. Accessed March 1, 2021. <https://journals.lww.com/10.5435/JAAOS-D-20-00557>
6. AOA Council of Orthopaedic Residency Directors (CORD). Letter to Orthopaedic Surgery Residency Programs. Published online May 27, 2020. Accessed January 25, 2021. [https://aamc-orange.global.ssl.fastly.net/production/media/filer\\_public/74/44/7444d6bc-5148-49b0-b240-cf90130b943a/aoacord\\_rec\\_guidelines\\_2021\\_application\\_seasonaamc.pdf](https://aamc-orange.global.ssl.fastly.net/production/media/filer_public/74/44/7444d6bc-5148-49b0-b240-cf90130b943a/aoacord_rec_guidelines_2021_application_seasonaamc.pdf)
7. Trikha R, Keswani A, Ishmael CR, Greig D, Kelley BV, Bernthal NM. Current Trends in Orthopaedic Surgery Residency Applications and Match Rates. *J Bone Jt Surg Am.* 2020;102(6):7.
8. Bernstein J. Not the Last Word: Ending The Residency Application Arms Race—Starting with the USMLE. *Clin Orthop.* 2016;474(12):6.
9. Bernstein J. Not the Last Word: Roll Them Bones—Selecting Orthopaedic Surgery Residents by Lottery. *Clin Orthop.* 2019;474(12):2535–2638.
10. Electronic Residency Application System. Preliminary Residency Application Data (ERAS 2021). Published online January 13, 2021. Accessed January 25, 2021. <https://www.aamc.org/data-reports/interactive-data/eras-statistics-data>
11. Whelan A. AAMC Open Letter on Residency Interviews from Alison Whelan. Published online December 18, 2020. <https://www.aamc.org/media/50291/download>
12. Chen AF, Secrist ES, Scannell BP, Patt JC. Matching in Orthopaedic Surgery: *J Am Acad Orthop Surg.* 2020;28(4):135–144.
13. the Coalition for Physician Accountability. Medical Student Away Rotations for Remainder of 2020–2021 and 2021–22 Academic Year. American Association of Medical Colleges; 2021. Accessed January 25, 2021. <https://www.aamc.org/what-we-do/mission-areas/medical-education/away-rotations-interviews-2020-21-residency-cycle>
14. Camp CL, Sousa PL, Hanssen AD, et al. The Cost of Getting Into Orthopedic Residency: Analysis of Applicant Demographics, Expenditures, and the Value of Away Rotations. *J Surg Educ.* 2016;73(5):886–891.
15. Baldwin K, Weidner Z, Ahn J, Mehta S. Are Away Rotations Critical for a Successful Match in Orthopaedic Surgery? *Clin Orthop Relat Res.* 2009;467(12):3340–3345.
16. Porter SE, Jobin CM, Lynch TS, Levine WN. Survival Guide for the Orthopaedic Surgery Match. *J Am Acad Orthop Surg.* 2017;25(6):403–410.
17. Finkler ES, Fogel HA, Kroin E, et al. Factors influencing the number of applications submitted per applicant to orthopedic residency programs. *Med Educ Online.* 2016;21(1):31865.
18. Salari S, Deng F. A Stepping Stone Toward Necessary Change: How the New USMLE Step 1 Scoring System Could Affect the Residency Application Process. *Acad Med.* 2020;95(9):1312–1314.
19. Lin GL, Nwora C, Warton L. Pass/Fail Score Reporting for USMLE Step 1: An Opportunity to Redefine the Transition to Residency Together. *Acad Med.* 2020;95(9):1308–1311.
20. Moynahan KF. The Current Use of United States Medical Licensing Examination Step 1 Scores: Holistic Admissions and Student Well-Being Are in the Balance. *Acad Med.* 2018;93(7):3.

# Program Director Kenneth Gundle Uses Instagram to Highlight OHSU's Strengths During the Pandemic

By: Kenneth Gundle, MD

Our people are such a strength of the residency and the Department. Each individual's attributes are then compounded by the collegial way we interact on a daily basis - finding humor, support, sibling-like rivalries and moments of joy.

Yet as words and statements, these truths and our positive idiosyncratic culture may seem all-too-replicable; people manage to say and write all sort of things these days. Experiencing on-the-ground lived reality for a few weeks is a far superior way to know these things themselves.

This is not a complicated argument to make, especially to orthopaedic surgeons or those who aim to join the field. If someone is talking about a complicated operation that went really well, then we'd sure like to see the x-rays. This mindset undoubtedly contributes to medical students traveling all over the country for 'away rotations' - subinternships with orthopaedic surgery programs of interest. And in addition to the educational value, all parties gain from spending time together and seeing if joining forces for another 5 years seems like a good idea.

For the class graduating in 2021, these away rotations were not really an option. COVID-19 restrictions prevented any medical students from conducting away rotations at OHSU. Our only advantage in this suboptimal scenario was in seeing it coming. So how to respond? How can we share of ourselves in a way that celebrates what we are, while also making possible for interested external groups of people to see us in a more authentic way?

These questions were the driving forces in joining Instagram. Sharing pictures is not as much fun

as an afternoon SAFETY Meeting at F&B. But it could be a way to stay connected with each other, while reflecting our days and our ways. That was its inner-directed objective. Additionally, these pictures could be a window for medical students applying in orthopaedic surgery to see our program in a way that a website or a virtual interview struggle to convey. What do we celebrate? How seriously do we take ourselves? What is it with OR shoes and socks in this program? Do all the residents have (and obsess over) pets? And while nothing can match the in-person beauty of a summer sunrise over Mt. Hood from the Tram, we can post dozens of pictures and videos to give it a go. Pictures of trail hikes, snowboarding, garden successes, bike rides and big catches project what we are up to and things we value. Pictures of call teams, Arthroscopy Boot Camp, awards and the Wall of Research show what we are up to while on the Hill. And of course, Dr. Doung's pipe cleaner animals are absolute works of art for which she clearly needs a social media savvy agent who receives a modest 60% of proceeds... just saying.

With Instagram, we can share a bit of ourselves. My hope is that it served a role of keeping us together while too-often apart this past year. I also think our posts were a great reflection of our Program and values, to anyone who may have taken a look. And as it continues, I think it'll serve helpful in keeping our graduates engaged and interested in the Department for years to come.

So slam that follow button, and throw us a few 'likes'  
TW: @OHSUOrtho | Insta: ohsuortho

*And since the IG is all about them pics... here are some highlights from the past year!*





# Checking in with the Portland Veterans Hospital

By: David Cornwell, BS



There is not a medical institution in the country, likely not a household in the country, which has not experienced change in this past year. The Portland VA orthopaedics group was by no means exempt from the wave of change that swept the country. As COVID-19 spread, it drove change in the existing systems architecture, highlighting strengths and areas for change.

At the Portland VA, non-emergency surgeries were severely curtailed last spring. To help PPE supplies, a complex system of UV sterilization was instituted by members of the anesthesiology group – this helped keep N95 masks available throughout the duration. To help minimize in-person visits, virtual clinics were expanded through the already present VA Video Connect (VVC) system. This built on a system of eConsults and remote care that had already been in use by Dr. Gundle for tumor referrals, among others. A benefit of familiarity with VVCs going forward is a decrease in unnecessary travel for rural patients (including from Idaho!), as well as those who are recovering at the VA Community Living Center in Vancouver and Roseburg.

Slowly, the VA has been able to bring back elective surgery. Outpatient operations, especially arthroscopic procedures with Dr. Berkson, were able to return faster and keep education going. Surgical volumes are now recovering, which is great for residents, faculty, and most of all our patients. And we must mention the great response of the Portland VA in administering vaccinations rapidly. This was done in part by volunteers from the orthopaedics section working in vaccination clinics. The team was also able to see a patient in clinic, then send them the same day for their first shot – and now some members of their family as well!

The Portland VA orthopaedics group looks forward to the upcoming year, and improving as a close-knit team.



# Checking in with Pediatric Orthopaedics at Doernbecher Children's Hospital

By: Scott Yang, MD



**Scott Yang, MD**

The Pediatric Orthopaedics service at OHSU has been providing excellent care for children and adolescents throughout the Pacific Northwest. 2020 was an interesting year, both in adjusting to, and providing care during the COVID-19

pandemic. Our service has not stopped despite the lock downs, as we found that earlier in the pandemic we were even busier with children getting hurt as they were all out of school!

From a clinical care perspective, we aim to provide an intersection of current / cutting edge clinical care, and the best patient outcomes. In 2020-2021, we have remained busy from a trauma perspective (treating femur fractures, elbow fractures, etc.), and have provided complex care such as magnetic femoral or tibial lengthening procedures, limb deformity corrections, scoliosis corrections, and complex surgeries in children with neuromuscular conditions. For some complex congenital scoliosis

conditions, sometimes the anatomy is very atypical, and we have been utilizing 3D printing to create a 1:1 ratio model of the spine before performing surgery - to study, and also practice, prior to performing the operation. By the time the child is on the operating room table, we have already understood the spine completely by studying and manipulating the model. We have also been collaborating with the main hospital at OHSU to utilize CT navigation for complex spine surgery to provide as perfect as possible placement of spinal hardware for challenging spine cases. Our goal has been, and will continue to be to intersect technology, outcomes, to provide quality care with maximal patient safety.

We all love what we do, and try to provide the best educational experience for our trainees as well. We have been active in the research front with several publications and national presentations to put us on the map. We are active in several multicenter studies, and have been contributing to an international research group in Perthes Disease. We are also proud to

be amongst the top in the country, as we are distinctly ranked in the top 50 pediatric orthopaedic services in the United States based on US News and World Report. From a personal perspective, all the providers on the pediatric orthopaedics team have been trying to maintain a balance with life and work. If you live in the Portland area, you will likely see Dr. Matthew Halsey running along Terwilliger Blvd, Pollee Brookings NP running some ridiculous >50 mile trail races, and Dr. Scott Yang cycling the west hills of Portland.



Left: Pre-operative planning with 3D printed model of complex spinal deformity.  
Right: Intraoperative MRI for hip dysplasia reduction saves time and sedation encounter!

# Checking in with Shriners Hospital for Children

By: Jeremy Bauer, MD



**Jeremy Bauer, MD**

Like many programs the biggest change to our education has been virtual conferences. This has led to some opportunities; we have been able to increase the accessibility of our quarterly Grand Rounds to not only those able to make it here in person, but also to any interested participant. It has also made it easier to have speakers that would not have been able to attend because of the same geographic restraints.

Our department has seen the retirement of two beloved surgeons, Michael Aiona, M.D., and Michael Sussman, M.D. Both surgeons have served as Chief of Staff at the Portland hospital, and have an incredible legacy of education, research, and excellent patient care. Luckily, they have both agreed to become emeritus professors and have already stayed engaged in our Wednesday morning educational series as well as our weekly Motion Analysis Center meetings.

Thanks to the approval and support of the OHSU Orthopaedic and Rehabilitation Department and the OHSU office of Graduate Medical Education, senior OHSU orthopaedic residents have been taking call at the Shriners Hospital. This has led to excellent coverage of our inpatient ward and has allowed the PGY-2 residents more clinical time. Our partnership with OHSU is expanding to our Motion Analysis Center (MAC), allowing children with gait abnormalities at OHSU to be seen and evaluated in our MAC.





# Checking in with Legacy Emanuel Medical Center

An Interview with Craig Gillis, DO

By: David Cornwell, BS



**Craig Gillis, DO**

What a year it has been. 2020 will forever hold a place in the books of our generation. I think we all remember the harsh transition beginning in March of 2020, when everything changed and the country shut down.

Elective surgeries were halted across all hospital systems and no one knew what the future held for managing this new virus. Unfortunately, a moratorium on elective cases does not stop traumas from happening. Being one of only three level 1 trauma centers in the Pacific Northwest, Legacy Emanuel manages a significant amount of orthopaedic trauma and thus our surgical cases are oftentimes urgent or emergent. In the face of this pandemic, navigating orthopaedic trauma proved difficult.

While the medical community diligently worked to address COVID-19, logistical barriers continued to plague most healthcare systems - including access to N95s and PAPRs. One of the biggest initial hurdles we encountered was managing trauma patients with limited COVID testing. We had days where the entire hospital had less than 5 rapid tests available. This meant any traumas beyond that volume were presumed COVID positive until proven negative. A number of cases were treated as such, meaning our surgical team was lucky enough to wear an N95 throughout some grueling cases. Despite these initial challenges, Emanuel was able to appropriately address most of these issues and maintain a reserve of testing and PPE to ensure our trauma patients received exceptional care.

As we settle back into a rhythm in balancing our trauma and elective cases, Summit Orthopaedics and Emanuel have developed an excellent system to ensure all patients are managed in a timely manner. Preoperative COVID testing continues to be required for every case but has become easy and reliable for patients to obtain. From an elective standpoint, our arthroplasty service is growing and we are expanding our utilization of patient specific instrumentation including in shoulder arthroplasty. Drs Madey, Frome, and Gillis continue with coverage on all upper extremity cases and microvascular procedures. The lower extremity service with Drs Mirza and Vande Zandschulp also remains extremely busy, and is likely to become even busier as we move into spring and summer.

With a return to a pseudo-normal life, we remain thankful for all of our healthcare workers at Emanuel. Despite the uncertainty COVID initially brought upon us, our team was able to navigate these challenges and remained committed to ensuring patients were cared for. Who knows what the rest of 2021 has in store for us, but we remain hopeful and optimistic in our ability to overcome unforeseen challenges.



# Checking in with Geriatric Trauma at Providence St. Vincent

By: Richard Southgate, MD



**Richard Southgate, MD**

The coronavirus pandemic changed many aspects of the residency education process, from away rotations and the match to the annual in-training exam and clinical rotations.

In March 2020, all elective cases were cancelled in Oregon. This suddenly altered the training experience for resident rotations as hospitals across the state paused all non-emergent cases, including most orthopedic surgeries. Prior to the pandemic, the residents who rotated through Providence St. Vincent had a rotation that mostly exposed them to arthroplasty and sports, with only one day per week covering community trauma. Due to logistical restrictions associated with contact tracing, the ambulatory clinic aspect of the rotation at Providence St. Vincent was removed for residents, practically overnight.

These changes provided us, like many others, an impulse to adapt. We shifted to a purely surgical rotation on the fracture block focused on general and community trauma cases. This gave the residents increased exposure to geriatric trauma, as most cases that come through the emergency department and transfer center at St. Vincent are low energy hip fractures and periprosthetic trauma.

This change for the group at St. Vincent was a sign of how adjustments occurred quickly in the wake of the virus, even within established practices and institutions. When at St. Vincent, OHSU residents work predominantly with

surgeons from Orthopedic + Fracture Specialists, a private practice consisting of 16 orthopaedic surgeons who have fellowship training in nine different subspecialties. This group has practiced exclusively at St. Vincent since the group's founding in 1934. Providence St. Vincent is a 523-bed community hospital—the largest Providence Health & Services hospital in the state of Oregon. The fracture block itself was established over a decade ago by Dr. Darin Friess at OHSU and Hans Moller at Orthopedic + Fracture Specialists. This year, a novel disease brought novel challenges, and even these large, well-established groups and traditions were forced to be nimble to continue providing residents with a well-rounded surgical education and patients with excellent care.

Our new approach worked. Over the last twelve months, 658 cases were completed in the fracture block and on weekends, exposing residents to a balanced mix of community trauma. 68 cases were completed in the fracture block in March 2021. These included 31 geriatric hip fractures (19 hemiarthroplasties and total hips for fracture, 11 cephalomedullary nails, and 1 sliding hip screw), 6 ankle fractures, 6 upper extremity fractures, 6 revision arthroplasties (both elective and for infectious etiologies), 5 irrigation and debridements, 4 periprosthetic fractures, 3 elective arthroplasty cases, 2 closed reductions, 2 tibial nails, and 1 each of the following: pediatric trauma, patella ORIF, and removal of hardware. The residents rotated on trauma cases with Drs. Kimberly Workman, Amer Mirza, Richard Southgate, Jeana Summers, Hannah Aultman, Alex DeHaan, and Mark Manoso. In addition to the orthopaedic surgeons who operate

on these patients, there are three full time clinical employees involved in the day-to-day workings of the fracture service plus additional administrators at Providence St. Vincent.

