

## 2024 ANNUAL SCIENTIFIC MEETING

San Juan Puerto Rico

MAY 21 - 23 • PRECOURSE MAY 20



## Restorative Healing.

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## **PRECOURSE 1**

#### MONDAY

### MAY 20, 2024 • Americas – DME State of SCI

Click Here for Abstract

Session Time (Atlantic ST)	Location: San Crisotbal D			
8:00 AM - 8:05 AM	Intro: Isaac Henandez	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
8:05 AM - 9:05 AM	ADLs • Moderator: Ronald Reeves, MD	Presenters		
	Where Do I Begin? Selecting and Prioritizing AT and DME Throughout the Rehabilitation Continuum	Keara McNair, MS, OTR/L, BCPR, ATP		
	Equipment for ADLs for People with Cervical SCI: Challenges, Knowledge and Creativity from a User Clinician Perspective	Marcelo Ullua, PT		
	Occupational Therapy Interventions for Autonomy: Our Argentinian Experience in the Use of DME	Mariana Bonetto, OT		
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Q&A	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
9:10 AM - 10:10 AM	WCs and Cushions • Moderator: Ronald Reeves, MD	Presenters		
	Seating Success: Tailoring Wheelchair and Cushion Solutions for Spinal Cord Injury Patients	Erika Gosai, MD		
	Wheelchairs and Cushions: A Mexican Perspective	Isaac Perez, PhD		
	Seating and Mobility in Cervical SCI: Frequent Problems and Creative Ideas to Solve them in a Developing Country Q&A	Josefina Martinez Paz, PT		
10:10 AM - 10:25 AM	Break (15 minutes)	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
10:25 AM - 11:25 AM	Transfers • Moderator: Steffen Franz, MD	Presenters		
	Seamless Shifts: Navigating Durable Medical Equipment for Smooth Transfers in SCI	Niña Tamayo DO, MS, MPH		
	Selecting and Recommending Transfer Type and Equipment Based on Prognostic Indicators	Keara McNair, MS, OTR/L, BCPR, ATP		
	Transfer Devices: A Mexican Perspective	Marlene Rodriguez Barragan, MD, MSc		
	Q&A			
11:30 AM - 12:30 PM	UE/LE Orthotics • Moderator: Steffen Franz, MD	Presenters		
	Incorporating Lower Extremity Orthotics into SCI Care	Lisa Ruppert, MD		
	Orthotics to Improve Upper and Lower Extremity Function After Spinal Cord Injury	Candy Tefertiller, PT, DPT,		
	Limb Orthotics, Mexican Style	PhD, NCS		
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Q&A	Isaac Perez PhD Jimena Quinzaños, MD, PhD		
12:30 PM - 1:30 PM	Lunch (60 minutes)	~~~~~~		
1:30 PM - 2:15 PM	A Case Presentation and Discussion: A Multiperspective Look at a Transdisciplinary Approach on the Individual with SCI in Latin America			
	Moderators: Isaac Hernandez Jimenez, MD; Camilo Castillo, MD			
	Marcelo Ullua, PT • Josefina Martinez, Paz, PT • Isaac Perez, PhD • Jimena Quinzaños, MD, PhI • Marlene Rodriguez, MD, MSc • Mariana Bonetto, OT	D		
2:15 PM - 3:00 PM	Training the Trainers Workshop: Cardiovascular, Wound and Sexuality Challenge	s in the Individual with SCI		
	Moderators: Niña Tamayo DO, MS, MPH; Melina Longoni, MD; Isaac Hernandez Ji	menez, MD		
	Niña Tamayo DO, MS, MPH • Melina Longoni, MD • Isaac Hernandez Jimenez, MD			
3:00 PM	Conclusion			
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#### SAN JUAN • PUERTO RICO • ASIA-SPINALINJURY.ORG

## **PRECOURSE 2**

#### MONDAY

MAY 20, 2024 • From Molecules to Movement – Scope, Utility, and Application of Biomarkers for SCI Clinical Trials and the Development of SCI Precision Medicine



Click Here for Abstract

ession Time (Atlantic ST)	Location: San Crisotbal G			
7:30 AM - 8:00 AM	Poster Set-up and Registration			
8:00 AM 8:10 AM	Course Introduction and Orientation	SCOPE Co-Chairs		
		Linda Jones, PT, PhD Jane Hsieh, MSc		
8:10 AM - 10:05 AM	Defining and Explaining Biomarkers – What is a Biomarker? Moderator: Bethany Kondiles, PhD	Presenters		
	What are Biomarkers Good For and Why Should They Matter to Researchers and Clinicians?	Chris Leptak, MD, PhD		
	What are Biomarkers Good For and Why Should They Matter to Researchers and Clinicians?	Brian Kwon, MD, PhD		
	Advanced Considerations	Nikolaos Kyritsis, PhD		
	Industry Perspective	Matt Szapacs, PhD		
	Panel Discussion and Audience Interactions			
10:05 AM - 10:30 AM	Coffee Break (25 minutes)			
10:30 AM - 12:40 PM	Exploring Biomarkers in SCI at Different Levels of Resolution Moderator: Paulina Scheuren, PhD	Presenters		
	Molecules	Diana Chow, PhD		
	Cells	Ona Bloom, PhD		
	Neural Circuits/Systems	Patrick Freund, MD, PhD		
	Neurological/Functional/Behavioral	Monica Perez, PT, PhD		
	Non-neurological/Functional/Behavioral	Chris West, PhD		
	Panel Discussion and Audience Interactions			
12:40 PM - 2:00 PM	Lunch and Posters (80 minutes)	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
2:00 PM - 3:10 PM	Application of Biomarkers for SCI Clinical Trials and Precision Medicine Moderator: Andrew Park, MD	Presenters		
	Introduction to Part 3: Biomarkers in Research vs Clinical Practice	Keith Tansey, MD, PhD		
	Biomarkers in Research – Success Stories Thus Far	James Guest, MD, PHD		
	Flipping it Around – What the Clinician Wants to Know for Tomorrow's Clinic	Edelle Field-Fote, PT, PhD		
	Panel Discussion and Audience Interactions			
3:10 PM - 3:40 PM	Coffee Break (30 minutes)	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
3:40 PM - 4:40 PM	Roundtable Discussion Groups – Round I & II			
4:40 PM - 5:20 PM	Speakers Panel (All) and Audience Development of Future/Next Steps Moderator: Naomi Kleitman, PhD			
5:20 PM	Conclusion of Pre-course	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		

## CRAIG NEUROREHABILITATION & RESEARCH HOSPITAL

PLEASE JOIN CRAIG HOSPITAL IN CONGRATULATING **SUSIE CHARLIFUE,** PH.D., FASIA, FISCOS, FACRM, AS INCOMING PRESIDENT OF ASIA.

Dr. Charlifue's career in spinal cord injury research spans nearly 50 years as a research scientist at Craig Hospital; co-director of the **Rocky Mountain Regional Spinal** Injury System; and associate clinical professor in the **Department of Physical Medicine** and Rehabilitation at University of Colorado, Denver, Her dedicated work has advanced SCI research and impacted countless individuals with SCI and their caregivers, and we are honored to celebrate this accomplishment with her.



Craig Hospital is a nationally recognized rehabilitation hospital in Colorado that specializes in neurorehabilitation and research for individuals with spinal cord injury and brain injury.

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# Thank You

## Coloplast

**Proud Sponsor of UroSTeP: Urology** 



UroSTeP, ASIA's newest e-Learning Program, is for Physicians, Medical Students, Residents, Nurses, and Nurse Practitioners who participate in caring for Spinal Cord Injury Patients experiencing Neurogenic Dysfunction.



