ORTHOPAEDICS

LINKED IN

RESIDENCY EDUCATION FOR A NEW GENERATION

Washington University School of Medicine
Department of Orthopaedic Surgery

Washington University in St. Louis
School of Medicine
Change...

Surgical training is not static. Ideally, it is an evolutionary process—one that allows for compelling advances in technology, for novel ways to approach the care of patients and for innovation stemming from basic and clinical research. With unrelenting change at the core, the Washington University orthopaedic surgical education program is designed to provide depth and breadth in each of nine orthopaedic subspecialties. We use a graduated learning philosophy that embraces change and that is constructed to produce skilled surgeons who are independent thinkers and who challenge existing concepts of care. To achieve that goal, full-time faculty lead all CORE lectures and discussions in an interactive manner, one that develops a highly personal and professional relationship during residency and beyond. The goal here is not only academic success—it is the development of a lifelong commitment to the concept of continued learning.

For us, education is a passion. Continuous improvement the goal. Long term one-on-one interaction the method. Surgical excellence the outcome.

On the Cover
Second-year resident Daniel Moon, MD, operates on a patient at the Outpatient Orthopaedic Center in Chesterfield, Missouri.
An Inside Look

The Department of Orthopaedic Surgery at Washington University School of Medicine has a long-standing history of offering tailored learning experiences that engage and challenge residents in its surgical training program. Customized mentoring opportunities, clinical and basic research, international rotations, accessible faculty and a comprehensive CORE curriculum all serve to establish a firm foundation for future orthopaedic surgeons.
Continuous Improvement

In a recent conversation, Chairman Richard Gelberman, MD, and I reflected on the number of orthopaedic surgeons who remain in contact with us long after they complete training. We agreed that the potential impact of our own academic accomplishments pales in comparison to the effect that we have had on our graduates. For us, resident education has been the single most gratifying aspect of academic orthopaedic surgery.

Our program’s goal is to build a strong foundation of orthopaedic core knowledge along with the critical thinking and decision-making skills that are crucial to achieving success. Our overall objective is to enable our residents to make decisions that are clinically sound, evidence-based, ethical and compassionate. Further, our goal is to foster the most advanced leadership capabilities among our graduates.

We strive to attain these goals by individualizing the approach to education and by developing an environment where selected faculty members regularly seek resident input in order to enhance residency education. Examples of recent initiatives based on resident input include the creation of an extended arthroscopic surgical skills training module during the shoulder and elbow rotation, the addition of an international rotation during the chief resident year to allow residents to appreciate the delivery of musculoskeletal care in underserved countries, and the refinement of the individualized research experiences that are provided during the early years of residency.

We hope you find our approach to resident education interesting, and we encourage you to call if you have questions. We hope you also will learn more about our Orthopaedic Surgery Residency Training Program by visiting orthoresidency.wustl.edu.

Rick Wright, MD
Dr. Asa C. and Mrs. Dorothy W. Jones Professor of Orthopaedic Surgery
Director, Orthopaedic Residency Training Program
Co-Chief, Sports Medicine
Department of Orthopaedic Surgery
Washington University School of Medicine
Rick Wright, MD

Rick Wright, MD, joined the Department of Orthopaedic Surgery at Washington University in 1994. In 2003, he became co-director of the residency program, and in 2006, director. Dr. Wright was promoted to Professor of Orthopaedic Surgery in 2010, and was awarded the Dr. Asa C. and Mrs. Dorothy W. Jones Professor of Orthopaedic Surgery in 2011. His tenure has been marked by an emphasis on mentoring and frequent engagement with residents throughout their careers.
Skill-Building
Hands-On Approach is Central to Building Confidence

Nikolas Kazmers, MD, carries three pagers and two phones while on orthopaedic night float rotation at Barnes-Jewish Hospital, a Level I trauma center. He moves seamlessly from checking on patients who underwent total knee replacements earlier in the day to consulting on orthopaedic trauma cases in the emergency room. In between, he’s juggling calls, stopping to see more patients in the critical care unit, and reviewing digital diagnostic images.