The backbone of our fracture block is made up of our experienced nurse practitioners, Nori Trevarthen and Melissa Thomas. They assist with consults, manage all of the floor work, and are indispensable in caring for our geriatric trauma population. Because we have NPs to assist with patient care duties, the residents are encouraged to focus on preoperative planning for their surgical cases, achieving full independence on certain quotidian community trauma cases by the end of their rotation. The repetition from seeing these hip fractures helps reinforce any pearls that they pick up throughout the rotation. We believe that this helps compliment the higher acuity Level 1 polytrauma they are exposed to at OHSU and Legacy Emanuel. Additionally, it gives the residents a glimpse of what orthopaedic trauma call is like in a community setting, which is unlike a busy urban or academic trauma center.

Although there is an increase in the representation of geriatric trauma on the rotation, there has been a return to some normalcy. The residents still have two days a week with Dr. Duwelius (elective total joints) and Dr. Andres (sports, shoulder replacements, and arthroscopy). This helps round out their experience.

The success of the rotation's uninvited change in 2020 has given us confidence to continue improving the experience at St. Vincent for residents, patients, and attending surgeons. We have discussed resident involvement in our geriatric hip fracture registry, which would be a first in the Providence health system, and would help expose residents to clinical research opportunities outside of an academic center. Additionally, we hope to grow mentoring opportunities as residents move through the fellowship application process, and we plan to continue involving them in arthroplasty research, as some have done with Dr. Duwelius in the past. We at O+FS and Providence St. Vincent look forward to continuing the collaboration with OHSU's orthopaedic surgery residency program.



# Checking in with Samaritan Health Services

A 2021 Residency Update

By: Teigen Goodeill, DO



**Teigen Goodeill, DO**

Like the rest of Oregon, United States, and world, the Willamette Valley was not immune to the Coronavirus Pandemic. Though many were quarantined for long periods of time, patients continued to require musculoskeletal intervention. This led to a truly galvanizing opportunity for our orthopaedic teams as shifts, call schedules, and responsibilities were reshaped in the wake of the pandemic; the program stepped up to the challenge and continued to provide high-quality patient-centric care throughout the Willamette Valley.

The summer and fall seasons typically provide a time where medical students from across the nation interested in the orthopaedic field rotate through our tertiary medical center. This allows students an opportunity to learn the basics of orthopaedic diagnosis, treatment, and patient care. When this educational offering for medical students was put on halt secondary to the pandemic, residents at Good Samaritan Regional Medical Center stepped up to this challenge and produced a virtual lecture series to effectively fill this void. A wide range of topics was presented such as basics of fracture reading, pediatric fractures, and adult hip and upper extremity fractures. Lectures were attended by residents as close as our local medical school in Lebanon, OR to as far away as Brazil. Although we are anxious to see what the future holds in regards to in-person education, our virtual lecture series was so successful and highly attended that we will continue the series in the spring.

The involvement in research-related activities has never been more robust than it is now. Our residents continue to produce meaningful research in multiple subspecialties of orthopaedic surgery. To name a few, Drs. Justin Than and Babe Westlake's research was accepted for publication in *Arthroplasty Today* as they evaluated different forms of pain control in total joint arthroplasty. Additionally, we continue to have a great relationship with Randall Children's Hospital in Portland, OR for our pediatric education which has allowed for multiple publications and research projects to come to fruition. Dr. Shaun Conley was recently published in the *JBJS Case Connector* as they discussed a case series of spontaneously reduced pediatric incarcerated medial epicondyle fractures while Drs. Justin Brohard and Alexandra Scoles received the Legacy Foundation Grant having instituted a randomized clinical trial which is now in active recruitment regarding pediatric elbow fractures.



©2021 Willamette Valley Planning LLC



# A Research Update at the Portland VA

## Striving to Better Define Mechanical Symptoms from Meniscal Pathology

By: Mark Berkson, MD; Samuel Moulton, MD; Jorge Walker, MS

### How did we get here?

In 1940 McMurray delivered a lecture at the Royal College of Surgeons of England describing his method of “manipulation of the injured joint” to identify tears of the “semilunar cartilage” of the knee.<sup>1</sup> In 1946, Apley described the “three disadvantages in this method,” and then proposed his test as a better solution for the problem of identifying meniscal tears.<sup>2</sup> Their goal was the same, identify the tear, cut out the meniscus, and help the patient. They both had a fair amount of success with the first two goals, but we now know that completely cutting out the meniscus was a bad idea.

Fast forward almost a century and we have MRIs to accurately identify the meniscal tear. We have advanced minimally invasive techniques to remove only the torn fragment. We are still left with a question on the third goal, are we helping the patient?

### Where do we need to go?

We face an uphill battle in the public eye and the medical community, to prove we can reliably identify symptoms from a torn meniscus that fail nonoperative treatment and improve with surgery. Randomized trials and editorials have concluded that arthroscopic partial meniscectomy provides no benefit over nonoperative treatment or placebo surgery.<sup>3-6</sup> However, studies failed to stratify patients with mechanical symptoms. If equal numbers of patients with mechanical symptoms were randomized to each study arm, it is not surprising that no difference was found between the operative and non-operative arms of the study.

One consensus article across three continents concluded “Once surgical treatment is considered,

the burden lies on the surgeon to ensure that the patient’s pain is truly emanating from the meniscal pathology, which at certain times can be difficult if not impossible.”<sup>7</sup>

We agree and search for a more universally accepted indication for arthroscopic partial meniscectomy.

### How do we get there?

*Step 1.* Establish a universally accepted definition of mechanical symptoms based on history and physical exam findings.

*Step 2.* Conduct rigorous prospective studies comparing patients with meniscal tears with identified mechanical symptoms against those without mechanical symptoms.

Our retrospective pilot study addressed step 1. We designed a simple, reproducible, binary physical exam test, the Portland Pivot Kick (PPK), to identify symptomatic medial meniscus tears with mechanical symptoms. At an average follow up of 9.8 months (range 1 – 18.7 months), 50 of 51 (98%) patients had a negative PPK test. All 51 patients had a positive PPK test prior to surgery. All KOOS and WOMAC subjective patient outcomes scores significantly improved, by 37% to 53% ( $P < 0.001$ ).

An ongoing prospective study is underway comparing patients with mechanical symptoms who undergo a partial meniscectomy to those who continue nonoperative treatment, to assess the PPK as an objective assessment of mechanical symptoms. We aim to help further define mechanical symptoms and define the subgroup of patients who could benefit from surgery.

1. McMurray T. The semilunar cartilages. Br J Surg 1942;29(116):407-14.
2. Apley AG. The diagnosis of meniscus injuries; some new clinical methods. J Bone Joint Surg Am. 1947 Jan;29(1):78-84.
3. Roos EM, Thorlund JB. It is time to stop meniscectomy. Br J Sports Med 2017;51:490-1.
4. Sihvonen R, Paavola M, Malmivaara A, et al. Finnish Degenerative Meniscal Lesion Study (FIDELITY) Group. Arthroscopic partial meniscectomy versus sham surgery for a degenerative meniscal tear. N Engl J Med. 2013 Dec 26;369(26):2515-24.
5. Sihvonen R, Englund M, Turkiewicz A, et al. Mechanical symptoms as an indication for knee arthroscopy in patients with degenerative meniscus tear: a prospective cohort study. Osteoarthritis Cartilage 2016;24:1367-75.
6. Sihvonen R, Paavola M, Malmivaara A, et al. FIDELITY(Finnish Degenerative Meniscal Lesion Study) Investigators. Arthroscopic partial meniscectomy versus placebo surgery for a degenerative meniscus tear: a 2-year follow-up of the randomised controlled trial. Ann Rheum Dis. 2018 Feb;77(2):188-95.
7. Stone JA, Salzler MJ, Parker DA, et al. Degenerative meniscus tears – assimilation of evidence and consensus statements across three continents: state of the art. Joint Disord Orthop Sports Med 2017;2:108-19.

## OHSU's New Orthopaedic Surgery Alumni Association

By: Elizabeth Lieberman, MD



Elizabeth Lieberman, MD

We are excited to announce the formation of an OHSU Orthopaedic Surgery Alumni Association. The aim is to create a network of graduates from the OHSU Orthopaedic Surgery residency program that will serve to connect graduates,

honor alumni achievements, and support the residency program. We hope to engage alumni in supporting education, research, and career development for the next generation of surgeons.

A newly formed committee chaired by 2019 graduate Elizabeth Lieberman, MD has begun work planning activities and events to connect alumni locally and at national meetings. Regular communications will provide updates from faculty and alumni to help us stay connected. We are also working on establishing awards and scholarships to support resident and medical student experiences.

All OHSU orthopaedic surgery residency and fellowship graduates will be eligible to join. Stay tuned for more details about membership and upcoming events. Please let us know if you have ideas or suggestions for the association. We look forward to hearing from you! Contact Elizabeth Lieberman at [lieberme@ohsu.edu](mailto:lieberme@ohsu.edu) for more information.



# Dr. Robert Orfaly Begins New Leadership Position for AAOS

By: Robert Orfaly, MD



**Robert Orfaly, MD,  
FRCS(C)**

The world is changing at an ever-increasing pace. No secret there. While scientific discovery and therapeutic innovation lead to the evolution of the care we provide as orthopaedic surgeons, change in how healthcare is delivered is more rapid and less predictable. It, therefore, stands to reason that each of us must take on roles of transformational leadership if we are to keep up with this continuous change and aspire to become true innovators. One of the fundamental aspects of effective change management is communicating well with the entire team. Only in this way can a leader gain the advantage of the rich diversity of knowledge and experiences that a team brings to the table and create a shared vision to benefit the organization.

I always appreciated these truths and sought out leadership roles that fit this model. When choosing a committee assignment within the American Academy of Orthopaedic Surgeons at the end of my Leadership Fellows Program (LFP), I selected the Communications Cabinet. My next role was as a member, and then chair, of the Membership and Leadership Development Committee that focused on member needs and managed the LFP program. I later had the great fortune to be elected chair of the Board of Councilors, which serves grassroots advocacy and communication between the membership and leaders of the Academy. These experiences were put to good use during my term on the AAOS Board of Directors as we redefined our mission, vision, and strategic goals for the next decade. Energized by this experience working with many

of the great innovators and leaders in orthopaedic surgery, I was delighted to receive a call from AAOS president Joe Bosco offering me the role of AAOS Now editor-in-chief. As the primary AAOS membership publication, I view this as a critical vehicle for communicating the change necessary for our association and our profession.

In a Harvard Business Review article by Angela Fisher Ricks, the author outlines four steps to communicating organizational change:

- Share a vision.
- Tell a story.
- Make those in your organization the heroes.
- Chart the path.

Whether clinical, advocacy, practice management, or diversity content, every AAOS Now article helps articulate the vision of orthopaedic surgeons as the trusted leaders in advancing musculoskeletal health. This vision is illustrated through education, commentary, and stories about AAOS members who are making a difference. AAOS Now is also an open newsroom in which every single member (yes, you!) can submit an article about your discoveries and experiences. In this way, the publication can serve multidirectional communication as knowledge is exchanged and a path to our common vision is created.

Most recently, I was selected to be one of 20 mentors to the inaugural class of the Level 3 training for the AAOS Leadership Institute. Mentees are competitively chosen for their aspiration and potential for higher levels of Academy service, such as committee or council chair or member of the Board of Directors. As I come full circle in my relationship with the AAOS, I am confident that the efforts of every member can create a shared future of excellence for our patients.

# Update on the Hayhurst Endowment

By: Jacqueline Brady, MD

The Hayhurst endowment has been an incredible boost in the area of resident education research. The first big move we made was to upgrade the sensors that record motion patterns during arthroscopy. Version 1 of the sensors was a brilliant set of equipment, but required a lengthy and onerous intermediate step using Matlab to process the firestorm of data points obtained during a recording session before true data analysis for research purposes could even begin. With the assistance of the Hayhurst fund, we obtained a set of Version 2 sensors, which skip that step by processing that data themselves into averages that can be analyzed to determine significance as we ask questions of the data. Collection is ongoing as residents rotate through the sports service and participate in simulation labs with practice in the shoulder, knee, and hip. We hope to gather the new data soon to help us understand how arthroscopy of the shoulder and hip joints might inherently differ from the knee, which will direct our educational interventions as residents pick up these new skills.

Meanwhile, we are embarking on another project with funding from the Hayhurst endowment: a study of the “work” of residency using a wearable device to track biometric data. The ACGME requires residency and fellowship program directors to educate trainees about fatigue as they work hard during their residency experiences, but specific information surrounding the effects of various portions of residency is lacking. Michelle Lawson, one of the rising PGY-3 residents, is seeking to understand various questions about sleep disturbance in particular as it pertains to fatigue during residency. A demo group of residents and faculty has been testing the device

for the last several months, gathering some tips and additional ideas for ongoing research. We obtained a commitment from many of our residents and faculty for participation, and just purchased the devices to embark on our study with the start of the 2021-22 academic year. We look forward to sharing our results!





# OHSU's Department of Orthopaedics & Rehabilitation Thanks Dr. Jung Yoo for 15 Years of Service as our Chairman

By: Darin Friess, MD



Jung Yoo, MD, professor of Orthopaedics and Rehabilitation, OHSU School of Medicine, stepped down as Department Chair after 16 years on October 1, 2020. Dean Sharon Anderson noted that "He has been a staunch advocate for his faculty and never shied away from saying what he felt needed to get said... I, his patients and colleagues are grateful that he will remain on faculty." During his tenure as chair from 2004 to 2020, Dr. Yoo developed a small Department into a leading force at OHSU, fulfilling all the facets of a successful academic practice, with managing 28 faculty and over 125 employees.

He grew up on the Northside of Chicago and graduated from Senn High School, which was most diverse public high school in the U.S., with students from 50 nations and 90% from families below the federal poverty level. He grew up working as a tutor, factory worker, and finally as finance clerk for the Chicago Tribune. At 18, he was baptized

as a Roman Catholic and this became a guiding principle for his life. He graduated from Loyola University with a degree in biology, but spent much of his time studying philosophy, history, theology and economics - subjects he often quoted as Department Chair. Many a student, resident, fellow or staff will fondly recall a wide-ranging discussion of all these disciplines in answer to a simple question asked of Dr Yoo.

Dr. Yoo attended medical school at the University of Chicago. During this time period he met his lifelong love, Anne, on a Catholic Charities service trip. His devotion to Anne, his family, and his church have been a constant through his life. Later, a chance mentor during medical school at



Dr. Jung Yoo is a gifted artist. His portrait of Dean Mark Richardson, who died in 2016, captured the dean's warm and engaging nature. In the early days of the pandemic-induced lock down, Dr. Yoo created this painting of a couple dancing, bringing to mind a lighter time.

the University of Chicago turned him to a career in orthopedic surgery. He spent his residency at Case Western Reserve University and began a career in medical research that grew from the basic science of cartilage growth to innovation and one of the earliest patents on stem cells. While at Case Western, he developed an interest in spine surgery and chose to do a fellowship in nearby Syracuse, New York. As one might expect from Jung Yoo, he lived cheaply in New York and traveled back frequently to his family in Cleveland.

After his fellowship year he returned to the faculty at Case Western Reserve University to begin his academic career. During his time on faculty in Ohio, his surgical care was sought by patients and other physicians. He asked his patients difficult questions and used their answers to research problems faced after spine surgery. He wrote seminal papers on swallowing difficulties after cervical spine surgery and urinary retention issues after lumbar spine surgery, since these were details that mattered significantly to his patients.

Such academic successes led him to OHSU as a new Orthopaedic Department Chair after a national search in 2004. Under his leadership, the Orthopaedic Surgery Residency at OHSU expanded from 12 to 25 residents and he still found time to win the yearly resident teaching award. During his career he mentored over 40 fellowship trained spine surgeons. As chair at OHSU, he hired a faculty that provides high quality care and is devoted to education and research. He was an early advocate of the expansion of OHSU Health to reach the orthopedic needs of Oregonians “off the hill,” partnering with multiple institutions to build new clinical sites. He would proudly note that his department budget ran a positive fiscal margin every single year.

The many lives he touched to develop surgeons, educators, scientists, and genuine human beings is the legacy he leaves behind as a Department Chair. While Dr. Yoo will be moving on from the

meetings and negotiations, he seems to relish the chance to return with greater devotion to his surgical practice and teaching. No doubt he will continue to make a difference for the patients he treats and the learners he teaches. As always, he will have a story to tell and a twinkle in his eye.

For his part, Dr. Yoo asked only to share his gratitude. “I would like to express my thanks to the department and OHSU for having confidence in me and giving me this opportunity of being the chair,” he said. “I am proud that the faculty and the residents in the department are consummate professionals dedicated to the mission of patient care, education and research. We have grown in all these areas and we work as one team that like each other and care for each other.”

