Article

# PMR on Point.

SAVE FOR LATER

SHARE

SEPTEMBER 23, 2021

POSTED BY
JAMES SLIWA, DO
QUESTIONS? CONTACT
MYSTORY@SRALAB.ORG

## Opt-In For Future Editions

**PMR on Point Newsletter Sign-Up**
Form

MENTIONED IN THIS ARTICLE →

## Contents

- Remembering Joanne C. Smith, MD
- Feature. Redefining Pelvic Health Rehabilitation
- Buzzworthy. The Soccer Doc: Team Physician for the U.S. Women's National Soccer Team Reflects on the Tokyo Olympics
- Science IRL. How to Improve Walking Without Walking
- Influencer. The Maestro
- CME. Wearable Sensors and Machine Learning to Enhance Ability
- Subscribe.
- Archives.

## Remembering Joanne C. Smith, MD (Jan. 1, 1961-Sept. 6, 2021)

*A remembrance from James Sliwa, DO, Chief Medical Officer, Shirley Ryan AbilityLab*

I knew Dr. Smith for more than 30 years, having met her as a medical student when she rotated onto my service when we were the Rehabilitation Institute of Chicago (RIC). Early in her career, we worked as partners on the sixth floor inpatient unit at RIC. Even then, her potential was clear. She began taking on many leadership roles culminating in her appointment as president and CEO in 2006. Not long after, she encouraged me to take on the role of chief medical officer, one I have relished ever since. I used to quip with her about how I trained her and then came to work for her; I must have done something wrong! She would always respond, "No, you did something right."

Dr. Smith had a vision for this organization — and for the field of PM&R — from day one. Shortly into her tenure as CEO, she saw that medicine, science and technology were at a boiling point with the convergence of disciplines and discovery. She understood that we could leverage research applied right into the clinical environment for even better, faster patient outcomes. In the four years since Shirley Ryan AbilityLab has opened, we've seen firsthand all that's possible with the integration of medicine and science.

Please join us in celebrating a visionary, a leader in our field and a dear friend. Consider submitting a story or memory here.

(Back to Top)

## Feature. Redefining Pelvic Health Rehabilitation

**Sarah Hwang, MD**
Attending Physician Director of Women's Health Rehabilitation

MENTIONED IN THIS ARTICLE →

Founded in the 1990s, the Women's Health Rehabilitation program at Shirley Ryan AbilityLab (formerly known as RIC) initially focused on serving women experiencing pain after giving birth. The specialty was needed then because women were not being provided adequate care.

According to Sarah Hwang, MD, current program director, three decades later, that problem remains distressingly common.

"Unfortunately, when women bring up issues with their doctors, often they are told that problems like urinary incontinence are normal after having a baby — that they're part of being a woman and something they must learn to live with," said Dr. Hwang. "However, there's so much that we can do to help with pelvic pain, bowel and bladder issues, and pain during and after pregnancy. People don't have to suffer through it."

During medical school, Dr. Hwang was passionate about both gynecology and PM&R. As a resident at RIC, working in the Women's Health Rehabilitation program combined what she liked best in both fields. Specializing in PM&R enabled her to focus on function and quality of life for her patients.

After completing her residency, Dr. Hwang worked at University of Missouri Health Care, where she founded a new women's health rehabilitation practice. After five years, she returned to Shirley Ryan AbilityLab with the goal of growing the program in the rehabilitation hospital where she began her career.

**"Anyone Can Have Pelvic Pain"**

Today, the Women's Health Rehabilitation program continues in its founding mission of treating women with childbirth-related medical issues, while also expanding treatment to include pelvic floor dysfunction, nerve injuries and bowel/bladder issues. In addition, the program now also treats men, nonbinary and transgender individuals with pelvic floor challenges.

"Anyone can have pelvic pain," said Dr. Hwang. "Over the last couple of years, we have had more and more referrals for transgender patients who experience pain, are undergoing hormonal treatments or require pelvic floor physical therapy before and after gender-affirming surgery."

With this patient population in particular, Dr. Hwang emphasized that providing a safe space is key.

"It's important to remember that a lot of transgender people have a history of poor experiences in healthcare," she said. "As physicians, we must take extra care to engage and empower them in their healthcare decisions."

