



NUPOC NEWS

Delivering excellence in Prosthetics-Orthotics education and research.

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Department of Physical Medicine & Rehabilitation, Feinberg School of Medicine, Northwestern University

NUPOC Directors J. Chad Duncan, PhD, CPO, and Steven A. Gard, PhD, are pleased to introduce you to this inaugural edition of NUPOC News. We invite you to engage with us through our semi-annual digital newsletter intended for current and prospective students, alumni, patient models, clinical and research collaborators, consumers of prosthetic and orthotic (P&O) devices, and all who are interested in prosthetics and orthotics. Please invite your friends and colleagues to [subscribe to NUPOC News](#).

NUPOC during COVID-19

Our Challenges and Triumphs

Throughout these challenging times, we recognize and appreciate the extraordinary efforts of our faculty, staff and students to keep NUPOC moving forward. COVID-19 closed Northwestern University from mid-March until August 2020, when protocols allowed us to return and work safely onsite. During the pandemic, our clinical educators, researchers and students continued to learn, adapt and grow. Wendy Beattie, CPO; Stefania Fatone, PhD, BPO(Hons); and Brianna Wolin, BSE, share their perspectives and experiences.



Wendy Beattie, CPO
Clinical Educator

The pandemic has impacted every aspect of education, but none more so than clinical education. It is simply impossible to teach patient care entirely virtually. Master of Prosthetics and Orthotics (MPO) students must interact with a variety of patients to evaluate, take impressions and perform fittings, none of which allow social distancing. To assure that students are taught the

necessary skills while protecting the health of students, patient models and faculty, Northwestern University Prosthetics-Orthotics Center has opted to decrease the size of student sections and eliminate interaction among sections. COVID-19 protocol includes students, faculty, and patient models who must screen for symptoms prior to arrival on campus. When they arrive at NUPOC, we verify their body temperature and use of masks and face shields at all times, but maintaining a 6-foot distance is impossible.

Surprisingly, we have discovered unexpected positive results of these adjustments. To decrease potential exposure due to time on campus, faculty have recorded demonstrations that previously were performed live and in person. These recorded demonstrations have afforded students improved

opportunities to learn the material. Each student has the best vantage point to watch, and they can review the procedure multiple times before they perform the task. The smaller sized sections provide a better student-faculty ratio, and, to date, have resulted in improved outcomes during fittings. We are encouraged to find that our COVID-19 modifications to the MPO program have actually improved the quality of the program. We anticipate that the COVID-19 adjustments and adaptations to our program can be continued and will reap benefits for future MPO cohorts.

Stefania Fatone, PhD
Researcher

Early in the pandemic I heard it said, “*We may all be experiencing the same storm, but we are not all in the same boat*”. As a researcher, the first months of the COVID-19



lockdown were a respite from my hectic schedule that requires juggling multiple research projects, educational commitments, and travel to conferences and meetings. Lockdown created a quiet time to contemplate research data and write grants and manuscripts. The pandemic has delayed the start of new projects, but also provided extra time to work with colleagues to develop detailed protocols that are invaluable in the data collection phase of our projects.

As researchers, we are especially attentive to potential risk to our volunteer human subjects. Reactivating in-person research has required considerable effort from all university administration and staff. We have developed new protocols that minimize risk for all who are involved in research. Everyone's lives are in a constant state of flux due to COVID-19 exposure incidences, so it is challenging to coordinate research data collection sessions.

However, I am grateful that our research participants are willing and eager to re-engage with our projects. They demonstrate a flexible adaptability and “*go with the flow*” attitude, a new outlook that I've had to master for myself.

Brianna Wolin, BSE
MPO Student, Class of 2021
NUPOSS President



The MPO Class of 2021 has started to embrace our nickname, “*The COVID Cohort*”. We never expected a graduate school experience like this! But despite COVID-19, we are on track to complete our onsite clinical practicum, finalize our research Capstone projects, apply to residencies and graduate on time.

