Unmasking Potential

AACPDM

# 74TH ANNUAL MEETING

# 2020

## JOIN US LIVE ON-LINE SEPTEMBER 23-26

**ALL CONTENT AVAILABLE ON DEMAND UNTIL DECEMBER 31, 2020.*

AACPDM

# VIRTUAL FINAL PROGRAM

*Teddy underwent selective dorsal rhizotomy surgery to permanently reduce muscle spasticity caused by cerebral palsy. This highly-involved surgery was refined at Gillette and means Teddy can thrive and live a vibrant life.*

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Gillette Children's
*Specialty Healthcare*

gillettechildrens.org/aacpdm-2020

# EMPOWERING YOU WITH REMOTE SUPPORT RESOURCES

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*Please see programming manual 8880T2 at manuals.medtronic.com

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Further, Together

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# AACPDM

Dear Industry and Institution Professionals:

In 1948, the AACPDM held the first annual meeting in Baltimore bringing together a small group of professionals devoted to the inter-disciplinary education of clinicians interested in improving care for children with Cerebral Palsy (CP). Over the years, the annual meeting has grown into an important annual event that provides professionals the opportunity to hear about the most up to date research, learn from experts at breakfasts and instructional courses and connect with colleagues old and new. The connections created at the annual meeting have blossomed into research collaborations and long-standing friendships.

After months of closely monitoring the situation associated with the current pandemic and considered all the options related to holding our traditional in-person meeting; the AACPDM program committee and leadership made the difficult decision to cancel our in-person meeting, and opt for the first ever virtual meeting. We continue to believe this was the best decision to protect the health and safety of our members and attendees..

Although we are unable to come together for an in-person meeting, the program committee is thrilled that we can offer a virtual program in a similar format to our traditional meeting. As all of our keynote speakers, and the vast majority of speakers for pre-courses, scientific presentations, lunch & learns and instructional courses have agreed to participate in our virtual meeting, our program will offer a similar educational experience through both live and pre-recorded options. Attendees will be able to meet with our vendors and ask questions following live presentations. Should you be unable to attend the meeting during the live session, you will still have the opportunity to ask questions of the presenters and engage with our vendors and other attendees at the meeting. In keeping with this years' theme of the meeting, "Unmasking Potential," we are creating fresh, new opportunities for networking and collaboration with other professionals passionate about enhancing the health and well-being of individuals with childhood-onset disabilities around the globe.

By registering for the AACPDM Annual Meeting, you will have the ability to earn over 89 educational credits at your convenience by giving you virtual access to all Annual Meeting sessions until December 31, 2020! This is more than double the usual annual meeting CME/CEU value!

Please check the AACPDM website regularly to receive program updates. The AACPDM leadership would like to thank each of you for your support in this decision.

Best Regards,

*Susan E. Sienko, PhD*
*First Vice President*

*Joline Brandenburg, MD*

*Jeremy Bauer, MD*
*Scientific Program Committee Co-Chairs*

555 East Wells Street, Suite 1100, Milwaukee, WI 53202
info@aacpdm.org | +1 (414) 918-3014 | www.aacpdm.org

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September 23-26, 2020

**Future Annual Meetings**
October 6-9, 2021
Quebec, QC, Canada

September 21-24, 2022
Las Vegas, Nevada

September 13-17, 2023
Chicago, Illinois

**AACPDM Office**
555 E Wells Street, Suite 1100
Milwaukee, WI 53202
Tel: 1.414.918.3014
Fax: 1.414.276.2146
Email: info@aacpdm.org
Website: www.aacpdm.org

All sessions and presentation times are in the Central Time (CDT) Zone. To assist with how to convert times to your specific time zone; click on the time zone converter "https://www.timeanddate.com/worldclock/meeting.html?year=2020&month=9&day=19&p1=178"

## Tuesday, September 22, 2020

| | |
|---|---|
| 2:00 pm - 4:00 pm | Committee Meetings |
| 4:00 pm - 6:00 pm | Committee Meetings |

## Wednesday, September 23, 2020

| | |
|---|---|
| 10:00 am - 2:00 pm | **Pre-Conference Courses** |
| 3:00 pm - 7:00 pm | **Pre-Conference Courses** |

## Thursday, September 24, 2020

| | |
|---|---|
| 10:00 am - 11:00 am | Membership Business Meeting |
| 11:00 am - 12:00 pm | Lunch and Learn Seminars 1-14<br>(formerly 'Breakfast Seminars') |
| 12:00 pm - 12:30 pm | BREAK (30 min) |
| 12:05 pm - 12:20 pm | Let's Move Activities |
| 12:30 pm - 2:15 pm | **Free Paper Sessions**<br>A: Ortho - Lower Extremity<br>B: Early Intervention<br>C: Adult<br>D: Basic Science |
| 2:30 pm - 4:30 pm | Instructional Courses 1-14 |
| 4:30 pm - 5:00 pm | BREAK (30 min) |
| 4:35 pm - 4:50 pm | Let's Move Activities |
| 5:00 pm - 7:00 pm | **General Session:**<br>Opening Address & Gavel Exchange<br>*Mauricio R. Delgado, MD to Susan E. Sienko, PhD*<br>Presidential Guest Lecture<br>*Ann Tilton, MD*<br>*"The Neurology of Voodoo"*<br>Lifetime Achievement Award<br>*Michael D. Sussman, MD*<br>Gayle G. Arnold Lectureship<br>*Yvonne W. Wu, MD, MPH* |
| 7:00 pm - 8:00 pm | Poster Crawl With Past Presidents |

## Friday, September 25, 2020

| | |
|---|---|
| 9:30 am - 10:45 am | Adults and Aging SIG |
| 11:00 am - 12:00 pm | Lunch and Learn Seminars 15-23<br>(formerly 'Breakfast Seminars') |
| 12:00 pm - 12:30 pm | BREAK (30 min) |
| 12:05 pm - 12:20 pm | Let's Move Activities |
| 12:30 pm - 2:15 pm | **Free Paper Sessions**<br>E: Gait<br>F: Rehab<br>G: International<br>H: Classification and Medical Mix |
| 2:30 pm - 4:30 pm | Instructional Courses 15-26 |
| 4:30 pm - 5:00 pm | BREAK (30 min) |
| 4:35 pm - 4:50 pm | Let's Move Activities |
| 5:00 pm - 7:00 pm | **General Session**<br>Mac Keith Press Basic Science Lecture<br>*Joanne Kurtzberg, MD*<br>Mentorship Award<br>*Mauricio R. Delgado, MD*<br>Point/Counter-Point<br>*Jason J. Howard, MD and Mark E. Gormley, Jr., MD* |

## Saturday, September 26, 2020

| | |
|---|---|
| 9:30 am - 10:45 am | Complex Care SIG Meeting |
| 10:30 am - 12:00 pm | Committee Meetings |
| 11:00 am - 12:00 pm | Lunch and Learn Seminars 28-40<br>(formerly 'Breakfast Seminars') |
| 12:00 pm - 12:30 pm | BREAK (30 min) |
| 12:05 pm - 12:20 pm | Let's Move Activities |
| 12:30 pm - 2:15 pm | **Free Paper Sessions**<br>I: Ortho Spine and Neuromuscular<br>J: Tone<br>K: Home and Community Care<br>L: Pain and Train |
| 2:30 pm - 4:30 pm | Instructional Courses: |
| 4:30 pm - 5:00 pm | BREAK (30 min) |
| 4:35 pm - 4:50 pm | Let's Move Activities |
| 5:00 pm - 7:00 pm | **General Session**<br>Duncan Wyeth Award<br>*Clayton Frech*<br>Chambers Family Lifespan Lecture<br>*Patrick Lawrence*<br>*Cody Jones*<br>*Clayton Frech*<br>*Gracie and Lanie Lockwood*<br>*Tessa and Janie Taylor*<br>LifeShots Winner<br>Closing Remarks<br>2021 Annual Meeting Introduction |

## Monday, October 5, 2020

On-demand sessions available (date is subject to change).

