

MUSCULOSKELETAL MATTERS

SPRING 2021

NEW SMS EXEC BOARD



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Carly grew up in New Freedom, PA and majored in molecular biology at the University of Pittsburgh. She competed in and coached gymnastics for most of her life, and she still enjoys watching it. She also loves skiing, running, hiking and pretty much all outdoor activities.



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Jessica grew up in the suburbs of Pittsburgh, PA. She graduated from Haverford College in 2018 with a degree in chemistry, concentrating in biochemistry. When she is not studying, Jessica enjoys staying active, going on long drives, and making memories with her friends.



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Mira grew up near Altoona, PA, completed her undergraduate degree in neuroscience at the University of Pittsburgh, and completed her MBA at Point Park University. Before medical school, Mira worked as a Nursing Assistant and a Project Manager for Highmark Health. She loves doing CrossFit and hiking.



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Momoh is a Boston-native who graduated from Columbia University in 2016 and completed his MBS at GCSOM in 2019. Prior to his matriculation, Momoh worked as a medical assistant in the orthopedic department at Brigham and Women's Hospital.



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Alexia grew up in Missoula, Montana and attended Colorado College where she majored in Neuroscience. Outside of medical school, she enjoys hiking, skiing, and fishing. She is looking forward to a great year as the community service chair of the SMS.



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Adam grew up in South Florida and attended FSU for undergrad where he received his BS in biology. He loves to play and watch soccer, and he's a big movie nut. He is excited to help people get involved with research, as it is an important aspect of musculoskeletal medicine.

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Unnamed (2016)
Mindy Gruzin, M1
Charcoal

A GUARANTEE OF MORE THAN JUST LEADERSHIP: AN INTERVIEW WITH DR. MICHAEL SUK

MIRA PATEL, M1

“We will aspire to do things here that nobody else has ever thought of. And we will do them better than anyone else has ever tried. And we will guarantee and produce outcomes to which the world will pay attention.” Chief Physician Officer for Geisinger System Services and Chair of the Geisinger Musculoskeletal Institute for the Geisinger Health System, Dr. Michael Suk, tells his story from high school athletics and an interest in activism to his countless accomplishments in orthopaedics, health economics, and resident wellness.

Growing up, Dr. Suk was highly competitive in multiple sports but was encouraged to focus on tennis in high school – eventually winning a state championship and going on to play in the NCAA at Carleton College in Minnesota. However, Dr. Suk’s interests and pursuits spanned far beyond the tennis courts, even at a young age. A natural leader, Dr. Suk was elected Class President in each of the four years in one of the largest high schools in Illinois with over 4,000 students and similarly was elected his Class President in college – motivated by a desire to be in positions that would allow him to advocate for those around him.

And that is exactly what he did. This pursuit of leadership and activism led him to major in African American History drawn by the intersection of political science and civil rights history. Walk down the halls of Carleton College’s African American History Department and you will see Dr. Suk’s photo as the first graduate of the department. One of many ‘firsts’ Dr. Suk would accomplish in his career.

After debating between becoming a high school history teacher or becoming a physician, Dr. Suk soon matriculated at the University of Illinois College of Medicine. Determined to not lose sight of his interest in history and politics through the traditional medical school pathway, he decided to apply to law school during his first year as a medical student. With Boston University having one of the only programs in the country focused on health law, Dr. Suk arranged with the deans of both schools take a leap of faith and allow for him to create a unique academic schedule to pursue both degrees simultaneously in two different cities (this was all before online learning!)

This was something no one was really doing at the time, in fact, in many ways Dr. Suk felt as though he was forging his own path along the way. During his time in law school, the



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school had just started a brand-new program – a joint JD/MPH program. Sure enough, Dr. Suk enrolled in the inaugural class. Returning to finish medical school, Dr. Suk remained active in advocacy and politics through the American Medical Association (AMA), take on the broader social issues, and became the first medical student to be elected to the board of trustees of the AMA.

After graduating medical school, Dr. Suk practiced law briefly before beginning his residency training to follow in the footsteps of his father and grandfather – to become a third-generation orthopaedic surgeon – ultimately completing his residency at Montefiore Medical Center and orthopaedic trauma fellowship at the Hospital for Special Surgery.

That level of motivation and innovation has continued in his work here at Geisinger. In 2017, Dr. Suk helped change the dialogue around value-based care by developing the world’s first “lifetime warranty” agreement for total hip replacement and has now extended that to include primary and revision total knee replacements. Dr. Suk is focused on growing and shaping the future of musculoskeletal care on a national scale.

