45th Annual
Interdisciplinary Spinal Cord Injury/Disease
Course: Biomarkers and Prognostic
Indicators

ONLINE LEARNING
April 28-29, 2022
**45th Annual Interdisciplinary Spinal Cord Injury/Disease Course: Biomarkers and Prognostic Indicators**

The Academy is the not-for-profit educational arm of Shirley Ryan AbilityLab, formerly the Rehabilitation Institute of Chicago (RIC). Since 1953, the Academy has offered a wide range of accredited programs with the common goal of improving patient outcomes through clinical excellence. Our hospital has been ranked the “Best Rehabilitation Hospital in America” for 31 consecutive years, and our commitment to sharing the best evidence and rehabilitation practice with clinicians around the globe has always been an integral part of our mission.

The Academy at Shirley Ryan AbilityLab is committed to creating an inclusive, authentic and comfortable learning environment that celebrates and supports all learners. We are dedicated to providing the highest-quality teaching regardless of race, age, ethnicity, nationality, gender, sexual orientation/identity, ability, religion, language or culture. Above all, we believe that everyone should feel safe, respected and welcomed when attending our programs at the hospital or online. We encourage the sharing of experiences and perspectives so we can learn from one another, and from our varied points of view.

**COURSE DESCRIPTION**

Persons with SCI and their families experience a severe decrease in quality of life due to the physical, social, psychological and financial burden of long-term health care, income loss, and disability. Rehabilitation professionals can have a huge effect in limiting this impact by accurately assessing function and prognosis of disability and focusing the patient and family on attainable goals. This course aims to review research updates in biomarkers to aid the clinician or researcher in making an accurate estimate of prognosis. Prognostic factors from neuroimaging, to blood and systemic physiological markers (such as spasticity and descending connectivity) will be reviewed.

Prognosis prediction is essential for planning rehabilitation programs, setting functional goals, return to community reintegration and organizing financial resources, including insurance coverage. However, predicting long-term outcomes from initial characteristics is a challenging task; there is a pressing need to improve prediction of SCI recovery. At present, the most important factor that predicts neurological recovery is the severity of damage detected by the clinical neurological exam. We will review many of these prognostic factors, but also discuss at length how these markers, indicators and outcome measures can guide effective clinical reasoning in rehabilitation. A panel discussion will focus on resources for return to community reintegration and case studies will help the learner integrate the materials.

**SUCCESSFUL COMPLETION:**

In order to receive contact hours, daily sign in and completion of an on-line evaluation are required.


**WHO SHOULD ATTEND**
Physical Therapists, Physical Therapist Assistants, Occupational Therapists, Occupational Therapy Assistants, Speech Language Pathologists, Nurses who have experience working with this patient population, and Physicians

**COURSE OBJECTIVES**
Upon completion of this course, participants will be able to:

- Describe specific biomarkers used to predict outcomes and recovery following SCI
- Illustrate how a physiological impairment level assessment can guide rehabilitation and answer critical questions surrounding locomotor recovery
- Recognize how issues such as autonomic dysreflexia or labor and delivery can alter the sympathetic and parasympathetic responses in individuals with an SCI
- Discuss ways to facilitate community reintegration for individuals with a spinal cord injury
- Defend how prognostic or ethical factors guide clinical reasoning in a variety of case examples

**COURSE CHAIR**

**Monica A. Perez, PT, PhD**
*Scientific Chair, Arms and Hands AbilityLab, Shirley Ryan AbilityLab*
*Professor, Department of Physical Medicine and Rehabilitation, Northwestern University’s Feinberg School of Medicine*
*Research Scientist, Hines VA*

Dr. Perez received a PhD in physical therapy from the University of Miami School of Medicine. She attended the University of Copenhagen as a post-doctoral fellow where she studied transmission in spinal cord networks. She then completed a postdoctoral fellowship at the Human Motor Human Cortical Physiology and Stroke Neurorehabilitation Section at the National Institutes of Health, where she focused on studies of cortical physiology and plasticity. Her main research interests are in understanding how the brain and spinal cord contribute to the control of voluntary movements in healthy humans and in individuals with spinal cord injury. She uses this mechanistic knowledge to develop rehabilitation therapies following CNS damage.
COURSE COMMITTEE

Kelly Breen, MS, OTR/L

FES lab therapist, Arms & Hands Lab
Research therapist, SMU Lab, Arms & Hands Lab,
Shirley Ryan AbilityLab

