

NUPOC NEWS

*The official newsletter of the
Northwestern University Prosthetics-Orthotics Center*



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Student Success

At NUPOC, we are continually inspired by our students' dedication to advancing the field of prosthetics and orthotics.

Congratulations to **Rio Strosnider**, recipient of the inaugural Hittenberger Legacy Award, and **Shania Taliyah Mair**, recipient of the IAAPOC Scholarship.

We're also proud to celebrate **Mariam El-Khatib**, who received a scholarship from Boston O&P/OPSB to attend the 2025 ACPOC Conference this April in Dallas.

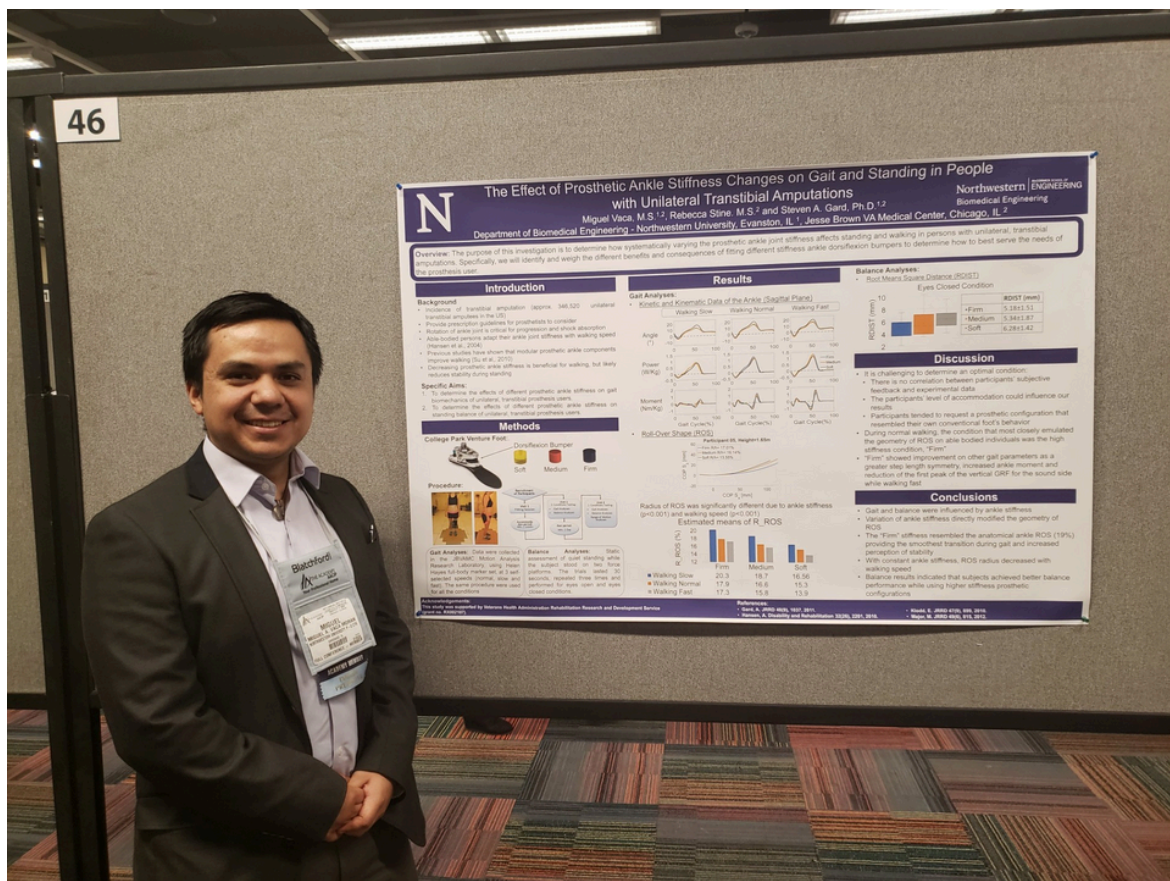
A special shoutout to the MPO 2026 class on receiving their white coats—a milestone marking the beginning of their professional journey. And congratulations to the MPO 2025 class on their graduation! Your hard work and commitment have made us incredibly proud.

