

# **Fifth Annual Pediatric Course: Technological Advancements in the Management of Cerebral Palsy**

**MAY 16-17, 2024**

**FLEX: VIRTUAL or IN-PERSON**



# Technological Advancements in the Management of CP

The Academy is the educational arm of Shirley Ryan AbilityLab (formerly RIC), a non-profit rehabilitation hospital in Chicago that has been ranked number one by *US News and World Report* since 1991. The Academy offers a wide range of accredited programs with the common goal of improving patient outcomes through clinical excellence. 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 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

Technology for individuals with Cerebral Palsy (CP) is a powerful ally, transforming challenges into opportunities and fostering newfound independence. This course will focus on the use of technology and the innovative ways in which it can enhance rehabilitation for individuals with CP. There is a large movement in childhood disability resulting in groundbreaking research, applications and devices to improve detection, access and independence for the individual with CP. This two-day course will discuss the use of technology in research and clinical practice to help with early detection, improvement in mobility, upper extremity function and access to community and functional participation in daily life. Leaders in the field will discuss the benefits and challenges when using technology and how input from patients and families can increase the success of its use. We will seek to empower rehabilitation professionals to utilize technology within their current practice and encourage the understanding of when technology might not be the appropriate fit for the outcomes and goals of their patients.

## Location and Delivery Method

This is a flex course being taught both virtually and in-person. If taking this course virtually, we will be using Zoom, an online meeting platform, and the Academy Learning Portal. Other online learning materials may also be utilized. If attending live, the program will be held at the Shirley Ryan AbilityLab, 355 East Erie Street, Chicago IL, 60611. The conference site is wheelchair accessible. Accessible materials, sign language interpretation and personal assistance are available with at least 45 days advance notice.

Directions and Parking Details for the Shirley Ryan AbilityLab can be found: [HERE](#)

## Successful Completion

To successfully complete this course, you must attend and participate on both live dates, submit attendance codes in the Academy Learning Portal and complete an online evaluation of the program by **May 31, 2024**.

## Who Should Attend

Advanced Practice Provider (APN's and PA's), Nurses (outpatient, inpatient), Occupational Therapists, Occupational Therapy Assistants, Orthotic Assistants, Orthotic Technicians, Orthotists, Physical Therapist Assistants, Physical Therapists, Physicians (including Residents and Fellows), Physiatrists, Orthopedics, Neurologists, Pediatricians, and Family Medicine Specialists, Social Workers and Speech-Language Pathologists. See accreditation details in the Continuing Education section.

## Learner Outcomes

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

- Explain how current research using technology can assist in early detection and intervention for babies with cerebral palsy.
- Determine when to use electrical stimulation to improve functional movement in the lower and upper extremity in your patient population.
- Summarize the benefits of independence with mobility and the rationale for early power mobility prescription.
- Summarize the benefits of robotic technology for ambulation or upper extremity use vs. when low tech options are more optimal for individuals with cerebral palsy.
- Prioritize two ways to integrate communication devices within your plan of care to maximize the patient's potential in therapy.
- Explain the safety concerns with increased access to technology and the role of the healthcare practitioner to minimize these concerns.

## Course Chairs



### Gadi Revivo, DO

*Section Chief, Pediatric and Adolescent Rehabilitation Program,  
Shirley Ryan AbilityLab*

*Associate Professor, Department of Physical Medicine and Rehabilitation  
Northwestern University Feinberg School of Medicine*

Gadi Revivo, DO is Section Chief of the Pediatric and Adolescent Rehabilitation Program at the Shirley Ryan AbilityLab and Assistant Professor in the Department of Physical Medicine and Rehabilitation and Northwestern University Feinberg School of Medicine. He also serves as a consultant to Lurie Children's Hospital in Chicago. For nearly 20 years, he has been working with children and young adults with cerebral palsy in a multidisciplinary team at Shirley Ryan AbilityLab and previously at Rady Children's Hospital with spasticity management experience. He currently collaborates with a team consisting of clinicians as well as researchers at Shirley Ryan AbilityLab on spasticity innovations to improve both upper and lower extremity function, ambulation, trunk control for optimal sitting and completion of ADL. He works at the national and international level of multi studies, investigating the efficacy of Botulinum Toxins in spasticity management as well as FDA approval for their usage in pediatric patients.