David Chen, MD

Section Chief, Spinal Cord Injury, George M.Eisenberg Chair,
Shirley Ryan AbilityLab

Sara Hobbs, PT, DPT

Board-Certified Clinical Specialist in Neurologic Physical Therapy,
Therapy Manager, Spinal Cord Innovation Center,
Shirley Ryan AbilityLab

Amanda Myron Olson, PT, DPT

Board-Certified Clinical Specialist in Neurologic Physical Therapy,
SCI Innovation Center Manager,
Shirley Ryan AbilityLab

Ellen Jo Suerth, BSN RN CRRN ONC

Clinical Nurse Educator, Spinal Cord Innovation Center
Shirley Ryan AbilityLab
COURSE FACULTY (Listed Alphabetically)

*Linda Bambrick, PhD.*
**Program Director at the Division of Neuroscience in Extramural Programs at National Institute of Neurological Disorders and Stroke (NINDS)**

Dr. Bambrick manages a portfolio of grants and cooperative agreements in the areas of spinal cord injury, peripheral nerve injury and axonal regeneration. Dr. Bambrick received her PhD from the University of Alberta studying neural regulation of skeletal muscle membrane properties. Following postdoctoral work on myelination and astrocyte function, Dr. Bambrick joined the University of Maryland, Baltimore in the Department of Physiology with additional appointments in the Department of Anesthesiology and Program in Neuroscience studying brain development and brain responses to chronic and traumatic injury targeting intracellular signaling, energy metabolism and free radical damage. Dr. Bambrick moved on to complete an MA in Science Writing at the Johns Hopkins University before joining GDIT where she managed peer review as a contractor for the Department of Defense Congressionally Directed Medical Research Programs (CDMRP). She then joined the federal government as a Program Manager at CDMRP. In this role, Dr. Bambrick led the Spinal Cord Injury Research Program (SCIRP), developing program priorities, overseeing application receipt, review, and award management, and promoting coordination across funding entities supporting spinal cord injury research. In addition to her primary role in SCIRP, Dr. Bambrick also supported research programs in neuromusculoskeletal injury rehabilitation and led a team of program managers, science officers and analysts in award management and program evaluation projects.

*Christopher Brennan*
**Chairman and President**
**Brennan Rehabilitation Foundation**

The Brennan Rehabilitation Foundation was established in 2019 after Chris became a Tetraplegic himself in 2014. The Foundation is an all volunteer organization committed to helping individuals who have suffered a cervical spinal injury by providing financial assistance during their long road to recovery. The Foundation provides grants through the creation of the Socrates Award, a lifetime cash grant provided to awardees nominated each year. Socrates Award recipients receive monies to be utilized specifically for equipment, prescription drugs, therapy and in-home care services. Prior to starting the Foundation, Chris was Chairman and CEO of TGI Systems Worldwide, a global visual branding company for stadiums, arenas and convention centers. Prior to TGI, Chris held management positions as Chairman, President and/or CEO for several broadcasting, sports media and sport marketing and activation companies. Chris has been awarded 4 United States Patents, inducted into the Chicago Entrepreneurial Hall of Fame, the Irish Business 100 and was a 25 year member of the Young Presidents Organization during his business career. Chris is a graduate of the University of Wisconsin, Madison and received a Master’s in Accounting from De Paul University's Kellstadt School of Business.
**Susan Charlifue, PhD, FISCoS, FASIA, FACRM**  
*Director of the Research Portfolio in the Research Department*  
*Craig Hospital, Englewood Colorado*

Dr. Susan Charlifue (Susie) has 45 years of experience in SCI research and quality assurance, research methodologies, and qualitative methods. She completed her doctorate in Health and Behavioral Science at the University of Colorado, Denver in 2004. She is the current Co-Project Director of the Rocky Mountain Regional Spinal Injury System. She has completed seven major collaborative investigations of the long-term consequences of SCI in the US and Great Britain, and has or is currently serving as PI on studies of caregiving in SCI funded by NIDILRR, the Department of Defense, and the Craig H. Neilsen Foundation. Dr. Charlifue is on the Executive Board and is Chair of the Program Committee of the International Spinal Cord Society (ISCoS). She currently serves the American Spinal Injury Association (ASIA) as Treasurer and will become President-Elect in July of 2022. She has been recognized as a Fellow by ISCoS, ASIA and the American Congress of Rehabilitation Medicine, has authored or co-authored over 120 manuscripts and book chapters.