## 2019-2020 AACPDM Board of Directors

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Margaret Wallen, PhD, OT

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Jennifer Lyman

## Office Staff

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Erin Freimark – Senior Meetings Manager
Heather Schrader, CAE – Membership and Administrative Manager
Elizabeth Mueller – Meetings Coordinator
Leah Skogman, CMP – Meetings Manager

## AACPDM Past and Future Presidents

Winthrop Phelps, MD ..... 1948
George G. Deaver, MD ..... 1949
Earl R. Carlson, MD ..... 1950
Bronson Crothers, MD ..... 1951
Leslie B. Hohman, MD ..... 1952
Arnold Gesell, MD ..... 1953
Meyer A. Perlstein, MD ..... 1954
Lenox D. Baker, MD ..... 1955
Margaret H. Jones Kanaar, MD ..... 1956
Nicholson J. Eastman, MD ..... 1957
William T. Green, MD ..... 1958
Alvin J. Ingram, MD ..... 1959
Raymond R. Rembolt, MD ..... 1960
G.W.R. Eggers, MD ..... 1961
Jessie Wright, MD ..... 1962
Russell Meyers, MD ..... 1963
Eric Denhoff, MD ..... 1964
Chester A. Swinyard, MD ..... 1965
Samuel B. Thompson, MD ..... 1966
Sedgwick Mead, MD ..... 1967
William Berenberg, MD ..... 1968
William J. Hillman, MD ..... 1969
Harriet E. Gillette, MD ..... 1970
Henry H. Banks, MD ..... 1971
Lawrence T. Taft, MD ..... 1972
Robert L. Samilson, MD ..... 1973
Elliott D. O'Reilly, MD ..... 1974
Hans U. Zellweger, MD ..... 1975
Eugene E. Bleck, MD ..... 1976
Leon Greenspan, MD ..... 1977
Gerald Solomons, MD ..... 1978
Hyman H. Soboloff, MD ..... 1979
Leonard F. Bender, MD ..... 1980
Fred P. Sage, MD ..... 1981
Paul H. Pearson, MD ..... 1982
Harold B. Levy, MD ..... 1983
David H. Sutherland, MD ..... 1984
Robert V. Groover, MD ..... 1985
Alfred L. Scherzer, MD ..... 1986
Robert P. Christopher, MD ..... 1987
Leon Root, MD ..... 1988
Alfred Healy, MD ..... 1989
Gayle G. Arnold, MD ..... 1990
James R. Gage, MD ..... 1991
John F. McLaughlin, MD ..... 1992
Michael A. Alexander, MD ..... 1993
Helen M. Horstmann, MD ..... 1994
Charlene Butler, EdD ..... 1995
Robert K. Rosenthal, MD ..... 1996
Peter L. Rosenbaum, MD ..... 1997/1998
Dennis C. Harper, PhD ..... 1999
John F. Mantovani, MD ..... 2000
Michael D. Sussman, MD ..... 2001/2002
James A. Blackman, MD ..... 2003
Robert W. Armstrong, MD ..... 2004
Luciano S. Dias, MD ..... 2005
Barry S. Russman, MD ..... 2006
William L. Oppenheim, MD ..... 2007
Diane L. Damiano, PhD, PT ..... 2008
Hank G. Chambers, MD ..... 2009
Deborah J. Gaebler-Spira, MD ..... 2010
Scott A. Hoffinger, MD ..... 2011
Joseph P. Dutkowsky, MD ..... 2012
Maureen E. O'Donnell, MD, MSc, FRCP (C) ..... 2013
Richard D. Stevenson, MD ..... 2014
Darcy Fehlings, MD, MSc, FRCP (C) ..... 2015
Eileen Fowler, PhD, PT ..... 2016
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Susan E. Sienko, PhD ..... 2021
Tom F. Novacheck, MD ..... 2022

# Mac Keith Press

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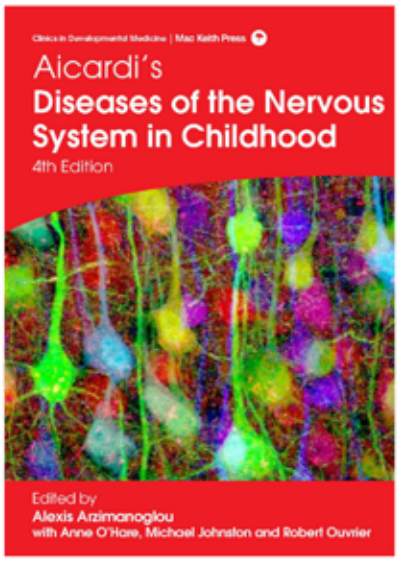




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# Download the AACPDM 2020 Mobile App!

### This mobile app allows you to:

- View schedules, explore sessions, and find networking events.
- Create your own personal schedule for easy conference attendance.
- Access speaker information at your fingertips.
- Post updates to sessions, keynotes, and exhibitor booths.
- Interact with a real-time feed of all event activity that showcases which sessions are trending, and popular discussion topics.
- Earn points for being active on the app.
- Expand your professional network and have fun!

### Features of the App:

- Agenda - view the full agenda and related information (session time, speaker information, etc).
- Update - a quick way to share photos, comments, and which session you're attending.
- Activity Feed - the real-time pulse of the event. See what people are saying, view photos from the event, and find trending sessions and topics.
- Users - view and connect with other event attendees.
- Exhibitors - find exhibitors and supporters. Leave comments or ratings.

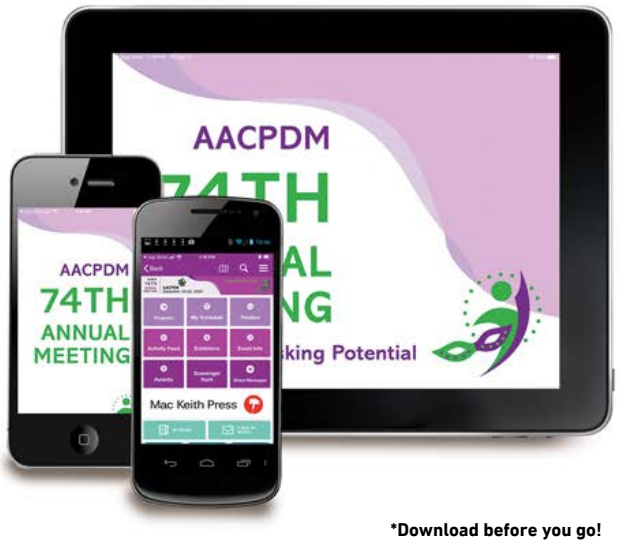
## Get the app!

Download the **"AACPDM Events"** app from the Apple App Store or Google Play Store.

Find your event app by searching for **"AACPDM"** or find the event icon and click to open the app. Follow the login instructions provided by your event registration to begin using the app.

As long as you have an internet connection, you can access the app through your **laptop** via this link:

**https://tinyurl.com/AACPDM20**




***Download before you go!**

## Purpose

The educational program of the American Academy for Cerebral Palsy and Developmental Medicine (AACPDM) is designed to provide targeted opportunities for dissemination of information in the basic sciences, prevention, diagnosis, treatment, and technical advances as applied to persons with childhood-onset disabilities. The program provides a forum for discussion of scientific developments and clinical advances in the care of people with these conditions. By presenting forums which foster interdisciplinary communication and interchange among all allied health care professionals concerned with individuals with cerebral palsy and neurodevelopmental disorders, this program's purpose is to ensure that the qualified personnel have the skills and knowledge derived from practices that have been determined through research and experience to be successful in serving children with disabilities. The purpose is also to encourage teambuilding within organizations and institutions, encourage multicenter studies, develop information for parents, and find a consensus on the optimal care of various conditions.