We are honored to support such driven and compassionate students—your impact is already being felt in the field.

Student Success, Continued

At NUPOC, our students continue to engage in innovative research that advances the field of prosthetics and orthotics.

Miguel Vaca Moran, PhD (December 2024) – Miguel recently completed his doctoral dissertation titled “*The Interaction Effects of Prosthetic Knee and Ankle-Foot Designs on Gait Safety in Transfemoral Prosthesis Users.*” His research, advised by **Dr. Matthew Major** and **Dr. Steve Gard**, represents the first fully comprehensive systematic study on the interaction effects of prosthetic knee and ankle-foot components on gait safety. Miguel’s work involved a systematic review of existing literature, mechanical characterizations of prosthetic knees and feet, in-vivo motion analysis evaluations, and numerical modeling to simulate swing phase effects. His findings have the potential to improve clinical decision-making in prosthetic component selection and enhance the design of future prosthetic limbs to improve gait safety for transfemoral prosthesis users.



Miguel Vaca, PhD presents his research, "The Effect of Prosthetic Ankle Stiffness Changes on Gait and Standing in People with Unilateral Transtibial Amputations."

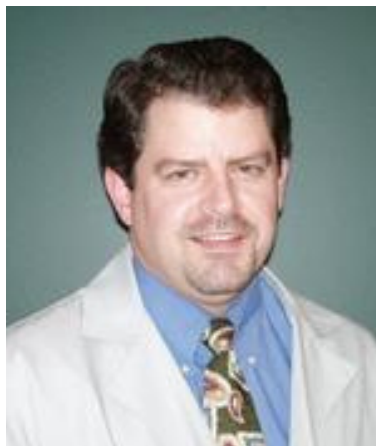
Recent NUPOC Publications

We are proud to highlight the following recent publications from NUPOC faculty and researchers, showcasing their contributions to the field of prosthetics and orthotics.

- **Matthew J. Major, PhD**, and **Paul Hammond, MS**, published a study titled “Dynamic balance of persons with unilateral upper limb absence when responding to a walking disturbance” in Human Movement Science (2025 Apr;100:103338). This study explores how individuals with unilateral upper limb absence maintain dynamic balance in response to walking disturbances. DOI: 10.1016/j.humov.2025.103338
- **Matthew J. Major, PhD**, co-authored “Bone Health Deterioration in Transfemoral Prosthetic Users: An Analytical Biomechanical Explanation” in International Journal for Numerical Methods in Biomedical Engineering (2025 Feb;41(2):e70014). This paper delves into the biomechanical aspects contributing to bone health deterioration in transfemoral prosthesis users. DOI: 10.1002/cnm.70014
- **Matthew J. Major, PhD**, co-authored “Robotic exoskeleton adapts to changes in leg movements in real time”, published in Nature (2024 Nov;635(8038):296-297). This groundbreaking study discusses how robotic exoskeletons can adjust in real-time to changes in leg movements. DOI: 10.1038/d41586-024-03546-4
- **Steve Gard, PhD**, co-authored “Spatiotemporal gait parameters influencing functional mobility of people with lower limb amputation” that was published in Prosthetics and Orthotics International (January, 2025. | DOI: 10.1097/PXR.0000000000000417). This study investigates the impact of atypical spatiotemporal gait parameters on walking speed in individuals with unilateral transtibial (TTA) and transfemoral amputation (TFA). While walking speed is a key measure of functional mobility, the specific influence of these gait abnormalities on walking speed in people with lower limb amputation has not been well understood. The study aims to clarify how these factors contribute to walking speed in this population.