**Bing Chen, M.D., PhD MEd**  
*Fellow at Shirley Ryan AbilityLab, Chicago, IL, USA.*

Dr. Chen received his PhD and Master of Science degrees in Rehabilitation Sciences and Master of Education degree in Measurement, Evaluation, Statistics and Assessment from the University of Illinois at Chicago, USA. He also received his medical degree at the Southwest Medical University, China. To study the mechanisms of spasticity and other neurophysiological change after human spinal cord injury, he joined the lab of Dr. Monica Perez at Shirley Ryan AbilityLab. His research is focused on the mechanisms of spasticity and non-invasive method to improve motor function after human spinal cord injury.

**Michael Fehlings, MD, PhD, FRCSC, FACS**  
*Professor and Vice Chair of Department of Surgery, University of Toronto*

Dr. Fehlings is currently Professor and Vice Chair of the Department of Surgery at the University of Toronto, full member of the Institute of Medical Sciences School of Graduate Studies, a Scholar in the McLaughlin Centre, a Scientist in the McEwen Centre for Regenerative Medicine, a Senior Scientist at the Toronto Western Research Institute, Co-Director of the University of Toronto Spine Program, Director of the Spinal Program at the Toronto Western Hospital, and Gerald and Tootsie Halbert Chair in Neural Repair and Regeneration at University Health Network. He completed his medical degree and residency at the University of Toronto. Dr. Fehlings became a Fellow of the Royal College of Physicians and Surgeons of Canada in 1990 and a Fellow of the American College of Surgeons in 2006. His main clinical interests are in complex spinal neurosurgery, and he operates a vibrant translationally-oriented research program focused on discovering novel treatments for the injured brain and spinal cord. He has published over 850 peer-reviewed articles (h-index 88) chiefly in the area of central nervous system injury and complex spinal surgery. His seminal 1991 paper, cited over
1400 times, outlined the severe and lasting consequences of SCI due to a cascade of secondary injury mechanisms following the initial trauma. Dr. Fehlings’ recent work demonstrating that midcervical excitatory interneurons are essential for the maintenance of breathing in non-traumatic cervical SCI and critical for promoting respiratory recovery after traumatic SCI was published in Nature.

**Traci Fernandez**  
Founder, Managing Partner, TRYAbility

Traci has owned and operated numerous organizations throughout her career and has held Executive positions at several Fortune 500 companies. Currently, Traci is a Founder and Managing Partner at TRYAbility in Chicago. TRYAbility provides Intensive Activity Based Rehabilitation services to individuals with Paralysis. TRYability’s mission is to help patients optimize their recovery, maintain long term health and foster a connected community. Prior to TRYAbility, Traci was a Founder and President of 3C Compassionate Care Center. As a founder of 3C, Traci successfully opened and operated two of the largest Medical Marijuana dispensaries in Illinois. Traci also was a Founder and President of Operations at iGenMedia, an application software and development company. Before opening iGen, Traci held Technical and Executive roles at Arthur Andersen, IBM and the Tribune Company. Throughout her career, Traci has excelled at both Technical and Executive positions and was twice awarded Employee of the Year for her contributions. Traci received her bachelor’s degree in Information and Decision Sciences from the University of Illinois. In addition to working with U2PF, Traci founded the United Paralysis Organization after becoming paralyzed in 2008 from Transverse Myelitis. Since founding the charity, Traci has worked as an advocate, raising monies to find a cure for neurological conditions and promoting therapies for those with Spinal Cord Injuries.

**Ellen Gamble, Programs Manager, Walkabout Foundation**

Ellen has over five years of experience working in the non-profit sector in the UK and internationally, first starting as an intern at the United Nations Economic and Social Commission for Western Asia in Beirut researching disability and social protection policies in the MENA region, since then she has worked in youth empowerment, mental health and community foundations and now works as the Programmes Manager for Walkabout Foundation since October 2020. Ellen manages Walkabout Foundation’s wheelchair distributions and rehabilitation programmes in the developing world and manages the research programme.

**Margaret “Maggie” Goldberg**  
President and CEO, The Christopher & Dana Reeve Foundation

Maggie leads the only national paralysis-focused organization centered around a dual mission – Today’s Care. Tomorrow’s Cure®. She has served with the Reeve Foundation for more than 20 years, helping drive its mission to cure spinal cord injury by advancing innovative research and improving the quality of life for individuals and families impacted by paralysis. A graduate of the University of Pennsylvania, Maggie has held numerous leadership roles during her tenure at the Foundation, including Chief Operating Officer; Vice President of Policy and Programs, which included overseeing the Foundation’s National Paralysis Resource Center; and Senior Vice President of Marketing.