“It’s a definite eye-opener when you first go on night float,” says Kazmers, a second-year resident in Washington University’s Department of Orthopaedic Surgery. “The impact of what you try to absorb in the first year really hits home when you put it into action in the second year. But we are well prepared and when I look back on a busy day, it’s kind of exciting to see what I’ve accomplished.”

Just two weeks into his first month-long rotation, Kazmers has handled everything from complex fractures to traumatic amputations and infected joints. The stress is real, but his first-year rotations have prepared him to handle a wide variety of cases.

At Washington University, a hands-on approach coupled with strong mentoring and a graduated learning philosophy are the keys to consistently training orthopaedic surgeons who later excel in both clinical care and critical thinking. First-year residents spend half of their time in orthopaedic rotations such as trauma, orthopaedic spine and neurosurgery, and then rotate through a series of general surgery departments — pediatric surgery, plastics, vascular and emergency care, to name a few — to get acclimated to evaluating and treating orthopaedic patients in multiple settings.
“We encourage, demonstrate and guide our residents as they acquire surgical skills,” says hand specialist Martin Boyer, MD, the Carol B. and Jerome T. Loeb Professor of Orthopaedic Surgery. “It’s a subtle but critical difference to teach skills rather than teach specific procedures. If all the residents learn is how to do a certain procedure, they won’t be able to do anything new, or think for themselves while operating on a patient. Our approach develops more skilled and capable surgeons.”

A key distinction of Washington University’s orthopaedic residency training program is the comprehensive nature of team and one-on-one surgical rotations in high-volume settings.

“Through our Level I trauma center, a children’s hospital, a dedicated orthopaedic outpatient surgery center, specialty orthopaedic clinics, and rotations through the regional Shriners and Veterans Administration hospitals,” says Richard Gelberman, MD, the Fred C. Reynolds Professor and Chair of the Department of Orthopaedic Surgery. “Our goal is to take advantage of these resources and build robust educational programs around them.”

A high volume of cases means thousands of hands-on opportunities. In the department’s dedicated outpatient surgery center, for example, the impact is formidable.

A Strong Foundation
Washington University’s high volume of orthopaedic cases translates into thousands of hands-on surgical opportunities.
Beginning in the second year, residents rotate through both hospital-based and outpatient clinic settings. Junior residents take advantage of team rotations to learn from senior residents, fellows and attending faculty. As more complex procedures are introduced, the department focuses on one-on-one mentoring rotations in which each resident trains side by side with faculty members.

“We performed almost 100 surgeries just during my hand rotation,” says Muyibat Adelani, MD, a fourth-year resident who recently completed her mentored rotation with Boyer. “Dr. Boyer is very interactive in his teaching style and engages residents in both the pre-operative and intra-operative processes. There’s a lot of close collaboration to work through cases, analyze patient conditions, and learn surgical techniques.”

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**Average Annual Volume: Orthopaedic Outpatient Surgery Center**

- 450+ knee arthroscopies
- 250+ rotator cuff repairs
- 200+ ACL reconstructions

The trauma team rotation handles up to 100 peri-acetabular and pelvic fractures annually. With two different sites to handle pediatric cases — a Top 10 children’s hospital and the regional Shriners Hospital — the pediatric orthopaedic team logs more than 150 congenital hand cases each year.
“We learn from master surgeons and experience things that are cutting edge,” says Adelani, who has decided to specialize in joint reconstruction. “We have a chairman as well as a residency program director who are both tireless advocates for us and who care tremendously about making sure we have an optimal experience.”

Up on the hospital’s orthopaedics floor, Kazmers is simultaneously talking on a phone and checking his pager before turning rapidly to head to the emergency room to evaluate a patient with a potential joint infection. He has a pocketful of notes to add to patient medical records and consults to share with the rest of the orthopaedic team in the morning. At the same time, he takes time to mentor a medical student — a potential Washington University resident — visiting for a month on an externship.

As more complex procedures are introduced, the department focuses on one-on-one mentoring rotations in which each resident trains side by side with faculty members.

“I looked at a lot of places before I applied to this orthopaedic residency program,” Kazmers says. “Where else can we train in all of the subspecialties and with such distinguished faculty? It’s a great environment in which to learn!”