## Objectives

To disseminate information on new developments in applied and translational sciences, prevention, diagnosis, treatment, and technology for individuals with cerebral palsy and other childhood onset disabilities. Specifically participants will:

- Increase awareness of new and emerging treatments for individuals with cerebral palsy and other developmental disabilities.
- Identify new modalities for the diagnosis of cerebral palsy and developmental disabilities.
- Increase interprofessional collaboration to help coordinate and improve services across the continuum of care for individuals with cerebral palsy and developmental disabilities across the lifespan.

## Target Audience

All health care professionals, clinicians, researchers and health administrators who are concerned with the care of patients with cerebral palsy and other childhood-onset disabilities, including: developmental and other pediatricians, neurologists, physiatrists, orthopedic and neuro-surgeons, physical and occupational therapists, speech and language pathologists, orthotists, dieticians, rehabilitation engineers, kinesthiologists, nurses, psychologists, special education teachers and educators. *Note: All levels of skill will be addressed.*

## AACPDM Vision

AACPDM is a global leader in the multidisciplinary scientific education of health professionals and researchers dedicated to the well being of people with and at risk for cerebral palsy and other childhood-onset disabilities.

## AACPDM Mission

To provide multidisciplinary scientific education for health professionals and promote excellence in research and services for the benefit of people with and at risk for cerebral palsy and other childhood-onset disabilities.

## Online Self-Reporting System for CME / CEU / CE Credits

After the AACPDM 74th Annual Meeting, all registrants will receive an instructional email about reporting and printing out their own continuing education certificates. The on-line self reporting system will open by October 6, 2020. *(Date is subject to change.)* Attendees can access after completing evaluations in the online self-report system. To verify your correct email address, please contact AACPDM staff prior to the conclusion of the live virtual meeting. *Please note: In self-reporting, if you miss more than 15 minutes of a session/course, it is not considered full attendance, and cannot be claimed.*

### Certificate of Attendance

All attendees may claim a Certificate of Attendance.

### ACCME Accreditation Statement

The American Academy for Cerebral Palsy and Developmental Medicine (AACPDM) is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

### AMA Credit Designation Statement

The American Academy for Cerebral Palsy and Developmental Medicine (AACPDM) designates this live activity for a maximum of 89.00 *AMA PRA Category 1 Credits*™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

### Physical Therapists / Physical Therapy Assistants

- The American Academy for Cerebral Palsy and Developmental Medicine is recognized as an Approval Agency by the Physical Therapy Board of California. http://ptbc.ca.gov/licensees/cc_agency.shtml
- This activity is under review by the Texas Board of Physical Therapy Examiners for 38.75 CCUs for PTS and PTAs.

### Occupational Therapists / Occupational Therapy Assistants

The American Academy for Cerebral Palsy and Developmental Medicine is an Approved Provider of Continuing Education by the American Occupational Therapy Association (AOTA) #6379. Occupational Therapists and Occupational Therapy Assistants will be able to claim AOTA CEU's. When claiming AOTA CEUs claim only the credit commensurate with the extent of participation in the activity. All sessions during the AACPDM 74th Annual Meeting are available for credit. *Note: The assignment of AOTA CEUs does not imply endorsement of specific course content, products, or clinical procedures by AOTA.*

### Nursing Credits

The American Academy for Cerebral Palsy and Developmental Medicine (AACPDM) is a Provider approved by the California Board of Registered Nursing, Provider # CEP 14720. Please note that one continuing education unit (CEU) is equal to 10 continuing education contact hours. Register the number of hours you spent in total in the AACPDM 2020 Annual Meeting courses. For example - If you spent 89 hours in the AACPDM courses, this equals 8.9 CEUs.

## Visit & Win Returns!

Be sure to participate in our interactive, online Scavenger Hunt! Click on the 'Scavenger Hunt' tile in AACPDM's mobile app, and answer questions from our participating exhibitors. Individuals who answer the most questions correctly will be entered to win a $500 Amazon gift card! Other prizes include a free year membership, $100 off the 2021 Annual Meeting registration, and $25 off a 2021 eCourse.

Winners will be announced in a broadcast email following the close of the Annual Meeting.

## Poster Crawl with Past Presidents

**Thursday, September 24**
7:00 PM – 8:00 pm CDT

## E-Poster

Scientific, Demonstration and Case Study posters will be available for viewing on the AACPDM Virtual Meeting site in the Poster Gallery beginning Wednesday, September 23 through December 31, 2020.

## Camera/Recording Policy

It is the policy of AACPDM that no photography or recording is permitted.

## System Requirements

For browsers, we recommend Google Chrome. Though not optimized for other browsers, the AACPDM virtual platform will also work with Firefox, Safari and with popular mobile devices. There may be minor visual differences among different browsers, but it shouldn't affect performance or functionality.

For best results, you're encouraged to access the virtual platform through a high-speed broadband service, and check to make sure you have adequate audio and video capabilities, including Adobe Flash. The AACDPM virtual meeting platform will perform well on either a Mac or Windows-based computer.

## FDA Disclaimer

Some medical devices or pharmaceuticals not cleared by the FDA or cleared by the FDA for a specific use only may be used "off-label" (i.e., a use not described on the product's label) if, in the judgment of the treating physician, such use is medically indicated to treat a patient's condition. "Off label" uses of a device or pharmaceutical may be described in AACPDM educational programs or publications so long as the lack of FDA clearance for such uses is also disclosed. Results from scientific studies known to the author or presenter relating to the described intended use should be discussed, if so doing will not adversely affect the study or violate some other regulatory requirement. Some drugs or medical devices described or demonstrated in Academy educational materials or programs have not been cleared by the FDA or have been cleared by the FDA for specific use only. The FDA has stated that it is the responsibility of the physician to determine the FDA clearance status of each drug or device he or she wishes to use in practice.

## Americans with Disabilities Act

The AACPDM wishes to ensure that no individual with a disability is excluded, denied services, or otherwise treated differently than other individuals because of the absence of auxiliary aides and services. If you need any auxiliary aids or services identified in the Americans with Disabilities Act please notify AACPDM at least 14 working days prior to the program to allow time to acquire the support needed.

## SESSION EVALUATIONS

We need your feedback! As a dedicated learner during the AACPDM 74th Annual Meeting we truly value your feedback on the individual sessions, general sessions as well as the overall meeting experience. The future leadership of the AACPDM uses this information to improve on the future educational offerings and to make your experience the most productive and realistic in bringing back practical information to your practice.

The Annual Meeting website will include access to the online survey portal to complete various session evaluations.

Participants will be asked to provide input on the educational program of the 74th Annual Meeting through the online CME / CEU Self-Reporting System when claiming credit for participation.

Please take a moment to provide your feedback on AACPDM 74th Annual Meeting in the in the following ways:

- The Annual Meeting website will include access to the online survey tool to complete various session evaluations. VISIT: http://www.aacpdm.org/meetings/2020/
- Participants will be asked to provide input on the educational program of the AACPDM 74th Annual Meeting through the online CME / CEU Self-Report System when claiming credit for participation.

## Insurance/Liabilities and Disclaimer

The AACPDM will not be held responsible for injuries or for loss or damage to property incurred by participants or guests during the Annual Meeting, including those participating in social and fitness events. Participants and guests are encouraged to take out insurance to cover loss incurred in the event of cancellation, medical expenses, or damage to or loss of personal effects when traveling outside of their own country. The AACPDM cannot be held liable for any hindrance or disruption of Annual Meeting proceedings arising from natural, political, social or economic events, or other unforeseen incidents beyond its control. Registration of a participant implies acceptance of this condition. The material presented at this continuing medical education activity is made available for education purposes only. The material is not intended to represent the only, nor necessarily the best, methods or procedures appropriate for the medical situations discussed, but rather is intended to present an approach, view, statement, or opinion of the faculty that may be helpful to others who face similar situations.

