

Executive Committee Spotlight: Dr. Lewis Wheaton

ASNR is thrilled to have Lewis Wheaton, PhD, serving as Vice President and a member of our Executive Committee. Dr. Wheaton is a Professor in the Department of Biological Sciences, Director of the Cognitive Motor Control Lab, and Director of the Center for Promoting Inclusion and Equity in the Sciences (C-PIES) at Georgia Tech. In the interview below, he shares more about himself, his career, and how he has been involved in ASNR over the years.



1) How did you get interested in science, and what steps did you take to get to your current role?

I got interested in science at a pretty young age. I was the science fair nerd in high school! Each year of high school, I completed in science fairs, and in 10th through 12th grade, I did my projects at universities around my community (Virginia State University, Old Dominion University, and Virginia Commonwealth University). These projects spanned self-efficacy (10th grade), how antioxidants impact bacterial growth (11th grade), and developing new therapies to decrease viral load in Lyme disease (12th grade). When I started undergrad at Radford University, I became active in research in my second year. I was mentored by Dr. Georgia Hammond in research focused on methods to make corn crops viral resistant while not impacting the quality of the harvest.

I had contemplated a clinical career, but I was more interested in basic science, even though I was actively applying for medical school. In my senior year at Radford University, I realized that you can conduct research on people from a scientific perspective... people could be participants in advanced scientific research! I realized this in a course called Brain and Perception taught by Dr. Karl Pribram, who was on sabbatical at Radford University from Georgetown University. The only reason I took this course was because I needed three credits to graduate. This entire course was a huge revelation for me. I declined all of my medical school offers and went straight into a PhD program in neuroscience at the University of Maryland. Soon after, I joined Dr. Mark Hallett's lab at the National Institutes of Health (NIH) as his first graduate student he mentored. I got to learn so much about brain imaging, clinical research, and human neurophysiology, all of which I have blended into my research to this day.

I love being around students and the "typical" campus environment, so having a career in academia has always felt like home. I pursued opportunities to learn more about academic jobs which led me to my first faculty role as an Assistant Professor at Georgia Tech in 2008. I have been on faculty ever since. As I have become more "senior" in my career, I have taken on additional opportunities in higher education. In addition to my faculty role, I am also the Inaugural Director for the Center for Promoting Inclusion and Equity in the Sciences. In many ways, this is an opportunity to continue my passion of broadening engagement in scientific

research that I committed to in my research lab to students, faculty, and staff across the Georgia Tech College of Sciences.

2) What is the focus of your current research, and what are some of your key findings?

I am the Director of the Cognitive Motor Control Lab, which seeks to understand relationships between brain and behavior, mainly from a rehabilitation perspective. The work of the lab falls in three domains: identifying neural-behavioral relationships for upper limb motor control in adults, developing neurorehabilitation-inspired approaches to support rehabilitation in persons with upper limb amputation, and evaluating perception-action coupling in stroke rehabilitation.

I am very excited about some of our recent work in persons with upper limb loss and understanding how to use principles of action observation and motor resonance to support new approaches to prosthesis use. This has led to two patents and a large group of studies that demonstrate how we might be able to more effectively train persons with upper limb loss on how to use prostheses for a greater variety of tasks in daily life. We have embedded this work into a training model and are currently testing it on different levels of limb loss and prosthesis types. As well, we are really beginning to figure out the motor strategies used with prostheses, and this is a fascinating and new approach to understanding the basic science of motor control with prostheses.

3) Why did you decide to get involved with the ASNR Board of Directors?

I became more active in ASNR after being connected to the society for about 12 years. When I was a graduate student, I started attending the Annual Meetings and stayed plugged into the society's activities. I found that the ASNR Annual Meeting really aligned with my interests in working with basic scientists and clinical scientists in an intimate setting to learn from each other. It has always felt good to be in that type of community. Early on (late post-doc and early career faculty years), I was urged to stay involved by former members of the Board, notably Dr. George Wittenberg and Dr. Krish Sathian.

It was after talking with Dr. Catherine Lang and Dr. Carolee Winstein that I realized that getting further involved would be meaningful, fun, and a way to really work to do good for the members

FAST FACTS

FAVORITE BREAKFAST CEREALS

OATMEAL AND HONEY NUT CHEERIOS.

FAVORITE BOOKS

MYSTERY NOVELS, ESPECIALLY AUTHORS AGATHA CHRISTIE AND CHARLES TODD.

FAVORITE PLACES TO TRAVEL

ANYWHERE TROPICAL!

FAVORITE SCIENTIFIC JOURNALS TO FOLLOW

NNR (OF COURSE!), JOURNAL OF NEUROENGINEERING AND REHABILITATION, BMC PUBLIC HEALTH.

IF YOU DIDN'T PURSUE A CAREER IN NEUROREHABILITATION, WHAT OTHER CAREER MIGHT YOU HAVE CHOSEN?

NAVY FIGHTER PILOT (MY EYESIGHT KEPT ME FROM HEADING OFF TO NAVY OFFICER CANDIDATE SCHOOL).

of the society and the discipline overall. Eventually, I was able to join the Program Committee which led me towards putting my name forward for a vote to become the Program Chair. It was exciting to give back to a society that has helped me so much. Drs. Lang and Winstein kept me connected to the various activities of ASNR and helped me realize that I could be more engaged through leadership opportunities. I have no regrets and am thankful for their mentorship in guiding my decision to be a part of the Board.

4) What do you enjoy most about being an ASNR Board Member?

A big thing about being on a Board is service to the bigger goals of the society that can impact so many. I love the goal of serving the broader community. When I first joined the ASNR Board and became Program Chair, I was able to participate in the society's strategic planning. It was a great time to not only learn my new role (while working alongside Dr. Lang, who was then Program Chair), but also to see how all the parts fit together. I have learned so much from those that came before me on the Board and from the broader ASNR community. As well, being a part of the Board has allowed me to get to know many ASNR members. Through various committees along the way, I have been able to build relationships with some of our youngest and oldest members. In particular, I love thinking about how to bring more diversity to ASNR, both in terms of the scientific and the racial and ethnic diversity of its members. There is so much diversity in this field! The more diversity we have in ASNR, the better discussions we can have to shape the future of the field and enhance research outcomes for people.

5) What do you see as the biggest challenges or areas of opportunities in neurorehabilitation research right now?

I believe one of the most substantial opportunities in neurorehabilitation comes in the tension between growing desires to use large-data analytics to inform approaches while also seeking to determine how the variability between individual people impacts our understanding of the success of a rehabilitation approach. While we consider new approaches to analyze and interpret our data, it is just as imperative to think about the individual people who are represented in the data: where do they come from, what are their needs, what are their challenges, are we reaching the right people? These are not technical questions, but human ones. These questions present a challenge to us all to ensure we are not overly focused on statistical models but also appreciate the complexities of the people we engage in research. The context of people's lives plays a substantial role in determining health. This presents an opportunity to consider how approaches in neurorehabilitation are influenced by social, political, and environmental determinants of health.