Orthopaedic Clinical Rotations
The Department of Orthopaedic Surgery is committed to a graduated learning process that encompasses both team and one-on-one subspecialty surgical rotations in multiple settings. The approach encourages collaboration to analyze patient conditions and determine treatment options while also offering individualized opportunities to learn complex surgical techniques during each rotation.

**TEAM ROTATIONS**
- Joint Reconstruction and Preservation*
- Musculoskeletal Oncology
- Pediatrics
- Spine
- Trauma

**1:1 ROTATIONS**
- Foot/Ankle
- Hand/Upper Extremity
- Joint Reconstruction and Preservation*
- Physical Medicine and Rehabilitation
- Shoulder/Elbow
- Sports Medicine

*Joint reconstruction and preservation is a 1:1 rotation in the fourth year of residency and a team rotation in the fifth year.
“It’s no longer a viable surgical option, and we need to share that with our residents,” declares Richard Gelberman, MD, chairman of Washington University’s Department of Orthopaedic Surgery. After reviewing a study published in the latest edition of the *Journal of Bone and Joint Surgery*, Dr. Gelberman confers with orthopaedic faculty specializing in hand and wrist surgery. “The study found that pyrolytic carbon implants are not appropriate options for patients with small joint osteoarthritis. As these implants have been used for several years, it made for stimulating conversation between faculty and residents when we decided to update our curriculum,” he says.

Sharing knowledge is at the core of the department’s residency training program. From discussions debating the validity of the latest journal articles to ongoing conversations about specific research projects, faculty members make it a point to offer dynamic learning opportunities and to be accessible to residents.

“An ongoing interaction with residents regarding clinical care issues, education and research is essential to optimize the environment for patient care, learning and productivity,” says John Clohisy, MD, the Daniel C. and Betty B. Viehmann Distinguished Professor of Orthopaedic Surgery. “We therefore try, as much as possible, to be available and to have an open-door policy for residents’ questions and concerns.”

On Saturday mornings, Clohisy is part of an informal “Saturday Morning Club” of faculty who keep weekend office hours to catch up on work and talk with residents in a less hectic atmosphere. “I frequently...
24/7 Accessibility

With a strong desire to help residents succeed, orthopaedic faculty encourage questions and are readily available for consultation and support.
Manske, who recently completed her pediatric orthopaedics rotation, says the mentoring is visible in all aspects of the program. “You can’t watch someone perform an operation and become an orthopaedic surgeon; you have to do it yourself to become proficient,” she says. “I’m gently guided and challenged all the time, with attending physicians guiding me through surgeries, showing me how to use my hands and use the operative tools, and asking questions that provide insights into both routine and complex cases. Very quickly, you start to understand how to critically approach cases. There is a huge volume of information to absorb, but the CORE curriculum is well coordinated with our hands-on opportunities, and we see things clinically that have been addressed in CORE readings and lectures.”

Clohisy says his teaching style is based upon three core principles. “My approach has been one of focusing on the fundamentals in terms of patient evaluation, pre-operative surgical decision-making and surgical technique,” he says. “Throughout, we emphasize the importance of continued learning, as this is an essential component throughout the career of an orthopaedic surgeon.”

We are committed to breaking down barriers and creating an atmosphere of camaraderie.

“He doesn’t give me the answers right away,” Ross says of Clohisy. “We brainstorm together, and then he encourages me to review the literature or points me in a new direction to pursue research or better understand a surgical technique.”

Adds Ross, “I think it’s vital not only to gain the surgical skills you need, but to have someone who pushes you to be an independent thinker while also serving as a mentor throughout residency. That’s what I get here at Washington University — the willingness to share knowledge and to help me grow as a surgeon and as a person.”
Evolving for Excellence

The Department of Orthopaedic Surgery continually reviews and updates its educational components to ensure that residents have dynamic opportunities for surgical training as well as access to the latest research and clinical findings. Included in this approach to educational excellence are:

**CORE Curriculum** — The fundamentals of orthopaedic surgery are introduced in weekly faculty-led interactive lectures over a two-year cycle. Over the five-year surgical training program, residents will go through CORE twice.