Before we began our onsite practicum in January 2020, we had already completed 6 months of online, didactic learning. When the COVID-19 lockdown required another 5 months of online work from March to August, we were all familiar with online education. For many other P&O programs, online learning required diving into the unknown. Fortunately, NUPOC was already set up for success with technology and professors who knew how to create online lectures. (We offer them a huge “*Thank you!*” because each hour of instruction meant many hours of their work.) But, online learning will never be the same as learning P&O in person, where we actually handle model prostheses and orthoses, interact with our Educational Models, ask live questions to really understand what a specific gait

deviation looks like, or palpate a classmate to find a key structure to design a particular socket. Nonetheless, we persisted and completed the lecture content for almost all the remaining P&O-specific coursework.

In August, we returned to campus in our now-beloved 6 groups (Teams A-F) of 8 students and revved into high-gear for Educational Model assessments, fabrication, and fittings across lower limb and upper limb prosthetics and orthotics. Our class revisited content we hadn't seen in months and it better prepared us for our upcoming board exams.

Our Northwestern University Prosthetics-Orthotics Student Society, [NUPOSS](#), has been strong, thanks to our incredible Executive Board and Chairs who initiated online philanthropic activities like writing letters to Lurie clinicians, scheduling Lunch and Learn extra-curricular lectures, and holding a successful fundraiser only weeks before the lock-down.

The MPO Class of 2021 is diverse with differing world views, yet we have come together with great respect for each other and our professors. It hasn't been easy, but our class will always remember the challenges and adaptations of this year. Our MPO 2021 experiences will positively influence future classes, such as smaller work groups due to physical distancing. In the fabrication lab, groups of 8 instead of a larger group meant welcome elbow room.

In this pandemic year, communication and cooperation ensured that we safely completed our required coursework before proceeding to a third stint of online learning. And, we will graduate on time in 2021!

New Education Faculty

Faculty growth improves student to faculty ratio and reflects our commitment to excellence in P&O education. Annually, NUPOC admits 48 students to the MPO program. Simultaneously, our faculty instruct and interact with three classes: the onsite class attending their supervised clinical practicum; the online, pre-practicum class studying remotely; and the offsite, post-practicum class working remotely to finalize their Capstone projects prior to graduation.



Wendy Beattie, CPO, FAAOP, well known for many years of service to the P&O profession, has joined NUPOC as an Assistant Professor in Physical Medicine and Rehabilitation. Ms. Beattie is committed to teaching clinical skills to Master of Prosthetics-Orthotics (MPO) students. *“The relationship between preceptor and student is primary to building good clinicians. It requires balance between a close bond and an objective distance that ensures accurate evaluation and effective transfer of knowledge. I look forward to contributing to NUPOC’s next stage of growth and innovation.”*

In addition to credentials as a CPO, Ms. Beattie holds a MA in Educational Leadership (Eastern Michigan University), a BS in Mechanical Engineering (Yale University) and several US patents. She completed her orthotics training at NUPOC and her prosthetics training at UCLA. Most recently, she served eight years as Clinical and Program

Director for the Master of Science in Orthotics-Prosthetics (MSOP) at Eastern Michigan University (Ypsilanti, MI), transforming it into a fully accredited degree program. Prior to directing the academic master’s program, Ms. Beattie practiced P&O for over 25 years at Becker Orthopedic (Troy, MI), where she was facility manager and residency director, demonstrating her passion for helping P&O patients, fellow clinicians and residents.

Ms. Beattie has contributed significantly to organizational leadership as officer and member of committees on clinical content, state of the science programs, professional issues, and publications. Her terms as Treasurer, Vice President, and then President of the American Academy of Orthotists and Prosthetists (AAOP) left her visionary imprimatur on the P&O discipline.

A strong advocate for improvement in P&O professional standards, Ms. Beattie has represented the profession before Congress and the Center for Medicare and Medicaid Services about matters that impact P&O, including financial support for P&O master’s students, instituting a P&O residency match program, sabbaticals for clinician researchers and improved marketing of P&O services and careers. Currently, she serves on the Board of Directors, Chair of Assistant Standards Committee, and Policy Forum Representative of the National Commission

on Orthotic and Prosthetic Education (NCOPE).