**Treatment Options**

Today, patients with pelvic floor dysfunction generally have good results with a combination of physical therapy and medications. In fact, most patients require an average of just 12 therapy sessions. Those with chronic pain also can benefit from intravaginal injections in the muscles of the pelvic floor (including levator ani, bulbospongiosus, obturator internus and coccygeus).

"When physical therapy alone isn't making adequate progress, I perform trigger-point injections with Lidocaine to aid in the treatment of trigger points and taut bands," said Dr. Hwang. "These injections can result in better progress in physical therapy. In patients who have high tone throughout levator ani that isn't improving with physical therapy alone, I perform botulinum toxin injections, which can help to improve the tone of the muscles."

For those with pelvic floor pain, dyspareunia or constipation, Dr. Hwang said she prescribes therapy to focus on decreasing tone through myofascial release, and strengthening other muscle groups to support the pelvic floor. Additionally, strengthening of the pelvic floor becomes a focus for those who have fecal and urinary incontinence.

**Identifying and Addressing Patients' Needs**

Although some of these treatments are highly specialized and performed by a scant number of physiatrists in the U.S., Dr. Hwang stressed that the majority of patients with pelvic floor, bowel and bladder issues, and pregnancy-related pain will benefit from physical therapy. The biggest hurdle is that so many of these potential patients do not realize a physiatry team can help them. They key, said Dr. Hwang, is for medical providers to break the ice.

"A recent study looked at women with low back pain and pelvic girdle pain, assessing for pelvic floor problems. Researchers found that 95.3% had some form of pelvic floor dysfunction," said Dr. Hwang. "Even if you are a musculoskeletal physiatrist who is only treating a patient for back pain, you should at least consider that the pelvic floor could be involved."

To catch many patients who are suffering and would benefit from treatment, Dr. Hwang recommended including questions on intake forms such as, "Do you have pelvic pain? Do you have pain with intercourse? Do you have incontinence of bowel or bladder? Do you have chronic constipation?"

The next step is finding a physical therapist with specialized training in pelvic floor issues, either through the American Physical Therapy Association or the Herman & Wallace Pelvic Rehabilitation Institute. According to Dr. Hwang, finding a specially trained PT can be easier than one might assume.

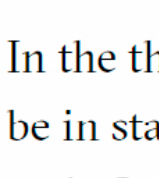
"When I was at Mizzou, we were in a fairly rural area, but I still was able to connect patients with PTs qualified to do pelvic floor therapy. They were usually no more than an hour's drive away," she said. "Finding a therapist to whom you can send patients is the key to treating them effectively."

Many physical therapists can teach patients the skills they need, such as how to use a dilator and TheraWand, and continue therapy at home on their own. Physicians who are unable to locate a pelvic floor physical therapist who is convenient for the patient may also consider telehealth.

"One does not need to specialize in pelvic floor rehabilitation to support these patients in their recoveries," said Dr. Hwang. "As physiatrists, we're uniquely equipped to help them recover and thrive."

(Back to Top)

## Buzzworthy. The Soccer Doc: Team Physician for the U.S. Women's National Soccer Team Reflects on the Tokyo Olympics



**Monica Rho, MD**
Reva and David Logan Section Chief of Musculoskeletal Medicine

MENTIONED IN THIS ARTICLE →

Monica Rho, MD, team physician for the U.S Women's National Soccer Team (USWNT) — whose day job is section chief of Musculoskeletal Medicine at Shirley Ryan AbilityLab — shares how the Tokyo 2020 experience was unlike any other (for one thing, it was actually held in *2021*), and explains how treating world-class athletes has changed her clinical approach with weekend warriors.

**All of the events at the Tokyo Olympics were held without fans in attendance. What does it feel like to be in a giant stadium without a crowd?**

In the three years since I've been traveling with the team, I've seen what it's like to be in stadiums full of tens of thousands of people. At the Olympics, the quiet was eerie. In these enormous stadiums, I could hear the goalkeeper talking to the players on the field while I sat on the bench.

**What were the Tokyo Olympics' COVID protocols like?**

Prior to leaving for Tokyo, we were required to have negative test results within 96 hours and 72 hours before departure. When we arrived, we all were tested and held at the airport until we generated a negative result. I heard that one team was held at the airport for 14 hours! Luckily, I was only there for three and a half hours.