**Improvements:** To enable residents to access reference material whenever and wherever they need it, CORE curriculum is available on CD, online and in printed binders. Immediate accessibility is critical because residents rotate through multiple locations and have varying schedules. While on off-site rotations, residents participate in lectures via teleconference.

**Surgical Indications Conferences** — Established several years ago, these conferences enable residents to meet directly with each attending surgeon to discuss the next day’s surgical cases. Suggested readings and anatomy studies are given to better prepare residents for what to expect.

**Improvements:** Residents are given responsibility for selecting which cases to discuss in detail. Comments from residents say that this approach “makes for a better learning experience,” and they are more knowledgeable and comfortable both with attending faculty and in the operating room setting.

**Essential Readings** — In each subspecialty, residents are given essential journal articles and other readings to study before and during each rotation.

**Improvements:** Readings are updated at least every two years and are available online for 24/7 access. When clinical advancements are noted, literature is updated immediately.

**Anatomy Sessions** — Assigned readings and detailed anatomical information are distributed regularly by the Hand, Shoulder, Spine, Trauma, and Foot/Ankle services to guide dissections and enhance core knowledge for surgical procedures.

**Improvements:** To further enhance surgical skills, residents have dedicated time set aside in a specialized arthroscopic lab to hone skills and broaden their perspectives on anatomy and surgical approaches.

**Annual Faculty Performance Reviews** — All residents are asked to anonymously gauge the effectiveness of faculty teaching style and course content and meet with the residency program director several times throughout the year. Concerns are addressed immediately.

**Improvements:** Based on recent feedback, changes were implemented to eliminate confusion and improve the operative experience on the orthopaedic spine service rotation. On the trauma rotation, junior residents are now given more opportunities for hands-on experience.
At the training site for the St. Louis Rams football team, orthopaedic resident Jeff Nepple, MD, closely watches football players during a team practice. As part of a research project in Washington University’s Department of Orthopaedic Surgery, Nepple is among a team of orthopaedists who studied knee articular cartilage findings on magnetic resonance imaging (MRI) from college football players participating in the NFL Scouting Combine.

“All prospective NFL players who have had previous knee surgery or who are identified as having an abnormal physical exam generally undergo a follow-up MRI,” Nepple says. “We found that full-thickness cartilage lesions in those players were common, despite players generally being asymptomatic. Players who had a history of previous surgery — notably, meniscus surgery — were more likely to develop articular cartilage lesions.”

The project earned Nepple and his Washington University faculty co-investigators the 2011 NCAA Research Award from the American Orthopaedic Society for Sports Medicine (AOSSM). “The results have implications for the long-term health of elite athletes as well as recreational athletes,” says Nepple.

All residents in Washington University’s orthopaedic residency program have two dedicated opportunities to pursue research projects: A one-month rotation occurs in the second year of residency, and a longer two-month rotation follows in the third year. The early start enables residents to understand a key element of an academic medical practice while also engaging in innovative research.
Many of them often continue research projects throughout their five-year residency program.

“The opportunity to actively initiate or participate in research here enhances our critical thinking skills and translates to how we practice medicine,” says Nepple.

Washington University’s Department of Orthopaedic Surgery ranks first in the nation in overall funding from the National Institutes of Health (NIH). It has focused on expanding and enhancing its research program for more than a decade. In 2009, a multi-million dollar grant from the NIH supported the creation of the Musculoskeletal Research Center (see page 15). The center, comprising of 50 laboratories, brings together Washington University researchers from the fields of orthopaedics, internal medicine, basic science and engineering to collaborate on a wide range of bone and muscle studies.

Fourth-year orthopaedic resident Greg Nelson, MD, is an ideal investigator in the collaborative environment. A chemical and bioengineering graduate from Massachusetts Institute of Technology, he subsequently graduated from Yale School of Medicine where he was awarded a Howard Hughes Medical Institute research fellowship.

Creating Wonder

Residents often have “ah-ha!” moments as they realize the critical role of clinical and laboratory research in advancing the field of orthopaedics.
“The most valuable aspect is seeing this model of collaboration in action and learning how to pursue similar partnerships in the future,” says Nelson. “In addition, the ability to share data between people with clinical experience and those in the bioengineering department means that we can move more rapidly to translate laboratory answers into clinical answers that, in turn, will benefit patients.”