## Disclosure

The presenting authors on the Free Papers and Posters are underlined. All corresponding authors were responsible for querying the co-authors regarding the disclosure of their work. The AACPDM does not view the existence of these disclosed interests or commitments as necessarily implying bias or decreasing the value of the author's participation in the course. To follow ACCME guidelines the Academy has identified the options to disclose as follows: a. Research or institutional support has been received b. Miscellaneous, non-income support (e.g., equipment or services), commercially derived honoraria, or other nonresearch related funding (e.g., paid travel) has been received c. Royalties have been received d. Stock or stock options held e. Consultant or employee f. Received nothing of value g. Did not respond or unable to contact.

One or more of these letters appears by each author's name indicating their disclosure. Please see the Disclosure Index at the back of the program.

Unmasking Potential

## How can you benefit from membership in the American Academy for Cerebral Palsy and Developmental Medicine?

### Annual Meeting
An international forum for the dissemination and exchange of new knowledge, ideas and educational information between participants from all disciplines.

Each year, the Academy offers International Scholarships and Student Scholarships to members to assist with the cost of attending the Annual Meeting. Financial support for the creation of new international meetings that are related to cerebral palsy and developmental medicine is also available through the Development Grant.

### Advisor Support Program
The AACPDM Membership Committee launched an Advisor Support Program to match current AACPDM members with new members. Advisor areas include: networking, committee involvement, research and grants, international experience and more!

### eCourses
The AACPDM Education Committee launched AACPDM eCourses which are 1-4 week online, self-paced educational opportunities to earn continuing education credits (CEUs).

### Networking
Membership in AACPDM facilitates contacts with medical professionals and researchers with similar interests. AACPDM is like no other professional society! The "teamwork" mindset of our members solidifies a worldwide network that provides the most effective outcomes for patients. We are pediatricians, neurologists, surgeons, rehabilitators, therapists, nurses, special educators, engineers, and scientists.

### Publications
Developmental Medicine and Child Neurology (DMCN) is the official journal of the AACPDM. This peer reviewed journal is recognized internationally as the leader in the field. Fellow Members receive a FREE subscription to DMCN, or they may choose to select from a list of Clinics in Developmental Medicine series books in place of the DMCN Journal.

Additionally, AACPDM members assist in developing informational materials to keep the public informed about advances in treating cerebral palsy and other developmental disabilities.

### Research
AACPDM offers the opportunity for members to apply for a Research Planning Grant. The purpose of this grant is to provide financial support to bring together investigators from geographically disparate locations, obtain statistical consultation and develop a multi-center research study plan. The goal is to provide the forum and initial planning to develop a successful grant submission for full funding through some larger agency (e.g., NIH, UCP, NIDRR, CDC, CIHR etc). The grant should focus on an important clinical question relevant to the membership of AACPDM and the involvement of a multidisciplinary team is expected.

### Website
Members can visit the Members Only section of the AACPDM website for a wide variety of information including: Sage Award Videos, membership contact information, and other educational opportunities.

### Committees
Committees are the heart of the Academy! Participation in committees offer networking and other opportunities with colleagues from across disciplines and around the globe. Committees include:

- Adapted Sports and Recreation
- Advocacy
- Awards
- Care Pathways
- Communications
- Complex Care
- Education
- International Affairs
- Life Span Care
- Membership
- Nominating
- Publications
- Research
- Scientific Program

### Member Events at the Meeting
All sessions and presentation times are in the Central Time (CDT) Zone. To assist with how to convert times to your specific time zone; click on the time zone converter

#### AACPDM Committee Meetings
Tuesday, September 22, 2020
2:00 pm - 4:00 pm
4:00 pm - 6:00 pm
Saturday, September 26, 2020
11:00 am - 12:00 pm

#### AACPDM Annual Membership Business Meeting
*Current members only.*
Thursday, September 24, 2020
10:00 AM – 11:00 am

### Committee Chairs

| | |
|---|---|
| Adapted Sports & Recreation Chair: | Hannah Aura Shoval |
| Advocacy Chair: | Susan E. Biffl, MD |
| Awards Chair: | Monica Payares-Lizano, MD, FAAOS, FAAP |
| Care Pathways: | Stacey D. Miller, BScPT, MRSc |
| Communications Chair: | Jessica Pruente, MD |
| Complex Care Chair: | Kathleen Huth, MD, MMSc |
| Education Chair: | Dianne L. Hrubec, MS, PT |
| International Affairs Chair: | Marcia B. Greenberg, MS, PT |
| Lifespan Care Chair: | Marij E. Roebroeck, PhD |
| Membership Chair: | Kareem Abu Sneineh, MD |
| Publications Chair: | Deborah J. Gaebler-Spira, MD |
| Research Chair: | Colleen Peyton, PT, DPT |

## Presidential Guest Lectureship
### Ann Tilton, MD

Ann Tilton, MD, is a Professor of Neurology and Pediatrics and Section Chair of Child Neurology at Louisiana State Health Science Center in New Orleans, Louisiana. She is director of the Rehabilitation Center at Children's Hospital of New Orleans and director of the Comprehensive Spasticity Program. Special interests include neurorehabilitation, neuromuscular disorders, and clinical applications and research in novel uses of botulinum toxin and intrathecal baclofen in the care of children and young adults with abnormal tone.

Dr. Tilton has been involved in the executive committee of the Professors of Child Neurology (PCN) and active in the national Child Neurology Society (CNS) as a councilor, Secretary/Treasurer, and served as President of the organization.

She is the immediate Past-President of the Child Neurology Foundation (CNF). She is actively involved in the American Academy of Neurology (AAN) Board of Directors, where she currently serves as Vice-President.

Residency education is one of her priorities. She served as a member and Vice-Chair of the ACGME Neurology Residency Review Committee (RRC). She recently completed her role as the Chair of the American Board of Psychiatry and Neurology (ABPN).

Her interest in children with disabilities extends to the American Academy of Pediatrics (AAP), where she served on the National Council for Children with Developmental Disabilities. Additionally, she is a certified member of the American Society of Neurorehabilitation and has been active on the executive committee. She is presently the director of the Rehabilitation Center at Children's Hospital of New Orleans.

Dr. Tilton has been board certified by the American Board of Pediatrics, the American Board of Psychiatry and Neurology with Special Qualifications in Child Neurology and the American Board of Psychiatry and Neurology in Clinical Neurophysiology. She has extensive publications on numerous topics and has spoken nationally and internationally on child neurology, rehabilitation, and spasticity management.

## Gayle G. Arnold Lectureship
### Yvonne W. Wu, MD, MPH

Yvonne Wu, MD, MPH, is a Child Neurologist and Professor of Neurology and Pediatrics at the University of California San Francisco (UCSF). Dr. Wu's research focuses on prevention and treatment of newborn brain injury in full term infants. Her goal is to reduce the rate of long-term neurodevelopmental disabilities resulting from insults to the developing brain. Dr. Wu is currently PI of an on-going NIH-funded multicenter trial evaluating erythropoietin as a novel neuroprotective treatment for newborn hypoxic-ischemic encephalopathy. She is also PI of a multidisciplinary team studying the use of electronic fetal monitoring in predicting newborn encephalopathy. Dr. Wu serves on the Editorial Boards of Pediatric Neurology and the Journal of Child Neurology. She is a member of the Program Committee of the Child Neurology Society, and has served as an elected member to the Society for Pediatric Research Council. She was appointed to the American College of Obstetrics and Gynecology (ACOG) Task Force that authored the ACOG consensus publication titled Neonatal Encephalopathy and Neurologic Outcomes. Dr. Wu has published over 80 peer reviewed papers including in high impact journals such as JAMA, JAMA Pediatrics, NEJM, Pediatrics and Annals of Neurology. Dr. Wu's research has been funded by the National Institute of Health, Cerebral Palsy Alliance, Thrasher Research Fund, Cerebral Palsy International Research Foundation and Gates Foundation. Dr. Wu received her medical degree from Harvard Medical School and her Master in Public Health from University of California Berkeley. She completed her residencies in Pediatrics and in Child Neurology at University of California San Francisco.