In honor of Dr. Yoo’s impact on the lives of so many patients, staff, students, residents and fellows, the OHSU Foundation has opened The Jung Yoo, MD Endowment for the Advancement of Education and Leadership in Orthopaedics. In line with Dr Yoo’s legacy, this fund will be used to support the education and leadership of tomorrow’s orthopedic surgeons. The OHSU Department of Orthopaedics would encourage all who have benefitted from a quiet conversation to lifelong lessons from Dr Yoo to consider a donation. The fund can be located at <https://www.ohsu.edu/ortho/giving-opportunities>.



Robotic-Assisted Solution



# SIMPLICITY

## THE NEXT CHAPTER IN ROBOTICS

VELYS™ Robotic-Assisted Solution **simplifies** knee replacement surgery **by providing valuable insights, versatile execution, and verified performance** designed to deliver efficiency and optimize patient outcomes.<sup>1,2</sup>

**References:** **1.** User experience evaluation of the VELYS Robotic-Assisted Solution for total knee (July 2020). Internal Report 103744839. **2.** Doan G, Curtis P, Wyss J, Clary C. Resection Accuracy Improved during Robotic-Assisted Total Knee Arthroplasty (March 2021). Internal Report 103720852.

Please refer to the instructions for use for a complete list of indications, contraindications, warnings, and precautions.

©DePuy Synthes 2020. All rights reserved. 154215-201209 DSUS





## Adult Reconstruction

Kagan R, Anderson MB, Bailey T, Hofmann AA, Pelt CE. Ten-year Survivorship, Patient-reported Outcomes, and Satisfaction of a Fixed-bearing Unicompartmental Knee Arthroplasty. *Arthroplasty Today*. 2020;6(2):267-273. doi:10.1016/j.artd.2020.02.016

Kagan R, Zhao S, Stone A, Johnson AJ, Huff T, Schabel K, Woodworth GE, Ivie RM. Spinal Anesthesia in a Designated Block Bay for Total Joint Arthroplasty: Improving Operating Room Efficiency. *Reg Anesth Pain Med*. 2020;45(12):975-978. doi:10.1136/rapm-2020-101773

Li N, Kagan R, Hanrahan CJ, Hansford BG. Radiographic Evidence of Soft-tissue Gas 14 Days after Total Knee Arthroplasty Is Predictive of Early Prosthetic Joint Infection. *Am J Roentgenol*. 2019;214(1):171-176. doi:10.2214/AJR.19.21702

Woelber E, Wurster L, Brandt S, Mecum P, Gundle K, Anissian L. Minimizing Opioids after Joint Operation: Protocol to Decrease Postoperative Opioid Use after Primary Total Knee Arthroplasty. *Fed Pract*. 2021;38(2):e1-e7. doi: 10.12788/fp.0092

Kagan R, Hart C, Hiratzka SL, Mirarchi AJ, Mirza AJ, Friess DM. Does Resident Participation in the Surgical Fixation of Hip Fractures Increase Operative Time or Affect Outcomes? *J Surg Educ*. Published online December 3, 2020. doi:10.1016/j.jsurg.2020.11.011

Langston JR, Ramsey DC, Skoglund K, Schabel K. Angiotensin II Blockade had no Effect on Range of Motion after Total Knee Arthroplasty: a Retrospective Review. *J Orthop Surg Res*. 2020;15(1):48. doi:10.1186/s13018-020-1555-5

Nielsen W, Schabel K. Acetabular Insufficiency Fractures in the Setting of Graft vs Host Disease: a Report of Two Cases. *Arthroplasty Today*. 2021;7:54-59. doi:10.1016/j.artd.2020.11.012

## Foot & Ankle

Wong LH, Woelber E, Wyland A, Arakawa J, Gundle KR, Working ZM, Meeker JE. Is Reoperation Higher than Expected after Below-the-knee Amputation? A Single-center Evaluation of Factors Associated with Reoperation at 1 Year. *Clin Orthop Relat Res*. 2021;479(2):324-331. doi:10.1097/CORR.0000000000001455

## Orthopaedic Oncology

Schneider P, Giglio V, Ghanem D, et al\*. Willingness of Patients with Sarcoma to Participate in Cancer Surveillance Research: a Cross-sectional Patient Survey. *BMJ Open*. 2021;11(2):e042742. doi:10.1136/bmjopen-2020-042742

\* Including OHSU Investigators: Gundle K, Doung Y-C, Hayden J

Hanna SM, Ramsey DC, Doung YC, Hayden JB, Thompson RF, Summers AR, Gundle KR. Utility of the Current Procedural Terminology Codes for Prophylactic Stabilization for Defining Metastatic Femur Disease. *J Am Acad Orthop Surg Glob Res Rev*. 2020;4(12). doi:10.5435/JAAOSGlobal-D-20-00167

Kagan R, Parlee L, Beckett B, Hayden JB, Gundle KR, Doung Y-C. Radiographic Parameter-driven Decision Tree Reliably Predicts Aseptic Mechanical Failure of Compressive Osseointegration Fixation. *Acta Orthop*. 2020;91(2):171-176. doi:10.1080/17453674.2020.1716295

Ramsey DC, Lam PW, Hayden J, Doung Y-C, Gundle KR. Mirels Scores in Patients Undergoing Prophylactic Stabilization for Femoral Metastatic Bone Disease in the Veterans Administration Healthcare System. *J Am Acad Orthop Surg Glob Res Rev*. 2020;4(9):e2000141. doi:10.5435/JAAOSGlobal-D-20-00141

Gupta S, Griffin AM, Gundle K, Kafchinski L, Zarnett O, Ferguson PC, Wunder J. Long-term Outcome of Iliosacral Resection without Reconstruction for Primary Bone Tumours. *Bone & Joint J*. 2020;102-B(6):779-787. doi:10.1302/0301-620X.102B6.BJJ-2020-0004



Gundle KR. CORR Insights®: Does a Modified Technique to Achieve Arthrodesis of the Wrist After Resection of the Distal Radius and Translocating the Ipsilateral Ulna as a Vascularized Graft to Reconstruct the Defect Improve Grip Strength and Outcomes Scores? Clin Orthop Relat Res. Published online January 28, 2021. doi:10.1097/CORR.0000000000001647

Parlee L, Kagan R, Doung Y-C, Hayden JB, Gundle KR. Compressive Osseointegration for Endoprosthetic Reconstruction. Orthop Rev (Pavia). 2020;12(3). doi:10.4081/or.2020.8646

Sleijfer S, Lolkema M. Bridging the Translational Divide in Oncology: In Vivo Testing of Chemo-sensitivity. Clin Cancer Res. 2020;26(15):3897-3898. doi:10.1158/1078-0432.CCR-20-1452

Schneider P, Heels-Ansdell D, Thabane L, Ghert M, PARITY Investigators\*. Prophylactic Antibiotic Regimens In Tumor Surgery (PARITY): a Multi-center Randomized Controlled Study Comparing Alternative Antibiotic Regimens in Patients Undergoing Tumor Resections with Endoprosthetic Replacements-a Statistical Analysis Plan. Trials. 2021;22(1):223. doi:10.1186/s13063-021-05147-2

\* Including OHSU PARITY Investigators: Doung Y-C, Hayden J, Gundle KR

Gundle KR. CORR Insights®: Psychosocial Factors Are Associated with Electronic Portal Registration. Clin Orthop Relat Res. 2020;478(9):2085-2087. doi:10.1097/CORR.0000000000001313

### Pediatrics

Halsey M, Dolan LA, Hostin RA, Adobor RD, Dayer R, Dema E, Letaif OB. Scoliosis Research Society Survey: Brace Management in Adolescent Idiopathic Scoliosis. Spine Deform. Published online February 12, 2021. doi:10.1007/s43390-020-00265-4

Knight BA, Bayne AP, Zusman N, Barney N, Yang S. Postoperative Management Factors affect Urinary Retention Following Posterior Spinal Fusion for Adolescent Idiopathic Scoliosis. Spine Deform. 2020;8(4):703-709. doi:10.1007/s43390-020-00090-9

Halsey MF, Myung KS, Ghag A, Vitale MG, Newton PO, de Kleuver M. Neurophysiological Monitoring of Spinal Cord Function During Spinal Deformity Surgery: 2020 SRS Neuromonitoring Information Statement. Spine Deform. 2020;8(4):591-596. doi:10.1007/s43390-020-00140-2

Zusman NL, Somogyi RD, Barney NA, Yang S, Halsey MF. Adolescents with Spondylolysis Have Lower SRS-22 Scores than Controls and Peers with Pre-operative Idiopathic Scoliosis. Spine Deform. 2021;9(1):135-140. doi:10.1007/s43390-020-00201-6

Zusman NL, Barney NA, Woelber E, Yang S. A Systematic Review of the Utility of Postoperative Imaging in the Management of Pediatric Supracondylar Humerus Fractures. J Pediatr Orthop. 2020;40(6):e430-e434. doi:10.1097/BPO.0000000000001431

Dikmen PY, Halsey MF, Yucekul A, de Kleuver M, Hey L, Newton PO, Havlucu I, Zulemian T, Yilgor C, Alanay A. Intraoperative Neuromonitoring Practice Patterns in Spinal Deformity Surgery: a Global Survey of the Scoliosis Research Society. Spine Deform. 2021;9(2):315-325. doi:10.1007/s43390-020-00246-7

Black SR, Meyers KN, Nguyen JT, Green DW, Brady JM, Maher SA, Shubin Stein BE. Comparison of Ligament Isometry and Patellofemoral Contact Pressures for Medial Patellofemoral Ligament Reconstruction Techniques in Skeletally Immature Patients. Am J Sports Med. 2020;48(14):3557-3565. doi:10.1177/0363546520966609

### Physical Medicine & Rehabilitation

Thompson AR, Ensrud ER. Superior Gluteal Nerve Injury Following Landmark-guided Corticosteroid Injection for Greater Trochanteric Pain: a Case Report. Clin Case Rep. 2020;8(12):2554-2556. doi:10.1002/ccr3.3202

Godil J, Barrett MJ, Ensrud E, Chahin N, Karam C. Refractory CIDP: Clinical Characteristics, Antibodies and Response to Alternative Treatment. J Neurol Sci. 2020;418:117098. doi:10.1016/j.jns.2020.117098

Thompson AR, Ensrud ER. Rapid Onset of Femoral Head Osteonecrosis after a Single Intra-articular Hip Joint Injection of Corticosteroid. Am J Phys Med Rehabil. 2020;99(4):e54-e55. doi:10.1097/PHM.0000000000001202

Moshe-Lilie O, Ensrud E, Ragole T, Nizar C, Dimitrova D, Karam C. CIDP Mimics: a Case Series. BMC Neurol. 2021;21(1):94. doi:10.1186/s12883-021-02118-7

Thompson AR, Ensrud ER. Bilateral Adhesive Capsulitis Following Influenza Vaccination: a Case Report. Clin Case Rep. 2020;8(11):2155-2157. doi:10.1002/ccr3.3072

Thompson AR, Ensrud ER. Superior Gluteal Nerve Injury Following Landmark-Guided Corticosteroid Injection for Greater Trochanteric Pain: A Case Report. Clin Case Rep. 2020;8(12):2554-2556. doi:10.1002/ccr3.3202

Carlson HL, Thompson AR, Pettersson DR, Goodwin B, Deloughery TG, Carlson NL, Marshall LM. Prevalence and Clinical Significance of Incidental Vertebral Marrow Signal Abnormality in Thoracolumbar Spine MRI. Spine (Phila Pa 1976). 2020;45(6):390-396. doi:10.1097/BRS.0000000000003278

### Research & Basic Science

Johnstone B, Zhang N, Waldorff EI, Semler E, Dasgupta A, Betsch M, Punsalan P, Cho H, Ryaby JT, Yoo J. A Comparative Evaluation of Commercially Available Cell-based Allografts in a Rat Spinal Fusion Model. Int J Spine Surg. 2020;14(2):213-221. doi:10.14444/7026

Coghlan RF, Olney RC, Boston BA, Coleman DT, Johnstone B, Horton WA. Norms for Clinical Use of CXM, a Real-time Marker of Height Velocity. J Clin Endocrinol Metab. 2021;106(1):e255-e264. doi:10.1210/clinem/dgaa721

Pattappa G, Krueckel J, Schewior R, et al\*. Physioxia Expanded Bone Marrow Derived Mesenchymal Stem Cells Have Improved Cartilage Repair in an Early Osteoarthritic Focal Defect Model. Biology (Basel). 2020;9(8). doi:10.3390/biology9080230

\* Including OHSU Investigator: Johnstone B

Sennett ML, Friedman JM, Ashley BS, et al\*. Long Term Outcomes of Biomaterial-mediated Repair of Focal Cartilage Defects in a Large Animal Model. Eur Cell Mater. 2021;41:40-51. doi:10.22203/eCM.v041a04

\* Including OHSU Investigator: Johnstone B

Lin C, Zhang N, Waldorff EI, Punsalan P, Wang D, Semler E, Ryaby JT, Yoo J, Johnstone B. Comparing Cellular Bone Matrices for Posterolateral Spinal Fusion in a Rat Model. JOR Spine. 2020;3(2):e1084. doi:10.1002/jsp2.1084

### Spine

Philipp T, Radoslovich SS, Yoo JU. Risk Factors Associated with Femoral Ring Allograft Breakage in ALIF. Global Spine J. 2021;11(1):57-62. doi:10.1177/2192568219890294

Zusman NL, Radoslovich SS, Smith SBS, Tanski M, Gundle KR, Yoo JU. Physical Examination Is Predictive of Cauda Equina Syndrome: MRI to Rule Out Diagnosis Is Unnecessary. Global Spine J. Published online September 16, 2020;2192568220948804. doi:10.1177/2192568220948804

Ross DA, Pollock JM, Li NP, Yoo JU, Obayashi JT. Anterior Cervical Arthrodesis with Polyetheretherketone Spacers: What is the Role of the Grafting Material? Clin Spine Surg. 2020;33(10):E539-E544. doi:10.1097/BSD.0000000000000995

### Sports Medicine

Brady JM, Bray A, Kim P, Schneider B, Lippe J, Mercer D, Sutton K. Female Residents Give Themselves Lower Scores Than Male Colleagues and Faculty Evaluators on ACGME Milestones. J Surg Educ. Published online December 18, 2020. doi:10.1016/j.jsurg.2020.12.003

Brady JM, Smith D, Barronian T, Jenkins D, Nguyen JT, Herzka A, Friess D. When Is an Orthopedic Intern Ready to Take Call? J Surg Educ. 2021;78(2):694-709. doi:10.1016/j.jsurg.2020.08.028

Bell CD, O'Sullivan JG, Ostervoss TE, Cameron WE, Petering RC, Brady JM. Surgical Simulation Maximizing the Use of Fresh-frozen Cadaveric Specimens: Examination of Tissue Integrity Using Ultrasound. J Grad Med Educ. 2020;12(3):329-334. doi:10.4300/JGME-D-19-00553.1

Andriolo L, Crawford DC, Reale D, Zaffagnini S, Candrian C, Cavicchioli A, Filardo G. Osteochondritis Dissecans of the Knee: Etiology and Pathogenetic Mechanisms. A Systematic Review. *Cartilage*. 2020;11(3):273-290. doi:10.1177/1947603518786557

Ling DI, Brady JM, Arendt E, Tompkins M, Agel J, Askenberger M, Balcaek P, Parikh S, Shubin Sein BE. Development of a Multivariable Model Based on Individual Risk Factors for Recurrent Lateral Patellar Dislocation. *J Bone Joint Surg Am*. 2021;103(7):586-592. doi:10.2106/JBJS.20.00020

Chahla J, Hinckel BB, Yanke AB, et al\*. An Expert Consensus Statement on the Management of Large Chondral and Osteochondral Defects in the Patellofemoral Joint. *Orthop J Sports Med*. 2020;8(3). doi:10.1177/2325967120907343  
\* Including OHSU Investigator: Crawford D

Sun G, Gundel K, Arnold K, Contag A, Crawford D. Effects of Immediate Postoperative Physical Therapy on Negative Events Following Ambulatory Orthopaedic Surgery. *Ann Sports Med Res*. 2020;7(3):1154.

