MRRI
MOSS REHABILITATION
RESEARCH INSTITUTE
50 Township Line Rd.
Elkins Park, PA 19027

About Moss Rehabilitation Research Institute

Moss Rehabilitation Research Institute (MRRI), founded in 1992, is a nonprofit organization devoted to improving the lives of individuals with neurological disabilities.

We do this by conducting research across the translational "pipeline" from basic neuroscience to clinical neuroscience and neurorehabilitation.

Moss Rehabilitation Research Institute: From theory-driven research to clinical trials in neurorehabilitation.

MRRI Letters
Moss Rehabilitation Research Institute

Annual Newsletter
Volume 1, Issue 1
2019

Inside this issue:

MRRI published 27 blog articles in 2018. Visit our blog at mrri.org/blog/ to stay up to date on MRRI news and announcements.

Message From The Director

Since it was founded, Moss Rehabilitation Research Institute (MRRI) has been at the forefront of research on rehabilitation and translational neuroscience. Today, MRRI is well known as an international leader in the field of rehabilitation science.

Daily work at MRRI includes innovative theory-driven research, clinical, and educational programs. This creates a vibrant buzz of activity from participants, administrators, and scientific staff. Our staff members are deeply passionate about their work. We are pleased to see that the influence of MRRI extends far beyond the walls of our outstanding facility. For example, we develop clinical research standards that help other clinicians and scientists, receive more NIH grant funding than any other department in the Einstein Healthcare Network, collaborate with scientists all over the world, and train post-doctoral fellows to become great researchers.

MRRI's rigorous, focused, and creative research equips us to address the pressing challenge of improving outcomes and reducing disability after stroke, traumatic brain injury, and other neurological conditions. Our talented group of scientists is fortunate to work with a superb team of clinicians at MossRehab, a leading U.S. rehabilitation hospital. As incoming Director of MRRI, I am delighted to build on the strong foundation and momentum of the Institute, to enhance existing activities, and introduce new initiatives that advance our mission to facilitate the translation of theory-driven research into clinical treatments in neurorehabilitation.

I'm looking forward to what we can accomplish together.

Dylan J. Edwards, PhD

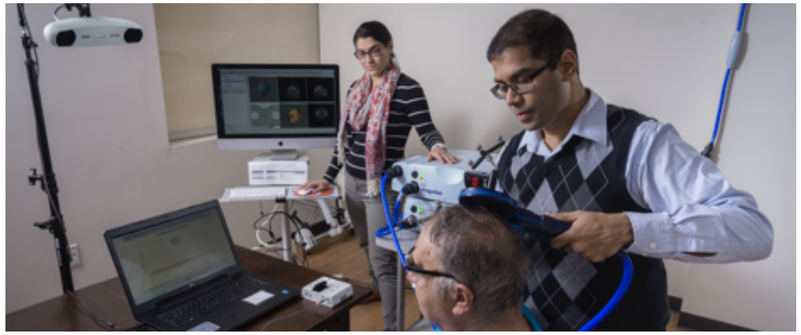
Dr. John Whyte Reflects on his Tenure as Director

Over 25 years ago, Dr. Myrna Schwartz (former Associate Director) and I founded MRRI. At the time, we noticed that a lot of rehabilitation research was not theory-driven. The questions researchers were asking were of the sort, "Let's see if this works." At best, that gives you one more thing that works. It doesn't launch a science. At the same time, successful theoretically important work was being done in neurologically normal people, not studying any patients that might complicate the theory. That didn't seem like a good way to solve the problem. Our vision for MRRI has been to apply theory and make sure that we are addressing questions that will impact real people in real ways. It's a complicated problem, but a fascinating mission to guide 25 years of work.

John Whyte, MD, PhD
Former Director, MRRI

Check out the MRRI YouTube channel (youtube.com/user/MossRehabResearch) to watch a variety of short videos on the exciting research going on at MRRI.

