3rd Annual Spinal Column and Cord Symposium

Beyond 2020: Envisioning Future Treatment of Spinal Column and Cord Injury

May 15, 2020
Shirley Ryan AbilityLab
355 East Erie Street
Chicago, IL 60611
Beyond 2020:
Envisioning Future Treatment of Spinal Column and Cord Injury

Jointly Provided by Northwestern University Feinberg School of Medicine and Shirley Ryan AbilityLab.

COURSE DESCRIPTION

Spinal column and spinal cord injury (SCI) have a devastating impact on the lives of patients. Often affecting a predominantly male demographic between the ages of 25-35, damage to these processes affect those in the prime of their life. In the United States, the annual incidence of spinal cord injury is 40-50 cases per 1,000,000 resulting in 17,000 new cases per year. The healthcare costs associated with this group is not insignificant; estimates range from $350,000 to $1,065,000 for the first year following injury and from $40,000 to $185,000 for each subsequent year. Surgical treatments for spinal column injury offer the potential to reduce these costs.

Advances in the medical and surgical treatment of those with spinal column and cord injury have been made; it is anticipated that evolving treatments will allow for optimization of neural recovery and function.

Join national and international experts in the fields of Physical Medicine and Rehabilitation, Orthopedic Surgery, and Neurosurgery as we explore current and future direction in the treatment of these devastating diseases.

The educational gap will be addressed by demonstrating latest paradigms and interventions for traumatic injuries of the spinal column and cord and the value afforded by medical treatment and surgical intervention.

The topics chosen for this course are based on needs assessment from previous national meetings and review of current literature. At national, local, and institutional levels, there is recognition that spinal column and cord injury are a devastating occurrence; medical and surgical advances offer the possibility of neural recovery. A multidisciplinary approach, spanning from the bedside to the operating room, from the laboratory to the rehabilitation hospital provides cutting edge care in 2020 and beyond.

WHO SHOULD ATTEND

Neurosurgeons, Trauma Surgeons, Orthopedic surgeons, Physiatrists, Nurse Practitioners, Physician Assistants, Registered Nurses, Physical Therapists, and Occupational Therapists

COURSE OBJECTIVES

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

- Identify past and current strategies utilized to aid in recovery after traumatic spinal cord injury (SCI)
- Discuss neuroplasticity after human spinal cord injury
- Describe neuroprotective strategies for spinal cord injury, including the benefits of modest hypothermia.
- Identify cell transplantation strategies including stem cells/Schwann cells for SCI
• Describe the challenges of peripheral nerve repair with long segment defects and the role of autologous Schwann cell transplantation
• Describe treatment strategies and outcomes for the treatment of type II odontoid fractures in various patient populations
• Identify applications of basic and clinical research to surgical treatment of spinal cord injured patients
• Discuss the key roles for serotonin and BDNF following exposure to intermittent hypoxia in patients with incomplete spinal cord injury

SYMPOSIUM CHAIRS

Aruna Ganju, MD, FAANS, FACS
Dr. Ganju is an Associate Professor of Neurological Surgery and Orthopaedic Surgery at Northwestern Medicine. She is a past Chair of the American Association of Neurological Surgeons/Congress of Neurological Surgeons Section on Women in Neurosurgery and Associate Editor of the AANS Neurosurgeon, an online publication. She is a past Residency Program Director and Clerkship Director in the Department of Neurological Surgery at Northwestern University Feinberg School of Medicine. Her clinical practice includes surgical treatment of acute and delayed sequelae of spinal column and cord injury with a special interest in post-traumatic syringomyelia and tethered cord. She has received the Northwestern University Feinberg School of Medicine Outstanding Teacher Award many times, including most recently in 2016 and 2017.

Monica Rho, MD
Dr. Rho is Chief of Musculoskeletal Medicine and the Director of Residency Training at Shirley Ryan AbilityLab. She is an Associate Professor of Physical Medicine and Rehabilitation at Northwestern University, Feinberg School of Medicine. She has completed a National Institutes of Health (NIH) K12 grant to investigate the neuromuscular control of the hip in femoroacetabular impingment. She is the Team Physician for the US Women’s National Soccer Team and travelled to the 2019 Women’s World Cup in France where they became World Champions. She has also served as the Team Physician for the Men's Paralympic Soccer team at the Rio Paralympics in 2016. She previously was the company physician for the Joffrey Ballet in Chicago. She is the 2015 recipient of the "Best Teachers of Feinberg" Award at Northwestern University Feinberg School of Medicine.