## **UROLOGY in the ASIA Learning Center**

Module 1 Anatomy & Physiology Neurogenic Dysfunction

Module 2 Testing Imaging Long Term Follow-up

Module 3 Mechanical Methods of Bladder Management

Module 4 Pharmacological Methods of Bladder Management

Module 5 Surgical Treatments for Bladder Management

Module 6 Urinary Tract Infections in Persons with SCI

Module 7 Urological Complications Following SCI

Module 8 Neurogenic Bladder in the Pediatric Population





#### MAY 20, 2024 All program times are in Atlantic Standard Time (AST) MONDAY

#### PRECOURSES

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4:00 PM - 5:00 PM	EARLY CAREER MEETIN	G – San Cristóbal BCD			
5:00 PM - 7:00 PM	WELCOME RECEPTION – San Cristóbal Foyer				
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TUESDAY	MAY 21, 2024 All program times are in Atlantic Standard Time (AST)				
	San G	ierónimo Ballroom			
7:00 AM - 8:00 AM	Breakfast with Partners and Exhibitors – San Cristóbal Foyer				
8:00 AM - 8:20 AM	WELCOME / OPENING REMARKS				
	Suzanne L. Groah, MD, MSPH (ASIA President 2022 - 2024)	Susie Charlifue, PhD (ASIA President 2024 - 2025)			
8:20 AM - 8:30 AM	<ul> <li>FELLOW OF ASIA (FASIA) AWARD</li> <li>Amy Bohn, OTR/L</li> <li>Jennifer Coker, PhD, MPH</li> <li>Suzanne L. Groah, MD, MSPH</li> <li>Linda Jones, PT, PhD</li> <li>Julio Furlan MD, LLB, MBA, MSc, PhD, FRCPC</li> </ul>	<ul> <li>Steven Kirshblum, MD</li> <li>David Magnuson, PhD</li> <li>Shari McDowell, PT, DPT</li> <li>Devinder Poonian, CEO</li> </ul>			
8:30 AM - 9:00 AM	LIFETIME ACHIEVEMENT AWARD Prof. Armin Curt Chief and Director of the Spinal Cord Injury Centre Balgrist University Hospital				
9:00 AM - 9:45 AM	SELL LECTURE Inclusive Trial Design: The Value of Real-World Prof. Armin Curt Chief and Director of the Spinal Cord Injury Centre Balgrist University Hospital • Click Here for Abstract	I Data			
		1000	continue		
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9:45 AM - 9:55 AM	Stretch Break, Transfer to				
9:55 AM - 10:55 AM	Partner / Exhibitor Recognition – San Geronimo Ballroom Click Here for Partner Listing			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
10:55 AM - 11:05 AM	Stretch Break / Transfer to	o Next Session	~~~~~	~~~~~~	
11:05 AM - 12:05 PM	COURSE 1 TRD The Rapidly Evolving Role of Ultrasound in Acute Spinal Cord Injury Care Click Here for Abstract	COURSE 2 TRIP Translational Science and Research in Urinary Tract Infection and Lower Urinary Tract Symptoms Click Here for Abstract	GENERAL SESSION 1 Advances in Upper Extremity Functioning: Hands down, Hand it Over and Hold On Click Here for Abstract	Do I Do the Exam Right Pitfalls and Common Mistakes Performing the ISNCSCI/E-ISNCSCI Exam Click Here for Abstract	
12:05 PM - 1:15 PM	Lunch Break (70 Minutes)	Lunch Break (70 Minutes)			
1:15 PM - 2:15 PM	COURSE 3 TRIP Are we Getting "TRIPped Up" by the Specifics of Task-Specific Training Click Here for Abstract	GENERAL SESSION 2 Metrics Matter! • Click Here for Abstract	COURSE 4 Use of Targeted Neuromodulation Tools for Enhancing Upper Limb Motor Function Recovery and Rehabilitation Click Here for Abstract	TSCIR Journal and Guidelines for Reviewers Click Here for Abstract	
2:15 PM - 3:15 PM	Poster Session 1 – San Cristóbal A and San Gerónimo C   Click Here for Abstracts				
2:15 PM - 3:15 PM	Break with Partners & Ex	<b>hibitors</b> – San Cristobal Foyer	~~~~~~	~~~~~~	
3:15 PM - 4:35 PM	COURSE 5 Towards Precision Medicine in Spinal Cord Injury: How Should SCI Clinicians and Researchers Design Questions to Best Capitalize on Large SCI Databases in the Age of AI and Big Data? Click Here for Abstract	GENERAL SESSION 3 Glad You Asked: Emerging Understandings in Secondary Conditions • Click Here for Abstract	COURSE 6 REP Neuromodulation and Neuroplasticity; Not All Plasticity is Good or Bad. Reflexes, Neuromodulation and Peripheral Plasticity after Spinal Cord Injury Click Here for Abstract	International Standards to Document Autonomic Function following SCI (ISAFSCI): Second Edition – An Update on the Changes Click Here for Abstract	