Nelson pursues both basic research and biomechanics projects with his mentor, Richard Gelberman, MD, professor and chairman of the Department of Orthopaedic Surgery. Nelson’s interest lies in investigating how cell-based therapies can augment flexor tendon injuries and their repair.

“You need to harness engineering principles to solve clinical problems like these,” says Nelson. “This type of cross-thinking is not found in a book, and I think it takes a well-engaged mentor to help us process the right way to investigate these kinds of questions.”

Residents often cite the willingness of faculty to allow full participation in research studies. From doing laboratory studies to writing research papers and developing poster presentations, residents are credited for the work they accomplish.

“Faculty always are readily available to discuss research projects,” says Kathleen McKeon, MD, a fourth-year orthopaedic resident.

“There were times when I called or went to visit my faculty mentor late in the evening or on weekends to go over questions I had as a result of my work. They really want you to succeed both as a surgeon and as a researcher.”

McKeon, who at times describes her anatomy studies as akin to the “Body Worlds” exhibits touring the country, used her two research rotations and free time to study arterial blood flow to bones and ligaments of the foot. A chemical debridement process enabled her to closely examine blood flow to the syndesmosis, which resulted in an elegant anatomic model to study.
“We thought that disruption in blood supply at the time of injury to the syndesmosis could explain the prolonged recovery time in some patients,” she explains. “Injuries to this area of the leg typically cause prolonged ankle pain and disability as well as delayed healing. Our study showed that one particular artery is the primary blood supplier to the area. Lack of blood flow when this artery is injured could be the reason for the slow healing process.”

Residents have the full support of faculty to participate in research studies.

The research was highlighted during a clinical symposium at the American Academy of Orthopaedic Surgeons annual meeting as well as at the AOSSM meeting.

“It was a great experience,” McKeon said afterwards. “It was nice to gain recognition for research on which we worked so hard.”

The challenge for residents is to balance the desire to further their research projects with the demands of the residency program. Oftentimes, they use personal time to work on clinical or laboratory research.

“There’s a lot of protected research time in the early years that allows you to get involved in the research going on here,” acknowledges Nepple. “The challenge comes when you want to finish up the research. I have many studies underway now that I would like to finish before my residency is completed.”

Residents say that the structure of Washington University’s early orthopaedic research rotations enables them to consider career options early and decide if research and academic medicine are in their future plans.

“The advantage of all these experiences, no matter what we decide to do, is that we can make a meaningful contribution to science and the practice of orthopaedics even as we train to be great surgeons,” says Nelson.

The Musculoskeletal Research Center

With laboratories specializing in bone, cartilage, tendon biomechanics and biology, residents and faculty are involved in a wide range of basic and clinical research projects.

The department also has long-standing collaborative research ties to Washington University researchers in anatomy and neurobiology, biomedical engineering, cell and developmental biology, genetics and pediatrics. In 2009, with the support of a multi-million dollar grant from the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS), the Musculoskeletal Research Center was formed to enhance the collaborative environment for basic and translational research.

Up to 50 laboratories now are connected in three defined research cores:
- musculoskeletal structure and strength
- molecular structures of healthy and sick bones
- muscles and connective tissues

“We want to better understand the causes and potential treatments for muscle and bone disorders as well as aid in the development of new and better ways to regenerate bone, cartilage, tendons and muscle tissue,” says center director Linda Sandell, PhD, the Mildred B. Simon Research Professor of Orthopaedic Surgery.
“It’s an eye-opening experience.” Fifth-year orthopaedic surgery resident Chirag Shah, MD, has just returned from a two-week surgical rotation in the African country of Tanzania. As part of Washington University’s orthopaedic surgical training program, senior residents are able to participate in an international externship that not only showcases opportunities to see treatment variances, but also enables them to appreciate the need for global engagement and charitable outreach.