VOLUNTEER OPPORTUNITY: SAINT JOSEPH'S CENTER

Saint Joseph's Center on Adams Avenue in Scranton provides compassionate outpatient rehabilitation services to our community. In addition, the center serves pregnant women, couples hoping to adopt, and individuals diagnosed with an intellectual disability or developmental delay. Volunteers at Saint Joseph's assist children and adults surmount profound challenges, and bolster therapists' outpatient treatment abilities. Additionally, volunteers coordinate the distribution of supplies to young mothers and their babies and help young families move into their first home.

While many opportunities have been put on hold due to the pandemic, the center would benefit enormously from those willing to help design group activities, as well as assist with clean-ups, painting projects, and planting. After a six-month hold, the adult day program has re-opened and the center is seeking those willing to create 'video experiences' encapsulating hobbies/interests that the day program folks

can watch for either entertainment or to learn by trying to replicate an activity (cooking/meal prep is a good example of a "watch-and-do" video activity, where the folks can watch a recipe come together, then try to replicate that same recipe). Many of the participants may not be able to get out into the community for safety reasons, so the intent is to bring some fun experiences to them.

Additional interest groups that you can get involved in right now include:

- Nature & Gardening
- Food Arts (Easy and inexpensive)
- Culture
- Science and Magic
- Sports
- Games & Puzzles
- Planes, Trains, and Automobiles
- Interactive Storytime

In the future, Geisinger students can interact with residents and help get some of them moving on an ability-dependent basis. As May rolls around, the therapy garden will be opening as well.

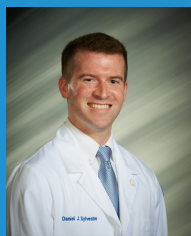
If you or someone you know is interested in getting involved with Saint Joseph's, please find contact information below!



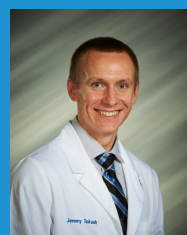
CONGRATS ON YOUR RESIDENCY MATCH!



Neil Patel
Hospital of the University of Pennsylvania (PA)
Physical Medicine & Rehabilitation



Daniel Sylvestre
SUNY Upstate Medical University (NY)
Orthopedic Surgery



Jeremy Tokash
Geisinger Health System (PA)
Orthopedic Surgery

COVID-19 IMPACTS ON MUSCULOSKELETAL MEDICINE

JESSICA KOSHINKSKI, M1

The COVID-19 pandemic took an unprecedented toll on the world. Health care systems across the globe faced an unpredictable, and largely uncontrolled, enemy affecting thousands of patients, causing immediate reallocation of resources, and restructuring of daily operations.^{1,2} Consequently, non-emergent health care was stunted to protect patients, to conserve personal protective equipment and to shift the priority to caring for patients affected by COVID-19.² This heavily impacted access to musculoskeletal care and musculoskeletal education. Musculoskeletal care and the providers that delivered it were tasked with coming up with innovative ways to engage safely with patients, while providing adequate treatment and continuing to train providers. Despite the initial challenges, utilizing technology and exercising intangible skills have highlighted a way forward in practicing musculoskeletal medicine.

As cases of COVID-19 surged globally, nations took unparalleled action to reduce the transmission of the virus. These included restricting non-essential travel, implementing working remotely, cancelling sporting events, and rescheduling non-emergent medical care. Hospitals saw a total decrease in admissions for musculoskeletal conditions and a subsequent decrease in the number of surgical procedures being performed.^{1,3} The reduction in volume allowed for reallocation of staff, space and supplies to assist in the burden of the pandemic on other departments, such as critical care and emergency medicine, in addition to increasing overall hospital capacity for COVID-19 care.² However, studies noted that while musculoskeletal admissions were less frequent, the number of home injuries and severe traumas requiring surgical intervention increased.¹ Suggestions for this phenomenon include an increase in risky driving practices due to decreased vehicle volume on roads, higher frequency of risky home projects, more time spent at home resulting in increased intimate partner violence, and an increase of psychological distress leading to increased suicide attempts.^{1,4,5}

It is important to consider the implications for this reduction in seeking treatment for musculoskeletal conditions. These include deferred diagnosis of acute and chronic injuries and self-treatment of injuries, resulting in more complicated cases and potentially worse outcomes after provider intervention.^{1,6} According to a survey conducted amongst musculoskeletal oncology surgeons and pediatric musculoskeletal oncology specialists from across the world, 40.8% reported that surgical treatment for life-threatening sarcomas were cancelled or postponed due to hospital restrictions and redirection of care to COVID-19 cases. Even more startling, the data reported by these physicians suggest an increased risk for morbidity and mortality amongst these patients, resulting from more complex procedures due to tumor invasion into surrounding tissues and structures.⁶