Pictured: Matthew J. Major, PhD



Pictured: Steven A. Gard, PhD



Pictured: Paul Hammond II, MS

AAOP 2025

The 51st Academy Annual Meeting of the American Academy of Orthotists and Prosthetists took place at the end of February, with NUPOC faculty, staff, and alumni making significant contributions as presenters, moderators, and session leaders.

- **Matthew J. Major, PhD**, presented *“The Role of Walking Speed and Leg Proprioception in Foot Clearance for Older Transtibial Prosthesis Users and A Human-In-Loop Optimization Approach for Personalized Ankle-Foot Prosthesis Stiffness to Maximize Comfort.”* He also served as a moderator for Free Papers: Lower Limb Prostheses – Socket Interface and Shape Capture.
- **John T. Brinkmann, MA, CPO/L, FAAOP (D)**, was a speaker at *“Ethical Considerations in Global Orthotics and Prosthetics and Lasting Influences of COVID on O&P Practice and Education,”* which was led by NUPOC alum **Kierra J. Falbo, MPO, CPO**, and also featured NUPOC alum **Kyle R. Leister, PhD, CPO** as a speaker. He was also a session leader for Psychosocial Issues in Scoliosis Care.
- **David Speers, CPO/L**, was a speaker at *“Psychosocial Issues in Scoliosis Care.”*
- **Gloria Lee, MSPO, CPO**, served as the Q&A moderator for *“Psychosocial Issues in Scoliosis Care.”*
- **Kiley L. Armstrong, MS, MPO, CPO**, was a session leader for *“Disability is Not a Bad Word and The Inclusive Lens in Perspective and Practice.”* She also spoke at *“Shaping Health Disparities Research in Orthotics and Prosthetics.”*
- **Ryan Caldwell, L/CP, FAAOP**, led and moderated the session *“Subischial Socket Technology: Challenging Cases, Clinical Indications, and Current Research.”*
- **Nina Bondre, CPO, FAAOP, MBA**, was a speaker at *“Advancing HCPCS Coding for Upper Limb Prostheses: A Year of Advocacy and Progress.”*
- **Abbey Senczyszyn** spoke at Rising Professionals: *“Building Your Professional Brand and Network in Healthcare—Mentorship, Personal Branding, and Growth Strategies.”*



Kiley L. Armstrong, MS, MPO, CPO leading The Inclusive Lens in Perspective and Practice session at the 51st AAOP Annual Meeting, fostering discussions on diversity, accessibility, and inclusion in O&P.



Pictured: Juan Cave, Brogan Comstock, Kiley L. Armstrong, Amandi Rhett, Scott Thach, and Tonya Parker

AAOP 2025

NUPOC hosted an exhibitor table at the event, offering a valuable opportunity to showcase our program and connect with the broader O&P community. We were excited to reconnect with many alumni, hear about their professional journeys, and share updates on the exciting work happening at NUPOC.

Several students from the MPO 25 and MPO 26 cohorts also attended the conference. They engaged with professionals from across the country, participated in educational sessions, and expanded their networks—gaining valuable exposure to the latest in prosthetics and orthotics.

Thank you to everyone who participated, attended, or stopped by our table. We value these moments of community and look forward to continuing our strong presence at future conferences.



Master of Prosthetics and Orthotics Class of 2026 students at the NUPOC AAOP 2025 Exhibitor Table. Standing from left to right: Mia Albornoz, Sofia Baralt Zamudio, Kevin Amidon, and Ansley Feininger. Seated, facing away from the camera: Rachel Lyons, MS (NUPOC Communications Coordinator) and Owen Albrecht (MPO 2026).

MPO on the Go

NUPOC students have been making an impact around the world! From Ecuador to Canada to Australia, our MPO '25 students have gained hands-on experience while learning from global leaders in prosthetics and orthotics.