### **WEDNESDAY** MAY 22, 2024 All program times are in Atlantic Standard Time (AST)

7:00 AM - 8:00 AM	Membership Breakfast – San Cristóbal D				
7:00 AM - 8:00 AM	Breakfast with Partners & Exhibitors (Non-Members) – San Cristóbal Foyer				
~~~~~~	San Gerónimo Ballroom				
8:00 AM - 9:30 AM	AWARD-ELIGIBLE ORAL PRESENTATIONS (TOP 6)				
	Denosumab Administration Pr	reserves Trabecular Bone Microa	rchitecture at the Distal Tibia Aft	er Acute Spinal Cord Injury	
	Early Electrodiagnostic Testing	g after Cervical Spinal Cord Injury	has Prognostic and Treatment V	/alue	
	Graph Representations of Neu	urological Test Results as A Nove	Approach for Recovery Prediction	on After Spinal Cord Injury	
	Transitions in Care After SCI: I	mpacts of Hidden Work on Supp	ort Persons		
	Blood Pressure Responses to Spinal Cord Epidural Stimulati	Bladder and Bowel Distension ar	nd Impact of Targeted Neuromoc	lulation with	
	Investigating the Impact of Hemodynamic Management and Thromboembolic Prophylaxis on Intraparenchymal Hemorrhage Following Traumatic SCI in a Porcine Model				
	Click Here for Abstracts				
9:30 AM - 10:30 AM	KEYNOTE TALK The State of Spinal Cord Injury Care in Puerto Rico				
	Manuel Fernando Mas Rodriguez, MD and Eduardo Nadal Ortiz, MD Click Here for Abstract				
10:30 AM - 10:40 AM	Stretch Break / Transfer t	Stretch Break / Transfer to Next Session			
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	San Gerónimo Ballroom	San Cristóbal D	San Cristóbal G	Salón Del Mar (Beach Wing 2nd floor)	
10:40 AM - 11:40 AM	COURSE 7 A Novel SCI Adaptive Trial Platform from Pragmatic to Randomized Controlled Clinical Trials: Accelerating Evidence for Disease Modifying Interventions (Sponsored by Scope)	COURSE 8 TRIP Brain-Computer Interface Neuromodulation for SCI: Engineering Developments to Clinical Applications Click Here for Abstract	GENERAL SESSION 4 Basic Science for Curious Clinical and Collaborative Researchers Click Here for Abstract	<b>Do I Classify this Case</b> <b>Correctly?</b> Clarifications on Classification of Challenging ISNCSCI Cases Click Here for Abstract	



#### (Beach Wing 2nd floor) San Cristóbal D Salón Del Mar San Gerónimo Ballroom San Cristóbal G **Midday Break** 11:40 AM - 1:40 PM COURSE 10 TRIP COURSE 9 1:40 PM - 3:00 PM **GENERAL SESSION 5 Epidural Stimulation or** Neuroimaging for Spinal Reality Check: Advancing Cord Injury: Refining the Oxygen Fluctuation – Our Understandings of That is the Question! Diagnosis the Lived Experience Click Here for Abstract **Click Here for Abstract** Click Here for Abstract 3:00 PM - 3:10 PM Stretch Break / Transfer to Next Session Posters Session 2 – San Cristóbal A and San Gerónimo C 3:10 PM - 4:10 PM Click Here for Abstracts Break with Partners & Exhibitors - San Cristobal Foyer 3:10 PM - 4:10 PM COURSE 12 TRIP 4:10 PM - 5:10 PM **GENERAL SESSION 6 COURSE 11** It's a Wrap: Myelin Cardiovascular Health: **Empowering Healthcare Emerging Understandings** Access for Women with Plasticity in Response to SCI and Driven by External and Evolving Therapies Spinal Cord Injury Interventions Click Here for Abstract Click Here for Abstract **Click Here for Abstract** 5:30 PM - 7:00 PM PRESIDENTS RECEPTION Hosted by Susie Charlifue, PhD Vistabella Garden 5:30 PM - 7:00 PM

#### **WEDNESDAY** MAY 22, 2024 All program times are in Atlantic Standard Time (AST)

THURSDAY MAY 23, 2024 All program times are in Atlantic Standard Time (AST)				
	San Gerónimo Ballroom	San Cristóbal D	San Cristóbal G	Salón Del Mar <sup>(Beach Wing</sup> 2nd floor)
10:00 AM - 11:00 AM	GENERAL SESSION 7 Acute to Chronic Acute Phase Management: Brains, Bones, Breathing, Brachial, and Bipedal Opportunities Click Here for Abstract	<b>MORNING OF</b> <b>COURSE 13</b> TRIP Breathing after Spinal Cord Injury: Emerging Therapeutics Harnessing the Potential of Respiratory Plasticity • Click Here for Abstract	<ul> <li>COURSE 14</li> <li>Breaking Boundaries: Collaborative Approaches to Enhance SCI Care Across Latin America and the Caribbean</li> <li>Click Here for Abstract</li> </ul>	<b>Do I Do the Exam Right</b> Pitfalls and Common Mistakes Performing the ISNCSCI/E-ISNCSCI Exam Click Here for Abstract
11:00 AM - 11:10 AM	Stretch Break / Transfer 1	to Next Session		
11:10 AM - 12:10 PM		Health Professional Research Awa ard • Mulcahey Award • TRoHI rly Career Awards		

12:10 PM - 12:20 PM

Stretch Break / Transfer to Next Session

12:20 PM - 1:20 PM	COURSE 15 TRIP	COURSE 16	GENERAL SESSION 8	
	Changes in the Gut	Neuromodulation –	Neurophysiology &	
	Morphology, Microbiota,	Community Integration	Imaging: The Landscape	
	and Metabolites: Roles in	and Continuum of Care	Continues to Evolve	
	Health and Recovery	Click Here for Abstract	Click Here for Abstract	
	after SCI			
	Click Here for Abstract			
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1:20 PM - 2:20 PM	Lunch on Own (60 Minute	es)		

#### **Do I Classify this Case Correctly?** Clarifications on COURSE 19 TRIP 2:20 PM - 3:20 PM **COURSE 17 COURSE 18** Translational Insights into The Role of Exercise and **Best Practice Panel:** Classification of Challenging **Diet in Combating Clinical Guidelines to** Pain after Spinal Cord Cardiometabolic and Assist with Evaluation and **ISNCSCI** Cases Injury Cardiovascular Risk after **Recommendations for** Click Here for Abstract Click Here for Abstract Spinal Cord Injury DME Related to Pregnancy, Lactation and Parenting Click Here for Abstract Click Here for Abstract



	San Gerónimo Ballroom	San Cristóbal D	San Cristóbal G	Salón Del Mar (Beach Wing 2nd floor)
3:20 PM - 3:30 PM	Stretch Break / Transfer te	o Next Session	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
3:30 PM - 4:50 PM	COURSE 20 Panel Discussion of Venous Thromboembolism in Spinal Cord Injury Click Here for Abstract	COURSE 21 Partnering with the SCI Community to Address Challenges in SCI Translation Click Here for Abstract	GENERAL SESSION 9 Time for a Stimulating Discussion: Advances in the Application of Neuromodulation Click Here for Abstract	International Standards to Document Autonomic Function Following SCI (ISAFSCI): Second Edition – An Update on the Changes Click Here for Abstract
4:50 PM	~~~~~~	CONCLUSION	N	



### **TUESDAY** MAY 21, 2024

COURSE	MODERATOR	PRESENTERS
COURSE 1 TRIP The Rapidly Evolving Role of Ultrasound in Acute Spinal Cord Injury Care	James Guest MD, PhD, FAANS	Zin Z Khaing, PhD Brian Kwon MD, PhD, FRCS Christoph Hofstetter MD, PhD, FAANS
COURSE 2 TRIP Translational Science and Research In Urinary Tract Infection and Lower Urinary Tract Symptoms	Suzanne L. Groah, MD, MSPH	Alan Wolfe, PhD Catherine Forster, MD, MSc Rochelle Tractenberg, PhD
<b>COURSE 3 TRIP</b> Are we Getting "TRIPped Up" by the Specifics of Task-Specific Training	Nicholas Evans, PhD	Edelle Field-Fote, PhD, PT Karim Fouad, PhD Nicholas Evans, PhD
COURSE 4 Use of Targeted Neuromodulation Tools for Enhancing Upper Limb Motor Function Recovery and Rehabilitation	Aiko Thompson, PhD	Aiko Thompson, PhD Sue Ann Sisto, PT, MA, PhD, FACRM Hang Jin Jo, PT, PhD Blair H.S. Dellenbach, MSOT
<b>COURSE 5</b> Towards Precision Medicine in Spinal Cord Injury: How Should SCI Clinicians and Researchers Design Questions to Best Capitalize on Large SCI Databases in the Age of AI And Big Data?	Dennis Bourbeau, PhD	Jose Zariffa, PhD Sarah Brüningk, PhD R. James Cotton, MD, PhD Ruediger Rupp, Prof. DrIng.
<b>COURSE 6 TRIP</b> Neuromodulation and Neuroplasticity; Not All Plasticity is Good or Bad. Reflexes, Neuromodulation and Peripheral Plasticity after Spinal Cord Injury	Linda A. T. Jones, PhD	Bing Chen, MD, PhD, Med Evan Sandler, DPT, PhD Candidate Morgan Sharp-Forston, PhD Alan Phipps, PhD





## COURSES

### WEDNESDAY MAY 22, 2024

COURSE	MODERATOR	PRESENTERS
<b>COURSE 7</b> A Novel SCI Adaptive Trial Platform from Pragmatic to Randomized Controlled Clinical Trials: Accelerating Evidence for Disease Modifying Interventions (Sponsored by Scope)	Norbert Weidner, MD	Norbert Weidner, MD James Guest, MD, PhD Jan Schwab, MD, PhD Tim E. Darsaut, MD
<b>COURSE 8 TRIP</b> Brain-Computer Interface Neuromodulation for SCI: Engineering Developments to Clinical Applications	Matija Milosevic, PhD	Milos R Popovic, PhD Abhishek Prasad, PhD Cesar Marquez-Chin, PhD