### **Ana-Marie Rojas, MD**

*Pediatric Rehabilitation Fellowship Director  
Shirley Ryan AbilityLab  
Assistant Professor, Department of Physical Medicine, and Rehabilitation  
Northwestern University Feinberg School of Medicine*

Dr. Ana-Marie Rojas is a Pediatric Physiatrist at the Shirley Ryan AbilityLab and Assistant Professor in the Department of Physical Medicine and Rehabilitation and Northwestern University Feinberg School of Medicine. She serves as co-medical director of the Motion Analysis Center at Shirley Ryan AbilityLab. She also serves as a consultant to Lurie Children's Hospital in Chicago. She is an active member of the American Academy of Cerebral Palsy and Developmental Medicine, the Association of Academic Physiatrists and the American Academy of Physical Medicine and Rehabilitation. She is the co-author of several chapters in the fields of stroke, limb deficiency and spina bifida. Dr. Rojas collaborates with neurosurgeons, orthopedic surgeons, engineers, therapists and other clinicians to develop innovative treatments in the field of Pediatric Rehabilitation.

## **Course Faculty**

### **Gabriel Anzueto, MD**

*Medical Director, Duncan Neurodevelopmental Clinic at UT Houston*

### **Elaine Biddiss Ph.D., P.Eng.**

*Senior Scientist, Holland Bloorview Kids Rehabilitation Hospital, Toronto, ON*

### **Yu-Ping Chen, PT, SCD.**

*Professor and Director in Ph.D. in Health Sciences, Physical Therapy, Georgia State University*

### **Kristen Cortese, AuD, CCC-A**

*Pediatric Audiologist, Clinician III, Ann & Robert H Lurie Children's Hospital*

### **Jennifer Hicks, Ph.D. Eng.**

*Executive Director, Wu Tsai Human Performance Alliance, Stanford University*

### **Bryce Johnson**

*Principal Researcher Accessibility & Inclusive Design, Microsoft*

### **Lisa Kenyon, PT, DPT, Ph.D.**

*Professor, Department of Physical Therapy, Grand Valley State University*

### **Nathalie Maitre, MD, Ph.D.**

*Professor of Pediatrics in Neonatology, Neonatologist at Children's Healthcare of Atlanta  
Director of Early Development and Cerebral Palsy Research*

**Anna McCormick, MD**

*Medical Director of Developmental Medicine and Rehabilitation, The Children's Hospital of Eastern Ontario. Associate Professor, University of Ottawa*

**Colleen Peyton, PT, DPT**

*Assistant Professor, Northwestern University*

**Kat Steele, Ph.D.**

*Albert S. Kobayashi Endowed Professor of Mechanical Engineering at the University of Washington*

**Theresa Sukal-Moulton, PT, DPT, Ph.D.**

*Assistant Professor, Northwestern University*

**Beth Tournis, Au.D. CCC-A**

*Pediatric Audiologist, Clinician III, Ann & Robert H Lurie Children's Hospital*

**Susannah Van Damme, OT Reg, Ont.**

*Occupational Therapist, Team Lead, Clinical Brain Computer Interface Program, Holland Bloorview Kids Rehabilitation Hospital, Toronto, ON*

## **Shirley Ryan AbilityLab Staff Faculty**

**Ronald Cotton, MD, Ph.D.**

*Lab Director, Center for Bionic Medicine*

*Research Physical Therapist, Physical Therapist, Outpatient Pediatrics*

**Edward Hitchcock, OTR/L**

*Manager, Occupational Therapist, Technology Center*

**Leslie Marriott, OTR/L, BCP**

*Education Program Manager, Academy Occupational Therapist, Outpatient Pediatrics*