Amputations amongst patients being treated in musculoskeletal oncology were still being performed at a prevalent rate. However, the authors suggest that a population of those patients may have been eligible to undergo a limb salvage operation, but opted for a more definitive procedure due to the uncertainties of treatment during the pandemic. Additionally, 36.5% of physicians in the survey reported a discontinuation or postponement of elective biopsies of potentially malignant lesions.⁶ The impact of the pandemic on these biopsies and investigation of other musculoskeletal malignancies could result in an increase of volume, as well as an increase in complexity and subsequent morbidity and mortality, with patients presenting with later-stage malignancies.

The pandemic has taken a toll on the daily practice of medicine, with the critical care burden rapidly shifting responsibilities. Specialties, like musculoskeletal medicine, were compelled to find innovative ways to provide adequate patient care and maintain physician engagement in training programs, while reducing the use of resources now needed to treat COVID-19 patients.² Telehealth visits were adopted to maintain clinical duties, such as completing follow-up appointments, development of treatment management plans, physical therapy sessions and counseling services.^{2,7,8} While more research is needed, telehealth visits have been shown to be cost-effective and increase access to the providers on the care team, so they will likely be utilized moving forward as a resource for delivery of care.^{9,10}

Learning experiences for residents and other trainees were greatly limited by the pandemic, including restricted opportunities in the operating room, minimal attendance and presentation at national conferences, and impaired ability to conduct research protocols. However, virtual interaction has allowed for greater collaboration between institutions, enabling international connection without the barriers of cost and travel. It has also created an environment of self-directed learning that will benefit trainees as they progress through their careers.² These changes highlight areas of growth for musculoskeletal research and training in the future.

The coronavirus pandemic has demonstrated positive and negative effects on health care provision globally. Access to treatment for musculoskeletal care, especially malignancies, was greatly affected by the restrictions and reallocation of resources in health care facilities.^{1,2,6} The long-term effects of this reduced access to care will need to be monitored, but some predict an increase in volume and complexity of cases due to postponed diagnosis and treatment.^{1,6} Despite these challenges, musculoskeletal medicine has adapted care delivery to utilize technology and focus on maximizing the benefits of multidisciplinary teamwork. Areas of improvement were highlighted, such as increasing collaboration amongst colleagues from various institutions that were previously inaccessible and encouraging trainees to take more initiative in their learning experiences outside of the



ALUMNUS HIGHLIGHT: DR. BRIAN VELASCO

PGY-1 at the University of Pennsylvania

I'm from Allentown, PA, and I went to college at Franklin and Marshall college where I also played Division III football (hence my interest in Orthopaedics). From there, I went straight into medical school at Geisinger. After my first year of medical school, I pursued a summer research internship at Beth Israel Deaconess Medical Center in Boston, MA under Dr. John Y. Kwon, Chief of the Foot and Ankle Division. Throughout medical school, I maintained my connection with Dr. Kwon and ended up completing a Year-Out Clinical Research Fellowship with him and Dr. Christopher Miller in between my MS3 and MS4 years.

I consider myself very lucky to have matched at the University of Pennsylvania for Orthopaedic Surgery residency. Currently, I am on my first Orthopaedic rotation because the first half of the year I was completing all of my off-service rotations (e.g. emergency medicine, trauma surgery, etc.).

On a day-to-day basis, I round on the elective patients in the morning with a PGY-4 and PGY-2 and then sign-out to our team of advanced practice practitioners (APPs). I then either go to the operating room or to clinic depending on what I am scheduled for the day. In the operating room, I am mostly scrubbed in on arthroplasty cases involving primary total hip or knee replacements, as well as some foot and ankle cases including correction of hallux valgus deformities and open reduction and internal fixation of Lisfranc injuries. Also throughout the day, I see consults either on the floor or in the emergency department. The consults vary from ruling out septic arthritis of a joint to reducing ankle fractures and even doing revision amputations of fingers in the ED.

Lastly, I am still undecided as far as which subspecialty I want to pursue. However, I do have strong interests in Adult Reconstruction surgery (i.e. hip and knee replacements). Thank you so much for allowing me to share a little bit of my journey. I'm excited to see what the future holds! Please don't be afraid to reach out to me for any questions!

traditional framework. While preparing for future implications of the pandemic, the innovative ideas and the lessons learned from this time can be used to improve patient access to musculoskeletal health care.