For Shah, already a seasoned traveler, there’s a new word in his vocabulary, piki-piki, the Swahili term for a small motorcycle. Piki-pikis are one of the most prevalent forms of transportation in Tanzania. They also are one of the primary reasons for an incredible number of accidents resulting in orthopaedic trauma cases. According to the nonprofit organization, Surgical Implant Generation Network (SIGN) Fracture Care International, more than 1.2 million people around the world are killed in road traffic accidents annually. Up to 50 million more people are injured each year. Most of these accidents occur in developing countries.

“The piki-pikis are a cheap form of transportation, so a lot of people get them,” says Shah. “However, locals

Expanding Horizons and Minds

Small steps can create big changes. International rotations can “tip” residents’ minds toward wanting to make a difference in the world around them.
don’t always wear helmets or other safety equipment. Many don’t even have licenses. Patients end up coming into the local hospitals daily with injuries from riding the piki-pikis."

Under the auspices of SIGN, Shah spent two weeks at the Muhimbili Orthopaedic Institute in Dar Es Salaam, Tanzania’s largest city. "I wanted to see a large variety of orthopaedic cases and how they were handled overseas," he says. "One of the biggest challenges of working in a developing country is that you have to realize very quickly what you don’t have and handle cases with what equipment and technology are available. That being said, it’s amazing what can be done with limited resources."

Lindley Wall, MD, found herself picking through a box of jumbled screws in a Nicaraguan public hospital in Managua while on her fifth-year international rotation with Health Volunteers Overseas (HVO). "You would have to filter through an entire box to find a screw to repair a fracture," she says. "If you were lucky enough to find the right size, you had to cut it to length."

A big challenge of working in developing countries is handling cases with the limited equipment and technology that are available.
Medical care in Nicaragua is extremely limited with emergency care almost unheard of in many locations. Most, if not all, hospitals have no central air or heat, just open-air windows and courtyards. Adds Wall, “They see diseases and pathologies that are much further along than what we typically see in the United States because people either wait too long for a surgeon and proper surgical equipment or because they can’t afford to pay for surgery.”

The Department of Orthopaedic Surgery funds the cost of all international externships. To allow residents to pursue their own interests and specialties, there are no mandated destinations. Instead, residents research their own options. Over the past several years, residents have traveled to far-reaching destinations such as India, Malawi, Nepal, Peru and Cambodia, to name a few.

“The international experience comes at a perfect time in our training,” says Shah. “You don’t realize how well prepared you are until you go elsewhere and can handle routine and difficult cases even with the few resources available. I think you also gain a strong appreciation for how surgeons in these countries work incredibly hard to ensure their patients have as good an outcome as possible.”

Over the past several years, residents have traveled to far-reaching destinations such as India, Malawi, Nepal, Peru and Cambodia, to name a few.
You don’t realize how well prepared you are until you go elsewhere and can handle routine and difficult cases even with few resources available.

“The disparity that we see in these countries creates such a vivid memory,” adds Wall. “Here, we dispose of surgical gowns and equipment after one use. Elsewhere, they re-use everything. They may handle a surgical case differently than how we have been trained, but the reason we go is to see how to do more with less and to understand the importance of helping wherever there is a need no matter where we end up practicing.”

Residents Around The World

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<td>2012</td>
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Only minutes from her condominium near Washington University School of Medicine, Ljiljana “Lily” Bogunovic, MD, finds a myriad of places to pursue outdoor activities. From bicycling and kayaking to rock climbing and training for a half Ironman race, the third-year orthopaedic resident finds the balance she craves between surgical training and personal time.

“The great things about St. Louis are that it’s easy to get around and there are so many things to do,” says Bogunovic. “After living in New York where everything was so expensive, I find St. Louis a very affordable place.”

Easily accessible are popular open-air cafes, ethnic restaurants and family-fun destinations such as the City Museum and Magic House.

Big-city draws such as Broadway plays, a world-class symphony and major league sports also abound in St. Louis.

“We are huge Cardinal baseball fans and were there when the Cards won the World Series in 2006 and also this year (2011). It is something we will remember forever,” says fifth-year resident Scott Paxton, MD. “My wife and I also have gone to St. Louis Rams football games and college games and went to the NCAA Final Four when it was here.”