In Tokyo, our movements were tracked using three apps on our smartphones. We were not allowed to tour the city. We couldn't even walk outside unless it was for approved training or games. We submitted daily screening questionnaires and saliva samples for COVID testing. With every positive case, the Japanese government's health department stepped in, requiring quarantine for any contacts who had more than 15 minutes of unmasked interaction.

Then, once our event was completed, we had just 48 hours to leave the country.

But, all of those precautions seemed to work — we were very fortunate and our team did not have any positive cases.

**What was the most interesting thing that happened to you at the Olympics?**

Since I've been with the team, I had never seen a penalty shootout before. In our quarterfinal match, however, we were tied 2–2 against the Netherlands after 90 minutes of regulation and 30 additional minutes of extra time, so we went to penalties. That was exciting! All of us — the whole bench staff and the players — were standing together on the sideline with our arms locked. The excitement was just so palpable; I felt like I could almost hear the heartbeat of the person standing next to me. Because there were no fans in the stadium, it was a really quiet, intense and heightened moment. When our goalkeeper, Alyssa Naeher, saved two shots, it was just incredible.

**How does treating elite athletes inform how you treat patients in your clinic?**

Most physicians see their patients once, then maybe four weeks later for a re-check, and then perhaps a year after that. In my role with U.S. Soccer, however, I spend large chunks of time essentially living with my patients. When I see people every day like that, it gives me a different perspective. For instance, when I'm on the road, the first day an injury happens, I'll sit down with the player to talk about the diagnosis and give her a timeline for what to expect. Then, the next day, that player may come back to me with three more questions, and two days after that, she'll have another question. I get to see how players process information. Now, I bring that knowledge back to my clinic patients. I really focus on setting expectations thoroughly, knowing that two days after a consultation they might have additional questions or feel differently about their recovery.

**With the current trends in fitness, are you seeing more injuries than you used to?**

There are always fads in exercise that ebb and flow, so you see fluctuations in common injuries. For instance, although there is a decent amount of data about the cardiovascular benefits of high-intensity interval training (HIIT), it's not a regimen that anyone can do on day one at 60 miles per hour. Also, it's been really interesting to see that, during the COVID pandemic and the lockdown, a lot of people have turned to online platforms for exercise classes. It's great to have that type of content available, and many people are able to do it with great form and stay injury-free. However, other people may run into some problems because no one is correcting their form or making sure they are doing it in a way that's not going to lead to injury.

(Back to Top)

## Science IRL. How to Improve Walking Without Walking

**José L. Pons, PhD**
Scientific Chair, Legs + Walking Lab
Professor to Dept. of PM&R, Feinberg School of Medicine and to Dept. of Biomedical Engineering and Dept. of Mechanical Engineering, McCormick School of Engineering, Northwestern University

MENTIONED IN THIS ARTICLE →

To improve walking following incomplete spinal cord injury (iSCI), significant time is generally devoted to gait-specific training. José Pons, PhD, scientific chair for Shirley Ryan AbilityLab's Legs + Walking Lab, offers his take on "Non-gait-specific intervention for the rehabilitation of walking after SCI: Role of the arms," a study revealing the increased benefits that result from taking a fresh approach.

**What's the big deal?**

Many of our patients tell us their main goal is to improve their ability to walk. Following iSCI, traditional rehabilitation approaches have included hours of practice at — you guessed it — walking! Although patients do improve with gait-specific training, this study found that an alternative intervention works even better.