Abraamyan T, Johnson AJ, Wiedrick J, Crawford DC. Marrow Stimulation Has Relatively Inferior Patient-Reported Outcomes in Cartilage Restoration Surgery of the Knee: A Systematic Review and Meta-analysis of Randomized Controlled Trials. *Am J Sports Med*. Published online April 23, 2021:3635465211003595. doi:10.1177/03635465211003595

## Trauma

Winston BA, Sarker M, Putnam D, Gehling P, Eagleton C, Friess D. The Utility of Obtaining Postmobilization Imaging in Nonsurgical Pelvic Ring Injuries. *J Am Acad Orthop Surg*. 2020;28(13):556-561. doi:10.5435/JAAOS-D-18-00254

Hellwinkel JE, Miclau T, Provencher MT, Bahney CS, Working ZM. The Life of a Fracture: Biologic Progression, Healing Gone Awry, and Evaluation of Union. *JBJS Rev*. 2020;8(8):e1900221. doi:10.2106/JBJS.RVW.19.00221

Ramsey DC, Lawson MM, Stuart A, Soddors E, Working ZM. Orthopaedic Care of the Transgender Patient. *J Bone Joint Surg Am*. 2021;103(3):274-281. doi:10.2106/JBJS.20.00628

Patterson JT, Ishii K, Tornetta P, et al\*. Open Reduction Is Associated With Greater Hazard of Early Reoperation After Internal Fixation of Displaced Femoral Neck Fractures in Adults 18-65 Years. *J Orthop Trauma*. 2020;34(6):294-301. doi:10.1097/BOT.0000000000001711  
\* Including OHSU Investigator: Friess D

Haller JM, Working ZM, Ross HL, Gililand JM, Kubiak EN. Fewer Hip Dislocations with Anterior Total Hip Arthroplasty for Displaced Femoral Neck Fracture. *Orthopedics*. Published online January 7, 2021:1-5. doi:10.3928/01477447-20210104-02

Working ZM, Morris ER, Chang JC, et al\*. A Quantitative Serum Biomarker of Circulating Collagen X Effectively Correlates with Endochondral Fracture Healing. *J Orthop Res*. 2021;39(1):53-62. doi:10.1002/jor.24776  
\* Including OHSU Investigators: Working Z, Johnstone B

Roberts HJ, Albright PD, Shearer DW, et al\*. Motivations and Impact of International Rotations in Low and Middle-income Countries for Orthopaedic Surgery Residents: Are We on the Same Page? *Am J Surg*. 2021 Feb;221(2):245-253. doi: 10.1016/j.amjsurg.2020.08.046. Epub 2020 Sep 12.  
\* Including OHSU Investigators: Friess D, Working Z, Sun G

Zhao S, Kendall J, Johnson AJ, Sampson AAG, Kagan R. Disagreement in Readmission Rates After Total Hip and Knee Arthroplasty Across Data Sets. *Arthroplasty Today*. 2021;9:73-77. doi: 10.1016/j.artd.2021.04.002

## Upper Extremity

Mirarchi AJ, Nazir OF. Minimally Invasive Surgery: Is There a Role in Distal Radius Fracture Management? *Curr Rev Musculoskelet Med*. 2021;14(1):95-100. doi:10.1007/s12178-020-09689-x

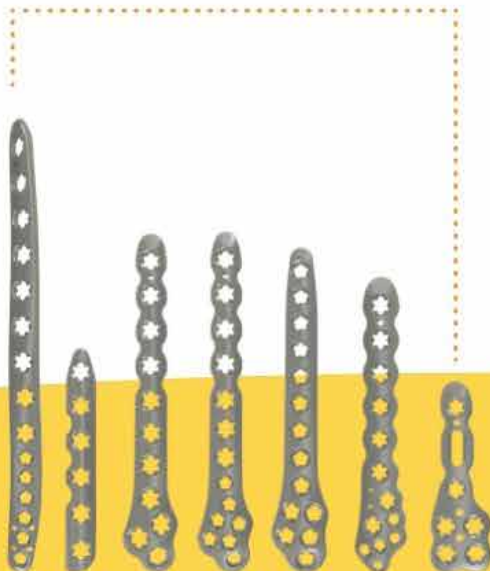
# Smith+Nephew

## EVOS<sup>®</sup> SMALL

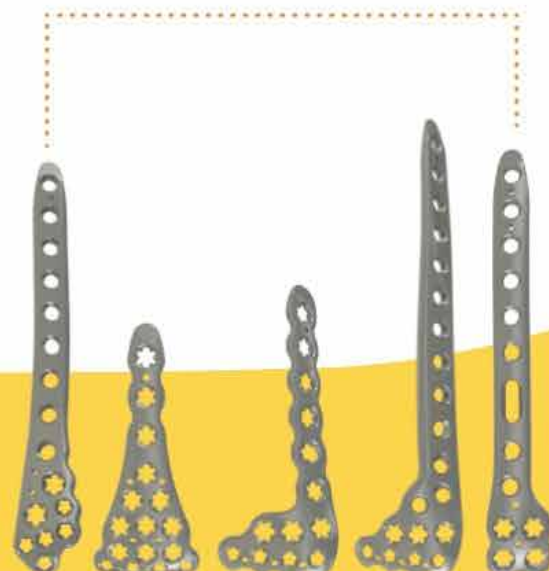
Lower Extremity Plating System



Ankle



Pilon





**Marrow Stimulation Has Relatively Inferior Patient-Reported Outcomes in Cartilage Restoration Surgery of the Knee. A Systematic Review and Meta-analysis of Randomized Controlled Trials.** Abraamyan T; Johnson AJ; Wiedrick J; Crawford DC. Am J Sports Med 2021 Published online April 23. doi: 10.1177/03635465211003595



**Torgom Abraamyan, MD**

Hometown: Glendale, CA

Medical School: Washington University, St. Louis, MO

Fellowship Plans: Sports Medicine, Southern California Orthopedic Institute, Van Nuys, CA

### BACKGROUND

Multiple cartilage repair techniques are available for chondral defects in the knee. Optimal treatment is controversial.

### PURPOSE

To evaluate change from baseline in the 5 Knee injury and Osteoarthritis Outcome Score (KOOS) subscales among different cartilage repair techniques of the knee.

### STUDY DESIGN

Systematic review and meta-analysis; Level of evidence, 1A.

### METHODS

Medline and Cochrane Central Register of Controlled Trials (CENTRAL) databases were searched for randomized controlled trials with minimum 1 year follow-up reporting change from baseline KOOS (delta KOOS) subscale values. The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines were followed. A meta-analysis was performed on the following surgery types: microfracture (Mfx); augmented microfracture techniques (Mfx + Augment); and culture-based therapies, including autologous chondrocyte implantation (ACI) and matrix-assisted autologous chondrocyte implantation (MAGI). A random-effects metaregression model was used.

### RESULTS

A total of 14 randomized trials with a total of 775 patients were included. The KOOS Sport and Recreation (Sport) and KOOS Quality of Life (QOL) were the 2 most responsive subscales after operative intervention. Outcomes from Mfx and Mfx + Augment were not different in any of the 5 KOOS subscales (minimum  $P > .3$ ). The mean delta KOOS Sport after ACI/MAGI was 9.9 points greater than after Mfx ( $P = .021$ ) and 11.7 points greater than after Mfx + Augment ( $P = .027$ ). Longer follow-up time correlated with greater delta KOOS Sport ( $P = .028$ ). Larger body mass index led to greater delta KOOS QOL ( $P = .045$ ). Larger cartilage defect size correlated with greater delta KOOS Pain and KOOS Activities of Daily Living scores ( $P = .023$  and  $P = .002$ , respectively).

### CONCLUSION

The KOOS Sport and QOL were the most responsive subscales after cartilage restoration surgery of the knee. Culture-based therapies (ACI/MAGI) led to clinically relevant improvements in the KOOS Sport score compared with marrow stimulation and may be a more appropriate treatment in younger and more active individuals. There were no benefits to Mfx + Augment over Mfx alone in any of the KOOS subscales.

### How Many Fracture Patients Are Using Marijuana for Pain Control and What Form? A Prevalence Study. [Barronian T](#); Sodders E; Meeker J; Working Z; Friess D.



**Trevor Barronian, MD**

Hometown: Seattle, WA

Medical School: OHSU, Portland, OR

Fellowship Plans: Total Joint Arthroplasty, Rothman South Jersey, Atlantic City, NJ

#### BACKGROUND

Marijuana use is legal in 17 states and Canada with 15% of adults reporting recent use. Non-prescribed drug use affects fracture care and multi-modal pain strategies. Medical records and surveys were used to design a cohort study to estimate the prevalence of marijuana use, administration route, and product type (cannabidiol (CBD) or Tetrahydrocannabinol (THC)) in orthopaedic trauma patients and compare to prevalence of NSAIDs, acetaminophen and opioid use. A case-control design was used to determine the odds ratio of improved pain control with marijuana use.

#### METHODS

Over a 12-month period of treating 737 patients, a prevalence study cohort of 160 orthopedic trauma patients from the Pacific Northwest completed written or electronic pain management surveys at time of post-injury clinics. Demographics, injury type, surgical intervention, and prescribed medication use of survey respondents were compared to the entire population to ensure sample validity. The survey asked patients for frequency of use of NSAIDs, acetaminophen, opioids, CBD, and THC in oral, inhaled, or topical forms and whether these drugs improved pain control or lowered opioid consumption. Finally, patients were surveyed to assess their most effective modality of pain control.

#### RESULTS

A broad cohort of orthopaedic trauma patients in the post-injury period finds a prevalence of 87% of patients having taken NSAIDs, 82% Acetaminophen, and 84% Opioids. Comparatively the prevalence of CBD use is estimated to be 24% and THC use 15%. Patients who use THC and CBD products show a wide prevalence of administration routes – 29% inhaled, 4% topical, 29% ingested and 38% multiple routes for THC, and 11% inhaled, 29% topical, 21% ingested and 39% multiple routes for CBD. A case-control, 2x2 square was used to determine the odds ratio of pain control in patients exposed to inhaled THC (0.88), ingested THC (0.8), inhaled CBD (0.64), ingested CBD (0.69) and topical CBD (1.12). While the preference of fracture patients for most effective pain control is opioids (43%), oral NSAIDs (32%) also demonstrated significant use. THC (9%) was selected by patients as most effective more frequently than acetaminophen (8%).

#### CONCLUSIONS

Both CBD and THC products are used by orthopaedic trauma patients as part of their pain control regimen via a variety of administered routes. These values were similar in prevalence to overall state population use. While not all patients experienced improved pain control, exposure to either CBD or THC was associated with increased rates and more patients felt THC was beneficial than acetaminophen.

### Utility of Upright Thoracolumbar Radiographs in Assessing Vertebral Fractures. [Laurita J.](#)



#### Jason Laurita, MD

Hometown: Camden, ME

Medical School: Dartmouth Medical School, Hanover, NH

Fellowship Plans: Adult Reconstructive Surgery, Houston Methodist Hospital, Houston, TX

#### INTRODUCTION

Thoracolumbar vertebral fractures are a common consult question fielded by spine surgeons in the emergency setting. When a thoracolumbar vertebral fracture appears likely to be stable, it is often interrogated for stability with an upright thoracolumbar radiograph, with or without a TLSO brace, although it is unclear how often these upright radiographs change clinical management. We present a retrospective study assessing the clinical utility of upright spine radiographs in the setting of acute thoracolumbar vertebral fractures. Our null hypothesis is that upright thoracolumbar x-rays rarely change management of vertebral fractures.

#### METHODS

Records at a single level 1 trauma center from January 2015 through July 2020 were reviewed. Patients with thoracolumbar fracture and subsequent standing thoracolumbar x-ray were assessed for conversion from conservative management to surgery. Lateral Cobb angle of the fractured vertebra on CT imaging and subsequent upright radiographs were measured and compared between operative and nonoperative groups.

#### RESULTS

Five of 75 patients had a change from non-operative to operative management during the initial hospitalization. A further 2 patients converted to surgical management based on progression of kyphosis on outpatient radiographs. Patients who converted to surgical management demonstrated an average kyphosis progression (from CT) of 11.1 degrees, versus 4.1 degrees in the non-operative group, which was significantly different ( $p=0.023$ ). Absolute degree of kyphosis was not significantly different between operative and non-operative groups.

#### DISCUSSION

Acute conversion from non-operative to operative management based on upright thoracolumbar radiographs occurred 6.6% of the time (5 of 75 patients) in our retrospective review. Based on this, we would reject the null hypothesis that upright thoracolumbar x-rays rarely change management of vertebral fractures.

**Optimizing Graft Extraction from the Femoral Condyle for Fresh Osteochondral Allograft Transplantation in Treating Osteochondritis Dissecans of the Capitellum – Best Fit Based on Radius of Curvature.** Goldstein Z; Thompson AR; Robbins M; Yang S; Nazir OF; Mirarchi AJ.



**Michael Robbins, MD**

Hometown: Paradise, CA

Medical School: University of California, Davis, CA

Fellowship Plans: Hand/Upper Extremity, University of Utah, Salt Lake City, UT

### BACKGROUND

Osteochondritis Dissecans (OCD) of the capitellum is common in adolescents that engage in repetitive loading of their elbows and results in pain and dysfunction. For large, unstable lesions, fresh osteochondral allograft transplantation (FOCAT) from the femoral condyle has been described as an effective treatment. Current practice involves significant guess work when obtaining an appropriately sized graft, with anatomical variations resulting in poor graft fit. No studies have analyzed or identified the best distal femur FOCAT graft site to repair OCD lesions of the capitellum based on ROC and simulated matching.

### METHODS

Computed Tomography (CT) scans of the elbow were used to estimate the subchondral bone ROC of adolescent capitella aged 11-21. The measurement site used for determining capitellar ROC was the most commonly reported site of OCD lesions in the elbow. CT scans of the lower extremity were used to estimate the subchondral bone ROC of four potential donor femoral condyle grafts. The age of donor grafts was not limited to a specific range. This method approximates the current donor-patient schema experienced in the operating room. The ROC of two distinct regions from the posterior section of both the medial and lateral femoral condyles were measured; one area representing a 10mm graft from

middle region of the posterior condyles, and the other estimating a 10mm graft adjacent to the physeal scar. A novel protocol was used to determine the ROC of subchondral bone at these locations. Intra-observer and inter-observer reliability measurements were performed to corroborate precision and consistency.

### RESULTS

The average ROC of the capitellum was  $9.79 \pm 1.39$ . The average ROC of MCL1 was  $18.61 \pm 2.26$ . The average ROC of MCL2 was  $15.23 \pm 1.43$ . The average ROC of LCL1 was  $16.47 \pm 1.34$ . The average ROC of LCL2 was  $18.19 \pm 3.09$ . 15,000 simulated condyle-to-capitellum matchings based on these measurements resulted in a “good fit” graft frequency of 6%.

### DISCUSSION

The main findings of this study were: (1) no site measured from the femoral condyle demonstrated a ROC that exactly matched the ROC of the capitellum; (2) of the locations measured, a 10mm section 15mm inferior from the physeal scar on the posterior medial condyle demonstrated the closest match; and (3) when the femoral condyle measurements were randomly matched to capitellar measurements, the ROC matched only 6% of the time. Based on this analysis, extracting a graft from MCL2 has the potential to further optimize FOCAT fit to the capitellum and improve functional outcomes.



**Expired Air Carbon Monoxide Testing Is Effective for Preoperative Screening of Cigarette Use in Orthopaedic Patients: A Prospective Pilot Study of 70 Veterans.** Sterrenberg SS; Gallacher DM; Tabb JP; Schmidt MS; Anissian L; Gundle KR; Wallenberg RB.



**Sean Sterrenberg, MD**

Hometown: Silverton, OR

Medical School: University of Washington, Seattle, WA

Fellowship Plans: Arthroplasty, Reno Orthopedic Clinic, Reno, NV

### BACKGROUND

Traditional biochemical testing methods, including serum and urine cotinine assays, do not differentiate active smoking from nicotine replacement therapy (NRT). This pilot study evaluates the effectiveness and cost savings potential of a novel point-of-care carbon monoxide (CO) breath test to verify smoking status and differentiate active smoking from NRT, as compared to the reference standard serum cotinine test.

### METHODS

Adult orthopaedic veterans indicated for elective surgery at our institution were offered inclusion. Self-reported smoking status (SRS), exhaled carbon monoxide (eCO) and serum cotinine (SC) levels were obtained preoperatively. An eCO level of >6 parts per million and a SC level >3 ng/ml were considered positive for recent cigarette use. Agreement between SRS, eCO levels and SC levels, and eCO level test-retest reliability were evaluated.