More than 100 parks are located within the city of St. Louis. One of the largest urban parks in the United States, Forest Park, is just across the street from the medical center campus. Here, residents and faculty often escape for quiet picnics, tennis matches or a round of golf. A nationally recognized zoo,
science center and art museum, as well as an outdoor skating rink and the nation’s oldest and largest outdoor musical theatre venue, The Muny, also can be found in Forest Park.

More than 100 parks are located within the city of St. Louis. One of the largest urban parks in the United States, Forest Park, is just across the street from the medical center campus.

“There are a lot of places to live and visit within a five- or 10-minute drive from the medical center,” says Paxton. “We were able to purchase our own home nearby, and we take our new baby out for walks and to local restaurants as often as we can. It’s really great family time.”

Bogunovic, who also owns her own two-bedroom condominium in a vibrant community of young professionals, says the diverse range of activities makes it easy for orthopaedic faculty to get out and enjoy the outdoors with residents.

“In my second year of residency, one of the faculty gathered a group of residents to eat barbecue and then go target shooting,” she says. “I’ve been invited by other faculty and residents to go water skiing, running and kayaking on the Meramec River. It’s been a great way to build relationships with other residents and the faculty with whom we train side by side.”

Balance

The historic rivertown of St. Louis, an inspiration for writers, artists and musicians, is a center for outdoor activities and cultural offerings.
“Spending time together outside of work is a great way to promote a team mentality,” says Kathryn Keeler, MD, assistant professor of orthopaedic surgery. “We work hard together. It’s my way of showing them thanks and to also make them realize that they can have balance in their lives.”

St. Louis is a great place to meet new friends, participate in enjoyable activities and raise a family.

Bogunovic and Paxton say the obvious draws to St. Louis were the caliber of surgical training and the mentoring environment at Washington University. The local environment was an added plus; St. Louis is a great place to meet new friends, participate in enjoyable activities, and raise a family.

“It’s definitely a nice balance here,” says Paxton while home relaxing with his family. “How many places can you find affordable homes nearby yet have the opportunity to train in such a comprehensive orthopaedic residency program? Washington University has all of the orthopaedic specialties and great faculty, so I know I’ll be confident in my skills when I complete my training.”

Bogunovic, meanwhile, has a couple more years before she completes her residency and already is leaning toward sports medicine as a specialty. She takes advantage of every spare moment to get outside. “Another resident, Dr. Lisa Kruse, and I completed a half-Ironman race in July.”

Keeler, who herself has completed three half-Ironman triathlons and numerous other races in between her own busy academic schedule and practice, is in the process of recruiting several residents for upcoming trail races. “I keep trying to get some of them to try cyclocross races, but I haven’t had any takers yet!”
St. Louis Area At A Glance

**Popular St. Louis Attractions**
- Gateway Arch
- Cardinals Baseball
- Rams Football
- Blues Hockey
- College sports
- Saint Louis Zoo
- Missouri Botanical Gardens
- 165+ parks in St. Louis City and County
- Central West End
- Delmar Loop/University City
- Laclede’s Landing
- The Fox Theatre
- The Muny
- Saint Louis Science Center
- Saint Louis Art Museum
- Saint Louis Symphony

**Popular Outdoor Activities**
- Mountain biking
- Hiking
- Kayaking
- Golf
- Waterskiing
- Fly fishing
- Cycling
In her third year as an assistant professor of orthopaedics at the University of North Carolina (UNC), J. Megan Patterson, MD, handles many pediatric hand and upper extremity cases at the UNC Children’s Hospital. Comfortable in a wide variety of settings, she also moves seamlessly into Level I trauma cases at nearby Memorial Hospital and takes care of orthopaedic patients suffering from a wide variety of hand and upper extremity conditions while in clinic.

“I think the high volume of patients seen while completing my residency and fellowship at Washington University was instrumental in preparing me for what I do now,” says Patterson, who sees an average of 50 patients a day and is in the operating room at least two days a week. In addition, she has come full circle, now mentoring orthopaedic residents herself.

“I think Washington University’s orthopaedic residency program is fabulous, arguably one of the best programs in the country,” she says. “One of its biggest strengths is the depth and diversity of the program. A lot of other residency programs send residents away for a period of time to fill gaps in training — pediatrics or trauma, for example — but at Washington University, they have everything. As a result, you observe and learn how to treat a huge variety of medical conditions.”