Movement Science and Mobility Rehabilitation



Shailesh Kantak, PhD, PT, Director of the Neuroplasticity and Motor Behavior Laboratory, has been awarded a $1.9 million grant from the National Institutes of Health.

In his grant, titled "Perceptual motor interaction to improve bimanual coordination after stroke," Dr. Kantak will conduct studies focusing on stroke survivors. The studies will determine how motor and perceptual task demands of a bimanual (two-handed) reaching task interact to influence coordination between arms; the effects of changing perceptual and motor task demands on bimanual coordination; and the behavioral, neuroanatomic, and neurophysiologic contributors to individual differences in bimanual coordination.

The results from this project will set the stage for future development of intervention protocols to improve bimanual coordination necessary for more complete functional arm recovery after stroke.

To learn more about Dr. Kantak's research, watch our "Moving to Complex Skills Sooner in Stroke Rehab" on the MossResearch YouTube Channel.

Cognitive Neuroscience and Cognitive Rehabilitation

Aphasia is a disorder of language due to brain injury, most commonly from stroke. A person with aphasia experiences problems producing and, in severe cases, understanding written and spoken language. Critically, intelligence remains largely intact, but because communication is impaired, aphasia often leads to disability and social isolation.

A major barrier to effective communication in aphasia is 'naming impairment.' Naming impairment is a prominent feature of aphasia that presents as frequent difficulty retrieving and producing familiar words, even names for common, everyday things such as 'library' or 'subway.' Erica Middleton, PhD, Director of the Language and Learning Laboratory, has been studying naming impairment in aphasia for a decade.

Dr. Middleton was awarded a five-year, $2.4 million grant from the National Institutes of Health to support her work in applying human learning principles to the treatment of naming impairment in aphasia.

"The ultimate goal is to understand how naming impairment manifests for an individual with aphasia, so that if someone presents to the clinic, we can diagnosis which underlying processes are damaged, and select a treatment that specifically targets the damaged processes."

To learn more about Dr. Middleton's work in the area of Cognitive Neuroscience and Cognitive Rehabilitation, visit our website, mrri.org.

Research is an important part of treatment, often leading the way to new advances and innovations in medical rehabilitation.

To support our rehabilitation research, visit the donation page of our website: http://mrri.org/donate-now/

Get connected with us!

To stay up to date on our latest announcements and activities:

Visit our website MRRI.org

Follow us on Twitter at @mossresearch

Subscribe to our YouTube channel at https://www.youtube.com/user/MossRehabResearch

Like and follow Moss Rehabilitation Research Institute - MRRI on Facebook

MRRI
MOSS REHABILITATION RESEARCH INSTITUTE

MossRehab
EINSTEIN HEALTHCARE NETWORK

Donor Impact

For Nancy and Marc Shrier, the connection to MossRehab and the Einstein Health Network (Einstein) is familial, and it is strong. MossRehab is part of Einstein, and it is home to MRRI.

Nancy's father, Larry Wachtel, was a member of the Board of Directors of Einstein's skilled nursing facility, Willowcrest. Her stepbrother, Louis Rosenthal, served for many years on the Einstein Board of Directors, and her stepmother, Hilda Wachtel, was a long-time member of the Einstein Auxiliary. Nancy began her involvement as a candy striper at Willowcrest at age 16.

As a member and former Chair of the MossRehab Advisory Board, Nancy has dedicated countless hours in support of programs benefitting both MossRehab and the Einstein Health Network. Nancy and Marc's children, Lee and Peter, were both born at Einstein.

Marrying their desire to support the research efforts of MossRehab and their interest in ongoing education, the Shriers made a generous gift to support a program which combines both. The Shrier Family Topics in Rehabilitation Science Lecture Series enables MRRI to better support its staff by creating and funding opportunities to expand both internal and external research education. Additionally, it provides resources to support presentations from engaging guest lecturers from other leading research organizations, as well as MossRehab clinicians.

From left to right: Dr. John Whyte, Dr. Stephen Jax, Marc Schrier, and Nancy Schrier.