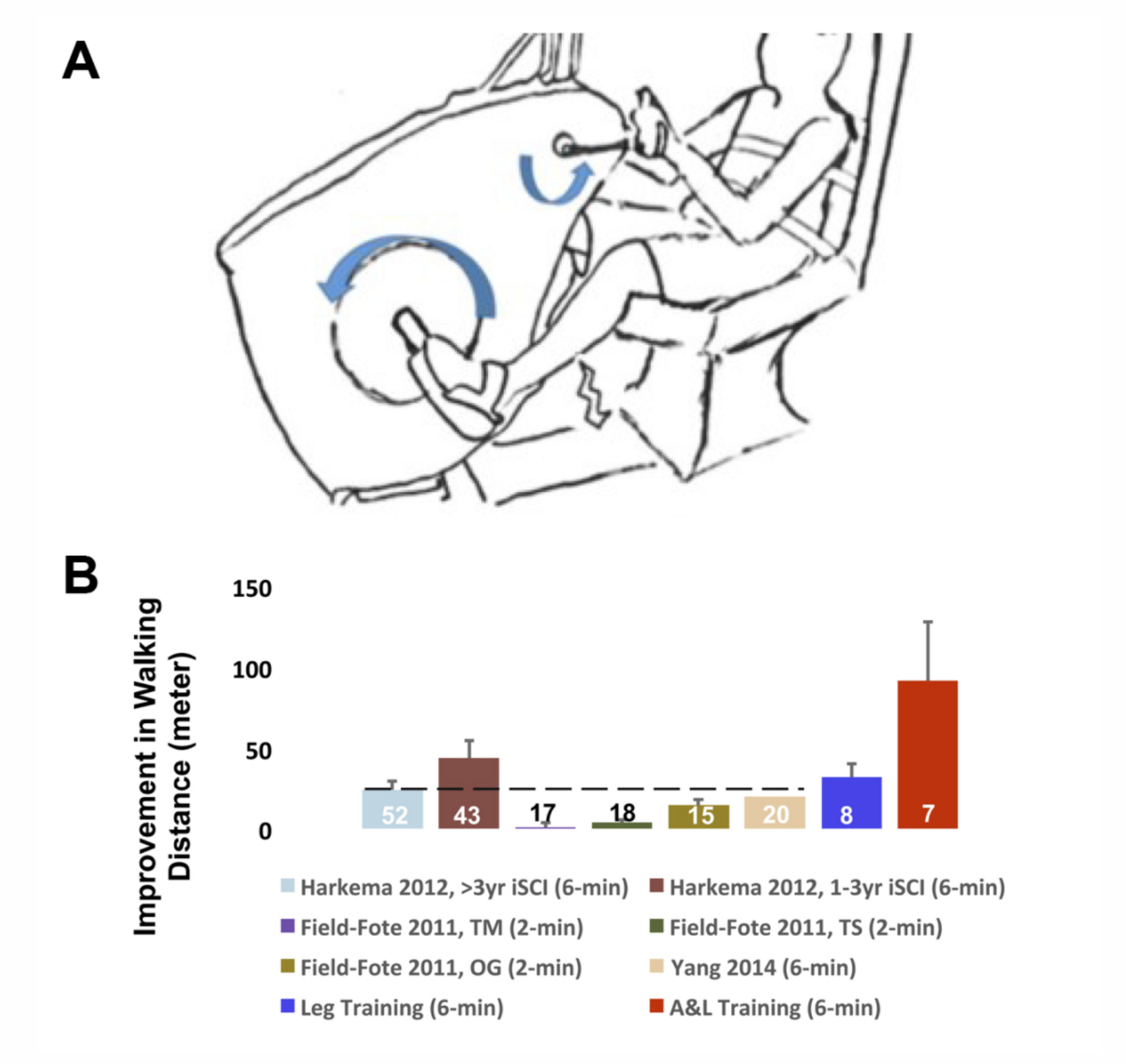


FIGURE 1. TRAINING SETUP AND RESULTS. (A) GRAPHIC OF SIMULTANEOUS ARMS AND LEGS CYCLING. (B) PATIENTS DEMONSTRATED SIGNIFICANT IMPROVEMENTS IN WALKING DISTANCE COMPARED TO TRADITIONAL THERAPY APPROACHES (RED BAR) WHEN TRAINED WITH SIMULTANEOUS ARMS AND LEGS CYCLING.

**What did the research reveal?**

Individuals with iSCI completed either simultaneous arms and legs (A&L) cycling (Fig. 1A) or legs-only cycling. They participated in the training for a total of 60 hours over 12 weeks. If a subject could not complete the cycling movements independently, electrical stimulation was used to activate the muscles. After the training period, researchers compared walking speed, walking distance, strength, sensation and balance between the two groups.