**Tasos Karakostas, MPT, Ph.D. B.Eng.**

*Associate Director, Motion Analysis Center*

**Megan O'Brien, Ph.D.**

*Associate Director of the Technology and Innovation Hub (tiHUB)*

**Timothy Krater, MD**

*Physiatrist, PM&R Pediatrics*

**Meaghan Rubsam, DPT, PCS**

*Research Physical Therapist, Physical Therapist, Outpatient Pediatrics*

**Richard L. Lieber, Ph.D.**

*Senior Vice President & Chief, Scientific Officer*

**Kathleen Ruppert, MS, CCC/SLP**

*Speech Language Pathologist, Technology Center*

**Sarah Lock, DPT**

*Research Physical Therapist, Physical Therapist, Outpatient Pediatrics*

**Jennifer Traines, DPT**

*Research Physical Therapist, Physical Therapist Legs & Walking Lab*

**Gabriela Lopez, DPT, PCS**

## Agenda (in CST)

Day One - May 16, 2024

8:30-9:00 am CT	<b>Registration &amp; Continental Breakfast (in-person learners only)</b> 10 <sup>th</sup> floor Auditorium – Shirley Ryan AbilityLab
9:00	<b>Welcome - Review of Course Outcomes &amp; Expectations</b> <i>Leslie Marriott, OT, Gadi Revivo, DO, Ana-Marie Rojas, MD</i>
9:15	<b>Technology Movement: Why is it so Important and What Does it Mean?</b> <i>Rick Lieber, Ph.D.</i>
9:45	<b>Technology &amp; Social Justice</b> <i>TBD</i>
10:30-10:45	<b>Break</b>
10:45	<b>Use of Sensors in Research</b> <i>Megan O'Brien, OT</i>
11:00	<b>Mat Study</b> <i>Nathalie Maitre, MD</i>
11:15	<b>Movement App</b> <i>Colleen Peyton, PT</i>
11:30	<b>Discussion on Improvement of Early Detection for Kids with CP</b> <i>Nathalie Maitre, MD, Megan O'Brien, PT, Colleen Peyton, PT</i> <i>Moderated by: Tim Krater, MD</i>
12:00-1:00 pm	<b>Lunch (on your own)</b>
1:00	<b>Functional Electrical Stimulation to Facilitate Improved Function</b> <i>Theresa Sukal-Moulton, PT</i>
1:30	<b>Spinal Neuromodulation</b> <i>Kat Steele, Ph.D.</i>
2:00	<b>Clinical Implications for Use of Electrical Stimulation for Functional Outcomes</b> <i>Kat Steele, Ph.D., Theresa Sukal-Moulton, PT, Moderator; Gadi Revivo, DO</i>
2:30-2:45	<b>Break</b>
Choose One Track 2:45-4:30	<b>Track One: Technology for Gait &amp; Mobility</b> <ul style="list-style-type: none"> <li>- <b>Open Access Gait Analysis</b> <i>Jennifer Hicks, Ph.D.</i></li> <li>- <b>Novel Use of Heart Rate Monitors</b> <i>Gabriela Lopez, DPT, Meaghan Rubsam, DPT</i></li> </ul>

	<ul style="list-style-type: none"> <li>- <b>Robotics vs Above Ground Gait Training</b> <i>Sarah Lock, PT, Jennifer Trainers, PT</i></li> </ul> <p><b>Track Two: Technology for Upper Extremity Rehabilitation</b></p> <ul style="list-style-type: none"> <li>- <b>Updates in Research on UE Robotics</b> <i>Yu-Ping Chen, PT, ScD.</i></li> <li>- <b>Virtual Reality</b> <i>Elaine Biddiss, Ph.D.</i></li> <li>- <b>Upper Extremity Robotics vs. Traditional Therapy</b> <i>Leslie Marriott, OT</i></li> </ul> <p><b>Track Three: Technology for Participation</b></p> <ul style="list-style-type: none"> <li>- <b>Hearing Impairments &amp; the Effect on Participation</b> <i>Beth Tournis, Au.D., CCC-A, Kristen Cortese, Au.D., CCC-A</i></li> <li>- <b>Euphonia: Can We Use Tech to Improve Speech Intelligibility?</b> <i>Kathleen Ruppert, SLP</i></li> <li>- <b>Smart Home Access</b> <i>Edward Hitchcock, OT</i></li> </ul>
4:30 PM	End of Day One