She is an avid global traveler who spent a year backpacking around the world with her husband and children. In Chicago, she and her husband enjoy exploring local art, architecture, culture and cuisine.

Meet Arturo Bory, BA Instructional Media Coordinator



Arturo Bory supports our MPO program by filming, editing and distributing distance education lectures, webinars, onsite symposia, meetings, interviews and more. He graduated with a degree in Modern Culture and Media from Brown University (2017), where he learned video editing and graphic design. Mr. Bory said, *“I am excited to be part of the team and look forward to producing and managing NUPOC’s videography and related projects.”*

Before joining NUPOC, Mr. Bory worked as Digital Content Editor for Chicago’s independent *Scapi Magazine*, an online podcast and arts site featuring new artists and media. He enjoys jigsaw puzzles, reading, developing podcasts, stories and contributing to new media. Born and raised in sunny Miami, he speaks Spanish and now calls Chicago his home.

Memorable Clinical Practicum for MPO Class of 2021

Undeterred by COVID-19, students adhered to safety protocols and completed their required practicum wearing PPE and working in smaller sections consisting of eight students. Pictured are three of the six sections.



Group A: Allison Binkley, Katie Fish, Tes-sa Leppek, Allie Roberts, Steve Rolwes, Claire Vallery, Julia Wright, Keaton Young.



Group B: Cassia Chitla, Kevin Clark, Miranda Conklin, Lauren Feagin, Julie Hantak, Anna Schade, Jessica Starr, Rachel Tupper.



Group C: Anna Atkins, Grace Casalino, Hannah Horowitz, Maria Inman, Kylee James, Keira Newkirk, Alyssa Petz, Alyssa Rebensburg.

Research Matters

Use New Knowledge to Improve Clinical Care

These three articles demonstrate the breadth of research conducted at NUPOC: mechanical testing and human subjects research; prosthetics and orthotics studies of lower and upper limb; and Northwestern University-based and external collaboration projects.

1. Kent J and Major M. (2020) **Asymmetry of Mass and Motion Affects the Regulation of Whole-Body Angular Momentum in Individuals with Upper Limb Absence.** Clinical Biomechanics (2020), 05015.

https://www.sciencedirect.com/science/article/pii/S0268003320301248?casa_token=pAS-Jip1O0HgAAAAA:ckojZ8F55NSTF2rAq7aVUub568BDZgnYYnto9notnVSgfbTsNp5ktE2O-ZM-WgL62Lgc80yd

2. Pundik S, McCabe J, Kesner S, Skelly M, Fatone S. (2020) **Use of a Myoelectric Upper Limb Orthosis for Rehabilitation of the Upper Limb in Traumatic Brain Injury: A Case Report.** Journal of Rehabilitation and Assistive Technologies Engineering 2020; 7: 2055668320921067.

<https://journals.sagepub.com/doi/full/10.1177/2055668320921067>

3. Quinlan J, Yohay J, Subramanian V, Poziembo B, Fatone S. (2020) **Using Mechanical Testing to Assess the Effect of Lower-Limb Prosthetic Socket Texturing on Longitudinal Suspension.** PLoS ONE 15(8): e0237841.

<https://doi.org/10.1371/journal.pone.0237841> Research data associated with this publication is archived at <https://digitalhub.northwestern.edu/collections/19673087-b6a5-4108-b285-9614aa8b6b95>

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NUPOC News Special Edition

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Your Support Helps NUPOC Stay Strong

As a premier P&O education and research center, NUPOC has many reasons to celebrate, even during this pandemic. In 2020, we marked a decade of successful growth in our custom-built site. We added important faculty, trained new P&O clinicians, developed new educational programs, and conducted novel, evidence-based research.

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

Make an [online donation](#) or contact FSM Development officer [Jordan Sund](#) (T: 312-503-2706) for more information about how to support NUPOC. We appreciate your support!