David Chen, MD
Dr. Chen is the Section Chief of Spinal Cord Injury at the Shirley Ryan AbilityLab. As the project director for the Midwest Regional Spinal Cord Injury Care System (MRSCICS), a federal program of the National Institute on Disability, Independent Living and Rehabilitation Research (NIDILRR) which designates RIC one of 14 model systems of care in the U.S., he leads investigators in the study of robotic walking therapy and bringing promising treatments from the laboratory to clinical trial phase to improve patient outcomes. Dr. Chen has published over 35 articles in peer-reviewed journals and 10 chapters in medical textbooks on various subjects related to spinal cord medicine.
**FACULTY**

**Nader S. Dahdaleh, MD, FAANS**
Dr. Dahdaleh obtained his undergraduate degree in biology graduating with distinction and his medical degree graduating with merit and ranking first in his class both from the American University of Beirut. He completed his training in Neurological surgery at the University of Iowa Hospitals and Clinics. Subsequently, he completed an adult deformity fellowship in the Department of Orthopedics at the University of Iowa Hospitals and Clinics and a minimally invasive spine fellowship at Northwestern University, Feinberg School of Medicine. He has over 120 peer-reviewed papers and book chapters and has published in high profile journals including: Nature Neuroscience, Cell, Proceedings of the National Academy of Sciences, American Journal of Human Genetics, Journal of Neurosurgery and Spine. He has special interest in minimally invasive spine surgery, spinal trauma, disorders affecting the craniovertebral junction, spine biomechanics, and gait analysis.

**Michael Fehlings, MD, PhD, FRSC, FACS**
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.

**Jim Harrop, MD, FAANS, FACS**
Dr. Harrop is a Professor at the Farber Institute for Neuroscience, Chief of the Division of Spine and Peripheral Nerve Surgery at Jefferson University Health, Neurosurgery Director of Delaware Valley SCI Center, and Neurosurgery Director for Adult Reconstructive Spine. Dr. Harrop received his medical degree from Jefferson Medical College. He completed his internship and residency at Thomas Jefferson University Hospital and his fellowship at Cleveland Clinic. His body of research includes several SCI trials that explore how different modalities including stem cells, pharmacology, hypothermia, and electric stimulation, can improve quality of life. In addition, he has examined the optimal treatment time for patients and whether synergistic affects can be obtained.
Wellington K. Hsu, MD
Dr. Hsu, Clifford C. Raisbeck Professor of Orthopaedic Surgery, has joint appointments in the Departments of Orthopaedic Surgery and Neurological Surgery at Northwestern University Feinberg School of Medicine. Dr. Hsu has been recognized as an international leader in the operative treatment of cervical and lumbar spinal disorders. He heads a number of programs within Northwestern University Feinberg School of Medicine and serves as director of research for the Musculoskeletal Institute at Northwestern Memorial Hospital. Dr. Hsu and his wife, Erin L. Hsu, PhD, Research Associate Professor in Orthopaedic Surgery at Feinberg, run the Laboratory for Regenerative Technologies, which focuses on developing novel modalities for bone tissue engineering using combinatorial approaches involving stem cells, nanotechnologies, 3D printing, and osteoinductive growth factors. A second major research arm focuses on mechanisms of bone toxicology with particular emphasis on the inhibition of bone healing and spine fusion by cigarette smoke constituents. As a part of his clinical research program, Dr. Hsu founded the Professional Athlete Spine Initiative, which retrospectively studies clinical outcomes in elite professional athletes after spine surgery. He has been widely interviewed for his expertise in outcomes of high-performance athletes. Dr. Hsu's clinical areas of focus include minimally invasive degenerative spine surgery, cervical spine surgery, spine trauma/spinal cord injury, spine tumors, and spine infections.

Tyler Koski, MD, FAANS
Dr. Koski is the Director of Spinal Neurosurgery in the Northwestern University Feinberg School of Medicine Department of Neurosurgery and at Northwestern Memorial Hospital. Dr. Koski has a strong interest in adult spinal deformity, spine tumors, and complex revision surgeries. He is actively involved in research focused on patient outcomes, spinal sagittal alignment, and quality of life in adults with spine deformity.