<b>COURSE 9 TRIP</b> Epidural Stimulation or Oxygen Fluctuation – That Is the Question!	Christopher West, PhD	Gordon Mitchell, PhD Andrei Krassioukov, MD, PhD Erica Dale, PhD Alicia Vose, PhD
COURSE 10 TRIP Neuroimaging for Spinal Cord Injury: Refining the Diagnosis	Laura Krisa, PhD	Patrick Freund, MD, PhD Matthew Budde, PhD Feroze Mohamed, PhD
COURSE 11 Empowering Healthcare Access for Women with Spinal Cord Injury	Heather B. Taylor, PhD	Heather B. Taylor, PhD Susan Robinson-Whelen, PhD
<b>COURSE 12 TRIP</b> It's a Wrap: Myelin Plasticity in Response to SCI and Driven by External Interventions	Timothy D. Faw, PT, DPT, PhD	Dana M. McTigue, PhD Philip J. Horner, PhD Timothy D. Faw, PT, DPT, PhD D. Michele Basso, PT, EdD





### THURSDAY MAY 23, 2024

COURSE	MODERATOR	PRESENTERS
<b>COURSE 13 TRIP</b> Breathing after Spinal Cord Injury: Emerging Therapeutics Harnessing the Potential of Respiratory Plasticity.	Kajana Satkunendrarajah, PhD	Warren Alilain, PhD Angelo Lepore, PhD Carlos Mantilla, MD, PhD Joshua Medow, MD, MSc, PhD
<b>COURSE 14</b> Breaking Boundaries: Collaborative Approaches to Enhance SCI Care Across Latin America and the Caribbean	Niña Carmela Tamayo, DO MS MPH	Melina Longoni, MD Jimena Quinzaños, MD, PhD Ana Valeria Aguirre Guemez, MD
<b>COURSE 15 CRIP</b> Changes in the Gut Morphology, Microbiota, and Metabolites: Roles in Health and Recovery after SCI	Cedric Geoffroy	Ceren Yarar-Fisher, PhD Dr. Warren Alilain, PhD Cedric Geoffroy, PhD Michelle Hook, PhD
COURSE 16 Neuromodulation – Community Integration and Continuum of Care	Claudia Angeli, PhD	Susan Harkema, PhD Leslie Morse, DO Carrie Shogren, OTR/L
<b>COURSE 17</b> The Role of Exercise and Diet in Combating Cardiometabolic and Cardiovascular Risk after Spinal Cord Injury	Ashraf Gorgey, PhD, MPT	Mark Nash, PhD Gary Farkas, PhD David Dolbow, PhD Ashraf S. Gorgey, PhD
<b>COURSE 18</b> Best Practice Panel: Clinical Guidelines to Assist with Evaluation and Recommendations for DME Related to Pregnancy, Lactation and Parenting	Allison Kessler, MD	Maryam Berri, MD Stephanie Hendrick, MD Cassandra Renfro, DO Allison Kessler, MD, MSc



## COURSES

### THURSDAY MAY 23, 2024

COURSE	MODERATOR	PRESENTERS
COURSE 19 TRIP Translational Insights into Pain after Spinal Cord Injury	Paulina Scheuren, PhD	Eva Widerstrom-Noga, DDS, PhD Paulina Scheuren, PhD Megan Detloff, PhD Jan Rosner, MD
COURSE 20 Panel Discussion of Venous Thromboembolism in Spinal Cord Injury	Christina Draganich, DO	Andrew Park, MD Jeffrey Berliner, DO Thomas Bryce, MD Brittany Snider, MD
<b>COURSE 21</b> Partnering with the SCI Community to Address Challenges in SCI Translation	Matthew Rodreick, Executive Director, Unite 2 Fight Paralysis	Lana Zholudeva, PhD Murray Blackmore, PhD Jason Biundo, Research Assistant



### **AWARD-ELIGIBLE ORAL PRESENTATIONS**

#### WEDNESDAY MAY 22, 2024 • 8:00 AM - 9:30 AM

Moderator: Steven Brose, DO • Co-Moderator: Evan Sandler, PT, DPT

ORAL PRESENTATIONS	PRESENTERS
Denosumab Administration Preserves Trabecular Bone Microarchitecture at the Distal Tibia After Acute Spinal Cord Injury	Christopher Cirnigliaro, PhD
Early Electrodiagnostic Testing after Cervical Spinal Cord Injury has Prognostic and Treatment Value	Lukas Linde, PhD
Graph Representations of Neurological Test Results as A Novel Approach for Recovery Prediction After Spinal Cord Injury	Louis Philipp Lukas, M.Sc.
Transitions in Care After SCI: Impacts of Hidden Work on Support Persons	Anne M. Bryden, PhD, OTR/L
Blood Pressure Responses to Bladder and Bowel Distension and Impact of Targeted Neuromodulation with Spinal Cord Epidural Stimulation	Charles Hubscher, PhD
Investigating the Impact of Hemodynamic Management and Thromboembolic Prophylaxis on Intraparenchymal Hemorrhage Following Traumatic SCI in a Porcine Model	Aysha Allard Brown, BSc

### **TUESDAY** MAY 21, 2024 All Program times are in Atlantic Standard Time (AST)

ORAL PRESENTATIONS	PRESENTERS	
<b>GENERAL SESSION 1:</b> Advances in Upper Extremity Functioning: Hands down, Hand it Over and Hold On 11:05 am - 12:05 pm • Moderator: Amy Bohn, OTR/L • Co-Moderator: Stephanie Hendrick, MD		
Automated Estimation of Adapted GRASSP Scores During Activities of Daily Living Using Egocentric Video	Jose Zariffa, PhD, P.Eng.	
The Emergence from Hand Paralysis after Cervical Spinal Cord Injury During Inpatient Rehabilitation: The Predictive Value of Electromyography and ISNCSCI Exam Measures	Keith Tansey, MD, PhD, FASNR, FASIA	
Loss of Self-Care Independence in Cervical Spinal Cord Injury: Exploring the Impact of Motor Weakness, Spasticity, and Residual Corticomotor Physiology (A Multi-Center Study)	Jia Liu, PhD	
Applicability of the Pain Training and Research team (E.F.I.D., by Its Acronym in Spanish) Ladder in Shoulder Pain After Spinal Cord Injury (SCI)	Mauro Guzzardo, MD Melina Longoni, MD	
ARC-EX Therapy Transcutaneous Spinal Cord Stimulation Facilitates Upper Extremity Functional Recovery in Spinal Cord Injury: Results from the Up-LIFT Pivotal Trial	Edelle Field-Fote, PT, PhD	



## **GENERAL SESSIONS**

### **TUESDAY** MAY 21, 2024 All Program times are in Atlantic Standard Time (AST)

ORAL PRESENTATIONS	PRESENTERS
GENERAL SESSION 2: Metrics Matter! 1:15 pm - 2:15 pm • Moderator: Rüdiger Rupp, PhD • Co-Moderator: Christian Schuld, Dipl-Inform. Med.	
Imputation Of Not Testable Motor and Sensory Scores in The International Standards for Neurological Classification of Spinal Cord Injury (ISNCSCI) With Regression Models	Christian Schuld, DiplInform. Med.
Development And Preliminary Evaluation of The Spinal Cord Injury Movement Index	MJ Mulcahey, PhD, OTR\L, FASIA
Revision Of the International Spinal Cord Injury (SCI) Urinary Tract Infection (UTI) Basic Data Set and Creation of Extended Data Set	Rochelle Tractenberg, PhD, MPH
A Clinical Prediction Rule for Independence in Individuals with Spinal Cord Injury	Aldo Rafael, Montes Ugalde, MD
ASIA Impairment Scale Grade E Conversion After Traumatic or Ischemic SCI: Incidence, Conversion Pattern as Well as Neurological and Functional Characteristics	Ruediger Rupp, Prof. DrIng.

#### **GENERAL SESSION 3:** Glad You Asked: Emerging Understandings in Secondary Conditions 3:15 pm - 4:35 pm • Moderator: Maureen Miner, MD • Co-Moderator: Nicholas Evans, PhD, CEP

Untreated Moderate-to-Severe Sleep-Related Breathing Disorder Is Associated with More Severe Spasticity in Individuals Living with Spinal Cord Injury: A Cross-Sectional Prospective Study	Julio Furlan MD, LLB, MBA, PhD, MSc, FRCPC, FAAN
Non-Invasive Spinal Cord Stimulation for Erectile Function Following Spinal Cord Injury	Claire Shackelton, PhD
Accelerating UTI Diagnosis and Treatment: Validating the Jiddu® Analyzer for Urine Bacterial Growth In Spinal Cord Injury/ Disease	Ana Valeria Aguirre Guemez, MD
Striving To Reduce Bladder Medications to Improve Quality of Life in People With SCI	Ishaan Hublikar, DO
Estimating Renal Function Using Cystatin C In the Spinal Cord Injury Population	Nick Brown, MD
The Effect of Non-Invasive Spinal Cord Stimulation on Lower Urinary Tract Function and Autonomic Dysreflexia in Motor-Complete Spinal Cord Injury	Lucas Rempel, B.Sc (Hons)
Detailed Patterns of Autonomic Impairment After SCI And Their Relationships to The International Standards Exam	Ryan, Solinsky, MD

## SCIENTIFIC MEETING GENERAL SESSIONS

### **WEDNESDAY** MAY 22, 2024 All program times are in Atlantic Standard Time (AST)

ORAL PRESENTATIONS	PRESENTERS
<b>GENERAL SESSION 4:</b> Basic Science for Curious Clinical and Collaborative Researchers 10:40 am - 11:40 am • Moderator: Cédric Geoffroy, PhD • Co-Moderator: Dr. Bethany Kon	diles
Promoting Regeneration following SCI through Subthreshold Epidural Electrical Stimulation	Ahad Siddiqui, PhD
What is Really Going on During Passive (Motorized) Cycling?	David Magnuson, PhD
Reducing Secondary Damage after Spinal Cord Injury Via Tailored Delivery of Anti-Inflammatory Cytokines	Daniel Hellenbrand, M.S.
A New Mouse Model of Polytrauma with Spinal Cord Injury-Associated Chronic Pain	Chan Gao, MD, PhD
Promoting Functional Neurological Recovery after SCI With a Novel Compound Identified Using Proprietary Drug Screening System	Arthur Sefiani, PhD