**Keith Gordon, PhD., ATC, CSCS**  
*Assistant Professor, Physical Therapy and Human Movement Sciences  
Feinberg School of Medicine, Northwestern University  
Research Health Scientist, Edward Hines, Jr. VA Hospital*

Dr. Gordon completed post-doctoral training at the Rehabilitation Institute of Chicago and Northwestern University, Feinberg School of Medicine. He earned a PhD in Kinesiology from the University of Michigan, a master’s degree in Exercise and Nutritional Sciences from San Diego State University and a bachelor’s degree in Exercise Science from U.C. Davis. Dr Gordon is the director of the Human Agility Laboratory. His research focuses on understanding the principles governing neuromechanical control of human locomotion and applying this knowledge to promote walking recovery following spinal cord injury.

**James D. Guest, MD, PhD**  
*Clinical Professor, Department of Neurological Surgery  
The Miami Project to Cure Paralysis*

Dr Guest received his medical degree from the University of Alberta Medical School and neurosurgical residency at the University of British Columbia. He received his PhD in Neuroscience at the Miami Project to Cure Paralysis. The current focus of the Guest lab is on the transplantation of autologous glial cells to repair spinal cord injuries. They utilize several types of animal models with an emphasis on solving translational questions related to human clinical application. They also emphasize minimally-invasive surgical lesion-making and transplantation techniques. Sophisticated outcome assessment techniques are used to evaluate transplant effects in both the acute and chronic state of injury. These include kinematic assessment of hand function and gait, electrophysiologic study of conduction across lesion sites, and sensory testing. Other areas of research include studies of human post-mortem spinal cord tissue, intraoperative human spinal cord conduction studies, and research design for human clinical trials.

**Allison Kessler, MD, MSc**  
*Attending Physician; Spinal Cord Injury Innovation Center  
Shirley Ryan AbilityLab  
Assistant Professor of Physical Medicine and Rehabilitation Northwestern University’s Feinberg School of Medicine*

Dr. Allison Kessler earned her medical degree from Northwestern University’s Feinberg School of Medicine and completed residency training at Northwestern Medicine and the Shirley Ryan Abilitylab. She also completed her fellowship in Spinal Cord Injury Medicine at the Shirley Ryan Abilitylab. Prior to moving to Chicago she completed a Master’s of Science in Biomedicine Bioscience and Society at the London School of Economics and Political Science. Her clinical activities focus on neurorehabilitation with a special interest in spinal cord injury recovery, pregnancy in spinal cord injury,
and adolescent SCI as well as research focused on swimming after spinal cord injury. She is involved in medical education and is a curricular thread leader for the Feinberg School of Medicine.

Michelle Kominiarek, MD, MS
Maternal-Fetal Medicine physician, Northwestern Memorial Hospital and Associate Professor, Department of Obstetrics and Gynecology Northwestern University Feinberg School of Medicine

Dr. Kominiarek received her MD from Rush University Medical Center and then completed training in a residency in Obstetrics and Gynecology and a fellowship in Maternal-Fetal Medicine, both at the University of Illinois at Chicago. Dr. Kominiarek’s clinical and research interests relate to nutrition, physical activity, and gestational weight gain during pregnancy. Dr. Kominiarek is nationally known for her expertise in pregnancies complicated by obesity and pregnancies that occur after bariatric surgery. Other areas of interest include fetal growth abnormalities, labor abnormalities, postpartum hemorrhage as well as pregnancies complicated by spinal cord injury, diabetes, hypertension, and thrombophilias. Dr. Kominiarek’s research also focuses on prenatal care models and health disparities. She is an active member of the American College of Obstetricians and Gynecologists and the Society for Maternal-Fetal Medicine.