## Mac Keith Press Basic Science Lectureship
### Joanne Kurtzberg, MD

Joanne Kurtzberg, MD Jerome Harris Distinguished Professor of Pediatrics Professor of Pathology Director, Marcus Center for Cellular Cures (MC3) Director, Pediatric Blood and Marrow Transplant Program Director, Carolinas Cord Blood Bank at Duke Co-Director, Duke Hospital Stem Cell Transplant Laboratory Dr. Kurtzberg is an internationally renowned expert in pediatric hematology/oncology, pediatric blood and marrow transplantation, umbilical cord blood banking and transplantation, and novel applications of cord blood in the emerging fields of cellular therapies and regenerative medicine. Dr. Kurtzberg serves as the Director of the Marcus Center for Cellular Cures (MC3), Director of the Pediatric Blood and Marrow Transplant Program, Director of the Carolinas Cord Blood Bank, and Co-Director of the Stem Cell Transplant Laboratory at Duke University. Dr. Kurtzberg's research in MC3 focuses on translational studies from bench to bedside, seeking to develop transformative clinical therapies using cells, tissues, molecules, genes, and biomaterials to treat diseases and injuries that currently lack effective treatments. Recent areas of investigation in MC3, which are funded by the Marcus Foundation, include the use of autologous cord blood in children with neonatal brain injury, cerebral palsy, and autism, as well as preclinical studies manufacturing microglial oligodendrocyte-like cells from cord blood to treat patients with acquired and genetic brain diseases. Studies of donor cord blood cells in adults with stroke and children with cerebral palsy and autism are also underway. Dr. Kurtzberg's lab has developed novel chemotherapeutic drugs for T-cell Leukemias, assays enumerating ALDH bright cells to predict cord blood potency from segments attached to cryopreserved cord blood units, and is performing translational research testing cord blood expansion, cellular targeted therapies and tissue repair and regeneration. Dr. Kurtzberg currently holds several INDs for investigational clinical trials.

## Point, Counter-Point Lectureship

### Mark E. Gormley, Jr., MD vs. Jason J. Howard, MD

#### Mark E. Gormley, Jr., MD

Mark E. Gormley, Jr., MD, is a pediatric rehabilitation medicine physician at Gillette. He treats children and adolescents who have cerebral palsy, brain injuries, spinal cord injuries, neuromuscular disorders, and other conditions, with a special interest in spasticity management. He joined Gillette in 1993.

Dr. Gormley received his medical degree at the University of Louisville School of Medicine in Louisville, Ky. He completed his residency in physical medicine and rehabilitation at Tufts Affiliated Hospitals in Boston, and completed a fellowship in pediatric rehabilitation medicine and traumatic brain injury at the University of Michigan Medical Center.

Dr. Gormley is board-certified in pediatric physical medicine and rehabilitation. His professional memberships include the American Academy for Cerebral Palsy and Developmental Medicine, the American Academy of Physical Medicine and Rehabilitation, the Association of Academic Physiatrists and the Association of Children's Prosthetic-Orthotic Clinics.

#### Jason J. Howard, MD

JDr. Jason Howard is a pediatric orthopedic surgeon in the Division of Cerebral Palsy/ Department of Orthopedic Surgery at Nemours/ Alfred I. duPont Hospital for Children in Wilmington, Delaware. Prior to moving to the USA, he was the Division Chief of Orthopedic Surgery at Sidra Medicine, a Weill Cornell Medicine-affiliated academic Women and Children's Hospital in Doha, Qatar. He practiced in Canada for 10 years before that, both in Calgary and Halifax, leading the galt analysis services in each of these centers. His clinical areas of interest include the orthopedic management of cerebral palsy and other neuromuscular disorders, including spina bifida, muscular dystrophies, etc. Continuing his research interests at duPont, Dr. Howard has nurtured a long standing collaboration with Dr. Walter Herzog's team at Human Performance Laboratory at the University of Calgary, investigating the pathophysiology of CP muscle. Dr. Howard completed his orthopedic surgery residency at the University of Calgary, with subsequent clinical fellowships at the Royal Children's Hospital, Melbourne, Australia, and at Starship Children's Hospital in Auckland, New Zealand. He also holds degrees in electrical engineering (Memorial University) and Biodesign (Stanford University).

## Chambers Family Lifespan Lectureship

### Panelists:

#### Clayton Frech

Clayton Frech is a disability advocate and social entrepreneur, with a passion for diversity and inclusion across all sectors of society. He is the CEO & Founder of Angel City Sports and is Chairman of the Board of Directors for Adaptive Sports USA. In addition to serving as a board member and strategic advisor to a number of companies, he is currently launching the Ampla Institute, a career development and planning firm dedicated to helping people optimize their career potential.

Mr. Frech became involved in the disability community when his first son, Ezra, was born with some physical differences. Since then, Mr. Frech has been an active advocate, mentor to other families and parents, fundraiser, and board member for high-impact organizations, including the Challenged Athletes Foundation and Adaptive Sports USA, and, of course, Angel City Sports.

Following Ezra's passion for sports, Mr. Frech identified major gaps in programming for athletes with physical disabilities, and in 2013, with the help of friends and family, he set out to address them. In 2015, he produced the first Angel City Games, which is now the largest Paralympic competition in the country, and the West Coast's most prestigious Paralympic event. With a planned 75 clinics in 2020, an impressive inventory of adaptive sports equipment, and the growing flagship event the Angel City Games presented by The Hartford, Angel City Sports is leading the movement ahead of the Los Angeles 2028 Paralympic Games.

Most recently, Mr. Frech served as Regional Vice-President for Safelite AutoGlass, managing the $100M California Region with over 600 employees and 35 facilities. He has also held positions including Vice President of Operations and Sustainability, Classic Party Rentals, Managing Director, NextLeft Digital Strategy Consulting, and Organizational Strategy Consultant, PricewaterhouseCoopers.

#### Cody Jones

Cody Jones is a US Paralympian and American Record Holder with cerebral palsy. He is training for Tokyo, ranked top 10 in the world and when not throwing a javelin, he is speaking to elementary students about disability awareness. Last year alone, Mr. Jones was privileged to speak to thousands of students at dozens of schools. He now has online options for students dealing with school shutdowns due to Covid-19. Disability awareness is worth the effort!

## Grace Lockwood

Grace Lockwood is a 16-year old high school senior living in San Diego, CA. She was diagnosed first with spastic diplegia cerebral palsy later in life at age 11, and then later, triplegic pattern. She has used her love for the water and turned it into a passion for Paralympic swimming, enjoying the competitive sport as her way of relaxing. She plans to swim alongside a collegiate team. Through her platform as a Challenged Athlete, she has worked towards growing Paralympic high school sports within the greater San Diego area.

## Lanie Lockwood

Lanie Lockwood is Grace's mom and has been the primary parent in Grace's journey in swimming before her diagnosis and then after. She has had to learn about not only the sport of swimming, but also the world of U.S. para swimming, which requires travel just to participate. She's also been challenged during this journey on how to support Grace, since diagnosis, manage the physical demands competitive swim training and competition has on her body.

## Tessa and Janie Taylor

Tessa Taylor is 7 years old. She had a traumatic brain injury at 3 weeks old from child abuse which led to hydrocephalus, epilepsy, cortical visual impairment, and spastic quadriplegic cerebral palsy level 3. When she was 6 months old she came to live with us, and her adoption was finalized 16 months later. Her first introduction to sports was participation in therapeutic riding lessons, followed by biski. Since then she has participated in 33 adaptive sports including stand up skiing, sled hockey, surfing, rock climbing, skateboarding, swimming, bowling, curling, jet skiing, water skiing, kayaking, dancing, hiking, running, yoga, golf, bocce ball, shot put, javelin, club throwing, cheerleading, wheelchair tennis, table tennis, archery, and table tennis. With the cessation of adaptive sports festivals this year Miss T has focused primarily on a live Facebook Zumba class 3 times per week. She also has a play area at home which is set up for outdoor games she can play independently, or with family. When Tessa is at home she loves to read her books, play with play dough, spin around on her swings, and cover the whole house in tape. (It's good occupational therapy!) She has three older siblings ages 23, 25, and 30, and is a new auntie. Tessa is the fourth child in a home where 3 of the 4 are adopted. For family privacy, as well as her own, we call her Miss T on social media. She is "The Unstoppable Miss T & CP", and she has shown us that she is indeed unstoppable.