Network Connections

Washington University Orthopaedic faculty members continue to mentor former residents through social media outlets, at national meetings and through regular communication.
Her husband, Ganesh Kamath, MD, also an assistant professor of orthopaedics at UNC, agrees. “I came out of Washington University’s orthopaedic residency program incredibly well trained to do anything,” he says. “The surgical volume was so high that my training in any subspecialty never felt incomplete. I felt very comfortable in diagnosing patients, problem-solving, and applying my surgical skills when I left.”

While sports medicine fellowship-trained, Kamath has continued to incorporate general orthopaedic care into his developing practice. Taking care of elite athletes and weekend warriors is common in his busy sports medicine practice, but, he adds, “A large percentage of my practice is trauma and arthroplasty, and I am on call at the Level I trauma center several times a month, often times having to deal with complicated fracture cases. My comfort level with these procedures, which are not part of a traditional sports practice, is in large part due to the exposure and thorough training I received as a resident.”

Both Patterson and Kamath, who fell in love while working the trauma rotation at Washington University, credit the Department of Orthopaedic Surgery’s graduated learning philosophy for their successes.
“I really enjoyed the camaraderie and the team concept early on during my residency. At Washington University, oftentimes there would be teams comprising world-renowned attending physicians as well as senior and junior residents working together,” Kamath explains, “One of the great things was that you could turn to the senior residents and look for guidance. I will be forever grateful to the residents and faculty who helped bring me along, and it’s something I try to incorporate now into my own approach with UNC residents.”

Residents experience a lasting impact from hands-on training and ongoing faculty mentoring.

The two surgeons, who juggle busy practices while also taking care of their two young children, still maintain strong ties to orthopaedic faculty at Washington University. “When I was there, we’d go over to a faculty member’s house and his wife would make us French toast while we discussed hand cases in a casual setting,” says Dr. Patterson. “I consider Dr. (Charles) Goldfarb still to be one of my mentors, and if I have an unusual congenital hand case or complex trauma case, I will often call or email him to discuss it. Those mentoring relationships don’t end when you leave St. Louis, and that’s what makes Washington University so special.”

“The fact is that Washington University has a demanding orthopaedic residency program,” she adds. “But if you want to be an orthopaedic surgeon, you should demand excellence from yourself. Residents experience a lasting impact from hands-on training and ongoing faculty mentoring. We both try to apply those practices here at UNC.”

J. Albert Key Washington University Orthopaedic Society

Washington University’s orthopaedic faculty members are well known for maintaining long-lasting ties to former residents. “I get many calls and emails from graduates asking clinical questions,” says Richard Gelberman, MD, Fred C. Reynolds Professor and Chair of the Department of Orthopaedic Surgery. “I enjoy that, and I’m always delighted to consult with them and review digital images as well as hear how they are doing.”

In 2009, the department established the J. Albert Key Washington University Orthopaedic Society, an outreach organization that fosters and maintains the sense of family among residents and fellows who have completed training programs. The society, named in honor of the department’s chairman from 1930 to 1955, hosts get-togethers across the country at annual professional conferences and meetings.
The second meeting of the J. Albert Key Washington University Orthopaedic Society was held from April 15-18, 2010, in Scottsdale, Arizona, at the JW Marriott Desert Ridge Resort and Spa. The meeting featured spirited scientific sessions in the morning followed by recreational activities in the afternoon. Attendees liked the venue so much that they voted to return to the same resort for the 2012 meeting!

“We don’t turn off the switch when residents walk out the door,” says Orthopaedic Residency Program Director, Rick Wright, MD, the Dr. Asa C. and Mrs. Dorothy W. Jones Professor of Orthopaedic Surgery. “We all work incredibly hard to make sure our residents are the best trained orthopaedic surgeons, and we build long-lasting friendships in the process. We always want to hear about their careers and their families.”

“I routinely get questions from former residents as well as fellows who have graduated more than 10 years ago,” says hand and wrist specialist Martin Boyer, MD, the Carol B. and Jerome T. Loeb Professor of Orthopaedic Surgery. “It tells me that we have built a relationship of trust.”
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