Andrei Krassioukov, MD, PhD, FRCPC
Professor, Department of Medicine, Division of Physical Medicine and Rehabilitation, University of British Columbia
Staff Physician, Spinal Cord Injury Program, Physical Medicine and Rehabilitation, Vancouver Acute (GF Strong)
Associate Director & Scientist, Rehabilitation, International Collaboration on Repair Discoveries (ICORD), UBC, Vancouver, BC, Canada

Professor Krassioukov is a clinician-scientist and an internationally recognized leading expert in the area of autonomic dysfunctions following spinal cord injury (SCI). He obtained his MD degree in Russia, followed by PhD at the Ivan Pavlov Institute of Physiology, St Petersburg, Russia. Dr. Krassioukov holds an endowed Chair in Spinal Cord Rehabilitation Research, UBC. Globally he is involved in leading organizations with focus on SCI, including: Chair of the International Autonomic Standards Committee for the American Spinal Injury Association and International Spinal Cord Society (ASIA/ISCoS); Member of ISCoS Council; President of American Spinal Injury Association (ASIA). Dr. Krassioukov’s research is supported by grants from the Canadian Institute for Health Research, Canadian Heart and Stroke Foundation, Canadian Foundation for Innovation, Rick Hansen Institute, H. Craig Neilsen Foundation, Christopher and Dana Reeve Foundation, Wings for Life and many others. He has published more than 290 peer-reviewed manuscripts, books, book chapters and reviews. He is a member of numerous advisory boards for the international agencies involved in research in the area of SCI and disability. Dr. Krassioukov’s work in the area of SCI has been recognized through numerous national and international awards including the inaugural Alan Brown Award from ASIA. In recognition of his research excellence and leadership he was elected as a fellow of the Canadian Academy of Health Sciences.
Brian K. Kwon, MD, PhD, FRCSC
Canada Research Chair in Spinal Cord Injury & Dvorak Chair in Spine Trauma
Professor, Department of Orthopaedics, University of British Columbia
Associate Director, International Collaboration on Repair Discoveries (ICORD)

Dr. Brian Kwon is an attending spine surgeon at Vancouver General Hospital, and serves as the Director of Research for the Vancouver Spine Program. As a surgeon-scientist and the current Chair of the AO Spine Knowledge Forum in Spinal Cord Injury, he is particularly interested in the bi-directional process of translational research for spinal cord injury, and he leads a research program focused on translation at ICORD. He has worked extensively on establishing biomarkers of human SCI to understand the biology of human injury and to better stratify injury severity and improve the prediction of neurologic outcome. Dr. Kwon has led the development of a novel large animal model of SCI and is utilizing this for both bench-to-bedside and bedside-back-to-bench translational studies. In 2020, for his significant contributions to the SCI community, Dr. Kwon was honoured by the Craig H. Neilsen Foundation with their inaugural Visionary Prize and an unrestricted cash prize of US$1million.

Martin Oudega, PhD
Professor, PTHMS and Neuroscience, Northwestern University
Research Scientist, Shirley Ryan AbilityLab
Research Health Scientist, Hines VA Hospital

Martin received his PhD in Medical Biology from the University of Leiden in Leiden, the Netherlands, and completed postdoctoral fellowships in Neurobiology at the University of California at San Diego, La Jolla, CA and at the Miami Project to Cure Paralysis at the University of Miami School of Medicine, Miami, FL. He was faculty at the University of Miami, Miami, FL, Johns Hopkins University School of Medicine, Baltimore, MD, and the University of Pittsburgh, Pittsburgh, PA. Martin directed the Animal Injury and Repair laboratory at the International Center for Spinal Cord Injury at The Kennedy Krieger Institute in Baltimore, MD and the Spinal Cord Repair Laboratory at the University of Pittsburgh, Pittsburgh, PA. Martin was the leading editor of a special issue on Experimental Strategies to Repair the Injured Spinal Cord published by the Journal of Neurotrauma. He served on national and international advisory boards, planning groups, study sections, and continues to reviews for numerous journals. The Oudega Laboratory investigates the efficacy of cellular transplants, tailor-made biomaterials, and plasticity-mediating approaches to elicit anatomical repair in the damaged spinal cord. Martin has a special interest in the role of inflammation and vascularization in spinal cord injury and repair. The overall goal of his research is to develop spinal cord repair strategies for translation into the clinic.
Sina Sangari PhD  
Post doctoral Associate at Shirley Ryan AbilityLab, Chicago, IL, USA.

Dr Sangari received his PhD and Master of Science degrees in Neuroscience from University Pierre and Marie Curie (Paris, France) during which he acquired expertises in neurophysiology and electrophysiology in humans. To study the contribution of descending motor pathways in spasticity and recovery in individuals with spinal cord injury, he joined the lab of Dr. Monica Perez. His research is focused on understanding the mechanisms underlying spasticity and functional recovery and their relations in humans after spinal cord injury.