### RESULTS

Of the 55 patients enrolled into the study, 4 were self-reported Current Smokers and 51 were self-reported Ex-Smokers or Non-Smokers. Combining SRS with eCO levels as a screening tool for recent cigarette use yielded a sensitivity of 100%, a specificity of 98%, a positive predictive value of 95% and a negative predictive value of 100%. ECO testing differentiated NRT from cigarette use in all non-smoking patients. Test-retest reliability for eCO levels showed perfect agreement for 16 patients that had two or more eCO levels pre-operatively.

### INTERPREPATION

Exhaled CO testing differentiates active smoking from NRT, and has a high level of accuracy and reliability when combined with SRS as a screening tool.

### **Supracondylar Pinning Antibiotic Stewardship (SPAS) Trial.** Brohard J; Umberhandt B.



#### **Justin Brohard, DO**

Hometown: Decatur, IL

Medical School: Western University of Health Sciences, Pomona, CA

Fellowship Plans: Foot and Ankle, University of Washington at Harborview, Seattle, WA

The goal of the SPAS trial is to determine the role of prophylactic antibiotics in closed reduction and percutaneous fixation of pediatric supracondylar humerus fractures. The study is a prospective, double-blinded, two-arm, non-inferiority trial. The intervention study arm will receive a preoperative saline placebo. The control study arm will receive 'standard of care' preoperative prophylactic antibiotics. The primary outcome of the study will be the development of a surgical site infection, including both superficial and deep infections. Secondary outcomes will include rate and type of post-operative complications, which will be monitored in an attempt to quantify drug related adverse events. The medical premise driving this research is that closed reduction and percutaneous fixation of pediatric supracondylar humerus fractures is safe to perform without prophylactic antibiotics, and we anticipate finding no difference in infection rates between the two study arms. The single inclusion criterion is an isolated, closed, displaced supracondylar humerus fracture treated with closed reduction and temporary percutaneous pinning. Exclusion criteria are immune compromise, pathological fractures, open fractures, polytrauma, skeletal maturity, and treatment primarily with open reduction or conversion to open reduction. Because of the low infection rate observed in this type of surgery, the sample size for the study is estimated at 600 participants per study arm to achieve adequate power. Consequently, we will attempt to recruit

660 participants per study arm to accommodate a 10% drop-out rate. With a multicenter design, it is expected that study enrollment will proceed over the course of 1-2 years with follow up of approximately 3 months post-surgical intervention per participant. As of Spring 2021, local patient enrollment at Legacy Emanuel Randall's Children's Hospital has begun, and several other remote sites are in the IRB phase of onboarding, with an anticipated completion date around year end 2024.

## **Suture Pullout in Human Cadaveric Skin: Evaluation of HEMIGARD® Augmentation versus Suture Alone.** Lin J; Conley S; Peardon J; Pipitone OR.



### **Shaun Conley, DO**

Hometown: St. Louis, MO

Medical School: Rocky Vista University of Osteopathic Medicine, Parker, CO

Fellowship Plans: Pediatrics, Children's Hospital, Los Angeles, CA

### **INTRODUCTION**

Closure of high-tension surgical wounds is a challenge frequently encountered during surgical procedures. The use of a novel adhesive augmentation device, HEMIGARD®, has been proposed to decrease tension on wound closure and thereby increase the amount of force needed for suture pullout. In principle, this may help prevent wound dehiscence, skin edge necrosis and the sequelae thereof. We hypothesized that HEMIGARD® augmentation of suture placement would require more force for suture pullout from human cadaveric lower extremity skin when compared to suture alone.

### **METHODS**

In this study, HEMIGARD® with suture was compared to suture alone on leg and foot measurements from four cadavers. One side of the incision was used to test the HEMIGARD® according to the manufacturer's instructions. The other side of the same incision was used to test the same suture material, passed without HEMIGARD®, to allow for direct comparison. A force gauge was used to measure the Newtons of force required for suture pullout. A total of 30 measurements were recorded per cadaver; 15 using HEMIGARD® and 15 using suture alone.

### **RESULTS**

No difference was observed between HEMIGARD® and suture alone in the amount of force required for suture pullout. When excluding instances of HEMIGARD® adhesive failure, which occurred in 67% of measurements, the HEMIGARD® was found to be superior to suture alone in the cadaveric foot, but not in the leg.

### **CONCLUSIONS**

The amount of force required for suture pullout from human cadaveric lower extremity skin did not significantly differ when using HEMIGARD® augmentation of suture placement versus using suture alone. However, when excluding instances of HEMIGARD® adhesive failure, the HEMIGARD® may be superior to suture alone in the cadaveric foot, but not in the cadaveric leg.

**Hyperarbia Is Not Associated with Increase in Prosthetic Joint Infections in Lower Extremity Total Joint Replacement: A Retrospective Study.** Goodeill T; Than J; Pipitone O; Lin J; Tedesco N.



### Justin Than, DO

Hometown: San Jose, CA

Medical School: Western University of Health Sciences, Lebanon, OR

Fellowship Plans: Total Joints, Cedar Sinai, Los Angeles, CA

### BACKGROUND

Periprosthetic joint infection (PJI) is a serious complication after total joint replacement (TJR). Adequate wound oxygenation is needed for wound healing and infection prevention. As carbon dioxide (CO<sub>2</sub>) is exchanged for oxygen (O<sub>2</sub>) in the lungs, serum bicarbonate (HCO<sub>3</sub><sup>-</sup>) may be used as a marker for predicting relative serum O<sub>2</sub> levels, and therefore, healing potential. This study aimed to determine if prosthetic joint infection (PJI) and wound complications within one year of index primary TJR correlated with hypercarbia.

### METHODS

We performed a retrospective review of lower extremity TJR patients to determine whether the risk of PJI and wound complications within one year was correlated with hypercarbia, which was defined as preoperative serum bicarbonate levels >30 mEq/L.

### RESULTS

Out of 1,690 TJR procedures, 1.6% (N=27) had a PJI or superficial wound infection within one year postoperatively. Hypercarbia was present in 9.2% of non-PJI patients and in 7.4% of PJI patients. Although patient demographics did not significantly differ across patients with vs without PJI (all p>0.05), the PJI cohort had a higher proportion of males (52% vs 39% in the non-PJI cohort), patients with

HbA1c over 7 (33% vs 12% in the non-PJI cohort), and smokers (15% vs 8% in the non-PJI cohort).

### DISCUSSION

The relative risk of PJI and wound complications did not differ for patients with vs without hypercarbia (RR = 0.79, 95% CI = 0.19-3.31, p=0.75). Our results indicate that preoperative hypercarbia is not correlated with an increase in risk of PJI or wound complications. Within this study population, 1.6% of lower extremity TJR procedures had a PJI or wound complication within one-year postoperatively. Although this includes both PJI and wound infection, this still falls within the national reported rates for PJI of 0.3% to 2%. To our knowledge, this is the first study examining the relationship between bicarbonate levels and PJI in TJR patients.



# Resident Directory 2020-2021

OHSU Residents (PGY-4 to PGY-1)

## PGY-4 Class

---



**Sam Cheesman, MD**

Hometown:  
Muncie, IN

Medical School:  
Indiana University,  
Indianapolis, IN



**Ryan Hadden, MD**

Hometown:  
Salem, OR

Medical School:  
University of Alabama,  
Birmingham, AL



**Sam Moulton, MD**

Hometown:  
Eugene, OR

Medical School:  
OHSU, Portland, OR



**Erik Woelber, MD**

Hometown:  
Anchorage, AK

Medical School:  
University of  
Washington,  
Seattle, WA



**Natalie Zusman, MD**

Hometown:  
Portland, OR

Medical School:  
OHSU, Portland, OR

## PGY-3 Class

---



**Elliott Cole, MD, MPH**

Hometown:  
Memphis, TN

Medical School:  
University of  
Tennessee,  
Memphis, TN



**Derek Bond, MD**

Hometown:  
Hillsboro, OR

Medical School:  
OHSU, Portland, OR



**Loren O. Black, MD**

Hometown:  
Portland, OR

Medical School:  
OHSU, Portland, OR



**Connor Pihl, MD**

Hometown:  
Juneau, AK

Medical School:  
University of  
Washington,  
Seattle, WA



**Jamil Kendall, MD**

Hometown:  
St. Thomas, Virgin Islands

Medical School:  
Howard University,  
Washington, DC

# Resident Directory 2020-2021

OHSU Residents (PGY-4 to PGY-1)

## PGY-2 Class

---



**Michelle Lawson, MD**

Hometown:  
Seattle, WA

Medical School:  
University of  
Rochester,  
Rochester, NY



**Danielle Peterson, MD**

Hometown:  
Mill Creek, WA

Medical School:  
University of  
Washington,  
Seattle, WA



**Frank Rodgers, MD**

Hometown:  
Columbia, SC

Medical School:  
University of South  
Carolina, Columbia, SC



**Laura Sokil, MD**

Hometown:  
Lower Merion, PA

Medical School:  
Thomas Jefferson  
University,  
Philadelphia, PA



**Naomi Turner, MD**

Hometown:  
Bloomington, MN

Medical School:  
University of  
Minnesota,  
Minneapolis, MN

## PGY-1 Class

---



**Kate Hutchison, MD**

Hometown:  
Evanston, IL

Medical School:  
University of  
Pennsylvania,  
Philadelphia, PA



**Mackenzie Kelly, MD**

Hometown:  
Portland, OR

Medical School:  
Oregon Health &  
Science University,  
Portland, OR



**Phillip Lam, MD**

Hometown:  
Portland, OR

Medical School:  
Oregon Health &  
Science University,  
Portland, OR



**Sarah Lindsay, MD**

Hometown:  
Greenwood Village, CO

Medical School:  
Stanford School of  
Medicine, Stanford, CA



**Kyle Minkel, DO**

Hometown:  
San Luis Obispo, CA

Medical School:  
Western University  
of Health Sciences,  
Pomona, CA

# Resident Directory 2020-2021

Samaritan Health Services Residents (PGY-4 to PGY-1)

## PGY-4 Class

---



**Andrew Hadeed, DO**

Hometown:  
Los Gatos, CA

Medical School:  
West Virginia School  
of Osteopathic  
Medicine,  
Lewisburg, WV

Fellowship Plans:  
Trauma



**Tyler Petersen, DO**

Hometown:  
Vancouver, WA

Medical School:  
Western University  
of Health Sciences,  
Lebanon, OR

Fellowship Plans:  
Trauma



**Babe Westlake, DO**

Hometown:  
Sparks, NV

Medical School:  
Western University  
of Health Sciences,  
Lebanon, OR

Fellowship Plans:  
Arthroplasty/  
Oncology

## PGY-3 Class

---



**Taylor Brown, DO**

Hometown:  
Appleton, WI

Medical School:  
Kansas City  
University,  
Kansas City, MO



**Teigen Goodeill, DO**

Hometown:  
Centralia, WA

Medical School:  
Pacific NW University  
of Health Sciences,  
Yakima, WA



**Jared Sanderford, DO**

Hometown:  
Greeley, CO

Medical School:  
Rocky Vista University  
of Osteopathic  
Medicine, Parker, CO

# Resident Directory 2020-2021

Samaritan Health Services Residents (PGY-4 to PGY-1)

## PGY-2 Class

---



**Christopher Canario, DO**

Hometown:  
Newark, CA

Medical School:  
Rocky Vista University  
of Osteopathic  
Medicine, Parker, CO



**Delaney Keane, DO**

Hometown:  
Los Gatos, CA

Medical School:  
West Virginia School  
of Osteopathic  
Medicine,  
Lewisburg, WV



**Alexandra Scoles, DO**

Hometown:  
Sonora CA

Medical School:  
Rocky Vista University  
of Osteopathic  
Medicine, Parker, CO

## PGY-1 Class

---



**Jeremy Brown, DO**

Hometown:  
St. Petersburg, FL

Medical School:  
Rocky Vista University  
College of Osteopathic  
Medicine, Parker, CO



**Clarian Smyth, DO**

Hometown:  
Happy Valley, Oregon

Medical School:  
Western University  
of Health Sciences  
College of  
Osteopathic Medicine  
of the Pacific,  
Lebanon, OR



**Robert Wood, DO**

Hometown:  
Erie, PA

Medical School:  
Lake Erie College of  
Osteopathic Medicine,  
Erie, PA



SURGEON-CENTERED. EFFICIENT.<sup>1</sup> ACCURATE.<sup>2</sup>

# REDEFINING ROBOTICS



For more information, visit [zimmerbiomet.com/rosaknee](https://zimmerbiomet.com/rosaknee)  
or contact ZB Oregon at [Brandon.Losee@zboregon.com](mailto:Brandon.Losee@zboregon.com).

## ROSA® Knee



1. Statement based on x-ray based imaging, imageless case option, and reduced instrumentation through pre-operative imaging.

2. Parratte, S., et al. Accuracy of New Robotically-assisted Technique for Total Knee Arthroplasty: A Cadaveric Study. The Journal of Arthroplasty. 34(11): 2799-2803, 2019.

All content herein is protected by copyright, trademarks and other intellectual property rights, as applicable, owned by or licensed to Zimmer Biomet or its affiliates unless otherwise indicated, and must not be redistributed, duplicated or disclosed, in whole or in part, without the express written consent of Zimmer Biomet. This material is intended for health care professionals. Distribution to any other recipient is prohibited. For indications, contraindications, warnings, precautions, potential adverse effects and patient counselling information, see the package insert or contact your local representative; visit [www.zimmerbiomet.com](https://www.zimmerbiomet.com) for additional product information. Check for country product clearances and reference product specific instructions for use. Not for distribution in France. © 2020 Zimmer Biomet



### HANNAH AULTMAN, MD

After graduating residency in 2018, I moved to Chicago for my hand and upper extremity fellowship at the University of Chicago. It was a whirlwind year with a wonderful group of mentors, both in the academic setting at University of Chicago, and at the two private practice groups I worked with in the NorthShore hospital system. I was so lucky to find a friend and lifetime colleague in my co-fellow, with whom I am in contact almost daily about difficult cases and the growing pains of early practice.

After graduating fellowship in 2019, my husband Pete and I took a couple months off to travel in Europe and Africa. I cannot recommend taking some time off enough to all graduating residents and fellows!

After our trip, we moved back to Portland and

I joined Orthopedic + Fracture Specialists as their third hand surgeon alongside Dr. Macpherson Beall and Dr. Rolf Sohlberg. I could not have asked for better partners, mentors, and friends. My practice is primarily hand and upper extremity surgery, but I also cover Fracture Block at St. Vincent's three days a month. Through fracture block I've been able to work with the current OHSU residents, which has been extremely rewarding.

This first year in practice has obviously not been what any of us imagined, and the learning curve has been steep, but it's made me all the more grateful for the resilience and foundational orthopedic principles I learned in residency at OHSU, and I feel so lucky to be able to turn to many at OHSU for advice. A huge thank you to everyone at OHSU who has shared their wisdom with me over the years!



## Alumni Updates: Class of 2018



### KARLEE LAU LOFTIN, MD

Since graduation 3 years ago, I spent a year training as a hand, upper extremity, and microsurgery fellow at the University of Alabama at Birmingham (UAB). It was an incredible year and was invaluable in teaching me about the intricacies of hand surgery. I had planned to return from the South to start my first job, but didn't imagine that I would be staying in Birmingham after fellowship. I met my now husband Andrew while in fellowship, and we decided to start our lives together in Birmingham. I'm currently an assistant professor in the department of Orthopedic Surgery at UAB and am deeply involved in the fellowship and residency program. Working with residents and fellows is a blast and so rewarding! I'm humbled to be a part of their educational journey. I take level 1 trauma hand call and am so thankful for the preparation my fellowship has given me. My practice is half elective and half trauma. Working at an academic center, I get many referrals from our community as well as neighboring states.

Between juggling a busy practice, teaching, and preparing for oral boards, Andrew and I got married in September 2020 (after planning 2 other weddings due to COVID!). We have two amazing puppies, Strudel the petite goldendoodle and Butter the Westie. We moved into our first home at the end of last year and are expecting our first baby this summer.

I'm grateful for the foundation that OHSU has helped me build as an orthopedic surgeon and look back on my memories as a resident fondly. All the challenges I faced as a resident at OHSU prepared me to be a better clinician and surgeon. I went through some of the most formative years of my career with wonderful co-residents, who are my life-long friends. I especially want to thank the attendings at OHSU as they have been impactful mentors to me. Residency at OHSU definitely paved the way for a satisfying career for me!





