



**Éimear Smith** is Consultant in Rehabilitation Medicine at the National Rehabilitation & Mater Misericordiae University Hospitals, Dublin since 2009. Following Basic Specialist Training in General Internal Medicine and Higher Specialist Training in Rehabilitation Medicine in Dublin, she spent 2 years in the National Treasure post for Specialist Training in SCI Medicine/Rehabilitation at the London Spinal Cord Injury Centre, Stanmore.

Sub-specialist clinical interests include paediatric SCI, ventilatory management in SCI, restoration of upper limb function in tetraplegia and the long-term medical complications of SCI.

Higher research degree (MD) was awarded for a study on the bone health of individuals with SCI, brain injury and limb loss, while other more current research interests include epidemiology of and outcomes following traumatic and non-traumatic SCI.



**Dr. Antigone Argyriou** received her Medical Degree from Saba University School of Medicine in the Netherlands Antilles. She went on to complete her Physical Medicine and Rehabilitation (PM&R) residency training at Montefiore Medical Center of the Albert Einstein School of Medicine in New York City, where she served as chief resident in her final year. She then went on to complete a fellowship in Interventional Pain Management. Dr. Argyriou holds two board certifications in PM&R as well as Pain Medicine.

She is currently practicing at South Shore Neurological Associates in Islip, New York where she was appointed the Medical Director of the Pain Management Program in 2016. She treats a variety of patients with neuromuscular and musculoskeletal conditions through a multidisciplinary pain program she has created using a wide range of conservative therapies, interventional procedures, and other treatments, including a medical cannabis program that she initiated in 2018.

Dr. Argyriou is the immediate Past President of the New York Society of Physical Medicine and Rehabilitation, and was recently elected to the Future Leaders Program of the American Academy of Physical Medicine & Rehabilitation, where she was selected as one of only ten physiatrists in the United States of America to help advance the field of PM&R and develop physiatry's value in medicine.



**Marcalee Alexander** graduated Jefferson Medical College where she also completed her residency in Physical Medicine and Rehabilitation in 1986. She is a previous president of the American Spinal Injury Association, has published over 125 professional manuscripts, was editor of the journal *Spinal Cord Series and Cases* from 2017-2020 and is currently Editor-In-Chief of *The Journal of Climate Change and Health*

Dr. Alexander is passionate about three varying issues related to quality of life for persons with spinal cord injuries and disabilities. These include sexuality, telemedicine and climate change. She took a sabbatical from the full-time practice of medicine in 2019 and began a walk from Canada to Key West to bring attention to the issues of accessibility and quality of life for persons with disabilities. She also launched the first Day for Tomorrow, a day when people can come together in community to prepare for disasters. Moreover, her book *Sexual Sustainability: A Guide to Having a Great Sex Life with a SCI* is available in English, Greek, Spanish and Italian.

Dr. Alexander also leads Sustain Our Abilities, a US based international nonprofit organization dedicated to combatting the issues of persons with disabilities regarding climate change and disasters and to providing accessible education around the world to professionals and consumers through telerehabilitation. She is also the Editor of *Telerehabilitation: Principles and Practice* a book that will be coming out this December.



**Dr. Gianluca Sampogna** graduated in Medicine with honors by the University of Milan in 2015. Later, he enrolled in the Urology Residency Training Program of the University of Milan, directed by Prof. Emanuele Montanari. During the last years, he became passionate about treating dysfunctions of the sacral area - urinary incontinence, fecal incontinence and sexual dysfunctions - in people with spinal cord injury, myelomeningocele, multiple sclerosis, Parkinson's disease and cerebrovascular diseases.

He currently works by the Neuro-Urology Unit of the Niguarda Hospital (Chief: Dr. Michele Spinelli), in Milan, Italy, where he combines clinical practice with intense scientific activity. In 2019, he won the Spinal Cord Young competition, dedicated to young doctors involved in the care of people with spinal cord injury, presenting a project for early sacral neurostimulation.

During COVID-19 pandemic, he developed a telemedicine service to follow hundreds of patients, receiving many national and international acknowledgments.