## Lifetime Achievement Award

### 2020 Recipient: Michael D. Sussman, MD

*The AACPDM Lifetime Achievement Award is specifically selected by the First Vice President. The recipient of this award has, during their lifetime, made creative contributions of outstanding significance to the field of medicine and for the benefit of patients with cerebral palsy and other childhood-onset disabilities.*

Michael D. Sussman, MD received his orthopaedic training at Johns Hopkins University and the Children's Hospital in Boston. From 1976 to 1992, he was in the Division of Pediatric Orthopaedic Surgery at the University of Virginia in Charlottesville, VA. He moved to Portland, Oregon in 1992 as Chief of the Medical Staff Department and helped develop a variety of programs including designating clinics for children with neuromuscular diseases, as well as insuring continuity of care for patients.

Dr. Sussman has been a visiting professor and lectured on these topics throughout the United States, Europe and the Middle East. He has received the Arthur H. Huene award from the Pediatric Orthopaedic Society of North America (POSNA) in recognition of his outstanding contributions to pediatric orthopaedics and in support of future endeavors. He also was the recipient of the "Gayle Arnold Award" and presented the award lecture at the 2008 American Academy of Cerebral Palsy and Developmental Medicine (AACPDM) Annual Meeting in Atlanta, GA.

Dr. Sussman is a member of numerous medical societies including the American Academy for Cerebral Palsy and Developmental Medicine (AACPDM), American Academy of Pediatrics (AAP), Pediatric Orthopedic Society of North America (POSNA), and American Academy of Orthopedic Surgeons (AAOS), Scoliosis Research Society (SRS) American Orthopedic Association (AOA) and the European Pediatric Orthopaedic Society (EPOS). He is on the editorial board of the Journal of Pediatric Orthopedics as well as the Journal of Pediatric Orthopedics B, the European issue. He has written many papers published in academic journals as well as book chapters and has been editor of one book on treatment of cerebral palsy.

Research Interests:
Dr. Sussman has particular interest in children with progressive neuromuscular diseases such as muscular dystrophy, spinal muscular atrophy and cerebral palsy.

## Mentorship Award

### 2020 Recipient: Mauricio R. Delgado, MD

*This award recognizes an individual who has demonstrated outstanding leadership for trainees and colleagues in the field of cerebral palsy and other developmental disabilities. The Research Committee considers the breadth and depth of the nominee's contribution and impact on improving services and care, promoting professional education and research for individuals with disabilities, and the sustainability of the nominee's mentorship over time. The award recipient must be a current member of the AACPDM.*

Mauricio R. Delgado, MD is Professor of Neurology and Neurotherapeutics at The University of Texas Southwestern Medical Center at Dallas. He has served as director of neurology at Texas Scottish Rite Hospital for Children since 1990. Dr. Delgado received his medical degree from the University of Monterrey in Monterrey, Mexico. He completed his training in pediatrics and neurology at the University of Ottawa in Ottawa, Canada. He received certification in neurology with special qualification in child neurology and neurophysiology from the American Board of Psychiatry and Neurology. Dr. Delgado is a Fellow of the Royal College of Physicians and Surgeons of Canada and the American Academy of Neurology. Dr. Delgado's clinical and research interests on childhood motor disorders led him to establish specialized clinics in Cerebral Palsy, Holoprosencephaly and Hereditary Spastic Paraparesis. He was the co-chair of the steering committee of the National Institutes of Health Childhood Motor Disorders Task Force. He was the leading author of the 2010 AAN practice guidelines on pharmacological treatment of spasticity in children with cerebral palsy. He has more than 100 peer reviewed publications and has served on the Editorial Boards of Journal of Child Neurology and DMCN.

## Duncan Wyeth Award

**2020 Recipient: Clayton Frech**

*This award is named after Duncan Wyeth, who has been both an outstanding athlete and advocate. The award is presented to an individual who has promoted sports and/or recreation in their area for individuals with disabilities. The recipient may be an athlete, coach, or sponsor.*

## Mac Keith Press Promising Career Award Recipient

**2020 Recipient: To Be Announced**

Mac Keith Press sponsors this award for the best Free Paper or Scientific Poster by an author who is within four years of completion of training and commencement of current career. The award recipient must be a member of the AACPDM or have an application pending. The recipient is selected by the Awards Committee during the live dates of the meeting and awarded after the Annual Meeting.

## Fred P. Sage Award

**2020 Recipient: Kathleen Huth, MD, MMSc**

The Sage Award is given to the best multimedia submission presenting clinical, research, or educational material in a digital format. The Award named after Fred P. Sage, MD, past president (1981) and Chairman of the A/V Committee of the AACPDM. Dr. Sage envisioned the great potential of audio-visual use in the Academy. He advocated for ways to popularize this method of teaching, and this interest eventually lead to the Sage Audio-Visual Award for the best program submitted each year.

## Gayle G. Arnold Award for Best Free Paper

**2020 Recipient: To Be Announced**

The 2020 Gayle G. Arnold Award is selected from a set of abstracts nominated by the Awards Committee. Then the authors are invited to submit a manuscript for final judging. The award of $2,000 is provided by the Children's Hospital in Richmond, Virginia. The editors of Developmental Medicine and Child Neurology Journal request to have first option on publication of this winning paper, as long as the authors comply with the publishing requirements of Mac Keith Press.

## Corbett Ryan Pathways Pioneer Award

**2020 Recipient: Christopher Hendricks**

The recipient of this award represents excellence while pursuing their interests, their dreams and a high quality of life who also happen to live with a personal physical challenge.

## Best Scientific Poster Award Recipient

**2020 Recipient: To Be Announced**

Each year, AACPDM awards the Best Scientific Poster Award. The award recipient is selected as the highest rated poster from all committee member ratings.

## Best Demonstration Poster Award Recipients

**2020 Recipient: To Be Announced**

The AACPDM awards the Best Demonstration Poster Award. The award recipient is selected by popular vote during the Annual Meeting.

## 2020 Scientific Program Overview

This year's program was developed from a submission total of 547 abstracts. All electronically submitted abstracts were independently rated by the multidisciplinary scientific program committee of 16 members (see page 3 of the program). The committee met in March 2020 to review the abstracts and finalize the program (e.g. Scientific paper or poster, instructional course/ Lunch & Learn Seminars). Scientific papers and posters were rated (masked to authors) on research question/objectives, design, methodology, conclusions and relative impact, relevance and importance to the care and treatment of children with childhood onset disabilities. Instructional Courses and Lunch and Learn Seminars (formerly 'Breakfast Seminars') were rated (unmasked) on course objectives, content, presenters and level of impact, relevance and importance to conference attendees and the AACPDM membership at large. The feedback from the previous year's evaluations are utilized in the process of creating the program with the aim of better meeting the needs of meeting attendees.

**The 2020 program includes:**
Scientific Papers
Scientific Posters
Demonstration Posters
Single Event Case Study Posters
Pre-Conference Sessions
Instructional Courses
Lunch and Learn Seminars (formerly 'Breakfast Seminars')

## Scientific Review Process

- Blinded abstracts submitted electronically
- Abstracts are scored independently by the program committee with scores submitted electronically and then tallied/averaged
- Highest scored abstracts are selected
- Program Committee meets in March to make final decisions re: scientific program planning and to ensure that the program is balanced in content.