Improvements in the legs-only group were similar to those seen after other gait-specific training strategies, but the A&L cycling group showed a two-fold increase in walking speed and distance (Fig. 1B, red bar). The researchers theorize that the A&L cycling increased the amount of feedback to the nervous system, which enhanced the neural connections between the brain and spinal cord — thus making it easier for participants to relearn how to walk.

**How can this advance guide me in treating patients?**

This study offers an approach to improve walking in individuals with iSCI that incorporates arm movements. The intervention requires much less therapist assistance compared with common gait training and can be leveraged in working with those who have very limited mobility. Importantly, patients can start cycling sooner after their injury than they can start standing or walking — capitalizing on the early window when the nervous system has the greatest ability to adapt and relearn.

Reference: Zhou, R., Alvarado, L., Ogilvie, R., Chong, S. L., Shaw, O., Mushahwar, V. K. (2018). Non-gait-specific intervention for the rehabilitation of walking after SCI: Role of the arms. *Journal of Neurophysiology*, **119***:* 2194–2211.

(Back to Top)

## Influencer. The Maestro

**Peter Lim, MD, MBBS, FAAPMR, FAMS, FRCP (Edin)**
('89 Residency, '91 Fellowship)
Senior Consultant, Rehabilitation Medicine, Singapore General Hospital
Group Chief Risk Officer, SingHealth
Former Head, Department of Rehabilitation Medicine, Singapore General Hospital

In 2000, Peter Lim, MD, embarked on what he thought would be a five-year journey — leaving his position at the Baylor College of Medicine in Houston to start up the rehabilitation medicine specialty at Singapore General Hospital. Those five years turned into 10, and 10 years turned into 21, as he took on new roles leading the organization's SGH Postgraduate Medical Institute and subsequently as Group Chief Risk Officer in charge of enterprise risk management for SingHealth. Now, Dr. Lim is ready for his next adventure: returning to the United States in a new position back at Baylor.

**What was behind your decision to leave America for your position in Singapore?**
In a professional career, you go through several stages. First, you acquire your credentials: passing examinations and boards. In the second stage, you're like someone with a new driver's license, but without very much mileage behind the wheel. This period is when you pick up experience, and learn when you need to ask for help! The third stage is when you've "been there and done that." When this one hits, there are three things that you can do: change your car (and let the wind blow through whatever is left of your hair); change your job; or change your spouse. Fortunately, I only did the first two of the three and kept the third and most important.

The other reason behind the decision to move was personal. My wife is a Chicagoan, and I'm originally from Malaysia. We wanted our kids to spend time in Asia to understand the big world out there. They finished their elementary school and high school in Singapore, went back to the U.S. for college, and now live in Virginia and North Carolina. Part of the push to return to America is because we miss them. Due to COVID-19 travel restrictions, we haven't seen them for two years.

**What was it like to build PM&R as a new medical specialty in Singapore?**
Singapore General Hospital is the flagship of the Ministry of Health in Singapore. At the time I started there, rehabilitation medicine existed, but it was not yet a vibrant specialty. This makes sense if you look at how healthcare evolves. It starts by focusing on infectious conditions like TB and malaria. After you take care of those illnesses, you focus on other conditions like heart disease and cancer. Then, with people living longer than ever, you start taking care of an older population with the conditions that accompany aging. When I came here, Singapore — which once had one of the youngest populations — was starting to grapple with an aging population. Some of the people at Singapore General had trained in the U.S., and they were very much in favor of adding a specialty in rehabilitation medicine to treat older patients and those with disabling conditions. There were of course challenges along the way, but we're now where PM&R is accepted as part of the continuum of patient care.

**What is the reputation in Southeast Asia of the PM&R specialty you built?**
Singapore General Hospital is one of the largest and oldest hospitals in the region, celebrating its 200th anniversary this year. It goes back to the time of British rule. Now, we have a lot of people who want to come to Singapore General Hospital for training, and the SGH Postgraduate Medical Institute focuses on internationals. If you go to nearby countries like Myanmar (Burma), and you walk the streets of the capital, you will see doctors' offices with their names and credentials, and then, within parentheses, "Fellowship, Singapore General Hospital." They actually use their training at Singapore General Hospital as proof of their qualifications.

As the department chair and in my position in the SGH Postgraduate Medical Institute, I traveled all over the region teaching and recruiting trainees and international doctors. In these travels, we were able to use our influence and cachet to promote PM&R.