Andrew C. Smith, PT, DPT, PhD  
Director of the Spinal Cord Injury Imaging Research Lab (SCIRL)  
Assistant Professor, CU Physical Therapy Program  
Department of Physical Medicine and Rehabilitation  
University of Colorado Anschutz Medical Campus | School of Medicine

Dr. Andrew C. Smith is a rehabilitation scientist whose primary interest is improving the assessment and clinical management of individuals with spinal cord injury. Dr. Smith’s secondary interest is in the quantification and characterization of skeletal muscle in health and disease states. Current research activities include: using medical imaging to investigate the extent of spinal cord injury and its impact on motor and sensory function, using magnetic resonance imaging to improve the mechanistic understanding of responsiveness to spinal cord stimulation in individuals with spinal cord injury, and convolutional neural networks to automate segmentation processes of neuromusculoskeletal imaging.

Keith E. Tansey, MD, PhD, FASNR, FASIA,  
Professor, Neurosurgery and Neurobiology, University of Mississippi Medical Center  
Senior Scientist, NeuroRobotics Lab, Methodist Rehabilitation Center  
Physician, Spinal Cord Injury, Jackson VA Medical Center

Dr. Tansey has been board-certified in Neurology, Spinal Cord Injury Medicine, and Neural Repair and Rehabilitation. He has served on the boards of the American Society for Neurorehabilitation (Fellow), and the American Spinal Injury Association (Past-President and Fellow). Early on, Dr. Tansey developed an inpatient spinal cord injury consultation service and he now provides care in the outpatient clinic setting. Dr. Tansey has directed a first-year medical school neuroscience course and has won awards for his teaching both at the lectern and the bedside. With colleagues from Heidelberg, Dr. Tansey also edited a textbook, “Neurological Aspects of Spinal Cord Injury” (Springer). Dr. Tansey has studied plasticity in neural circuits for pain, autonomic function, locomotion, and upper extremity function in animal models and humans after spinal cord injury, with an interest in shaping that plasticity to improve functional recovery.
Dr. Tysseling earned a MPT from the University of Iowa and a PhD in Neuroscience from Northwestern University. She also completed post-doctoral training at Northwestern University, Feinberg School of Medicine. Dr Tysseling’s research uses both in vivo and in vitro approaches to identify spinal excitability changes post spinal cord injury that underlie involuntary muscle contractions, and to investigate how these changes affect volitional movement post incomplete injury.

**SMALL CASE DISCUSSION FACILITATORS**

*Shoshana Clark, PT, DPT, NCS*
Clinical Specialist in Neurologic Physical Therapy, Physical Therapist, 22nd floor Spinal Cord Innovation Center; Clinical Assessor, Neuromodulation and Motor Control Lab

*Kristen Forand, M.A., CCC-SLP*
Senior Speech and Language Pathologist – Spinal Cord Injury Innovation Center
Allied Health Training and Orientation Manager – Staff Development

*Amy Pietro, OTD, OTR/L*
Senior Occupational Therapist – Spinal Cord Injury Innovation Center

*Preya Tarsney, JD*
Bioethicist, Donnelley Ethics Program, Shirley Ryan AbilityLab; Instructor, Physical Medicine & Rehabilitation, Northwestern University Feinberg School of Medicine

**AGENDA**

**Thursday, April 28, 2022**

8:00  **Expectations and Introduction to prognostic factors and biomarkers**

8:15  **Can neurophysiological tests inform recovery prediction in therapeutics clinical trials after complete SCI?**
James David Guest, MD

8:45  **Role of spasticity in neurological recovery**
Monica A. Perez, PT, PhD

9:15  **Neurochemical biomarkers of SCI**
Brian Kwon, MD

9:45  **Discussion**
Choose a Workshop Track:

10:45  **A. Physiological impairment level assessment**  
Bing Chen, M.D., PhD, ME & Sina Sangari, PhD

**B. The application of imaging for prognosis and treatment of SCI**  
Andrew C. Smith, PT, DPT, PhD

**C. Conducting clinical research in the SCI population**  
Keith Gordon, PhD, ATC, CSCS & Monica A. Perez, PT, PhD & Vicki Tysseling, PT, PhD

12:45  **Lunch**

1:45  **Clinical predictors of recovery after subacute Spinal Cord Injury**  
Sara Hobbs, PT, DPT & Amanda Myron Olson, PT, DPT

2:30  **Case study problem solving (small group session) (Choose 2 of 4)**  
† Faculty from Shirley Ryan AbilityLab leading small groups  
Shoshana Clark, Kristen Forand, Amy Pietro, Preya Tarsney