### **DAYTON OPEL, MD**

I find myself thinking fondly and frequently of my time at OHSU and all of the wonderful people and experiences in Portland and Oregon. After residency, I completed my fellowship in Hand & Upper Extremity Surgery at Case Western/MetroHealth/Cleveland Clinic where I continued my surgical training with some of the same attendings (Harry Hoyer, Bill Seitz, Peter Evans) that helped train my residency mentors prior to their arrival in Portland. My wife and two boys and I now live in Madison, WI, where I work as an employed surgeon for SSM Health, including at a level 2 trauma hospital. My practice focuses exclusively on shoulder to fingertip issues, including arthroplasty, arthroscopy,

microscopy, and everything in between, from infants to centenarians, with a mix of bread & butter and complex pathology. Practice has not been without its share of challenges, however due to the experience and training I received at OHSU, I was able to benefit quickly and immensely from my fellowship training and immediately establish myself as a safe and effective surgeon. This comes as no surprise to the dedicated and skilled surgeons at OHSU from whom I gleaned all of the best skills, tricks, and pearls (and none of the bad habits) which now live on in my practice in my various techniques, abilities, and approaches to patient clinical and surgical care. I am deeply indebted to the faculty mentors who dedicate their lives and practices to quality surgical care and education.



### **DEREK SMITH, MD**

After residency at OHSU, Dr. Smith completed fellowship training in hand and micro surgery at the University of Cincinnati College of Medicine under the mentorship of Dr. Peter Stern. Following graduation, he returned to Oregon after falling in love with the state during his five years of residency. His clinical practice focuses on hand and wrist surgery at Desert Orthopedics in Bend.

When not in the operating room, he enjoys spending time outdoors with his family and trying to keep up with his two young daughters. Per his practice bio, "he strives to keep his schedule on time, but can't make any promises if you get him talking about Navy football, cycling, rowing, or animated films with strong female leads".



## Alumni Updates: Class of 2018



### **BENJAMIN WINSTON, MD**

After finishing residency, I knew that I would be back in Portland, starting practice at Kaiser Permanente, which made leaving after 5 years a lot easier. I spent one amazing year at the Tahoe Arthroplasty Fellowship (which is located squarely in Reno but strategically named). It turns out Reno is pretty amazing; there are all kinds of things to do outside with proximity to world class skiing, mountain biking, short drives to Lake Tahoe and Donner in addition to multiple excellent breweries. And slot machines in the airport. I feel that my training there was second to none... if it's good enough for 3 time OITE champion Alex DeHaan, it's good enough for me. All that being said, settling down back in Portland with my wife, Ellen, and 2 little ladies, Kenna (6)

and Shea (soon to be 4), was a big relief. Looking back, I wouldn't so much say I miss residency and I just don't understand anyone who would say something like that. I can, however, say for certain that I got excellent training at OHSU, a fact that became very evident to me in fellowship and in my early career. So, for all the current residents, hang in there; there is indeed a light at the end of the tunnel. You get to choose what kind of surgeon you become and no one else. Don't become the stereotypical jaded, angry, overworked ortho doc. Be nice to the people calling you for a consult at 0230, they're scared and they don't know what to do. And most importantly, don't forget, you're all heroes. Oh, and we got a COVID puppy: BaLuna Starbrella... guess who named her.

## Alumni Updates: Class of 2007



### J. RAFF SALES, MD

My time at OHSU taught me many things, and definitely shaped who I am today as a surgeon and a human being. Having wonderful mentors like Rod Beals, Tom Ellis, and others shaped the way I approach many aspects of my practice. After leaving OHSU in 2007, I went to the San Francisco Spine Institute for a spine fellowship. There I focused on minimally invasive spine surgery. After finishing that fellowship in 2008, I spent the summer at Harborview Medical Center with great mentors such as Carlos Bellabarba and Jens Chapman, who further shaped my approach to spine surgery as well as spine trauma. I then went into practice at Legacy Emanuel Medical Center in Portland, focusing on spinal trauma in addition to a normal minimally invasive spine practice. I worked in a practice with mentors such as Steve Madey as well as great OHSU colleagues Brit Frome, Corey VandeZanschulpe and Amer Mirza. It was there that I really honed the business of medicine, which has served me well. I became the Director of Spine Trauma for Legacy Emanuel in 2009, and stayed in that role until 2016.

In 2010 I moved my practice from Legacy to Providence St Vincent, joining Dan Rohrer, a neurosurgeon. This allowed collaboration and a focus more on minimally invasive spine surgery. St Vincent is still the home of my primary spine practice, however I have the opportunity to work at Legacy on occasion. I became the medical director of spine surgery for Providence Health System in Oregon

in 2019 and still serve that role today. My practice is now entirely focused on minimally invasive spine surgery, and work out of St Vincent as well as two ASCs. I enjoy working with many colleagues from my time at OHSU, and feel that the collaboration with these colleagues is a great boost for my morale as well as a benefit to my patients.

My family time is still what I cherish most. While a resident at OHSU, I had two wonderful children, Ashlyn and Aaren. They have grown into amazing teenagers (most of the time), and keep us busy. In 2013 we had Ryan, who is now an 8 year old ball of energy who enjoys time with his brother and sister. Aaren spends much of his time focusing on lacrosse, and competes on a national travel team year round when not picking on his brother. Ashlyn is a junior at OES and is looking carefully at her transition to college. Throughout all of this, the rock of our family has been Jaime, who many know from my time at OHSU. She is always busy helping at school, working with various charities, and maintaining an amazing garden at our house in SW Portland. In our free time we enjoy time on the mountain and golf course, although my golf game has not evolved much over the last 13 years.

I still miss the camaraderie and friendships from OHSU, and will never forget my time there. From the mentors who shaped my decision in choosing a specialty to the lifetime friends I made there, I feel my time at OHSU shaped who I am today.





## Alumni Updates: Class of 2003



### JOHN B. REID III, MD "JEB"

I remember driving down the hill following my last day of residency in June of 2003 like it was yesterday. As I wound down Sam Jackson Park Rd. I thought to myself, damn those 5 years went fast! It is often that I fondly reflect on my time at OHSU, both as a medical student, and then as an orthopaedic resident. Many big life events occurred during those 9 years including the birth of our two children. I have frequently told OHSU stories of the orthopaedic resident shenanigans and adventures, educational experiences, and of all the great mentors with which I was blessed.

Following residency I completed my Sports Medicine Fellowship at Taos Orthopaedic Institute (TOI) in northern New Mexico. In the fall of 2004, we returned to Portland, and joined Dr. Weintraub and Dr. Colorito at The Orthopedic & Sports Medicine Center of Oregon. I was happily building my sports medicine practice in Portland when, on a rainy winter day, I received a phone call from Dr. Jim Lubowitz, my former Fellowship Director. He asked if I would consider returning to Taos and

help develop the Fellowship program. After much debate, a pro's and con's list, and thorough consideration of the two amazing opportunities my wife, Nye, and I decided to head back to the Sangre de Cristo range of the Southern Rockies. Therefore, in the fall of 2005 we returned to Taos, the high desert and 320 days of sunshine per year.

During the 15 years I spent at Taos Orthopaedic Institute as Fellowship faculty, the last 3 of which as Fellowship Program





Director, I wore many hats and helped expand the program from 2 to 3 fellows per year. In addition to my faculty positions at TOI, I was also Assistant Clinical Professor in the Department of Orthopaedics at the University of New Mexico, Director of the Taos Orthopaedic Institute Research Foundation, and Head Team Physician at New Mexico Highlands University for 15 great years. During my tenure at TOI I was blessed with the opportunity to help train 41 Sports Medicine Fellows as well as 3 International Fellows from Japan. Our affiliation with UNM also allowed us to host physician assistant students, medical students, and residents for elective sports medicine rotations. I truly feel that the years spent in academic medicine and teaching enabled me to continue to grow and develop as a physician and surgeon, provided me the opportunity to remain active in research, and gave me the chance to become an industry consultant. During the winter of 2005 I began traveling with the U.S. Ski Team to mountains around the world as team physician, a privilege that I still enjoy today.

Growing up in Taos, our children felt fortunate to be raised in a small mountain town rich in history and unsurpassed in natural beauty. Throughout childhood they were exposed to cultural diversity and provided with many unique opportunities. Both were avid ski racers, and when they were young we were a “never summer” family, following the snow to Arapahoe Basin in late spring, Mammoth and Mt. Hood in the summer, and the Southern Hemisphere with the U.S. Ski Team for

training in the fall. Following high school our daughter, Aquene, headed off to Seattle to attend the University of Washington where she majored in Molecular Biology. After undergraduate school she stayed in Seattle and worked at Seattle Children’s Hospital doing CAR T-Cell research, obtained a Masters in Applied Bioengineering at U Dub, and is currently applying to medical school. After solo travel, trekking, teaching, and ski guiding around the world in between his sophomore and junior year in college our son, Rec, decided to transfer from the University of Virginia to the University of California Santa Barbara. He is currently entering his senior year as an Economics major, preparing for the LSAT, and enjoying life in Isla Vista.

As with most things in life, our path has come full circle and we have returned to Oregon. This past summer, primarily to be closer to immediate and extended family, we moved from Taos to Ashland and the first thing my wife said when we arrived was, “Oregon has always felt like home”. I had to agree.





# Settling is never a good thing.

**You deserve the ultimate knee  
replacement experience.**

Take the stairs.<sup>1\*</sup> Go for walks. Stop  
being afraid. You can—because  
a robotics-assisted surgery with  
Smith+Nephew implants can deliver  
a more normal feeling knee,<sup>2</sup> a  
quicker, smoother recovery<sup>3</sup> and an  
implant built to last.

## Smith+Nephew

# 89%

89% of patients\* were able  
to take the stairs again  
after surgery.<sup>1</sup>

Discover more at [rediscoveryourgo.com](https://rediscoveryourgo.com)

\*Journey II BCS.

1. Iriuchishima T, Ryu K. Bicruciate substituting total knee arthroplasty improves stair climbing ability when compared with cruciate-retain or posterior stabilizing total knee arthroplasty. Indian J Orthop. 2019. doi:10.4103/ortho.IJOrtho\_392\_18. 2. Hall, et al. Unicompartmental knee arthroplasty (alias uni-knee): an overview with nursing implications. Orthopaedic Nursing. 2004;23(3):163-171. Accessed April 25, 2019. 3. Mayman DJ, Patel AR, Carroll KM. Hospital related clinical and economic outcomes of a bicruciate knee system in total knee arthroplasty patients. Poster presented at: ISPOR Symposium; May 19-23, 2018; Baltimore, Maryland, USA.

Individual results may vary. There are risks associated with any surgical procedure. Robotics-assisted knee surgery is not for everyone. Children, pregnant women, patients who have mental or neuromuscular disorders that do not allow control of the knee joint, and morbidly obese patients should not undergo a robotics-assisted knee replacement procedure. Consult your physician for details to determine if robotics-assisted knee surgery is right for you. Please note: all citations referenced are the result of in vitro simulation testing have not been proven to predict clinical performance. ©2020

## OHSU Annual Beals Lectureship



*Rodney K. Beals, MD*

The Beals memorial lectureship is an annual event established in honor of the late Rodney K. Beals, MD, Professor Emeritus in the Department of Orthopaedics & Rehabilitation at Oregon Health & Science University, who taught orthopaedics for more than 50 years. Dr. Beals was a lifelong “Oregonian” and spent his entire professional career practicing orthopaedic surgery in Portland, OR. Dr. Beals was a committed clinician, master surgeon, revered educator and accomplished researcher. It was not only out of respect for his scientific accomplishments, but for his humble guidance and mentorship that the OHSU Department of Orthopaedics & Rehabilitation established the annual Beals Memorial Lecture Series.

Dr. Beals attended Willamette University for his undergraduate training, graduating in 1952, and received his medical degree from the University of Oregon Medical School (precursor to OHSU) in 1956. He completed his internship at Minneapolis General Hospital followed by a General Surgical Residency in San Bernadino County Hospital in California. He ultimately completed his training in Orthopaedic Surgery at the University of Oregon Medical School in 1961. Dr. Beals immediately joined the faculty and rapidly rose through the ranks at OHSU, serving as Head of the Division of Orthopedics from 1981 to 1994. Dr. Beals also served as the first chairman for the Department of Orthopaedic Surgery at OHSU in 1994. At the age of 77, he remained an active member of the Orthopaedic faculty at OHSU until the time of his passing on August 7, 2008.

Dr. Beals was an accomplished researcher throughout his career. He was nationally recognized for his research on skeletal manifestations of growth disturbances in children. He authored more than 150 peer-reviewed publications. Dr. Beals was also a revered educator. During his tenure at OHSU, he helped train more than 150 orthopaedic surgeons in residency. He also helped thousands of patients and mentored countless numbers of medical students. Throughout his remarkable career, Dr. Beals represented and personified excellence in medicine and orthopaedic surgery.

**Due to Covid-19, the 2021 Beals Memorial Seminar was held virtually.**

# Visiting Lectureships



Guest Lecturer 2021  
**Bruce A. Levy, MD**

## **BEALS GUEST LECTURER**

### **Bruce A. Levy, MD**

Doctor Levy was born and raised in Montreal, Quebec, Canada and received his medical degree from the University of Montreal. He then completed his Orthopedic Surgery Residency at the Mayo Clinic in Rochester, Minnesota. He performed an Orthopedic Sports Medicine Fellowship at the Minneapolis Sports Medicine Center in Minneapolis, Minnesota. Doctor Levy now holds the rank of Professor of Orthopedics, Mayo Clinic College of Medicine and Science, Rochester, Minnesota.

Since completing his fellowship in 1999, Doctor Levy's clinical and research interests have focused largely on complex knee trauma with a particular emphasis on knee dislocation and multi-ligament knee reconstruction. He has served on the AAOS Clinical Practice Guidelines Committee and is the Mayo Clinic principal investigator for several multi-center trials funded by the NIH and Department of Defense. Doctor Levy is on the editorial board for several journals, served on the Board of Trustees for the Journal Arthroscopy and was the Sports Medicine Deputy Editor for Clinical Orthopaedics and Related Research.

Doctor Levy has chaired countless AAOS, AOSSM and AANA symposia and instructional course lectures on complex knee injuries. He was the Director of the Mayo Clinic Knee Dislocation Surgical Skills Course which won the 2015 Mayo CME course of the year, chosen from over 300 CME events. Dr. Levy is a member of the prestigious Herodicus Society, a consultant for the NBA and NBA Players Association and is a team physician for the US Snowboard Team. Dr. Levy has published over 250 papers in the scientific literature, numerous book chapters, and lectures extensively nationally and internationally..



OHSU Faculty Speaker  
**Jacqueline Brady, MD**

## **OHSU FACULTY SPEAKERS**

### **Jacqueline Brady, MD**

Dr. Brady specializes in the care of patients with sports injuries, especially involving the knee and shoulder. She treats injuries of the bones, muscles, cartilage, tendons, ligaments, joints, and other connective tissue. Her patients include athletes of all ages, skill levels and disciplines. She has a particular interest in patients with joint instability, including kneecap dislocations, shoulder dislocations, and knee dislocations involving multiple knee ligaments (ACL, PCL, MCL, etc.).



OHSU Faculty Speaker  
**Andrea Herzka, MD**

### **Andrea Herzka, MD**

Dr. Herzka is an arthroscopic specialist whose interests include sports injuries to the knee, shoulder and hip in adolescents and adults, shoulder and knee instability, and cartilage injuries. She has expertise in anatomic and double bundle ACL reconstruction and she enjoys managing shoulder pain in the throwing athlete. Dr. Herzka teaches advanced arthroscopic techniques in the hip to other orthopedic surgeons throughout the Northwest.

## Shriners Hospital for Children – Beattie Lecture Series



Mr. Byron J. Beattie was the owner and operator of a printing plant in Portland, Oregon. Mr Beattie became acquainted with Dr “French” Eldon Chuinard, while Dr Chuinard was the chief of staff at Shriners Hospital for Children, Portland. He was so impressed with the importance of the educational mission of Shriners Hospital that he created an endowment fund to support our local education activities. The first seminar was held in 1985.

## Shriners Hospital for Children – Dillehunt Memorial Lecture



### **58TH ANNUAL DILLEHUNT MEMORIAL LECTURE**

The Dillehunt Memorial Lecture honors the contribution of a great surgeon and legendary teacher, Dr. Richard Dillehunt, who inspired many orthopaedists. With his keen interest in medical education, he played a prominent role in the development of the medical school on the hill. He was particularly devoted to children and was instrumental in the establishment of the Shriners Hospitals for Children, Portland. He became Shriners first Chief Surgeon in 1920, and served in that position until his retirement in 1943. His legacy continues through the Dillehunt Memorial Trust Fund, sponsoring visiting distinguished Pediatric Orthopaedic Surgeons from throughout the world.