**Free Papers and Posters are rated on:**
Research Question/Objectives
Research Design, Methodology
Impact, Relevance & Importance

**Instructional Courses and Lunch and Learn Seminars (formerly 'Breakfast Seminars')**
**Seminars are rated on:**
Course Objective
Content/Presenters
Impact, Relevance & Importance

## Scholarships

The American Academy for Cerebral Palsy and Developmental Medicine Scholarship Program supports the mission of the AACPDM to improve the health and general status of children and adults with cerebral palsy, developmental disorders and childhood acquired disabilities. The Academy seeks international applicants who are highly motivated, currently in clinical practice, and who are in a position which will enable them to disseminate knowledge acquired at the meeting to others in their home country once they return. Particular emphasis is placed on assisting those from areas with under supported medical systems and limited financial resources. The AACPDM also awards scholarships to students each year so that they may attend the Annual Meeting.

### 2020 International Scholarship Winners

Carolina Ayllón, MD
Oluwasola A. Solaja, RN, RPaed, RPH, BNSc
Álvaro Hidalgo-Robles, PT
Anna D. Kushnir, MD
Oluwatosin Esther Afolabi, BNSC
Raquel R. Lindquist, PT, PhD
Yusuf S. Jamnagerwalla, MD, M.Med, MSc
Margaret B. Fatudimu, PhD
Mari Thiart, FCOrth (SA) MD
Catherine Paola Velasquez Ignacio, MD
Fernanda Marques
Vrushali Shripad Kulkarni, B.O.Th.

### 2020 Student Scholarship Winners

Karl Jancart, MSEd
Meghan Munger, MPH
Gardenia De Oliveira Barbosa, PhD
Dalina M. Delfing
Zachary B. Novaczyk, BS
Andy Vuong, MS
Ashwini A. Sansare, PT
Thais Invencao Cabral, PhD
Michael P. Trevarrow, BS
Rebecca M. Molinini, DPT
Sonia Khurana, PhD
Ketaki Inamdar, PhD student
Anna O. Jesus, MD
Bhavini K. Surana, PT, EDM
Corri L. Stuyvenberg, PT, DPT, MA
Grace-Anne M. Herard, BA, DPT
Julia A. Shah
Daniel H. Lench, PhD
Jason M. Hubeny
Megan Flanigan, MD
Kianna Nunally
Diego A. Saldonid, PhD
Jennifer Gutterman, MS
Rashelle Hoffman, PT, DPT, GCS

### 2020 Orthopediatrics Travel Scholarship Winners

Paula Silva De Carvalho Chagas, PhD
Katy D. Caynes, BSpPath
Roshaan Salie, MSc
Helen L. Long, MS, CCC-SLP
Rachel Bican, DPT
Nancy Altshuler, PT, C/NDT
Tugba Gokbel
Kimberley S. Scott, PT, DPT, PCS
Brad Corr, DPT
Rose U. Elekanachi, MSc, PhD Student
Verity D. Quiroz, RN, MSN
Oyebukola O. Oyinloye, BMR(PT)
Amy L. Noyes, MSN
Jordan M. Wyrwa, DO
Courtney K. Bishop, MPAS, PA-C
Noel E. Pristas, MD
Mohammed Jazaa Alanazi, Orthopedic Board

## Research Grants

*A key mission of the Academy is to promote excellence in research for the benefit of persons with cerebral palsy and childhood-onset disabilities. One way in which the Academy promotes research is through the annual Research Grants. The AACPDM has partnered with the Pedal with Pete Foundation, the Center for Progress and the Cerebral Palsy Alliance to fund multiple grants, up to $25,000 USD each!*

### 2019 Research Grant Recipients

Jessie E. Mann, M.Sc
*Intensive Neurorehabilitation Therapy for Children with Global Developmental Delay and Hyperkinetic Movements*

Theresa S. Moulton, PT, DPT, PhD
*RaceRunning for Fitness in an Elementary School Setting: Pilot Testing and Program Development*

Maria L.V. Dizon, MD, MSCI
*MicroRNAs in Magnesium-Mediated Neuroprotection*

Jason J. Howard, B. Eng., MD, FRCSC
*Use of Collagenase Clostridium Histolyticum to Decrease Muscle Fibre Bundle Stiffness in Cerebral Palsy: A Proof-of-Concept Pilot Study*

Andrea A. Domenighetti, PhD
*Reversal of Aged Muscle Stem Cell Dysfunction in Contractured Muscle from Cerebral Palsy*

Darcy L. Fehlings, MD, MSc, FRCPC
*A cognitive behavioral pain management (CBPM_CP) program for children and youth with CP*

Hsing-Ching Cherie Kuo, PhD, PT
*Task-dependent Motor Cortex Mechanism in Children with Unilateral Spastic Cerebral Palsy*

Daniel G. Whitney
*Fracture epidemiology and its related disease and mortality burden among adults with cerebral palsy*

Fabrizia Festante, PhD
*A Vulnerable Dyad: early parent-infant Interactions in infants at high-risk of Cerebral Palsy*

### 2020 Research Grant Recipients

Yanlong Song
*Multi-modal Neuroimaging in Children with Hemiplegia to Assess Brain Functional Network Reorganization in Relation to Manual Response Inhibition*

Heather A. Feldner, PT, PhD, PCS
*Early Powered Mobility for Toddlers with Cerebral Palsy: A Comparative Case Series of the Permobil® Explorer Mini and a Modified Ride-On Car*

Danielle E. Levac, PhD
*Immersive Virtual Reality for Eye-hand Coordination Assessment in Children with Hemiplegia*

Giuseppina Sgandurra, MD, PhD
*BI-UPCAT - BIlateral UPper-limb Children Action Observation Training for Children with Bilateral Cerebral Palsy*

All sessions and presentation times are in the **Central Time Zone (CDT)**. To assist with how to convert times to your specific time zone, **click here**.

## Wednesday, September 23, 2020

### PRE-CONFERENCE SESSIONS

### 10:00 AM – 2:00 PM

**PC2: USE OF MOTION ANALYSIS TO IDENTIFY & TREAT PATIENTS WITH HEREDITARY SPASTIC PARAPLEGIA (HSP)**
*Christine Bickley, MD*
*This course will only be available during the scheduled live session; this course will not be made available to access on-demand after the live session concludes.*

**PC3: ROBOTIC REHABILITATION: EVIDENCE-BASED TRAINING OF BALANCE, POSTURE, MOBILITY AND GAIT**
*Diane Damiano, PhD, PT; Andrew Gordon, PhD; Sunil Agrawal, PhD; Cole Galloway, PhD, PT; Deborah Gaebler-Spira, MD; David Roye, MD; Joseph Dutkowski, MD; Heakyung Kim, MD*

**PC5: HAMMERSMITH INFANT NEUROLOGICAL EXAMINATION ADVANCED CLINICAL WORKSHOP**
*Nathalie Maitre, MD; Rachel Byrne, MD*
*This course will only be available during the scheduled live session; this course will not be made available to access on-demand after the live session concludes.*

**PC6: PAIN AND FATIGUE IN ADULTS WITH CP: FROM STATE-OF-SCIENCE TO TREATMENT OPTIONS**
*Marij E. Roebroeck, PhD; Deborah E. Thorpe, PT, PhD; Caitlin Cassidy, MD; Mark Peterson, PhD; Elisabet Rodby-Bousquet, PhD, Prue E. Morgan, BAppSc (PT), MAppSc (PT), PhD; Laura Brunton, PT, PhD; Heidi Haapala, MD; David Frumberg, MD on behalf of the Lifespan Care Committee*

### 3:00 PM – 7:00 PM

**PC4: EPIGENOMICS: DNA METHYLATION**
*Robert Akins, MD*

**PC7: PRACTICAL APPROACHES TO COMPLEX CARE: BUILDING YOUR CLINICAL AND TEACHING TOOLKIT FOR RESPIRATORY CARE**
*Kilby Mann, MD; Emily Goodwin, MD; Kathleen Huth, MD, MMSch*

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## Thursday, September 24, 2020

### MEMBER BUSINESS MEETING

**10:00 AM – 11:00 AM**

### LUNCH & LEARN SEMINARS (FORMERLY 'BREAKFAST SEMINARS')

**11:00 AM – 12:00 PM**

**LL01 - "WE DON'T HAVE ACCESS TO ALL THINGS": SUPPORTIVE MOBILITY FROM THE LIVED PERSPECTIVE OF PEOPLE WITH CEREBRAL PALSY ACROSS THE LIFESPAN**

*Kristie Bjornson, PT, PhD; Heather A. Feldner, PT, PhD, PCS; Deborah Gaebler-Spira, MD*

Learning Objectives:

1. Understand the presence and impact of lived stakeholder experiences in current CP research.
2. Understand the perceived facilitators and barriers of SMD access and use by people with CP across the lifespan.
3. Understand healthcare providers' perspectives about SMD provision for people with CP.
4. Engage in critical discussion about leveraging rich qualitative data that has potential to direct innovation in SMD access and use by people with CP.