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A DOCTOR'S VIEW: THE RESTORATIVE POWER OF NATURE DURING COVID-19

MICHAEL SUK, MD, JD, MPH, MBA, FACS

If your social media feed looks anything like mine right now, it's filled with two things: 1) messages about COVID-19 and 2) nature shots. Amidst the posts about possible supply shortages and staffing fears, people are sharing photos of hikes, campfires, and bicycle rides. A physician colleague posted that it's the first time ever that he's gone for a walk with his wife two weekdays in a row.

The importance of spending time in nature is something that I've been passionate about for a long time, stretching back to my time as a White House Fellow working alongside Gale Norton, Secretary of the U.S. Department of the Interior. In 2004, we published a piece for the **American Journal of Law and Medicine** where we discussed the connection between outdoor physical activity and wellness.

From our work encouraging Americans to head outside and lauding the opportunities afforded by the National Parks for respite, reflection, and outdoor recreation, I know that we have an excellent cure for self-isolation and its effects right now: nature.

Nature as medicine

Getting out in nature does more than clear away the figurative mental cobwebs — it has real, measurable physical benefits. Spending time in nature has been shown to reduce blood pressure, heart rate, muscle tension, and the production of stress hormones. In fact, physicians have been encouraged to prescribe nature as a treatment option for their patients. A 2019 study showed that 120 minutes or more spent in nature per week can significantly benefit health and well-being (1).

One of the many proven benefits to time in nature is enhanced immunity. With a view to the unfolding health crisis, it's easy to see the merits of giving ourselves every immunological advantage. A 2016 paper reported that two 2-hour forest walks on consecutive days increased the number and activity of anti-cancer NK cells by 50 and 56% respectively, with the impact still noted a month later (2). Why is this important? Because NK cells also play a role in fighting viral and other infections!

Spending time in nature also **gets us off our devices**. And I think we can all agree that we've been extra-glued to them over the past while as news stories and updates pile up. But when we trade those blue screens for green spaces, our focus shifts. So if you're having trouble seeing the forest for the trees amongst all the news and changes to our routine, then an actual forest walk may be the best remedy. Nature has a way of shifting our focus and helping us zooming out to see a fuller picture.

The great news is that science tells us that just looking at a picture of nature has restorative benefits.

We also can't overlook how physical activity in nature can help us **optimize our lung capacity**. Pneumonia is the main

cause of death linked to COVID-19. A daily constitutional, or any kind of physical fitness, can boost your lung expansion capacity. This may be potentially preventative for anyone who contracts the virus, as we know that reduced lung expansion capacity is linked with a greater risk of death from pneumonia. There was never a better or more urgent time to take up that outdoor walking habit that you've been meaning to get started on!

The physical benefits of trips into nature aren't just about what we're seeing. Nature has its own soundscape. Bird sounds, in particular, have received attention for their ability to engage the human brain and convey important information about the safety of our surroundings. Bird sounds foster a connection with nature, which **restores alertness, reduces stress, and promotes a sense of well-being**.

Nature also provides **a sense of connection**. During this strange time, heading into nature gives us a chance to be alone together. Anecdotally, many are reporting that spotting each other outside is giving them a renewed sense of community and connection. And even if we don't see another person, time in nature provides a different kind of connection. This was demon-





strated in a psychiatric study, which explored the effect of gardening amongst adults in an acute psychiatric inpatient setting. The study linked gardening with what is called “attention restoration therapy” and reported that participating in gardening activities “provided an opportunity to feel connected to a larger world” (3).

Get on out there!

Even for areas under a “shelter in place” order, the directive allows for people to go outside, as long as they follow the CDC guidelines for physical distancing, such as staying six feet away from others, covering mouths and noses for coughs and sneezes, and staying home if unwell. While most public facilities operated by The National Parks are closed in areas under “shelter in place” orders, they have so far opted to keep trails and open spaces accessible across the country. On the National Parks website, they offer this timely reminder: “During this challenging time, the parks can be wonderful spaces to walk, hike, run and just appreciate the sun and fresh air.”

Need some ideas to get outside in nature? Find a path that goes down by the river and into the woods. Get your bicycle out of storage. Grab your rollerblades, your skateboard, your stand-up paddleboard. Walk your dog. Take a longer route than usual. Yes, we need to keep a respectable distance from each other, but the outdoors are wide and there is room for everyone.

But wait, you really can't get outside?