"Both Nancy and Marc are engaged and active participants in the work of MRRI. I know they gave this careful consideration, and I am so personally gratified by their support of our work and their belief in what is possible for patients who have experienced significant disability. The Shrier Research Lecture Series provides the opportunity to disseminate research and promote discussion to directly inform and impact patient care." - Dr. John Whyte

These lectures are presented by scientists from MRRI and other leading research organizations, to MossRehab clinicians, including physicians, therapists, psychologists, nurses, and social workers. This allows for the latest research to directly inform and impact patient care. In addition to the lecture series, MRRI scientists travel throughout the world participating in top research conferences, often as speakers.

Aphasia Center

Public radio station WHYY recently took an in-depth look into aphasia. They featured interviews with experts from MossRehab's Aphasia Center and members of its "Conversation Cafes."

Aphasia Center Director Sharon Antonucci, PhD, shared her thoughts on the radio show The Pulse.

"While there are no guarantees about where you will end up in your recovery, opportunities for rehabilitation and for improving and increasing communication skills are lifelong," Dr. Antonucci said.

She emphasized that recovery from aphasia can continue for years after a stroke.

The MossRehab Aphasia Center was developed to meet the long-term communication and psychosocial needs of people affected by aphasia. It is a place where they can find information and peer support as well as participate in on-going research and treatment.

To listen to a recording of the interview, visit mrri.org/radio-report-features-mossrehabsaphasia-center/. For more information, watch our video about the MossRehab Aphasia Center on our MossResearch YouTube channel.

Traumatic Brain Injury Treatments and Outcomes

"This award speaks to the continued excellence of the cutting-edge research environment at MRRI, our clinical care in the Drucker Brain Injury Unit at MossRehab, and most importantly, the superb collaboration among the research and clinical teams."

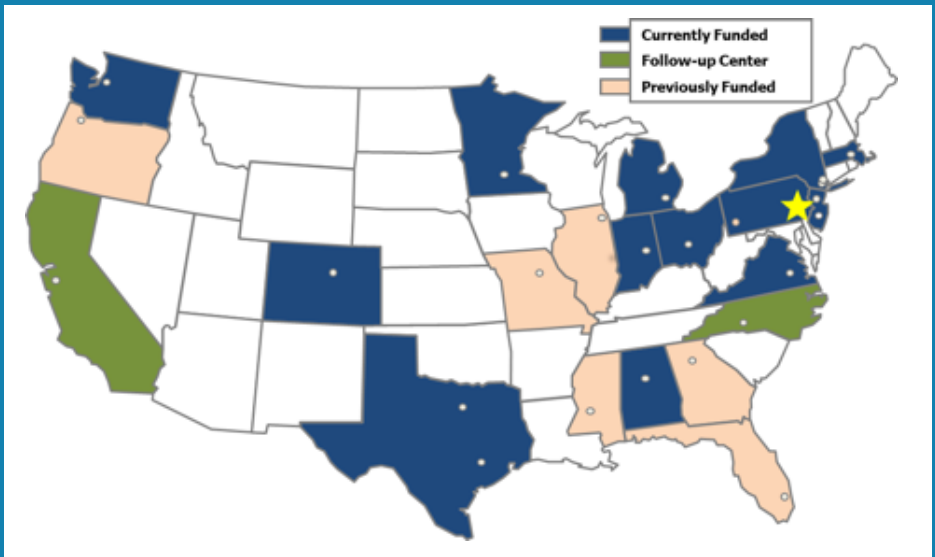
MossRehab's Drucker Brain Injury Unit and MRRI recently received their renewal grant for the fifth time from the National Institute on Disability, Independent Living and Rehabilitation Research (NIDILRR) to continue as a Traumatic Brain Injury (TBI) Model System.