**What mindset do you think makes someone a good physiatrist?**
I think of myself as an orchestra conductor. Just like a rehabilitation team, an orchestra is a complex system, and the conductor has to know all of the instruments and see the big picture. You're not necessarily the best at every instrument, but you've got to know when you hear an instrument that is out of tune, you have to know the score, and you have to have the skills to lead.

As a physiatrist, I'm the ideal person to lead the rehabilitation team because of a training that includes general medicine, surgery, anatomy, biomechanics, rehabilitation engineering, nursing concepts, PT, OT, speech therapy and social work. I know the parts for each section in the orchestra. I know the score and how to get everyone to make good music together. It's a complicated job, and physiatrists are needed because of our ability to help rehabilitation patients achieve their goals.

**What direction do you see PM&R heading in the future?**
In all of medicine, there is increasing emphasis on innovation and technology such as AI, robotics and genomics. These innovations have contributed so much to what we can do for patients, but we have to be careful not to become too enamored with the idea that technology is going to cure everything. Remember that patients are human. Healthcare providers need software as well as hardware. It's not enough for a machine to tell a patient that they may never walk again. Patients want a physician who not only knows what is going on inside their body, but also understands their thoughts, fears and hopes. I see us increasingly needed with the complicated healthcare systems and unsettling changes in our world today.

*Currently Dr. Lim is in the process of repatriating to the United States after decades in Singapore. He will live in Houston with his wife, is looking forward to eating fajitas and Texas barbecue, and can't wait to visit his daughters in Virginia and North Carolina.*

**Recent Publications**

- Rehabilitation of a Post-Intensive Care Unit Patient After Severe COVID-19 Pneumonia
- A Call for Development; NeuroRehabilitation Services

(Back to Top)

## CME Opportunity.

**Title:** Wearable Sensors and Machine Learning to Enhance Ability

**Presenter:** James Cotton, MD, PhD, Shirley Ryan AbilityLab/Northwestern University

**Sign up here.**
Wearable sensors are playing a large role in the future of data collection — both in the community and in clinical settings. This one-hour CME — for which there is no cost to participate — will give clinicians critical insights into the performance of their interventions as Dr. Cotton discusses what this technology means to the field of rehabilitation. He will address outcome monitoring, as well as kinematics and electromyography, therapeutic use of sensors, and assistive technology.

**Learning Objectives:** Upon completion of this course, participants will be able to:

1. List three broad domains/objectives for which wearable sensors can be used in rehabilitation.
2. Identify the name of an emerging technique to track movements from regular video and how this technique might be useful clinically.
3. Identify the term for games designed to further rehabilitation objectives.

**Disclosures:**

**FSM's CME Leadership and Staff:**

| | |
|---|---|
| Clara Schroedl, MD, Medical Director of CME | Has nothing to disclose |
| Sheryl Corey, CME Director | Has nothing to disclose |
| Allison McCollum, Senior Program Coordinator | Has nothing to disclose |
| Rhea Alexis Banks, Administrative Assistant 2 | Has nothing to disclose |

**Course Director's and Planning Committee Members' Disclosure Information:**

| | |
|---|---|
| Rebecca Bagdy, MBA | Has nothing to disclose |

**Speakers, Moderators and Panelists' Disclosure Information:**

| | |
|---|---|
| James Cotton, MD, PhD | Has nothing to disclose |

**Accreditation Statement**

The Northwestern University Feinberg School of Medicine is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

**Credit Designation Statement**

The Northwestern University Feinberg School of Medicine designates this live activity for a maximum of 1.0 *AMA PRA Category 1 Credit(s)™.* Physicians should claim only credit commensurate with the extent of their participation in the activity.

For questions on claiming CME credit, contact the Office of CME at cme@northwestern.edu.

Sign up here.