#### **GENERAL SESSION 5:** Reality Check: Advancing Our Understandings of the Lived Experience 1:40 pm - 3:00 pm • Moderator: Indira Lanig, MD • Co-Moderator: Emily Leonard, PhD

Integrating Community-Based Participatory Research Approaches into Program Development and Study Design	Margaret Finley, PT, PhD
Readability Assessment of Patient Education Materials on Autonomic Dysreflexia	Will Bataller, MD, MS Lauren E. Powell, MD
Loneliness and Its Relation to Psychological and Physical Health Among People with Spinal Cord Injury	Susan Robinson-Whelen, PhD
From 'Blah, Blah, Blah' To Practice: Implementing the Ideal Care Pathway for Traumatic Spinal Cord Injury in Ontario	Judith Gargaro, MSc
Nationwide Emergency Department Visits for Pediatric Traumatic Spinal Cord Injury in the United States, 2016-2020	James A. G. Crispo, MSc, PhD
A Pilot Pain Management Program with Heart Rate Variability Biofeedback Training Improves Cardiac Coherence, Pain Intensity, And Self-Efficacy in Individuals with Paraplegia and Chronic Neuropathic Pain	Karen D'Huyvetter, ND, RN
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## **GENERAL SESSIONS**

#### **WEDNESDAY** MAY 22, 2024 All program times are in Atlantic Standard Time (AST)

ORAL PRESENTATIONS	PRESENTERS
GENERAL SESSION 6: Cardiovascular Health: Emerging Understandings and Evolving The 4:10 pm - 5:10 pm • Moderator: Ryan Solinsky, MD • Co-Moderator: Andrew Park, MD	rapies
Treatment With Adjuvant Ethyl Nitrite in The Acute Phase Following Traumatic SCI Improves Cardiovascular Function in Rodents 12 Weeks Following SCI	Ryan Hoiland, PhD
Treatment Of Post-SCI Hypotension: A Randomized Controlled Study of Usual Care Versus Anti-Hypotensive Therapy	Jill Wecht, EdD
Association Between Cardiovascular Risk and Incidence of Cardiovascular Disease in Veterans With SCI	Khin Chan, MBBS, MS
Acute Intermittent Hypoxia Improves Cardiovascular Function in Rats with Incomplete Spinal Cord Injury	Liisa Wainman, BSc, MSc, PhD (c)
8 Days of Mild Intermittent Hypoxia Improves Autonomic Dysreflexia and Orthostatic Hypotension in Individuals with Motor Incomplete Spinal Cord Injuries	Gino S. Panza, PhD

#### THURSDAY MAY 23, 2024

ORAL PRESENTATIONS	PRESENTERS	
GENERAL SESSION 7: Acute Phase Management: Brains, Bones, Breathing, Brachial, and Bipedal Opportunities 10:00 am - 11:00 am • Moderator: Isa A. McClure PT, MAPT • Co-Moderator: Lisa Ruppert, MD		
Determining The Incidence of Concomitant Traumatic Brain Injury in Patients with Acute Spinal Cord Injury: A Ten-Year Cross-Sectional Study.	Antoine Dionne, MS4	
Home-Based ARC-EX Therapy Transcutaneous Spinal Cord Stimulation Safely Maintains and Extends Upper Extremity Functional Recovery Following Spinal Cord Injury: Results from The LIFT Home Trial	Candace Tefertiller, DPT	
The Role of Diaphragm Pacing in Pediatric Spinal Cord Injury: Decreasing Invasive Mechanical Ventilation	Raymond Onders, MD, FACS	
Association of Calcium and Vitamin D Supplements with Fractures in Persons with a Traumatic SCI	Brian Le, MD	
Factors Influencing Standing and Walking Outcomes During Inpatient Rehabilitation in Persons with Traumatic Spinal Cord Injury: A Canadian Perspective	Kristen Walden, PT	



### **THURSDAY** MAY 23, 2024 All program times are in Atlantic Standard Time (AST)

ORAL PRESENTATIONS	PRESENTERS
GENERAL SESSION 8: Neurophysiology & Imaging: The Landscape Continues to Evolve 12:20 pm - 1:20 pm • Moderator: Monica Perez, PhD • Co-Moderator: Bing Chen	
Advanced Neurophysiology Reveals Topographical Patterns of Myelon Impairment Related to Dynamic Mechanical Stress in Lesional and Non-Lesional Cervical Myelopathies	Paulina S. Scheuren, PhD
Surface Electromyography for Assessment of Sacral Motor and Reflex Function After Acute Spinal Cord Injury: A Pilot Study	Andréane Richard-Denis, MD-MSc
Corticospinal Tract Sparing and Motor Recovery after Cervical Spinal Cord Injury	Gustavo Balbinot, PhD
Cortical Functional Connectivity in Pediatric Participants with Chronic SCI And the Association with Injury Severity	Laura Krisa, PhD
ANTHONY F. DIMARCO MD AWARD Neuromodulation of Cervical Spinal Interneurons: A Novel Preclinical Translation Strategy to Restore Breathing After Chronic Cervical Spinal Cord Injury	Kajana Satkunendrarajah, PhD

## **GENERAL SESSION 9:** Time for a Stimulating Discussion: Advances in the Application of Neuromodulation 3:30 pm - 4:50 pm • Moderator: Professor James Bilzon • Co-Moderator: Dr Jennifer Maher

Replacing Bladder Medications with Home Neuromodulation in Spinal Cord Injury	Laura Serrano-Ortiz, MD
Recovery of Autonomic Function with Lumbosacral Spinal Cord Neuromodulation in those Living with Chronic Motor-Complete, Cervical Spinal Cord Injury	Susan Harkema, PhD
Neuromodulation-Enhanced Rehabilitation Through Epidural Stimulation in Patients with Subacute and Chronic Spinal Cord Injury	Rodrigo Vilches-Aranguren, MD Beatriz Perez Hernandez
Transcutaneous and Epidural Stimulation: Understanding their Impact on Impaired Autonomic Regulation After SCI	Ryan Solinsky, MD
Assessing Blood Pressure Stability in Transcutaneous Spinal Stimulation: A Clinimetric Approach	Einat Engel-Haber, MD
2021 CRAIG H. NEILSEN AWARD Feasibility and Early Outcomes of Operant Conditioning of Motor-Evoked Potentials in Upper Extremity of Individuals with Chronic Cervical Spinal Cord Injury	Blair H.S. Dellenbach, MS, OTR/L

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*Winners will be announced during the Awards Ceremony on the last day of the annual meeting.* 







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## POSTERS

AWARD-ELIGIBLE POSTERS

#### TUESDAY, MAY 21 & WEDNESDAY, MAY 22, 2024

- Acute Intermittent Hypoxia Improves Airway Protection During Swallowing in Chronic Cervical Spinal Cord Injury Alicia K. Vose, PhD, CCC-SLP
- 2 Dating Satisfaction and Sexual Behaviors of Adults with Pediatric-Onset Spinal Cord Injury Justine Stewart, PsyD
- 3 Working Hard or Hardly Working? Comparing Physical Therapist Burden During Different Gait Training Approaches with a Patient with an Acute Spinal Cord Injury Lindsey Wynne, PT, DPT, NCS
- 4 A Pilot Study Testing Safety and Benefits of Ursolic Acid as a Countermeasure to Myopenia and Insulin Resistance in Chronic SCI Mark S. Nash, PhD, FACSM, FASIA



5 Acquired Infections Drive Genetic and Immune Changes Acutely after SCI Angele Fileus, PhD

Angela Filous, PhD

- 6 Adaptive Sports for All: Investigating the Socioeconomic Challenges to Participation Allyson Gorman, BS
- 7 Activity-Based Restorative Therapy (ABRT) and the Risk of developing Medical Device-Related Pressure Injuries in pediatric Patients with Spinal Cord Injury: A Case Report Quyen Catania, PT, DPT, NCS, CWS, CLT
- 8 An Unusual Presentation of Spinal Arachnoid Cyst: The Value of SCI/D Annual Evaluation Ryan Shields, MD, MSc
- Upper Extremity Motor Scores and Functional Outcomes in Tetraplegic Spinal Cord Injury Emily Y. Chen, M.D. Candidate
- Adjuvant Ethyl Nitrite on Hemodynamic Management and Spinal Cord Intraparenchymal Hemorrhaging in the Acute Phase Following Traumatic SCI
   Erin Erskine, MSc
- **11** Addressing Sexual Health in Individuals with Spinal Cord Injury (SCI) in Latin America: Results from a Survey Study Melina Longoni, MD
- 12 A Biomarker to Predict Spasticity Reduction Following Transcutaneous Spinal Stimulation Evan B. Sandler, PT, DPT, PhDc
- 13 A Feasibility Study of High Intensity Interval Training (HIIT) to Reduce Cardiometabolic Disease Risks in Individuals with Acute Spinal Cord Injury James Bilzon, PhD
- 14 The Need to Establish a Model Systems of Care for the Non Traumatic Spinal Cord Injury Population Melissa Michaluk, DO



## **POSTERS** TUESDAY, MAY 21, 2024

#### **ACCESSIBILITY/PUBLIC HEALTH**

- **15** Management of Durable Medical Equipment in Latin America: the Healthcare Provider's Experience Melina Longonl, MD
- **16** Flooding and SCI: Characterizing Weather Effects on the SCI Community in South Florida David McMillan, PhD
- 17 Does Participating In A National Research Registry Impact Patient Outcomes Following Traumatic Spinal Cord Injury? A Population-Based Study From the Rick Hansen Spinal Cord Injury Registry Andréane Richard-Denis, MD-MSc