**Andrei Krassioukov MD, PhD, FRCPC,**

Professor, Dep. Medicine, Div. Phys. Med. & Rehab.; Endowed Chair, Rehabilitation Medicine; Associate Director and Scientist, ICORD, University of British Columbia; Staff physician, Spinal Cord Program, GF Strong Rehabilitation Centre; Vancouver, BC, Canada.

**Spinal cord stimulation protocols and their impact on  
autonomic & somatic nervous system overactivity.**

Healthy central nervous system activity thrives in the middle between two extremes of neuronal circuit's activity: excitation and inhibition. The balance between neural excitation and neural inhibition (the Yin and Yang within central nervous system) is crucial to health and functioning of our systems that are under ongoing central nervous system control. A brain dominated by glutamate would only be capable of exciting itself in repeated bursts of activity, similar to an epileptic seizure. Unfortunately, spinal cord injury (SCI) results in disruption of the balance between supraspinal excitatory and inhibitory control to somatic and autonomic spinal centers. Disruption of the balanced excitatory/inhibitory supraspinal control by SCI results initially in a period of profound inhibition of all reflexes and all spinal cord functions known as spinal (somatic function) and neurogenic (autonomic functions) shocks. However, with time after acute SCI and resolution of the spinal and neurogenic shocks we notice appearance of over activity within spinal somatic and autonomic circuits.

Clinically, spinal cord overactivity following injury presents with following well known phenomenon: exaggeration of the stretch reflex secondary to hyperexcitability of spinal reflexes with increased muscle tone and resulting spasticity; exaggerated blood pressure responses due to autonomic dysreflexia (previously known as autonomic hyperreflexia); development of neurogenic bladder and associated detrusor sphincter dyssynergia; over activation of sweat glands (hyperhidrosis). During this presentation, the mechanism of development of spinal cord over activity and currently available pharmacological and non-pharmacological strategies for management of exaggerated spinal cord activity within somatic and autonomic circuits will be presented. Finally, the novel approach with use of spinal cord stimulation (epidural/transcutaneous) to modulate spinal cord somatic and autonomic overactivity will be discussed.



**Associate Professor Ruth Marshall** is the current President of the International Spinal Cord Society.

She has been the Medical Director of The South Australian Spinal Cord Injury service (SASCIS) since 1986, a service which provides acute injury management, rehabilitation and life-time follow-up for people who have suffered spinal cord injury or disease and is a Rehabilitation Physician by training.

Dr Marshall is considered an expert in spinal cord injury management especially the medical sequelae (short and long term) and rehabilitation issues throughout life stages.

Her interests include issues to do with living with a spinal cord injury and the effect of ageing, bone health after spinal cord injury, improving outcomes during acute and rehabilitation stages and preventing late complications, using telehealth systems to communicate with patients and their health providers and the effect of spinal cord injury on Australian aborigines and their families, especially those living in rural and remote settings, and inequities in health care.



**Professor James Middleton** is Clinical Director of the NSW State Spinal Cord Injury Service and also holds an academic appointment as Professor of Rehabilitation Medicine at the John Walsh Centre for Rehabilitation Research, Kolling Institute of Medical Research, Northern Sydney Local Health District and Faculty of Medicine and Health, The University of Sydney. He is also Senior Medical Specialist for the Spinal Outreach Service, based at Royal Rehab. James is a Consultant Physician in Rehabilitation Medicine with almost 30 years of clinical and research experience in the field of spinal cord injury (SCI) medicine and rehabilitation. Blending continuing clinical and management roles with his academic position affords James a unique opportunity to translate research evidence into improved rehabilitation practice, service planning, delivery and innovation, as well as enhanced health, functioning and quality of life outcomes for people with SCI. He has authored or co-authored over 150 peer-reviewed journal publications and 19 book chapters. James is Chair of the External Relations Committee for the International Spinal Cord Society, working closely with the World Health Organisation, ISCoS Affiliated Societies and Networks, and external societies, such as Humanity Inclusion and ISPRM in this role. He is a past President of the Australian and New Zealand Spinal Cord Society. James also is Chair of the Board of Youthsafe (formerly Spinesafe Education Program), which is a leading non-government organisation for primary injury prevention in young people in NSW, advocating use of evidence-based, multi-strategic approaches to youth injury prevention in the key areas of motor vehicle, sports and occupational health and safety.