**Day Two – May 17, 2024**

8:00-8:30 am CT	<b>Registration &amp; Continental Breakfast (in-person learners only)</b> 10 <sup>th</sup> floor Auditorium – Shirley Ryan AbilityLab
8:30	<b>Day Two - Review of Day One, Day Two Expectations</b> <i>Leslie Marriott, OT, Gadi Revivo, DO, Ana-Marie Rojas, MD</i>
8:45	<b>AAC: Why Every Rehabilitation Professional Should Make It a Priority</b> <i>Anna Ware, SLP</i>
9:30	<b>Brain Computer Interface</b> <i>Susannah Van Damme, OT Reg. (Ont.)</i>
10:15-10:30	Break
10:30	<b>Early Power Mobility: Why We Should Be Prescribing Sooner?</b> <i>Andrina Sabet, PT</i>
11:15	<b>On Time Power Mobility</b> <i>Lisa Kenyon, PT</i>
12:00-1:00 pm	Lunch (on your own)
1:00	<b>Parent/ Patient Panel- The Highs and Lows of Technology</b> <i>James Sulzer, Moderator, Anna McCormick, MD</i>
2:00	Break
2:15	<b>Motion Analysis Center &amp; the Future with AI</b> <i>Ronald Cotton, MD, PhD., Tasos Karakostas, PT, Ph.D, Ana-Marie Rojas, MD</i>

3:00	<b>Future of Adaptive Gaming</b> Bryce Johnson
3:30	<b>Improved Access to Technology: What is Our Role to Keep Kids Safe?</b> <i>Gabriel Anzueto, MD</i>
4:00	<b>Course Debrief &amp; Wrap Up</b> <i>Leslie Marriott, OT, Gadi Revivo, DO, Ana-Marie Rojas, MD</i>
4:30 PM	End of Day Two

**Cancellation Policy**

All cancellations must be requested by email at [academy@sralab.org](mailto:academy@sralab.org). Refunds less a 20% administrative charge will be given until 30 days before the start date of the course. If the cancellation notice is received less than 30 days from the start date of the course, a credit towards a future continuing education program would be applied for one year from the start date of the canceled course. The Academy reserves the right to cancel or change any programs for due cause. The cancellation of a program by the Academy will result in a full refund of tuition.

**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 registrations. Full tuition must accompany the registration form in order to confirm your 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 same day that you register. For registrations received by standard mail, the confirmation may take up to 3 weeks to process. If you do not receive confirmation within this period, please call 312-238-6042. One week prior to the course, only internet registrations that include an email will be accepted. Please note that once the course has reached its maximum enrollment, no additional spots will become available.

**Accommodations**

Shirley Ryan AbilityLab has a preferred rate at The Hyatt Centric Chicago Magnificent Mile which is located one block away. Hyatt Centric Chicago Magnificent Mile, 633 North St. Clair, Chicago, Illinois, 60611. You can reserve a room by clicking [HERE](#). The daily rate for parking at the Hyatt Chicago is \$76.00/day with in and out privileges.

The W Chicago - Lakeshore is located 1 block from the Shirley Ryan AbilityLab. You can reserve a room with a discounted rate by clicking [HERE](#) and entering Shirley Ryan AbilityLab’s corporate code: ROI. The daily rate for parking at the W Chicago Lakeshore is \$79.00/day with in and out privileges.

For a list of other available lodging options near the hospital, please click [HERE](#).



\*Room and parking rates may fluctuate and are subject to change

## 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 better)
- Web browser with latest stable version. Recommended browsers are Apple Safari, Google Chrome, Mozilla Firefox and Microsoft Edge
- JavaScript and Cookies enabled
- Speaker or headset to listen to audio files and participate in Zoom calls
- Do NOT use Internet Explorer, as it is not supported.

## Accessibility

Please contact the Academy if you require any special accommodations for this course.

## Continuing Education Credit

### Early Intervention

The Illinois Early Intervention Training Program has approved this event for 12.5 hours of EI credential credit. [Please click here for specific breakdown of categories](#)

### Nursing



The Shirley Ryan AbilityLab 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 12.5 contact hours of continuing nursing education.

### Occupational Therapy



American  
Occupational Therapy  
Association

**Approved Provider**

Shirley Ryan AbilityLab is an AOTA Approved Provider of professional development. Course approval ID# 8750. This distance learning-interactive/ live-interactive course is offered at 12.5 contact

hours, 1.2 CEUs [intermediate level, foundational knowledge/OT service delivery]. The assignment of AOTA CEUs does not imply endorsement of specific course content, products, or clinical procedures by AOTA.