- 18 How Does Extreme Heat Impact SCI Daily Living? Perspectives and Considerations from Southestern Floridians Living with Spinal Cord Injury

David McMillan, PhD

**19** Preliminary Results of Participants Engagement In the Peer-Led Workout on Wheels Internet Intervention Program Katherine Froelich Grobe, PhD

#### **ACUTE CARE**

20 Is There an Optimal Mobility Pattern For Preventing Pressure Injuries During Acute Care After SCI: A Prospective Cohort Study to objectively monitor Nighttime Mobility using Actigraphy Islam Krazdi, MSc

#### **ADVOCACY**

21 The Impact of the Educational Interventions by the Americas Committee of ASIA In Latin America Melina Longonl, MD

#### **ASSISTIVE TECHNOLOGY**

**22** Developing A Functional Electrical Stimulation Garment for the Upper Limbs

Eugene Eunoia Brukhman

23 Deep Learning Classification of Pediatric Spinal Cord Injury from Diffusion Tensor Imaging Measurements Laura Krisa, PhD 24 Unlocking Independence: Exploring Assistive Technology Use Among Individuals with Tetraplegia and Its Impact on Psychosocial Well-Being Kimberley R. Monden, PhD

#### **BASIC SCIENCE/ANIMAL MODELS**

- 25 Investigating the Influence of Spinal Cord Injury on Sympathetic Ganglionic Control of the Heart Alissa Taki, BSc
- 26 Overexpression of Sox11 Restores Embryonic, Pro-Regenerative Gene Transcription In Adult Corticospinal Tract Neurons after Spinal Injury Elizabeth Batsel, BS

#### CARDIOVASCULAR

- 27 Effect of Two Different Training Programs on Cardiovascular Response and Functional Activity In Individuals with Chronic Spinal Cord Injury Marlene Alejandra Rodríguez Barragán, MD, MSc
- 28 Effects of a Feedback-Controlled Heated Vest on Core Temperature in Persons with Spinal Cord Injury during Cool Exposure Ian Paez, BA
- 29 Mild Intermittent Hypoxia Acutely Exacerbates Autonomic Dysreflexia, but Orthostatic Hypotension Fei Zhao, MPT, PhD
- **30** Cardio-Vagal Responses to the Cold-Face Challenge In People with SCI: Effects of Cholinergic Agonist and Antagonist Jacob A. Goldsmith, MS, PhD
- Vascular Dysfunction Following Spinal Cord Injury: A Systematic Review and Meta-Analysis Ali Hosseinzadeh, BSc
- 32 The Effect of Transcutaneous Spinal Cord Stimulation on Peripheral Vascular Responses During Urodynamic Assessment Ali Hosseinzadeh, BSc

#### P R O G R A M

## **SCIENTIFIC MEETING POSTERS** TUESDAY, MAY 21, 2024

#### **CASE STUDY**

- **33** When Paresthesias Are More Than Skin Deep: A Case Report Michiko Paschall, MD
- **34** Surfer'S Myelopathy: An Unusual Cause of Acute Spinal Cord Ischemia Aldo Rafael Montes Ugalde, MD
- **35** The Importance of Spilling Their Guts: An Uncommon Case of Anemia In SCI

Lauren E. Shuda, MD

36 Psychological Intervention Model Aimed to Inpatient Rehabilitation Spinal Cord Injury Individuals Sandra R. Hernández-Sandoval, BA Psychology; Psy. M.

#### **CHRONIC CARE**

- **37** Skipping Leg Day isn't always Bad: Complications Found in Heavy Lifters who Experience Paralysis Samantha Mendelson, DO
- 38 Complexities of Bowel and Bladder Management In Cancer-Associated Spinal Cord Injury: A Mixed-Methods Study Andrea Leyton-Mange, MD

#### **39 WITHDRAWN**

40 Prevalence of Current Pregnancy In Women with Traumatic Spinal Cord Injury: Findings from the National SCIms Database 2000-2023 Yuying Chen MD, PhD

#### **CLINICAL TRIAL UPDATES**

#### 41 WITHDRAWN

- 42 A Phase 1b/2a Study of NVG-291 In Individuals with Subacute Or Chronic Spinal Cord Injury Daniel Mikol, MD, PhD
- 43 Segmental Motor Recovery After Cervical Spinal Cord Injury Gustavo Balbinot, PhD

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- 44 Returning to Work After a Spinal Cord Injury In Latin America Melina Longoni, MD
- **45** A Clinical Research Registry: The Power of Connection Carolyn Ostrowski, PTA, CEAS
- **46** Working Conditions in Patients with Spinal Cord Injury at the National Rehabilitation Institute, Mexico City Aldo Rafael Montes Ugalde, MD
- 47 Sexuality in Patients with Spinal Cord Injury: Satisfaction Reported About the Intervention Received During Rehabilitation Program Mariana Bonetto, OT
- **48** Group Tele-Exercise Impact on Physical Activity Determinants and Behavior In Individuals with Spinal Cord Injury Laura Baehr, PT, DPT, PhD
- **49** Predicting Complete vs. Incomplete Long-Term Functional Independence Early After Acute Motor-Incomplete AIS D Spinal Cord Injury to Optimize the Care Pathway. A Prospective Cohort Study Antoine Dionne, MS4

#### **COVID 19**

- **50** Results of Telepsychology Intervention In People with Spinal Cord Injuries In Argentina During the Pandemic and Beyond Melina Longonl, MD
- 51 Autoimmune Cervicothoracic Myelopathy following Covid-19 Infection: A Variable Presentation Ton La, Jr., MD JD

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**52** Transcutaneous Electrical Spinal Stimulation Attenuates Ankle Clonus in Humans with Chronic Spinal Cord Injury Alex Benedetto

#### IMAGING

- 53 Measurement of Magnetization Transfer Ratio In Normal Pediatric Cervical Spinal Cord: Clinical Feasibility, Assessment of Normative Data and Age Correlation Laura Krisa, LK, PhD
- 54 Metal Reduction Around Cervical Spine Implant Using Diffusion Tensor Imaging at 3T MRI: Preliminary Results Slimane Tounekti, PhD



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#### LOWER EXTREMITY FUNCTION/GAIT

55 Data-Driven Characterisation of Lower-Limb Kinematics During Breaststroke Swimming In Patients with Spinal Cord Injury Melina Giagiozis, MSc

#### **MEASUREMENT AND OUTCOMES INSTRUMENTS**

- 56 Longitudinal Functional Recovery after Spinal Cord Injury Using the Neuromuscular Recovery Scale Doug Griffin, PT
- **57** Novel Superconditioning Transcranial Magnetic Stimulation (TMSsc) As a Sensitive Biomarker In Amyotrophic Lateral Sclerosis (ALS) Diagnosis Ramza Malik, DO
- 58 Use of Motor Score "5\*" In the European Multicenter Study About Spinal Cord Injury (EMSCI) Christian Schuld, MSc
- 59 Not Testable ISNCSCI Motor and Sensory Scores In the European Multicenter Study about Spinal Cord Injury (EMSCI): Occurrence Patterns and Consequences on Classification Christian Schuld, MSc
- 60 Biomarkers for Recovery Following Severe Spinal Cord Injury Monica Perez, PhD
- 61 Differences in Common Prehension Relevant Outcome Measures in Tetraplegia Nilanjana Datta, MD
- 62 Establishment of Reference Scores For Trunk Control Assessment Using Smartphones In Patients with Spinal Cord Injury Erika Abarca Ortega, MD
- 63 Predicting Bladder Function During Acute Hospitalization with a Qualitative Voluntary Anal Contraction Assessment Following Motor Incomplete Spinal Cord Injury Andréane Richard-Denis, MD-MSc
- **64** A Data-Driven Investigation of Historic Control Matching Miklovana Tuci, MSc
- 65 Knowledge, Comfort, Approach and Attitude towards Sexuality Scale in Spinal Cord injured Population: Adaptation and Validation to Spanish Language Luz Miriam Leiva Pemberthy, MD

#### **METABOLIC/OBESITY**

- **66** The Effects of High-intensity Interval Training on Fitness and Metabolic Health in Individuals with Acute Spinal Cord Injury Submission Jennifer Maher, PhD
- 67 Treatment of Neurogenic Obesity in Spinal Cord Injury with Tirzepatide: A Case Report Michael Juszczak, MD

#### **MOTOR CONTROL**

- **68** Quantifying Volitional Leg Movement In the E-Stand Clinical Trial Using Surface Electromyography Emily Haaq, B.S.
- **69** Mild Intermittent Hypoxia Improves Hand Function In Individuals with Motor Incomplete Spinal Cord Injury Lexi Soltesz

#### **NEURAL PLASTICITY**

**70** Peripheral Plasticity of Nociceptive Afferents Following Spinal Cord Injury

Morgan Sharp-Forston, B.S.

#### **NEUROMODULATION**

- 71 Transcutaneous Spinal Cord Stimulation Combined with Activity-Based Therapy Leads to Sensorimotor Improvements In Chronic, Thoracic Spinal Cord Injuries Jenny Suggitt, MSc, OTR/L
- **72** Restoring Function after Chronic Spinal Cord Injury from Electrophysiology to Kinematics Tara Nash, CNP
- 73 Autonomic and Motor Recovery with Non-Invasive Lumbosacral Spinal Cord Stimulation Following Cervical Motor-Complete Spinal Cord Injury: A Case Study Ali Hosseinzadeh, BSc