It is unfortunate that the 2020 Beattie Lecture Series and the 2021 Dillehunt Memorial Lecture had to be cancelled due to Covid-19.



# Grand Rounds Lectures 2020-2021

## OHSU Grand Rounds Topics and Speakers 2020-2021

Ryland Kagan, MD. *Patellar Bone Loss and Extensor Mechanism Reconstruction in Revision Knee Arthroplasty*

Amit Jain, MD, Johns Hopkins University. *Impact of the Pandemic on Non-COVID Healthcare*

Jaysson Brooks, MD, University of Mississippi. *Phone-A-Friend? Utilization of Two Attending Surgeons to Maximize Outcomes in Neuromuscular Scoliosis*

Scott Yang, MD. *The Mystery of Perthes Disease – Updates for 2021*

Omar Nazir, MD. *Resilience in Orthopaedic Surgery*

Nathalie Lunden, MD. *Rebound Pain: To Block or Not to Block*

Darin Friess, MD. *Femoral Neck Fractures: Primary, Secondary, and Tertiary Outcomes from Recent FAITH & HEALTH Multicenter Trials*

Hyunjee Kim, PhD. *Comprehensive Care for Joint Replacement (CJR) Model – Lessons Learned*

Ravi Chandra, MD, PhD. *Introduction to Radiation Medicine: Ortho Edition*

Kathryn Schabel, M.D. *Revision Hip and Knee Arthroplasty: the Basics. How Joint Replacements Fail and How We Fix Them*

David Noall, MD. *Pediatric Orthopaedics in the Sacred Valley*

Matthew Halsey, MD. *Developmental Dysplasia of the Hip*

Travis Philipp, MD. *COVID-19 in NYC: My Experience Working on the Frontline*

Available to view on <https://www.ohsu.edu/ortho/orthopaedic-grand-rounds-lecture-archive>

## Shriners Grand Rounds Topics and Speakers 2020-2021

Robert Bernstein, MD. *Arthrogryposis / Amyoplasia & Achondroplasia*

Jeremy Bauer, MD. *Cerebral Palsy & Gait Analysis*

Dominique Laron, MD. *FAI and Hip Arthroscopy*

Louise Vaz, MD. *ID Strategies in Management of Osteomyelitis*

Erika Finanger, MD. *Review of Recent Developments in Treatment of Neuromuscular Disease*

Michelle James, MD. *Congenital Hand Malformation or Brachial Plexus Birth Palsy*

Vince Mosca, MD. *Understanding and Management of Pediatric Cavovarus and Skewfoot Deformities*

April Holley, PhD. *Pediatric Chronic Pain: Identifying and Treating Youth and Families at Risk for Poor Pain Outcomes*

Moise Danielpour, MD. *The Role of Cervicomedullary Decompression in Treatment of Hydrocephalus in Achondroplastic Children with Symptomatic Foramen Magnum Stenosis*

# Resident and Teaching Awards

**LEO S. LUCAS OUTSTANDING ORTHOPAEDIC EDUCATOR AWARD:** Presented to the faculty member most instrumental in the development of future orthopaedic surgeons.

**MORRIS HUGHES AWARD:** Presented to the resident who best demonstrates concern for patients and for education of the next generation of physicians.

**RESEARCH AWARD:** Presented to the resident recognized for a commitment to the development, execution and publication of original research during residency.

**RODNEY BEALS AWARD:** Awarded yearly by faculty to the best resident based on intelligence, quality of work, work ethic, and effect on the environment.

YEAR	LEO S. LUCAS	MORRIS HUGHES	RESEARCH AWARD	RODNEY BEALS AWARD
2007	Tom Ellis	Rob Tatsumi	Joseph Schenck	
2008	Dennis Crawford	Stephan Pro	Kate Deisseroth	
2009	Darin Friess	Stephan Pro	Khalid Shirzad	
2010	Amer Mirza	Gary Kegel Gregory Byrd	Patrick Denard	
2011	James Hayden	Jayne Hiratzka	Jayne Hiratzka Matthew Harrison	
2012	Jesse A. McCarron	Luke Rust	Dawson Brown Matthew McElvany	
2013	James Hayden	Laura Matsen Ko Jacqueline Munch	Adam Baker	
2014	Adam Mirarchi	Rich Myers	Trevor McIver	
2015	Kathryn Schabel	Dustin Larson	Alexander DeHaan	
2016	Paul Duwelius	Jacob Adams	Thomas Kowalik	
2017	Jacqueline Brady	Ryland Kagan	Michael Rose	
2018	Darin Friess	Dayton Opel	Derek Smith	Elizabeth Lieberman
2019	Kenneth Gundle	Elizabeth Lieberman	Shanjuan Lee	Taylor Lara
2020	Yee-Cheen Doung	Taylor Lara	Duncan Ramsey	Loren Black

## Additional Award Recipients from OHSU's Department of Orthopaedics and Rehabilitation:

**Kenneth Gundle, MD**, won a 2021 OHSU Faculty Flame Award, which is awarded by the All-Hill Student Council to celebrate volunteer work, generosity, compassion and achievement.

**Kenneth Gundle** was also inducted into the OHSU Chapter of The Gold Humanism Honor Society, in recognition of exemplary service, integrity, clinical excellence and compassion.

**Zachary Working, MD**, was awarded the OREF New Investigator Research Grant for his research titled *Quantification of Fracture Healing Biology Using Novel Collagen X Bioassay*. This research aims to develop a serum biomarker to indirectly track changes in tissue at fracture sites.

**Kathryn Schabel, MD**, and **Jacqueline Brady, MD** were finalists for the OHSU's Women in Academic Health and Medicine Award in Clinical Excellence.

PGY4 Residents **Dr. Natalie Zusman** and **Dr. Sam Cheesman** were selected to attend the AOA Annual Resident Leadership Forum, held virtually in June of 2021.

# OHSU Orthopaedic Program Alumni Directory

GRADUATE	FELLOWSHIP TRAINING	CURRENT PRACTICE LOCATION
<b>2020</b>		
Nikolas Baksh	Spine, New York University, New York, NY	
Taylor Lara	Adult Reconstruction, Florida Orthopaedic Institute, Tampa, FL	
David Putnam	Adult Reconstruction, Scripps Health, San Diego, CA	
Duncan Ramsey	Orthopaedic Oncology, Massachusetts General Hospital, Boston, MA	
Grant Sun	Foot and Ankle, Baylor University, Dallas, TX	
<b>2019</b>		
Courtney Bell	Adult Reconstruction – Rothman Institute, Egg Harbor, NJ	NASA Neuroscience and Spine Associates, Fort Myers, FL
Shanjuan Lee		VA Sierra Nevada Healthcare System, Reno, NV
Elizabeth Lieberman	Adult Reconstruction – Washington University, St. Louis, MO	Adventist Health, Portland, OR
Peters Otlans	Sports Medicine – Jefferson University, Philadelphia, PA	Proliance Southwest Seattle Orthopedics, Burien, WA
Travis Phillip	Spine – New York University, New York, NY	Oregon Health & Science University, Portland, OR
<b>2018</b>		
Hannah Aultman	Hand & Upper Extremity – University of Chicago, Chicago, IL	Orthopedic + Fracture Specialists, Portland, OR
Karlee Lau	Hand & Upper Extremity – University of Alabama, Birmingham, AL	University of Alabama, Birmingham, AL
Dayton Opel	Hand & Upper Extremity – Cleveland Clinic, Cleveland, OH	SSM Health, Madison, WI
Derek Smith	Hand Surgery – Mary S. Stern, Cincinnati, OH	Desert Orthopedics, Bend, OR
Benjamin Winston	Arthroplasty – Tahoe Reno Orthopedic Clinic, NV	Kaiser Permanente, Portland, OR
<b>2017</b>		
John Cox	Adult Reconstruction – Scripps Health, San Diego, CA	Scripps Health, San Diego, CA
Ryland Kagan	Adult Hip and Knee Reconstruction and Hip Preservation – Univ. of Utah, Salt Lake City, UT	Oregon Health & Science Univ., Portland, OR
Joseph Langston	Adult Reconstruction – Melbourne Orthopaedic Group, Melbourne Australia	Southern Oregon Orthopedics, Medford, OR
Michael Rose	Sports Medicine – Steadman Hawkins Clinic, Denver, CO	The CORE Institute, Phoenix, AZ
Ryan Wallenberg	Orthopedics – St. Vincent Hospital, Portland, OR	VA Portland Health Care System, Portland, OR
<b>2016</b>		
Jake Adams	Adult Reconstruction – Mayo Clinic, Scottsdale, AZ	Regenerative Orthopaedic Center, Tualatin and Oregon City, OR
Kirsten Jansen	Adult Reconstruction – Indiana University, Indianapolis, IN	STL Orthopedics, Chesterfield, MO
Tom Kowalik	Trauma & Adult Reconstruction – Orthopedic + Fracture Specialists, Portland, OR and Sydney Australia Arthroplasty & Trauma	Tuality Orthopaedic, Sports, Spine & Rehabilitation Center, Hillsboro, OR
Jared Mahylis	Shoulder & Elbow – Cleveland Clinic, Cleveland, OH	Specialty Physicians of Illinois, Olympia Fields, IL
Farbod Rastegar	Spine – Cleveland Clinic, Cleveland, OH	Aurora Orthopaedics, Grafton, WI
<b>2015</b>		
Alex DeHaan	Adult Reconstruction – Tahoe Reno Arthroplasty Fellow, Reno, NV	Orthopedic + Fracture Specialists, Portland, OR
Troy Miles	Adult Reconstruction – UC Davis, Davis, CA	Shasta Orthopaedics, Redding, CA
Dustin Larson	Hand and Upper Extremity – Univ. of New Mexico, Albuquerque, NM	Olympic Medical Physicians Orthopaedic Clinic, Port Angeles, WA
Vivek Natarajan	Pediatrics – Childrens Hospital of Pittsburgh, PA	Advocate – The Orthopaedic Center, Cedar Knolls, NJ
John Seddon	Foot & Ankle – Melbourne Orthopedic Group, Melbourne, Vic, Australia	UC Health Orthopaedics Clinic, Colorado Springs, CO
<b>2014</b>		
Zachary B. Domont	Sports Medicine – Univ. of Pennsylvania, Philadelphia, PA	AMG-Lincolnshire Orthopedics, Lincolnshire, IL
Jia-Wei Kevin Ko	Shoulder & Elbow – Rothman Institute, Thomas Jefferson Univ., Philadelphia, PA	Orthopedic Physician Associates, Seattle, WA
Trevor C. McIver	Spine – Spine Institute of Arizona, Scottsdale, AZ	St. Cloud Orthopedics, Sartell, MN
Richard J. Myers	Orthopaedic Trauma – Univ. of Maryland, College Park, MD	Sentara Orthopedic Trauma Specialists, Norfolk, VA
Brent M. Roster	Foot & Ankle – Univ. of California Davis Medical Center, Sacramento, CA	Missoula Bone and Joint Clinic, Missoula, MT

GRADUATE		FELLOWSHIP TRAINING	CURRENT PRACTICE LOCATION
2013			
Adam P. Baker	Foot & Ankle - Northwest Orthopedic Specialists, Portland, OR	Kaiser Permanente, Portland, OR	
Michael Kuhne	Trauma Orthopedics - Univ. of California, San Francisco General Hospital, San Francisco, CA	Enloe Medical Center, Chico, CA	
Laura J. Matsen Ko	Adult Reconstruction - Thomas Jefferson Univ., Philadelphia, PA	Orthopedic Physician Associates, Seattle, WA	
Jacqueline Brady (Munch)	Shoulder Surgery, Sports Medicine - Hospital for Special Surgery, New York, NY	Oregon Health & Science Univ., Portland, OR	
Daniel C. Wiekling	Foot & Ankle - Melbourne Orthopaedics, Melbourne Australia	Asante Physician Partners, Grants Pass, OR	
2012			
Dawson S. Brown	Sports Medicine - Southern California Orthopedic Institute, Van Nuys, CA	West Sound Orthopedics, Silverdale, WA	
Peter D. Fredericks	Trauma Orthopedics - Indiana Orthopaedic Hospital, Indianapolis, IN	UCHealth Orthopaedics Clinic, Colorado Springs, CO	
Matthew D. McElvany	Shoulder & Elbow - Univ. of Washington Medical Center, Seattle, WA	Kaiser Permanente, Santa Rosa, CA	
Cuchulain Luke Rust	Foot & Ankle - Orthopaedic Associates of Michigan, Grand Rapids, MI	Rebound Orthopedics, Vancouver, WA	
2011			
Matthew J. Harrison	Foot & Ankle - Oakland Bone & Joint Specialist Clinic, Oakland CA; Middlemore Hospital, Auckland, New Zealand	Alta Orthopedics, Santa Barbara, CA	
Jayne R. Hiratzka	Spine Surgery - Univ. of Utah, Salt Lake City, UT	Oregon Health & Science Univ., Portland, OR	
Jackson B. Jones	Adult Reconstruction - Harvard Medical School's Brigham and Women's Hospital, Boston, MA	Reno Orthopedic Clinic, Reno, NV	
2010			
Matthew W. Bradley		Orthopedic Sports Medicine & Spine Care Institute, St. Louis, MO	
Gregory D. Byrd	Hand - Beth Israel Deaconess Medical Center, Boston, MA	Olympia Orthopedics, Olympia, WA	
Adam E. Cabalo	Spine - Spine Care Medical Group, Daly City, CA	Southern Oregon Orthopedics, Medford, OR	
Patrick J. Denard	Shoulder - Centre Orthopédique Santy, Lyon, France and San Antonio Orthopaedic Group, San Antonio, TX	Southern Oregon Orthopedics, Medford, OR	
Gary Kegel	Hand - St Luke's-Roosevelt Hospital Center, New York, NY	Group Health Capital Hill Medical Center, Seattle, WA	
2009			
Stephen L. Pro	Sports Medicine - Santa Monica Orthopaedic and Sports Medicine Group, Santa Monica, CA	Ortho Kansas, Lawrence, KS	
Khalid Shirzad	Foot & Ankle - Duke Univ. School of Medicine, Durham, NC	Northwest Orthopedic Specialist, Spokane, WA	
Abner M. Ward	Hand - SUNY Stony Brook Univ. Hospital & Med. Ctr., Stony Brook, NY; Sports Medicine - Southern CA Center for Sports Med., Long Beach, CA; Shoulder & Elbow - Alps Surgery Institute, Annecy, France; Shoulder & Elbow - Schulthess Klinik, Zurich, Switzerland	Yosemite Bone and Joint, Inc., Merced, Turlock, Modesto and Manteca, CA	
2008			
Kate B. Deisseroth		VA Medical Center, Lebanon, PA	
Andy J. Kranenburg	Surgery and Trauma - San Francisco Spine Institute, San Francisco, CA	Southern Oregon Orthopedics, Medford, OR	
Kenna Larsen	Hand - Univ. of New Mexico, Albuquerque, NM	Utah Orthopaedics, Ogden, UT	
2007			
William Magee	Sports Medicine -TRIA Orthopaedic Center, Park Nicollet Methodist Hospital, Minneapolis, MN	Rockwood Clinics, Spokane, WA	
J. Rafe Sales	Spine-San Francisco Spine Institute, San Francisco, CA	Summit Spine, Portland, OR	
Joseph Schenck	Sports Medicine - Perth Orthopaedic Sports Medicine Center, Perth, Australia and Arthroscopic Surgery and Computer Navigated Total Joint Arthroplasty - Sir Charles Gairdner Hospital, Nedlands, Western Australia	Orthopedic & Sports Medicine, Portland, OR	
Robert L. Tatsumi	Spine - LA Spine Institute, Santa Monica, CA	Oregon Spine Care, Tualatin, OR	
2006			
Catherine A. Humphrey	Trauma - Vanderbilt Univ. Medical Center, Nashville, TN	Univ. of Rochester Medical Center, Rochester, NY	
Amer J. Mirza	Trauma - Harborview Medical Center, Seattle, WA	Summit Orthopaedics, LLP, Portland, OR	
Mark B. Wagner		Orthopedics NW, Tigard, OR	