## Orthotics

This program has been approved for up to 12.5 credits through the American Board for Certification in O&P (ABC) for Orthotists, Orthotic Assistants, and Orthotic Technicians. Full participation in this program is required to be eligible for the full amount of credits.



## Physical Therapy

This 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 California and 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 course has been approved for 12.5 contact hours on 3/7/2024.

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 12.5 *AMA PRA Category 1 Credit(s)*<sup>™</sup>. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

## Speech-Language Pathology



**ASHA CE**  
**APPROVED PROVIDER**

**Rehabilitation Institute of Chicago  
dba Shirley Ryan AbilityLab**

Intermediate Level  
1.25 ASHA CEUs

## Faculty Disclosures

### Course Director's and Planning Committee Members' Disclosure Information:

Leslie Marriott, OTR/L, BCP	Has nothing to disclose.
Gadi Revivo, DO	Has nothing to disclose.
Ana-Marie Rojas, MD	Has nothing to disclose.
Nichollette Andrews, MS, APRN, PCNS-BC	Has nothing to disclose.
Pamela B. Pfeifer, MS, RN, NPD-BC	Has nothing to disclose.
Ashley Berman, SLP	Has nothing to disclose.
Ryan Coxe, PT, DPT	Has nothing to disclose.

### Speakers, Moderators and Panelists' Disclosure Information:

Gabriel Anzueto, MD	Has nothing to disclose.
Elaine Biddiss, Ph.D. PEng.	Financial relationship with Pearl Interactives Inc.
Kristen Cortese, Au.D. CCC-A	Has nothing to disclose.
Jennifer Hicks, Ph.D.	Has nothing to disclose.
Edward Hitchcock, OTR/L	Has nothing to disclose.
Bryce Johnson	Receives a salary from Microsoft
Tasos Karakostas, Ph.D., MPT	Has nothing to disclose.
Rick Lieber, Ph.D.	Has nothing to disclose.
Sara Lock, PT, DPT	Has nothing to disclose.
Gabriela Lopez, PT, DPT	Has nothing to disclose.
Nathalie Maitre, MD, Ph.D.	Non-financial patent with Enlighten Mobility
Anna McCormick, MD	Has nothing to disclose.
Megan O'Brien, Ph.D.	Has nothing to disclose.
Colleen Peyton, PT, DPT	Receives speaking fee from GM Trust Speaker's Bureau
Meaghan Rubsum, PT, DPT	Has nothing to disclose.
Kathleen Ruppert, MS, CCC	Has nothing to disclose.
Andrina Sabet, PT	Has nothing to disclose.
Kat Steele, Ph.D.	Non-financial patent Spine-X and University of Washington
Theresa Sukal-Moulton, PT, DPT, Ph.D.	Has nothing to disclose.
Beth Tournis, Au.D. CCC-A	Has nothing to disclose.
Jennifer Traines, DPT	Has nothing to disclose.
Susannah Van Damme, OT Reg. (Ont)	Has nothing to disclose.

# THANK YOU!

**The Academy would like to extend a special thank you to the following supporters of this program:**

**Silver Sponsor**

C-Star

**Bronze Sponsor**

Luciano Dias, MD

The Academy would like to extend a special THANK YOU to **MERZ** for their educational grant which supports the Academy at the Shirley Ryan AbilityLab and helps us pull together programs such as this.

Note: Course sponsors do not have input into the planning or delivery of course content.

# Technological Advancements in the Management of CP

Register online at <https://www.sralab.org/academy> or complete the form below and return with payment.

Mail to: Academy  
Shirley Ryan AbilityLab  
355 E. Erie Street, Suite 12-West  
Chicago, Illinois 60611

Check One: Live \_\_\_\_\_ Virtual \_\_\_\_\_

Select One Workshop Track: Track One: Technology for Gait & Mobility \_\_\_\_\_  
Track Two: Technology for Upper Extremity Rehabilitation \_\_\_\_\_ Track Three: Technology for Participation \_\_\_\_\_

Early Bird Registration Fee by March 21 <sup>st</sup> 2024	\$400
Registration Fee After March 21 <sup>st</sup> 2024	\$450

Questions? Contact Leslie Marriott [lmariott@sralab.org](mailto:lmariott@sralab.org), 312-238-6832

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)  
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Billing Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
Cardholder's Signature \_\_\_\_\_