- 74 Modulation of Spinal Cord Excitability and Motor Performance in Individuals with Chronic Cervical SCI Following a Single Spinal Cord Transcutaneous Stimulation Training Session Pawan Sharma, PhD

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- 75 Transcutaneous Spinal Cord Stimulation to Restore Cardiovascular Function In Chronic SCI Lynda Murray, PhD
- 76 Participants and Caregivers' Perspectives of the Spinal Cord Epidural Stimulation Effect on Bowel Function and Management for Individuals with Spinal Cord Injury: A Qualitative Study Beatrice Ugiliweneza, PhD, MS
- Paired Brain and Cervical Spinal Stimulation Facilitates Hand Muscle Responses In Humans
   Lynda Murray, PhD

- 78 Identifying Midbrain Locomotor Circuits that Improve Walking In Pigs Following Incomplete SCI Brian Noga, PhD
- 79 Enabling Volitional Lower Limb Control with Non-Invasive Spinal Cord Stimulation: Responder vs. Non-Responder Raza N. Malik, PhD

#### **PSYCHOSOCIAL**

**80** Barriers to Health Promotion Among Young Adults with Pediatric-onset Spinal Cord Injury Alicia January, PhD

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**81** Overground Robotic Exoskeleton Use for Early Mobility After Spinal Cord Injury During Acute Care Hospitalization: A Case Series Jaime Gillespie, PT, DPT

#### GASTROINTESTINAL

**82** The Gut Microbiome After SCI: A Preliminary Analysis of the Gut Microbiome to Identify Molecular Mechanisms of GI Dysfunction Mark Nash, PhD, FACSM, FASIA

#### **GENOMICS**

**83** Genetic Variability and DVT After Spinal Cord Injury (SCI): A Negative Pilot Study Highlights Barriers and Opportunities To Exploring Gene Association in SCI Outcomes Lauren Hall, MD

#### IMAGING

84 Characterization of Chronic incomplete Cervical Spinal Cord Injury with Magnetic Resonance Imaging and Assessments of Sensory and Motor Functions: Case Reports Allison Lewis, DPT, PhD

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85 Effectiveness of Hydrotherapy on Neuropathic Pain and Pain Catastrophization in Patients with Spinal Cord Injury: Protocol for a Pilot Trial Study

Luz Miriam Leiva Pemberthy, MD

- **86** Factors Associated with Neuropathic Pain in Colombian Patients with Spinal Cord Injury of Traumatic Origin: Case-Control Study Luz Miriam Leiva Pemberthy, MD
- 87 Perceived Effectiveness and use of Seven Active Pain Management Tools By individuals with Paraplegia Participating in A 9-Week Chronic Neuropathic Pain Management Program Lisa Lighthall Haubert, MPT, DPT, KEMG
- **88** Battlefield Acupuncture in Action : Our Centers Experience with Battlefield Acupuncture for SCI Related Pain Samantha Mendelson, DO
- 89 The Impact of SCI and SCI-Related Neuropathic Pain on Multisensory Integration Roberta Vastano, PhD
- **90** Determinants of Days with Manageable Pain After SCI Eva Widerstrom-Noga, DDS, PhD
- **91** Balance Between Spinothalamic and Lemniscal Tract Preservation as a Crucial Aspect in Neuropathic Pain Development after Spinal Cord Injury Laura Heutehaus, MSc



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- 92 The Synergistic Effect of Acute TBI and SCI on the Development of Chronic Pain: A Populational Cohort Study on 2389 Patients in Québec, Canada Antoine Dionne, MS4
- **93** Trial of Early Intervention with Transcutaneous Electrical Nerve Stimulation for the Prevention of Neuropathic Pain After Spinal Cord Injury

Elizabeth Felix, PhD

94 Changes of Pain Cortices in Chronic Adults with SCI: The Underpinnings of the Resting State BOLD fMRI Abdulaziz Alhussein, BA

#### 95 WITHDRAWN

#### **PATIENT/CAREGIVER EDUCATION**

#### 96 WITHDRAWN

97 WITHDRAWN

#### PREVENTION

- **98** Perceptions of Photovoice as a Virtual Fall Prevention and Management intervention after Spinal Cord Injury Katherine Chan, MSc, RKin
- 99 Effects of Lactobacillus Rhamnosusgg Bladder Wash Versus Saline Bladder Wash on Urinary Function and Bladder Symptom Burden in intermittent Catheter Users: Preliminary Results Emily Leonard, PhD
- **100** Passive Heat Therapy to Improve Cardiometabolic Health in Persons with A Spinal Cord Injury – A Case Series Hannah Uhlig-Reche, MD, MPH

#### **PSYCHOSOCIAL**

- 101 Understanding The Impact of Screening Location on Depressive Symptom Scores Among Acute Traumatic and Non-Traumatic Patients with Spinal Cord Injury Ramya Gopalan, MS, MPH
- **102** Bladder and Bowel Dysfunction, Cognitive Appraisals of Disability, and Life Satisfaction in individuals with Pediatric-onset Spinal Cord Injury Olivia Clark, MA

- 103 A Qualitative Study on The Impact of Oral Health on Quality of Life: The Lived Experience of People with SCI Jennifer Coker, PhD, MPH
- 104 Longitudinal Satisfaction with Life Among individuals with Spinal Cord injury: A Multilevel Multiple indicator Multiple Cause Model Elizabeth Pasipanodya, PhD
- **105** Depression in Patients with Spinal Cord Injury Lina María Rodríguez Vélez

#### REHABILITATION

- **106** Rehab in Rehab: A Prospective Analysis of The Effect of Substance Use Disorders on inpatient Rehabilitation for Traumatic Spinal Cord Injury Shane Stone, MD
- **107** Comparative Analysis Between Acute Phase and 30 Years of Evolution in People with Tetraplegia Due to Spinal Cord Injury: Clinical Cases Diego Uberti, Neurorehabilitador
- **108** Challenges in Virtual Healthcare for Patients with Disabilities Joann Pan, BA
- 109 Safety and Feasibility of Transcutaneous Spinal Cord Stimulation to Stabilize Blood Pressure for Acute inpatients with Spinal Cord Injury Jorge Chavez, BS
- 110 Changes in Cough Effectiveness Following 5-Days of Therapeutic Acute intermittent Hypoxia in Chronic SCI Michela Mir, PhD CCC-SLP
- 111 Title: Viral Myelopathy: A Rare Subset of Non-Traumatic Spinal Cord Dysfunction Lisa Beck, APRN, CNS, MS
- 112 Does Race/Ethnicity influence Epidemiology, Survival and Neurological Outcomes After Acute Traumatic Spinal Cord Injury? Julio Furlan, MD, LLB, MBA, PhD, MSc, FRCPC, FAAN
- **113** Presence, Descriptors, and Perceived Locations of SCI Related Painful Sensations During The First-Year Post-Injury Laiba Afzal, MS

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#### **REHABILITATION THERAPY**

- 114 Variability in The Risk of Elbow Flexor Tendon Retraction in Tetraplegia Due to Spinal Cord Injury At C5, C6 and C7 Levels. Clinical Evidence of Neuromuscular Response to FES Stimulation. Diego Uberti, Neurorehabilitador
- 115 Reviving intimacy After Spinal Injury: Unveiling A Novel Approach to Enhance Sexual Participation in A Male Patient with Incomplete Spinal Injury Jane Alkhazov, PT, DPT, NCS
- **116** Walking Outcomes Enhanced By Use of A Novel Electrode Array for Transcutaneous Spinal Cord Stimulation and Gait-Based Therapies in Patients with Incomplete Spinal Cord Injury Elizabeth Neighbors, PT, DPT

#### **117 WITHDRAWN**

#### RESPIRATORY

- **118** Comparing Indirect Ventilatory Drive Outcomes in Chronic Spinal Cord Injury Tommy Sutor, MS, PhD
- 119 Mild intermittent Hypoxia Elicits Ventilatory Plasticity without Changes in Resting Blood Pressure
  - Lexi Soltesz, Undergraduate Researcher
- 120 Improving Breathing After Spinal Cord Injury By Electrical Stimulation of Locomotor Circuits Ian Walling, BS

## SCI KNOWLEDGE DISSEMINATION/IMPLEMENTATION INTO THE COMMUNITY

- **121** Case Report: Spinal Cord Injury Due to Ligamentum Flavum Buckling in a Transgender Elhers-Danlos Patient Adam Haniff, MD
- 122 Bladder and Bowel Function in Adult Subjects with Spinal Cord Injury in Argentina Diego Uberti, Neurorehabilitador
- 123 What is the Status of Research Spinal Cord Injury in Latin America? Florencia Fernández, PhD
- 124 Healthcare Utilization in Veterans with Cervical Spinal Cord Injury: Defining The Opportunities for Dissemination of Treatment information Michael Berger MD, PhD

#### **SENSORY STUDIES**

**125** Body Composition and Muscle Mass and Its Effect on Functional Activities of Males in Comparison to Females with Chronic Spinal Cord Injury

Marjorie Morgan PTA; CLT

#### SEX/FERTILITY

- **126** Knowledge, Comfort, Approach and Attitude towards Sexuality Scale in Spinal Cord injured Population: Adaptation and Validation to Spanish Language Laura Ramirez Abadia, MD