GRADUATE		FELLOWSHIP TRAINING	CURRENT PRACTICE LOCATION
2005			
Patrick A. Dawson	Upper Extremity and Sports Medicine - Congress Medical Associates, Pasadena, CA		Cascade Orthopaedic Group, Tualatin, OR
Suresh Kasaraneni			Scott Memorial Hospital, Scottsburg, IN
Christopher M. Untch	Surgical Services - Davis Monthan AFB, Tucson, AZ		Arizona Orthopedics, Tucson, AZ
Corey J. Vande Zandschulp	Trauma - Ortholndy, Methodist Hospital, Indianapolis, IN		Summit Orthopaedics, LLP, Portland, OR
2004			
Benjamin C. Kam			Medical Center Point, Colorado Springs, CO
Britton Frome (Polzin)	Hand Surgery - UT Southwestern, Dallas, TX		Colorado Springs Health Partners, Colorado Springs, CO
2003			
Jennifer R. Miller	Sports Medicine - Congress Medical Associates, Pasadena, CA		Idaho Sports Medicine Institute, Boise, ID
John B. Reid	Sports Medicine - Taos Orthopaedic Institute, Taos, NM		Taos Orthopaedic Institute, Taos, NM
Eric F. Shepherd	Trauma - UC Davis Medical Center, and Auckland City Hospital, NZ		Santa Barbara Orthopedic Associates, Santa Barbara, CA
2002			
Michael A. Binnette	Spine - Univ. of Washington, Seattle, WA		OA Center for Orthopaedics, Portland, ME
Kevin M. Kahn	Trauma - Universitatsspital, Zurich Switzerland, Vanderbilt Orthopaedic Inst., Nashville, TN		Rebound Orthopedics & Neurosurgery, Vancouver, WA
Tamara S. Simpson	Trauma - UCSF - Sports Medicine; Hennepin Medical Center, Minneapolis, MN		Cascade Orthopaedic Group, Tualatin, OR
2001			
Michael J. Gustavel	Sports Medicine - San Diego Sports Medicine and Orthopaedic Center, San Diego, CA		Idaho Sports Medicine Institute, Boise, ID
James B. Hayden	Musculoskeletal Oncology - Massachusetts General Hospital, Boston, MA		Oregon Health & Science Univ., Portland, OR
Todd W. Ulmer	Sports Medicine - Univ. of Washington, Seattle, WA		Columbia Orthopedic Associates, Portland, OR
2000			
Mark S. Metzger	Joint, Spine & Tumor - Harvard Medical School, Boston, MA		
Lorenzo L. Pacelli	Hand & Microvascular Surgery - Hand Center, San Antonio, TX		Scripps Clinic Torrey Pines, La Jolla, CA
Edward A. Perez	Trauma - R. Adams Cowley Shock Trauma Center, Baltimore, MD		Campbell Clinic Orthopaedics, Germantown, TN
1999			
Anthony I. Colorito	Sports Medicine - Cincinnati Sports Medicine and Orthopedic, Cincinnati, OH		Orthopedic & Sports Medicine, Portland, OR
John M. Kioschos	Shoulder and Elbow Surgery - Florida Orthopaedic Institute, Tampa, FL		
Jill A. Rider-Graves			
1998			
John D. Curtis			Dory Orthopaedics, Uab Medical West, Bessemer, AL
Darrin F. Eakins	Sports Medicine and Knee - Royal N Shore Hospital, Sydney, Australia		Ortho Wilmington, Wilmington, NC
Ronald D. Wobig	Sports Medicine and Knee - Louisiana State Univ., Lake Charles, LA		Beaver Sports Medicine, Corvallis, OR
1997			
Dennis J. Davin			
Kevin M. Lee			Upper Valley Orthopedics, Rexburg, ID
Ronald L. Teed			Cascade Orthopedic Surgery, Hillsboro, OR
1996			
Knut C. Buehler	Lower Extremity Reconstruction - Scripps Clinic and Research Foundation, San Diego, CA		Center Orthopedic & Neurosurgical Care & Research, Bend, OR
Thomas J. Croy			310 Villa Road, Ste 108, Newberg, OR
Marc R. Davidson	Sports Medicine - The Hughston Clinic, Columbus, GA		Advantage Orthopedic and Sports Medicine Clinic, LLP, Gresham, OR

# OHSU Orthopaedic Program Alumni Directory

GRADUATE		FELLOWSHIP TRAINING	CURRENT PRACTICE LOCATION
<b>1995</b>			
Douglas R. Bagge			Cortez Orthopedics, Cortez, CO
Robert A. Foster	Hand and Microvascular Surgery - Univ. of Minnesota, MN		Texas Orthopedics Sports and Rehabilitation Association, Austin, TX
Gregory A. Voit	Hand and Microvascular Surgery - Univ. of New Mexico Health Sciences Center, Albuquerque, NM		
<b>1994</b>			
Robert J. Grondel	Sports Medicine and Shoulder - Mississippi Orthopaedic & Sports Medicine Clinic; Trauma - Emanuel Hospital, Portland, OR		Orthopaedic Institute of Henderson, Henderson, NV
Allen L. Hershey	Lower Extremity Reconstruction - Scripps Clinic and Research Foundation, San Diego, CA		Precision Orthopedics and Sports Medicine, Salinas, CA
Brian J. Padrta	Foot and Ankle - Florida Orthopaedic Institute, Univ. of South Florida, Tampa, FL		Northwest Orthopaedic Specialists, Spokane, WA
Mark R. Rangitsch			Cheyenne Orthopaedics LLP, Cheyenne, WY
<b>1993</b>			
Blaine A. Markee			
Dean K. Olsen			Park Nicollet Orthopaedics, Burnsville, MN
Andrew H. Schmidt	Adult Reconstruction, Shoulder Surgery, Trauma - Hennepin County Medical Center, Minneapolis, MN		Hennepin County Medical Center, Minneapolis, MN
<b>1992</b>			
Edward C. Pino	Sports Medicine - Cincinnati Sports Medicine, Cincinnati, OH; Foot & Ankle - Michigan Internat. Foot and Ankle Center, Detroit, MI		Kaiser Permanente, Denver, CO
Stephen S. Tower			Anchorage Fracture & Orthopedic Clinic, Anchorage, AK
Michael R. Van Allen	Hand and Microsurgery - Univ. of Alabama, Birmingham, AL		Legacy Meridian Park Medical Center, Tualatin, OR
<b>1991</b>			
Ronald R. Bowman			Tigard Orthopedic & Fracture Clinic, Portland, OR
William H. Dickinson			
Richard A. Rubinstein	Methodist Sports Medicine Center, Indianapolis, IN		Providence Portland Medical Center, Portland Knee Clinic, Portland, OR
<b>1990</b>			
Gregory T. Bigler	Sports Medicine and Arthroscopy - Harvard Medical School, Massachusetts General Hospital, Boston, MA		Thomas & Bigler Knee and Shoulder Institute, Las Vegas, NV
Adrian B. Ryan			Anchorage Fracture & Orthopedic Clinic, Anchorage, AK
Theodore S. Woll	Foot and Ankle - Univ. of Washington, Seattle, WA		Rebound Orthopaedics, Vancouver, WA
<b>1989</b>			
James R. Hazel			Tri-City Orthopaedics, Kennewick, WA
Asa E. Stockton			Eureka Community Health Center, Eureka Open Door, Eureka, CA
Keith J. Ure	Joint Replacement - Joint Replacement Institute, Orthopaedic Hospital, Los Angeles, CA		Olympic Medical Center, Sequim, WA
Robert G. Zirschky			Hope Orthopedics of Oregon, Salem, OR
<b>1988</b>			
John D. DiPaola			Occupational Orthopedics, Tualatin, OR
Jeffrey E. Flemming	Texas Southwestern Medical Center - Texas Back Institute, Dallas, TX		Providence Portland Medical Center, Portland, OR
Morris Hughes			
Michael B. Wyman			Orthopedic Specialists, Portland, OR
<b>1987</b>			
Dale G. Bramlet	Orthopaedic & Plastic Surgery, Hand and Upper Extremity - Univ. of Rochester Medical Center, Rochester, NY		Advent Orthopedics, Pinellas Park, FL
Scott B. Jones			Orthopedic & Sports Medicine Center of Oregon, Portland, OR
Stefan D. Tarlow	Knee Surgery - Dr. Jan Gillquist, Sweden; Sport Medicine - Dr. James Andrews, Birmingham, AL		Advanced Knee Care, PC, Scottsdale, AZ

1986
Mark J. Buehler
Wendell D. Ferguson
Paul A. Switlyk

1985
Stanley J. Neitling
Daniel N. Ovadia

1984
Steven J. Bruce
Kenneth A. Hermens
Wendy M. Hughes

1983
Michael J. Grundy
Paul J. Mills
John C. Schwartz

1982
Julie Isaacson
James D. Livermore
John S. Toohey

1981
Christopher A. Blake
Wayne K. Nadamoto
Samuel K. Tabet

1980
Lenart C. Ceder
Jonathan H. Hoppert
Robert W. Jordan

1979
Brian Laycoe
Donald Peterson
James Robbins

1978
Lyle Mason
Edgar K. Ragsdale
Enoch D. Shaw

1977
David L. Noall
Byron K. Skubi
Robert K. Smith
Theodore J. Vigeland

1976
Wayne C. Kaesche
Walter A. Smith
Stephen J. Thomas

1975
Randy W. Crenshaw
John O. Hayhurst
Patrick T. Keenan
Kelsey C. Peterson
Ned R. Schroeder

1974
Thomas W. Hutchinson
Robert J. Porter
Frederick L. Surbaugh

1973
James L. Baldwin
David A. Haaland
Craig MacCloskey

1972
Michael S. Hmura
Grant D. Lawton
Michael R. Marble

1971
Charles B. Bird
Robert G. Chuinard
Jim Dineen
Ilmar O. Soot

1970
Philip J. Fagan
Robert J. Foster
Art Hauge
Edwin A. Kayser
Gerald T. Lisac
Ira M. Yount

1969
Thomas E. Fagan
Michael H. Graham
George W. Ingham
Joseph P. Klein
Scott Struckman

1968
Benjamin F. Balme
James D. Kunzman
James D. Nelson
Frederick D. Wade

1967
Michael S. Baskin
John W. Gilsdorf
John W. Thompson

1966
Charles A. Bonnett
McGregor L. Church
Don D'Amico
Fred G. Grewe
Howard E. Johnson

1965
Arthur L. Eckhardt
John Hazel
Richard L. Mercer

1964
Robert F. Corrigan
Richard C. Zimmerman

1963
Donn K. McIntosh
Michael R. Rask

1962
Phaen Gambee
Norman D. Logan
Keith A. Taylor

1961
Rodney K. Beals
Thomas A. Edwards
George Keyes
Ralph E. Peterson

1960
Charles A. Fagan
Calvin H. Kiest
Betty J. Hohmann
Robert W. Straumford
Bud Yost

1959
Raymond A. Case
James V. Harber

1958
Richard G. Gardner
William D. Guyer

1957
Hadley F. Fitch
Richard S. Gilbert

1956
William E. Hummel
Joseph R. McProuty
Jack B. Watkins

1955
Edward A. Attix
Max M. Bocek

1954
Howard I. Popnoe
Dale D. Popp

1953
Donald D. Smith

1952
Melvin L. Makower

1951
Bob Maris
William E. Snell
James W. Weed

1950
Ralph Thompson

1949
Howard Cherry
Boyd G. Holbrook
Richard J. Hopkins

1948
Robert F. Anderson
George W. Cottrell
Carl L. Holm

1947
Edward A. LeBold

1946
William P. Horton
Clyde D. Platner
Faulkner A. Short

1945
Joseph H. Gill

1943
Paul G. Hafner

1942
Rodney Begg
Harold E. Davis

1940
Leslie S. Porter

1938
Arthur M. Compton

1935
E.G. Chuinard

1931
Harry Leavitt

1929
D.G. Leavitt

1928
Leslie C. Mitchell

1925
John LeCocq

1924
Leo S. Lucas

## Special Thanks

**To our donors:** Last year, the generous support of over 30 donors helped advance our research and educational missions while fostering innovation and faculty achievement. In addition, the history of our department and orthopaedics in the state of Oregon would not be the same without the significant contributions of the Beals family, which are vital to keeping Dr. Beals' hopes for Oregon Orthopaedics alive.

**To our Education Manager:** Robin Sasaoka is an invaluable resource for residents as they progress through OHSU. She is always happy to assist with any questions or concerns in addition to her role of organizing resident education, schedules, vacations, and assisting with financial matters.



Marie Kane

**To our Technical Writer:** Finally we thank Marie Kane, who will be retiring this year from OHSU. She began her time at OHSU in 1998 as director of the Orthopaedic Biomechanics Laboratory under Dr. Charlie Bird. Before that, she was an East-coaster in Boston's Beth Israel Deaconess Medical Center. When Drs. Yoo and Johnstone arrived with interests more along the lines of cartilage/soft tissue research, she left OHSU in 2005 to work elsewhere, returning in 2011 to help write or finalize grants and manuscripts for submission. In 2018, she took on these tasks for Anesthesiology and Perioperative Medicine as well.

She notes: "I have seen continual and exciting growth in the department, especially under Dr. Yoo. What he brought to the table as an educator and a leader was really remarkable. I have been honored to help out with the Oregon Journal of Orthopaedics beginning with the third edition. It has been a real pleasure seeing the OJO through to completion each year, with a wonderful group of residents to do the heavy lifting.

I am happy to retire at the end of June, and am looking forward to spending more time playing tennis, hiking, scuba diving, gardening and, of course, traveling. When my husband John and I are able to visit abroad will be venturing to New Zealand, Patagonia and Europe, for months at a time. Until then, it will be road trips to parks in the US and Canada. When traveling is out of our systems, we look forward to returning home to Portland and getting a couple of puppies to share our lives with.

I had a wonderful career in the orthopaedics field, and I couldn't have asked for a better place than Portland and OHSU to wrap it up - salute to all of you!"



# OHSU Department of Orthopaedics and Rehabilitation

We are building on a tradition of excellence and innovation among faculty leaders and staff. Your personal gift is a vital part of this legacy and will help us advance the future of Orthopaedics in Oregon.

Please make your gift to the Department of Orthopaedics and Rehabilitation by donating to one or more of the fund areas below. Each provides crucial and strategic resources for our educational, training and research missions.

## **Jung Yoo, M.D. Endowment for the Advancement of Education and Leadership in Orthopaedics**

A recently created permanent endowed fund supporting teaching and education.

## **John and Susan Hayhurst Endowed Professorship and Distinguished Scholar**

Prestigious holders to OHSU's first-ever endowed faculty position in Orthopaedics are provided with additional resources to propel innovation and advancements in the field, and may be appointed as either a Professor or Distinguished Scholar.

## **Rodney K. Beals, M.D. Endowment for Faculty Excellence in Orthopaedics & Rehabilitation**

Supports mission-focused work of exceptional faculty members, honoring Dr. Beals' legacy in the exploration of new horizons in the field of Orthopaedics.

## **Lawrence Noall, M.D. Fund for Excellence in Orthopaedic Resident Education**

Supports resident education and training.

## **Orthopaedic Research Endowment**

Supports basic science research in the field of Orthopaedics.

## **OHSU Department of Orthopaedics & Rehabilitation Support Fund**

Advances the education, training and research missions of the department. It provides crucial bridge funding for innovative projects.

Please contact us if you wish to discuss these and other giving opportunities, or if you plan to include the OHSU Department of Orthopaedics and Rehabilitation in your estate plans.

## **Ways to Give**

**Outright gifts and pledges:** You can make an outright gift of cash or certain other assets with the option of making your gift as a pledge over a period of up to five years.

**Planned or deferred gifts:** A gift made through your will or trust, retirement account or life insurance, is a great way to support OHSU Orthopaedics. OHSU Foundation can also assist with gifts of real estate, stocks, and other assets.

[www.ohsufoundation.org](http://www.ohsufoundation.org)

OHSU Foundation

1121 SW Salmon St., Suite 100

Portland, OR 97205 <https://www.ohsu.edu/ortho/giving-opportunities>

For further inquiries, please contact Tim Coffey, Senior Director of Development, OHSU Foundation Phone: (503) 901-6100, Email: [coffeyt@ohsu.edu](mailto:coffeyt@ohsu.edu)



# Combining Our Strengths. Expanding Our Solutions.

The recent Acumed | OsteoMed merger enhances Acumed's already **comprehensive product portfolio**.

The result? A powerful combination with **limitless potential**.

## Recent product additions include

- Craniomaxillofacial and neurosurgical products
- A broad line of orthobiologics offerings
- Chest wall plating and fixation solutions

## An Expanded Portfolio of Upper and Lower Extremity Solutions

### For More Information:

**Acumed**

[www.acumed.net](http://www.acumed.net)

888.627.9957

**OsteoMed**

[www.osteomed.com](http://www.osteomed.com)

800.456.7779