Range of Motion Project - Ecuador

This March, a group of MPO 25 students traveled to Ecuador with the Range of Motion Project (ROMP), where they helped deliver 35 prostheses to 33 patients from underserved communities—changing lives one step at a time. From casting and fabrication to final fittings, it was an unforgettable experience of learning and impact!

Boundless Bracing – Toronto, Canada

Students traveled to Boundless Bracing in Toronto to explore healthcare and O&P practices in Canada. They shadowed professionals at Sunnybrook, Bloorview, and George Brown College, delivered their first AFOs, and even presented at the college's Grand Rounds Presentation.

"This was an experience I'll never forget, and it was wonderful connecting with so many individuals in the P&O field." – Rio Strosnider

Osseointegration - Australia

Skyler Miggiaccio (MPO 25) ventured to Australia to learn about osseointegration, an advanced procedure that integrates prosthetic components directly with the patient's bone. This immersive experience provided insight into cutting-edge O&P techniques shaping prosthetic care's future.

From delivering life-changing devices to collaborating with global clinicians, our students continue to bring NUPOC's mission to life—one patient, one prosthesis, and one learning experience at a time!



Pictured from left to right: Elijah Ban-sok Jones, Julie Czech, Maxine Hanley, John Andamasaris, Karli Villano, Andy Staats, Dave Kurpa, Romp Founder and NUPOC alum, Maddy Ball, Olivia DeRodes, Anapaula Avila, Lily Centra, and Emily Wolf.



MPO '25 students Rio Strosnider and Melina Livingston at Boundless Bracing in Toronto

MPO 2026 White Coat Ceremony

On January 31st, 2025, NUPOC celebrated the Master of Prosthetics and Orthotics (MPO) Class of 2026 at their White Coat Ceremony. This milestone event marked the students' transition from the classroom to clinical training, symbolizing their dedication to patient care and the profession. Faculty, staff, friends, and family gathered to support in-person and on Zoom to celebrate the next generation of O&P professionals as they donned their white coats for the first time. Congratulations to MPO 2026 as they embark on this next phase of their journey!



Master of Prosthetics and Orthotics (MPO) Class of 2026 students sitting together at their White Coat Ceremony on January 31st, 2025.



MPO 25 students, from left to right Jaden Schovanec, Riley Burgoon, Anapaula Avila, Kelsey Macaddino, and Marcus (Bradley) Barksdale, proudly donned white coats to the MPO 26 class during the White Coat Ceremony.



Dr. Elliot Roth, MD, Chair of the Department of Physical Medicine and Rehabilitation, delivers remarks at the MPO 26 White Coat Ceremony.

MPO 2025 Graduation Ceremony

We are thrilled to congratulate the Masters of Prosthetics and Orthotics (MPO) Class of 2025 on their graduation, which took place on March 28th, 2025. This marks the end of an incredible journey and the beginning of a new chapter in your careers. Your dedication, hard work, and passion for the field of prosthetics and orthotics have paid off, and we couldn't be prouder of each of you. As you step into the professional world, we know that you will continue to make a positive impact on the lives of many individuals. We are excited to see all that you will achieve and the difference you will make in the field. Congratulations once again, MPO 25 — we are so proud of you!



Rio Strosnider receives the inaugural Hittenberger Legacy Award from Tina Hittenberger during the MPO Class of 2025 graduation ceremony



NUPOC faculty, Master of Prosthetics and Orthotics Class of 2025, along with family and friends, celebrating at graduation.



Master of Prosthetics and Orthotics Class of 2025 at their graduation on March 28th, 2025



John Andamasaris, MPO 2025 and outgoing NUPOSS president, addressing the class at the MPO 2025 graduation



Giving Opportunities

Donor support is essential to our continued success. Your gift can help support emerging researchers, P&O clinicians, and programs that will improve the lives of people who live with amputation or other physical impairments.

Contribute [online](#). Or contact FSM Development (T: 312-503-2706)

NUPOC appreciates your generosity

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