This is a reality for some Americans right now. The great news is that science tells us that **just looking at a picture of nature** has restorative benefits. And we can even do better:

1. Documentaries: There is a slew of nature documentaries on streaming services like Netflix and Amazon Prime, allowing us to immerse ourselves in the surfs of Hawaii, to glide over the Rocky Mountains, or swim through the coral reefs of the Caribbean.

2. Nature sounds: A quick search on your favourite music streaming app will give you a playlist of bird sounds. Or, if you'd prefer a different auditory dose of nature, you can listen to rain, babbling brooks, thunderstorms, or a blustery shore. All of these nature soundscapes have wonderful effects on our well-being.

3. Virtual tours: Check out Cincinnati Zoo & Botanical Garden, who is doing a virtual safari every day about a different animal. Or tour Yosemite National Park virtually and visit the Mariposa Grove of Giant Sequoias, the top of the Half Dome, and the eponymous Yosemite Falls.

If there was ever a time to put the restorative power of nature to the test, it's now. Get outside if you can. Spring is here.

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RESEARCH OPPORTUNITIES:

Summer Research Immersion Program

Geisinger Commonwealth School of Medicine's (GCSOM) Summer Research Immersion Program (SRIP) is an eight-week program open to current first-year medical students at GCSOM who are in good academic standing. The program provides students the opportunity to gain hands-on research experience in basic science, clinical science, public/community health, behavioral health or medical education under the guidance of a research mentor. Participants are also offered supplemental seminars on study design, institutional review board (IRB) protocol development, scientific writing and other topics within research. The experience includes an educational stipend contingent upon fulfillment of program requirements. The link to the SRIP application will be available to eligible GCSOM students through Canvas.

MSKI Upper Extremity Research Fellowship

This is a one-year, paid Clinical Research Fellowship in Orthopaedic Surgery within the Geisinger Musculoskeletal Institute for qualified GCSOM students, beginning in July 2021. This research fellowship is designed for qualified GCSOM students interested in both gaining additional research experience and pursuing a career in orthopaedic surgery. The primary goal for this one-year clinical research fellowship is to provide GCSOM students with an opportunity to engage in meaningful clinical research. We aim to provide an opportunity for participating students to strengthen their research skills and knowledge base. We will engage students in a comprehensive musculoskeletal didactic program throughout the year, with the goal of improving their musculoskeletal and orthopaedic knowledge base. Interested candidates should send their CV and cover letter to Jennifer Harding, MSKI Research Director, at jlharding1@geisinger.edu.

MSKI Orthopedic Research Application

This application is for outstanding and committed medical students who want to get involved with Orthopaedic research at Geisinger's MSKI. If accepted, students will have the opportunity to work closely with physicians and other research staff on Orthopaedic research projects. The aim of this program is to allow students to engage meaningfully with clinical Orthopaedic research. Applications are reviewed twice a year, in February and August.

Student applicants are expected to engage with a Geisinger orthopaedics physician and complete a clinical shadowing experience before submitting their application. Students will also need to obtain a letter of recommendation from the physician with whom they shadowed.



tinyurl.com/3ev57t73

NYU Orthopedic Research

Division of Adult Reconstructive Surgery, Shoulder and Elbow Surgery, Spine Surgery, Sports Medicine, and Trauma and Fracture Surgery offer one-year research opportunities for current medical school students interested in pursuing orthopedic clinical research. You have the opportunity to work closely with faculty, residents, fellows, statisticians, and other research staff. tinyurl.com/v2ck5htw

Hopkins Poggi Pediatric Orthopedic Fellow

The Johns Hopkins Poggi Research Fellowship is a year-long fellowship program for extraordinary medical students. Fellows will have the opportunity to participate in cutting-edge clinical research, and learn the skills necessary to produce sound, high-quality papers. tinyurl.com/3jdkcp96

Rush Sports Medicine Research Fellowship

This unique position will allow the research fellows to work closely with residents, fellows, and faculty at Rush. Fellows will also have extensive opportunities for publication and presentation of research at national and international conferences. Our team provides the unique opportunity to work for a leader in orthopedic sports medicine, close collaboration with Midwest Orthopaedic at Rush's own biomechanical department, and a fast-paced clinical research lab determined to produce high quality, novel research. tinyurl.com/2w6j7d2s

Interested in writing about a topic in musculoskeletal medicine?

We are now accepting editorial submissions! We will be featuring one editorial in each issue of Musculoskeletal Matters and posting the rest of the submissions on the website! Submissions and questions can be sent to Jessica Koshinski (JKoshinski01@som.geisinger.edu).

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