- **127** Promoting Reproductive Health Equity After Spinal Cord Injury: Identifying Needs for Health Professional Training and Continuing Education

Lauren Hall, MD

#### SKIN

- **128** Staged Chronic Wound Therapy with Use of Medical Maggot Therapy and Human Placental Extracellular Matrix injectate: A Case Study Colton Sauer, MD
- **129** The Feasibility of Admitting Patients to Acute Rehabilitation with Severe Pressure injuries Elizabeth Twist, MD

#### **SPASTICITY**

130 Development of a Virtual Teaching Tool for Support in The Application of Botulinum Toxin Daisy Falla Ramirez, PhD

#### **SPINE SURGERY**

- **131** The Surgical Enigma: Tracing Post-Surgical Guillain-Barré Syndrome Alwin David, MD
- **132** Efficacy of Postoperative Spine Orthosis in The Prevention of Fixation Failure after Surgery for Unstable Thoracolumbar Fractures Mark Prasarn, MD
- 133 Is Routine Use of External Spinal Orthoses Necessary after Operative Stabilization of Cervical Spine injuries? Mark Prasarn, MD
- **134** Utility of Augmented Reality and Virtual Reality in Spine Surgery Hasan Sumdani, MD



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#### TRANSLATIONAL RESEARCH

- **135** Improving Bowel Function in Chronic Spinal Cord Injury with Noninvasive Spinal Cord Neuromodulation: Translational Advances Rahul Sachdeva, PhD
- 136 Targeting intraparenchymal Hemorrhage After SCI Antje Kroner, MD, PhD
- 137 The Concept of Positive Deviance Applied to Spinal Cord Injury Recovery - An Analysis of Medications Received By Patients Exhibiting A Phenomenal Recovery Lucie Bourguignon, MSc
- 138 Ethics, Access and Inclusion: Human Subjects Considerations for Spinal Cord Injury
   B. Jenny Kiratli, PhD

#### **UPPER EXTREMITY FUNCTION**

- **139** Isn't It GRANND? Grasp-Release Assessment for A Networked Neuroprosthesis Device – A Clinical Trial Update Anne M. Bryden, PhD, OTR/L
- **140** Pilot Data to Develop A Multivariate Classification System for Upper Extremity Function and Participation Among People with Tetraplegia Ana Valeria Aguirre Guemez, MD
- 141 A Simplified Neuroprosthesis for Lateral Pinch in Cervical Spinal Cord Injury: Proof of Principle Megan Moynahan, MS

#### UROLOGY

- **142** Chronic Electrical Stimulation to Reduce Bladder Hyperreflexia Mine Aydan Cenberoglu, MD
- **143** Urinary NADH Levels As A Biomarker for Bacterial Metabolic Activity and Bladder inflammation Among People with NLUTD Abigail Fox, BAc
- 144 Within Individual Urinalysis and Urine Culture Variation with Symptoms Among People with Neurogenic Lower Urinary Tract Dysfunction who use Indwelling Catheterization Christopher Riegner, BA

#### WHEELCHAIR

- 145 Are Al-Based Conversational Agents A Reliable Support for Wheelchair Service Providers During The Selection of Appropriate Wheelchairs? Alberto Isaac Perez Sanpablo, DSc
- 146 Rotator Cuff Tendon Pathology Is Associated with Satisfaction with Life in Pediatric and Adult Manual Wheelchair Users with Spinal Cord Injury and Dysfunctions Shubhra Mukherjee, MD, FRCP(C)

#### **147** Assessing The Quality of information for Patients on Wheelchair Services Provided By Conversational Agents Based on Artificial intelligence

Alberto Isaac Perez Sanpablo, DSc



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Visit: SpinalCordRecovery.org

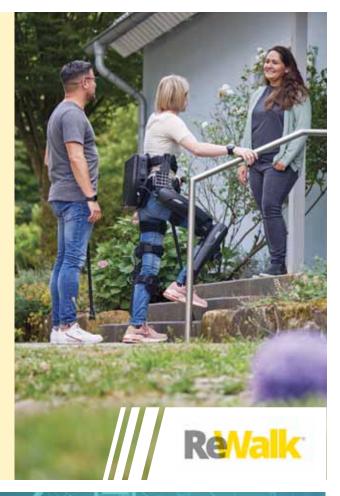
INTERNATIONAL CENTER FOR SPINAL CORD INJURY at Kennedy Krieger Institute

## Paralyzed Medicare Beneficiaries May Be Eligible

The ReWalk Personal Exoskeleton by Lifeward gives paralyzed individuals a new option to experience the benefits of walking again in daily life – even in environments with stairs and curbs.



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If you are looking for an experienced SCI partner to help you with your next clinical trial, contact DP Clinical.



### Your Partner in Success

- A full service contract research organization (CRO) specializing in spinal cord injury (SCI) clinical research for more than 30 years
- Managed the gold standard SCI trial Sygen<sup>®</sup> (GM1)
- Expertise includes drugs, devices, neuromodulation, autologous and stem cells, and gene therapy
- Strong relationships with SCI leaders, key professionals, and trauma/rehabilitation facilities
- In addition to SCI research, DP Clinical has expertise in dermatology, oncology, neuroscience, ophthalmology, infectious disease.
- If you're looking for a team that will be your partner in success for your next clinical trial, contact DP Clinical

9201 Corporate Blvd, Rockville, MD 20850 ~ 301-646-0388 jhamer@dpclinical.com ~ www.dpclinical.com World-renowned expertise. World-class innovation. World of difference. That's the Power of U.

At UofL Health – Frazier Rehabilitation Institute, patients benefit from leading-edge research, expertise and compassion that can make a world of difference, every step of the way. As one of the most innovative and state-of-the-art rehab facilities in the country, we help each patient's journey become a success story.

UofL Physicians – Physical Medicine & Rehabilitation experts offer personalized care for patients using revolutionary treatments for everything from spinal cord injuries to trauma, musculoskeletal conditions, cerebral disorders and more. With over 70 years of rehab experience and extensive collaborative partnerships, Frazier Rehab delivers comprehensive programs, highly skilled therapy teams and innovative care models that have earned national recognition.

We offer a wide variety of rehabilitation programs including:

- Acute inpatient rehab
- Assistive technology
- Brain injury
- Movement disorders
- Pediatrics
- Pulmonary rehab
- Spinal cord injury
- Stroke recovery
- Outpatient rehab

With every referral, we not only optimize patient healing and quality of life, we can help them experience lifechanging success. That's the Power of U.

## Frazier Rehabilitation Institute

### **UL** Health

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Visit us at UofLHealth.org/FrazierRehab for more information.

**Camilo Castillo, MD** Physical Medicine & Rehabilitation

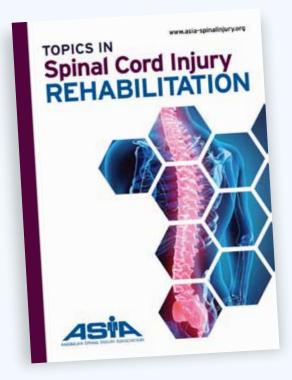
UL Health



#### ONWARD is committed to helping people with spinal cord injury regain movement, function, and independence.

Learn more about two breakthrough ARC Therapy<sup>™</sup> neuromodulation platforms on onwd.com.\*

\*Investigational therapies, not available for commercial use. 2023006A



## **Topics in Spinal Cord Rehabilitation**

Topics in Spinal Cord Injury Rehabilitation (TSCIR) is an interdisciplinary journal devoted to the study and dissemination of practical and theoretical information related to the subject of spinal cord injury rehabilitation.



The TSCIR Online Archive is fully indexed and includes all articles from 1997 to present. ASIA members receive complimentary subscriptions to TSCIR!



## **CONGRATULATIONS!**

## MARK S. NASH, PH.D., FACSM, FASIA

Associate Scientific Director for Research, The Miami Project Vice-Chair for Research, Department of Physical Medicine & Rehabilitation Professor, Departments of Neurological Surgery, Physical Medicine & Medicine and Physical Therapy Co-Director, DHHS-NIDILRR South Florida SCI Model System

The University of Miami's Department of Physical Medicine and Rehabilitation and The Miami Project to Cure Paralysis proudly congratulate Dr. Mark S. Nash on becoming the American Spinal Injury Association's president-elect. With his dedication, expertise, and leadership, Dr. Nash is poised to continue leading ASIA toward a future of innovation and excellence.





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MedStar National Rehabilitation Hospital is proud to have an Ace on our team!

> With a serve of dedication and a backhand of brilliance, Dr. Suzanne Groah has rallied our society to new heights.

> > Thank you for your unmatched leadership!

It's how we treat people.

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The Neilsen Foundation's funding is dedicated to supporting both programs and scientific research to improve the quality of life for those affected by and living with spinal cord injury.

Visit our website at www.chnfoundation.org.