Allan D. Levi, MD, PhD, FAANS, FACS
Dr. Levi is a tenured Professor and Chair of Neurosurgery at the University of Miami School of Medicine. His clinical practice focuses on complex spinal cord, spine and peripheral nerve disorders. While at the University of Miami for the last 25 years, he has completed a PhD in neurosciences. He graduated from the University of Ottawa Medical School, completed his residency at the University of Toronto and a spine fellowship at the Barrow Neurological Institute in Phoenix. He has served as national director of the AANS Oral Board course for the last 12 years. He is an elected member of the American Academy of Neurosurgery and the Senior Society of Neurological Surgeons. His clinical research interests have focused on developing cellular transplantation strategies to repair injuries within both the human central and peripheral nervous system. His current research interests involve (1) intravascular hypothermia after human cervical spinal cord injury (2) an FDA approved trial of “The Safety of Autologous Human Schwann Cells in Subjects with a. Sub-acute Spinal Cord Injury (SCI)” and b. chronic SCI (3) a Phase II Proof-of-Concept Study of the Safety and Efficacy of HuCNS-Stem Cell Transplantation in Cervical SCI (4) the clinical development and characterization of the use of autologous human Schwann cells for peripheral nerve injuries with a lengthy gap.
Alpesh A. Patel, MD, FACS
Dr. Patel, MD, FACS is the Director of Orthopedic Spine Surgery at Northwestern University Feinberg School of Medicine and Northwestern Memorial Hospital. He has fellowship training in both Orthopaedic Spine Surgery and Neurosurgery. His experience and research include the areas of cervical spine surgery, cervical myelopathy, herniated discs, minimally invasive surgery, spine trauma and spinal cord injuries. He is known for his clinical research on patient outcomes, efficacy and value of spine care, genetics of spinal disease, and injuries of the spine and spinal cord.

Monica Perez, PT, PhD
Dr. Perez is the Scientific Chair of the Arms and Hands AbilityLab at Shirley Ryan AbilityLab. She received a Ph.D. in physical therapy from the University of Miami Miller 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 individuals and those with spinal cord injury in order to develop rehabilitation therapies following CNS damage.

Zev Rymer, MD, PhD
Dr. Rymer is the Director of the Single Motor Unit Laboratory at Shirley Ryan AbilityLab. He received his medical training from the University of Melbourne and his Ph.D. in Neuroscience from Monash University. He served as the Vice President for Research and the John G. Searle Chair of Rehabilitation Research. Dr. Rymer currently has appointments as Professor of PM&R, Physiology, and Biomedical Engineering at Northwestern University. His research concerns the neural control and biomechanics of movement in human and animal models, and the disturbances of voluntary movement and their origins in people with neurological disabilities. He is currently Project Director of a NIDILRR-funded multi-center clinical trial to evaluate the efficacy of intermittent hypoxia therapy in individuals with spinal cord injury.
Jean-Paul Wolinsky, MD, FAANS

Dr. Wolinsky is an international expert in the treatment of tumors of the spine, spinal canal and spinal cord. He has a vast experience in spondylectomies and sacrectomies for en bloc resections of primary tumors of the spine. He is a surgical innovator, refining and developing new surgical techniques to decrease surgical morbidity, optimize tumor resection, and improve patient outcomes. He has a particular interest in chordoma, a rare (1 in 1,000,000 people) malignant tumor that affects the spine, sacrum and skull base.; in 2017, he established the Chordoma Center multidisciplinary team at Northwestern Memorial. He leads the Northwestern Neurosurgical Innovations Laboratory that works to improve surgery through development of new surgical techniques, instruments and development of robotic applications for neurosurgery.
AGENDA

Friday, May 15, 2020

8:00 am  Introduction to Course

8:15 am  Advances in the Pathobiology and Management of Degenerative Cervical Myelopathy: From Molecule to Human
           Michael Fehlings, MD, PhD, FRCSC, FACS

9:00 am  Point/counterpoint – Type II Odontoid Fracture
           Moderator: Aruna Ganju, MD
           Panelists: Nadar Dahdeleh, MD and Wellington Hsu, MD

9:45 am  Break

10:00 am Novel Treatment Strategies in Spinal Cord and Peripheral Nerve Injury
           Allen Levi, MD, PhD, FACS