4:30  **Conclusion Day 1**

**Friday, April 29, 2022**

8:00  **Reflection and Learning Summary**

8:15  **Advances in prognostication of outcome on acute traumatic spinal cord injury**  
Michael Fehlings, MD

8:45  **Perceptions of biomarkers – what are you doing with my tissue?**  
Susan Charlifue, PhD, FISCoS, FASIA, FACRM

9:15  **Role of the ISNCSCI exam in predicting recovery**  
Keith E. Tansey, M.D., PhD, FASNR, FASIA

9:45  **Discussion**  
Moderator: David Chen, MD

10:15  **Break**

10:45  **Autonomic Dysreflexia / Sympathetic and Parasympathetic*  
Andrei Krassioukov, MD, PhD, FRCPC

11:15  **Pregnancy after Spinal Cord Injury: What are the risks and how to optimize outcomes*  
Michelle Kominiarek, MD
Discussion *
Moderator: Allison Kessler, MD, MSc

Lunch

Panel Discussion: Return to community reintegration & availability of resources
Panelists: Linda Bambrick, Chris Brennan, Ellen Gamble, Maggie Goldberg
Moderator: Traci Fernandez

Overview and Wrap Up
Monica Perez, PT, PhD / Melissa Kolski

Course Conclusion

* NOTE: 3 sessions from 10:45 – 12:15 are not available for ASHA CEUs

Workshop title: Physiological Impairment Level Assessment

In this online lab, participants will have an opportunity to review different assessments that are important in patients with SCI/D. Each demonstration will review outcomes focusing on sensory function and dermatome assessment, spasticity assessment using a portable dynamometer, and transcranial magnetic stimulation (TMS) and use of vibration in conjunction with stretching. The session will feature both demonstration and instruction with cases.

Faculty: Bing Chen, M.D., Ph.D. MEd & Sina Sangari, PhD

Workshop title: The Application of Imaging for Prognosis and Treatment of SCI

Lab Description: This lab session will give an overview on the use of MRI for aiding and informing our treatment of patients with SCI. The workshop will provide a basic understanding of imaging can be used in clinical practice. Participants will be invited to break into smaller breakout groups to have a more interactive session applying the session to interpretation of MRI.

Faculty: Andrew C. Smith, PT, DPT, PhD

Workshop title: Conducting Clinical Research in the SCI Population

This online lab will focus on the critical issues that clinicians and researchers face when considering how to conduct clinical research in the population of individuals with a spinal cord injury. Three leading experts in different aspects of SCI research will discuss how to optimize your clinical questions. Areas addressed include grant writing, patient selection (inclusion/exclusion), research methodology such as selection of assessments and implementation of assessments to next steps in SCI research.

Faculty: Monica Perez, PT, PhD & Keith Gordon, PhD, ATC, CSCS & Vicki Tysseling, PT, PhD
CANCELLATION POLICY
All cancellations must be in writing. Refunds less a 20% administrative charge will be given until March 31, 2022. The Academy reserves the right to cancel or change any programs for due cause. Cancellation of a program by the Academy will result in a full refund of tuition. The Academy is not responsible for the refund of travel or hotel expenses under any circumstance.

IMPORTANT REGISTRATION INFORMATION
Registrations will be taken in the order in which tuition checks or credit card information is received. We highly encourage you to register online as these are processed more quickly than mailed or faxed registrations. Full Tuition must accompany the registration form in order to confirm a place in this course. Until you receive your confirmation letter, you are not officially registered for the course. For online registrations, you will receive email confirmation on the day that you register. For registrations received by standard mail or fax, the confirmation may take up to 3 weeks after we receive your registrations. If you do not receive confirmation within this period, please call 312-238-6042.

One week prior to the course, only internet registrations and faxed registrations that include an email will be accepted. Please note that the course could reach its maximum enrollment before this time.

LOCATION
The program will be held online.

Teaching modality/Delivery method
This course is taught virtually using Zoom, an online meeting platform, and the Academy Learning Portal, and other online learning materials.

TECHNOLOGY REQUIREMENTS
To participate, you will need access to a computer with an Internet connection. High-speed broadband access (LAN, Cable or DSL) is highly recommended.

- Internet connection: broadband wired or wireless (3G or 4G/LTE)
- Web browser:
  - Apple Safari: Latest stable version
  - Google Chrome: Latest stable version
  - Mozilla Firefox: Latest stable version
  - Microsoft Edge: Latest stable version
- JavaScript and Cookies enabled
- Flash Player 9+
- Speaker or headset to listen to audio files and participate in Zoom calls
- Do NOT use Internet Explorer or Microsoft Edge, as they are not supported.