The highly competitive grant and classification as a Model System is earned for excellence in both the treatment and the research related to a particular disability. Specifically, a TBI Model System must demonstrate a strong track record of excellent clinical care and treatment. It must carry out a program of research on outcome prediction and treatment, and it must have a superior record of publications, presentations, and other knowledge sharing and teaching on TBI rehabilitation.

Receiving the grant renewal for the fifth straight cycle means the MossRehab TBI Model System has been continuously funded since 1997. This makes our renowned facility one of only two to hold the designation continuously for 25 years.

"I am tremendously proud and gratified to be leading a fifth TBI Model System for MossRehab and Moss Rehabilitation Research Institute," said Tessa Hart, PhD, who recently retired from her role as Director of the TBI Model System.

Read more about the TBI Model System renewal grant on our blog at mrri.org.



Traumatic Brain Injury Model System Facilities in the U.S.

MRRI is a leader among federally funded Traumatic Brain Injury Model Systems nationwide.

2018 Accomplishment Highlights

5	39	9	58
Awards and Honors	Conference Presentations	Grants Funded	Research Papers

Dr. John Whyte was honored as the Dudley Allen Sargent Lecturer and gave an invited talk at Sargent College in Boston, MA titled "Translating Translational Research to Rehabilitation: What Are Our Treatments and Who Are We Treating?".

Dr. Laurel Buxbaum was featured on the American Society of Neurorehabilitation (ASNR) podcast. Visit mrri.org/dr-buxbaum-featured-on-asnr-podcast/ to listen to this podcast episode.

Moss researchers including Dr. Tessa Hart, Dr. John Whyte, Andrew Packel, and Dr. Mary Ferraro, in collaboration with colleagues at other institutions, finalized the Manual for Rehabilitation Treatment Specification and published four interrelated articles on this topic in the journal *Archives of Physical Medicine & Rehabilitation*.

Drs. Aaron Wong and Amanda Rabinowitz each received Albert Einstein Society Awards. Dr. Wong's award will support research on pathways subserving the imitation of actions, and Dr. Rabinowitz's award will fund the development of a "chat bot" to augment outpatient brain injury rehabilitation.

Dr. Laurel Buxbaum, Associate Director of MRRI, was recently honored with two prestigious awards - The Arthur Benton Mid-Career Award of the International Neuropsychological Society and the Kenneth Viste Award of the American Society for Neurorehabilitation.

Dr. Erica Middleton was honored with the 2018 J. Stanley Cohen Award for Research Excellence from the Einstein Healthcare Network. She was also interviewed by Dr. Bill Latimer for the public radio show "Public Health Minute" about her research on aphasia.

Dr. Tessa Hart will be presented with the prestigious Robert L. Moody Prize for Distinguished Initiatives in Brain Injury Research and Rehabilitation during the 19th Annual Galveston Brain Injury Conference on May 2nd & 3rd, 2019 in Galveston, Texas. This award recognizes distinguished contributions in brain injury rehabilitation and research.

MossRehab has again been named by U.S. News & World Report magazine as a top 10 rehabilitation facility in the country.

Dr. Dylan Edwards, Director of the institute, is a co-author on a upcoming publication in the journal *Cortex* titled "Using tDCS to facilitate motor learning in speech production: The role of timing."

Moss Rehabilitation Research Institute (MRRI) was awarded a 5-year renewal of its NIH-funded training grant titled "Postdoctoral Training in Translational Neurorehabilitation Research". The grant is directed by John Whyte, MD, PhD, co-founder and former Director of MRRI.

Our Research Registry

MRRI maintains a registry with information on over 2,000 research volunteers. These volunteers include adults who have a neurological condition such as a stroke or traumatic brain injury, as well as adults who do not have a neurological condition.

The MRRI Registry helps support neurorehabilitation research in the MossRehab community. We thank all of our research volunteers and their families. Your participation is vital to the discovery of state-of-the-art, evidence-based neurorehabilitation treatments at MossRehab.

To learn more, please visit our MRRI Research Registry web page or contact the Research Registry Office at 215-663-7147.