10:45 am Neuroplasticity after Human Spinal Cord Injury
           Monica Perez, PT, PhD

11:15 am Case Study – From Surgery through Rehabilitation
           Moderator: David Chen, MD

12:00 pm Networking Lunch (provided)

1:00 pm Translations in Spinal Cord Injury: How Are We Doing?
           Jim Harrop, MD

2:00 pm Case Review for Spinal Cord Injury
           Moderator: Aruna Ganju, MD
           Panelists: Michael Fehlings, Allen Levi and Jim Harrop

2:30 pm  Break

2:45 pm  Acute Intermittent Hypoxia as a Novel Therapy to Enhance Recovery after Incomplete Spinal Cord Injury
           Zev Rymer, MD, Ph.D.

3:15 pm  Retrospective Visions: Lessons from Mistakes
           Moderator: Monica Rho, MD
           Panelists: Tyler Koski, MD, Alpesh Patel MD and Jean-Paul Wolinsky, MD

3:45 pm  Wrap-up

4 – 5 pm  Cocktail hour
TUITION FOR 6.5 CEU/CMEs

| Early Bird Registration (Up to Jan 31, 2020) | $200 |
| Registration Fee (after Jan 31, 2020) | $300 |

LOCATION

The program will be held at the Shirley Ryan AbilityLab. The conference site is wheelchair accessible. Accessible materials, sign language interpretation and personal assistance are available with at least 45-days advance notice.

HOUSING

Rooms have been reserved at the Hyatt Centric Chicago Magnificent Mile, 633 North St. Clair, Chicago, Illinois, 60611.

The Hyatt Centric Chicago Magnificent Mile is located 1½ blocks from the Shirley Ryan AbilityLab. Please contact their reservation agent from 9:00 am until 5:00 pm at (888) 591-1234 and ask for the Shirley Ryan AbilityLab Beyond 2020 Envisioning Future Treatment course (Group Code G-EFTC) or make your reservation online using this link: https://www.hyatt.com/en-US/group-booking/CHIMM/G-EFTC. The corporate rate is $229.00 for a Deluxe Guestroom (single or double occupancy) plus *17.4% tax. The daily rate for parking at the Hyatt Chicago is *$69.00/day with in and out privileges. The cut-off date for room reservations is April 16, 2020. Please note that the room block could reach its maximum before the cut-off date. Rooms and rates revert to a space-available basis after the room block has reached its maximum or after the cut-off date (whichever comes first.) *The rates for parking and taxes are subject to change without advanced notice.

CANCELLATION POLICY

All cancellations must be in writing. Refunds less a 20% administrative charge will be given until May 1, 2020. 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 time period, please call 312-238-6042.

Do not make airline reservations that have cancellation penalties until we confirm your registration. However, you should make hotel reservations as soon as possible.

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.
CONTINUING EDUCATION AND CONTINUING MEDICAL EDUCATION CREDIT

Nursing
The Shirley Ryan AbilityLab is an approved provider of continuing nursing education by the Ohio Nurses Association, an accredited approver by the American Nurses Credentialing Center’s Commission on Accreditation. (OBN-001-91) (OH-362- 9/01/2020).

Occupational Therapy
The Shirley Ryan AbilityLab is an approved provider for the American Occupational Therapy Association to offer continuing education in occupational therapy. This one-day intermediate level program awards occupational therapists .65 CEUs or 6.5 contact hours. The assignment of AOTA CEUs does not imply endorsement of specific course content, products, or clinical procedures by AOTA. AOTA CLASSIFICATION CODE: CATEGORY 2: Occupational Therapy Process – Intervention & Outcomes

Physical Therapy
This course has been approved by the Illinois Physical Therapy Board for 6.50 Contact Hours.

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 three-day course has been approved for 6.50 Contact Hours.

Physicians
Accreditation Statement: The Northwestern University Feinberg School of Medicine is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

Credit Designation Statement: The Northwestern University Feinberg School of Medicine designates this live activity for a maximum of 6.5 AMA PRA Category 1Credit(s)™. Physicians should claim only credit commensurate with the extent of their participation in the activity.
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Early Bird Tuition: $200 Until January 31, 2020
After Jan 31st Tuition: $300

Mail to: Academy
Shirley Ryan AbilityLab
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.

Register Online at www.sralab.org or complete the form below and return with payment