(Back to Top)

## Stay Tuned for Future Issues

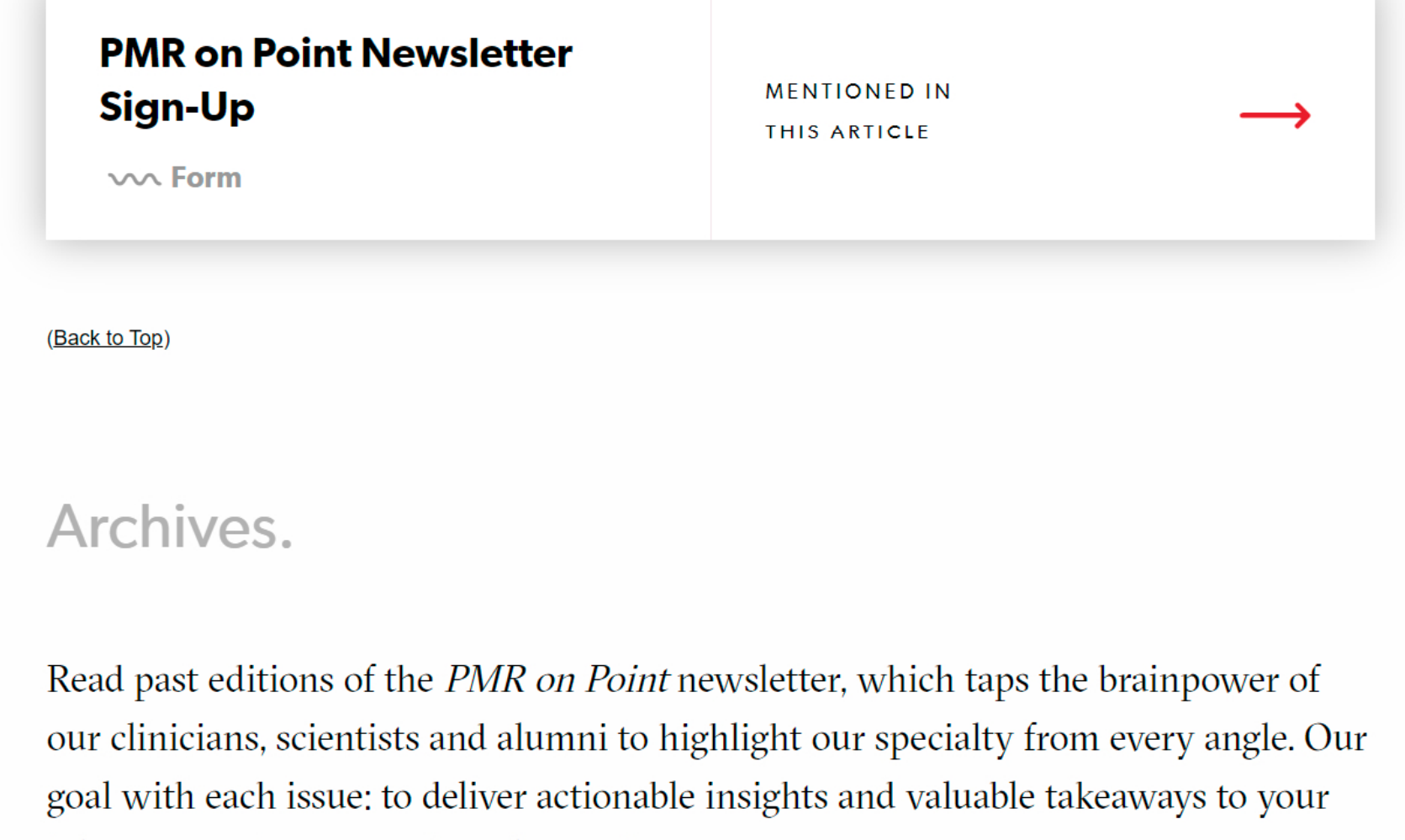
**PMR on Point Newsletter Sign-Up**
Form

MENTIONED IN THIS ARTICLE →

(Back to Top)

## Archives.

Read past editions of the *PMR on Point* newsletter, which taps the brainpower of our clinicians, scientists and alumni to highlight our specialty from every angle. Our goal with each issue: to deliver actionable insights and valuable takeaways to your inbox — on time, on topic and on point.



Issue 1, February 2021 | COVID Nerve Damage, Residency, Connections, Dr. Ellen Casey

Issue 2, March 2021 | Future of Neurostimulation in SCI, COVID CME, Parkinson's Rehabilitation

TAGS
BRAIN INJURY
SPINAL CORD INJURY
STROKE RECOVERY

(Back to Top)