ACCESSIBILITY
Please contact the Academy if you require special accommodations for this course.
CONTINUING EDUCATION CREDIT

Nursing

The Shirley Ryan AbilityLab (P0609-11/30/2022) is accredited as a provider of nursing continuing professional development by the American Nurses Credentialing Center’s Commission on Accreditation. This CNE is being offered for 12.75 contact hours of continuing nursing education.

Occupational Therapy

Shirley Ryan AbilityLab is an AOTA Approved Provider of professional development. Course approval ID# 03763. This distance learning-interactive course is offered at 12.5 contact hours, 1.25 CEUs [intermediate level, Foundational Knowledge/OT Service Delivery]. AOTA does not endorse specific course content, products, or clinical procedures.

Physical Therapy

This two-day course has been approved by the Illinois Physical Therapy Board for 12.5 contact Hours. Approval #216-000069

The Shirley Ryan AbilityLab is recognized by the New York State Education Department’s State Board for Physical Therapy as an approved provider of physical therapy and physical therapist assistant continuing education. This two-day course has been approved for 12.5 Contact Hours.

The following states require continuing education units with no state specific approval: CT, IA, and WA

Physician

The Rehabilitation Institute of Chicago DBA Shirley Ryan AbilityLab is accredited by the Illinois State Medical Society (ISMS) to provide continuing medical education for physicians.

The Rehabilitation Institute of Chicago DBA Shirley Ryan AbilityLab designates this live activity for a maximum of 12.75 AMA PRA Category 1 Credit(s)™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Speech-Language Pathology

Rehabilitation Institute of Chicago
dba Shirley Ryan AbilityLab

Intermediate Level
1.10 ASHA CEUs
FACULTY DISCLOSURES:
https://ricacademy.sharefile.com/d-s34ee5242040a44138921d98129b69099
The Academy would like to extend a special thank you to the following supporters of this educational program:

Premier Title Sponsor

AbbVie

Gold Level Sponsor

Edward Hines, Jr.
Veteran’s Affairs Hospital

We would also like to thank Merz for their educational grant which supports the Academy at the Shirley Ryan AbilityLab and helps us pull together programs such as this.

Please note: None of these organizations have input in the planning or delivery of this course.
**Early Bird Registration Fee by March 17, 2022** | **$200**
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**Registration Fee After March 17, 2022** | **$250**

**SELECT A WORKSHOP**

A. **Physiological impairment level assessment**  
Bing Chen, M.D., PhD MEd & Sina Sangari, PhD

B. **The Application of Imaging for Prognosis and Treatment of SCI**  
Andrew C. Smith, PT, DPT, PhD

C. **How to address clinical research in the SCI population?**  
Monica A. Perez, PT, PhD & Keith Gordon, PhD, ATC, CSCS & Vicki Tysseling, PT, PhD

Questions? Contact Melissa Kolski, at mkolski@sralab.org or 312-238-7731

**Mail to:**  
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355 E. Erie Street, Suite 12-West  
Chicago, Illinois 60611

Please TYPE or PRINT your name and professional initials (MD, OT, PT, RN, etc.) as you would like them to appear on your continuing education certificate.

First Name _______________________________ Last Name ____________________________________________________________________________

Home Phone ( ) __________________ Prof. Initials ____________________________________________________________________________

Home Address ____________________________________________________________________________

City ______________________________________ State ________ Zip __________

Organization/Facility ____________________________________________________________________

Work Address __________________________________________________________________________

City ______________________________________ State ________ Zip __________

Work Phone ( ) __________________ Fax ( ) ____________________________________________

Position ______________________________________________________________________________

E-mail (required) ________________________________________________________________

Please note: registration will not be processed without full payment.

Method of Payment:  
☐ Check enclosed (Payable to: Shirley Ryan AbilityLab)  
☐ Credit Card

Credit Card Users Must Complete the Following Information:

☐ MasterCard  
☐ VISA  
☐ American Express

Credit Card # ___________________________ Expiration Date __/____ CVV _______ (security code on back of card)

Name on Card ________________________________________________________________

Billing Address ________________________________________________________________

City ______________________________________ State ________ Zip __________

Cardholder’s Signature __________________________________________________________________

Credit card registrations may be mailed or faxed to: 312-238-4451.