**LL02 - ACUTE FLACCID MYELITIS(AFM): A FORMIDABLE MALADY IN THE 21ST CENTURY**

*Rajashree Srinivasan, MBBS; Laura L. Owens*

Learning Objectives:

1. Recognize the etiology, pathology/pathophysiology, clinical features, and treatment of AFM.
2. Describe the various rehabilitative approaches including use of bracing, equipment, Functional electrical stimulation.
3. Recognize the limitations faced in the diagnosis and management of AFM.
4. Recognize the paucity of available literature.

**LL03 - ADVANCES IN CLINICAL AND INSTRUMENTAL EVALUATION OF OROPHARYNGEAL DYSPHAGIA IN INFANTS AND YOUNG CHILDREN WITH CEREBRAL PALSY**

*Amanda Khamis, B.App.Sc. (Sp Path); Katherine Benfer, Doctor of Philosophy; Kelly Weir, BSpThy, MSpPath, Doctor of Philosophy*

Learning Objectives:

1. Define 'Paediatric Feeding Disorder' and presentation of oropharyngeal dysphagia (OPD) in children with cerebral palsy (CP).
2. Outline best practice clinical assessment and clinimetrics of measures of OPD in infants and young children.
3. Describe the strengths and limitations of instrumental evaluations of swallowing in children with CP
4. Explain which pediatric feeding assessment might be most appropriate to request for a variety of infants and children with cerebral palsy

**LL04 - INTERPRETING HIP SURVEILLANCE X-RAYS WITH THE HIPSCREEN APP: A PRIMER FOR THE RADIOLOGY NOVICE**

*Vedant A. Kulkarni, MD; Jon R. Davids, MD; Suzanne Bratkovich, MSPT; Pam Thomason, B Phty, M Physio*

Learning Objectives:

1. Be able to use the HipScreen App to measure a hip's migration percentage.
2. Identify important landmarks on a hip surveillance radiograph used for quantifying hip displacement.
3. Recognize features of poor patient positioning for radiographs that could cause inaccuracy of the migration percentage measurement.
4. Understand protocols for proper positioning of children to obtain accurate hip surveillance radiographs.

**LL05 - IT TAKES A VILLAGE: AN INTERDISCIPLINARY APPROACH TO PATIENT AND FAMILY PRE-OPERATIVE EDUCATION**

*Jackie Norling, MPT; Amy Grossman, MSW, LICSW; Natalie Kinsky, MS, BA; Sara Moga, MSN, RN, PHN*

Learning Objectives:

1. Define the role and recognize the benefits of an interdisciplinary team of physical therapy, child life, social work, and nursing in preparing children and families for orthopedic surgery.
2. Describe successful modes of preparation for orthopedic surgery utilizing videos, cast teaching dolls, cast replicas, and hospital tours.
3. Define how to best support patients, families, and other caregivers prior to orthopedic surgery.
4. Define the beneficial outcomes from attending the pre-operative class.

**LL06 - MANAGEMENT OF THE SPASTIC UPPER EXTREMITY IN HEMIPLEGIC CHILDREN USING A MULTIDISCIPLINARY APPROACH**

*Supreet Deshpande, MD; Deborah Bohn, MD*

Learning Objectives:

1. Describe the benefits of a , multidisciplinary clinic to evaluate and manage upper extremity hypertonia in children with hemiplegia.
2. Demonstrate an understanding of various assessment tools used in the evaluation of the upper extremity in patients with hypertonia.
3. List treatment options for managing upper extremity hypertonia in children with hemiplegia.
4. Establish a multidisciplinary clinic for assessing and for managing upper extremity hypertonia in children with hemiplegia.

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**LL07 - NAVIGATING THE UPDATED NATIONAL INSTITUTE OF NEUROLOGICAL DISORDERS AND STROKE CEREBRAL PALSY COMMON DATA ELEMENTS WEBSITE**

*Robin S. Feldman, BS, MBA; Theresa Sukal-Moulton, PT, DPT, PhD; Carolina Mendoza-Puccini, MD*

Learning Objectives:

1. Describe the process of revising Cerebral Palsy Common Data Elements
2. Define the role of the Cerebral Palsy Oversight Committee in revising Cerebral Palsy Common Data Elements.
3. Demonstrate how to navigate the new NINDS Common Data Elements website.
4. Demonstrate how to use Cerebral Palsy Common Data Elements and case report forms in a research study.

**LL08 - PEARLS AND PITFALLS OF MEASURING FIDELITY IN EARLY INTERVENTION CLINICAL TRIALS FOR INFANTS AT HIGH RISK OF CEREBRAL PALSY**

*Kimberley S. Scott, DPT; Roslyn N. Boyd, PhD; Leanne Sakzewski, PhD, OT; Jill Heathcock, MPT, PhD*

Learning Objectives:

1. Define intervention fidelity in pediatric early intervention trials and describe the different frameworks when planning fidelity evaluation of randomized controlled trials
2. Explain the process in development of intervention specific fidelity evaluation tools
3. Explain the contribution of parent enactment in measuring intervention fidelity for pediatric early intervention trials
4. Identify strategies to address challenges in measuring and reporting intervention fidelity and parent enactment

**LL09 - PHYSICAL AND MENTAL HEALTH OUTCOMES IN CEREBRAL PALSY ACROSS THE LIFESPAN: INSIGHTS FROM THE CLINIC AND LARGE POPULATION-REPRESENTATIVE COHORTS.**

*Mark Peterson, PhD; Edward A. Hurvitz, MD; Daniel G. Whitney, PhD*

Learning Objectives:

1. Describe the longitudinal trends of chronic pain, cardiometabolic, psychological, and musculoskeletal morbidity in adults with CP, and risk factors that contribute to increased risk.
2. Develop a set of common data elements useful for clinical screening of the adult with CP that includes greater attention to aging-related chronic disease risk.
3. Discuss relevant pathophysiologic mechanisms linking early frailty and long-term health outcomes among persons with CP.
4. Discuss the need for surveillance of physical and mental health risks in adults with cerebral palsy, with a priority focus on psychological, metabolic and musculoskeletal systems.

**LL10 - PRACTICAL APPROACHES TO ENHANCING COMPLIANCE WITH REHABILITATION RECOMMENDATIONS SUCH AS BRACING AND HOME EXERCISE PROGRAMS.**

*Nathan S. Rosenberg, MD; Natalie P. Truba, PhD; Catie Christensen, PT, DPT, PCS*

Learning Objectives:

1. Describe common barriers to compliance with bracing and home exercise program.
2. List tools for enhancing follow-though with bracing prescription and utilization as prescribed.
3. Describe the underlying psychological underpinnings to lack of follow-through with recommendations.
4. List strategies that therapists can utliize to enhance compliance in the home setting with exercise programs.

**LL11 - RECENT PRACTICE CHANGING PUBLICATIONS FOR THE PEDIATRIC COMPLEX CARE PROVIDER**

*Kristie Malik, MD; Sarah K. Luthy, MD, MSCS; Anna Jesus, MD, MBe; Irene C. Dietz, MD*

Learning Objectives:

1. Discuss current topics and advances in the care of children with medical complexity
2. Understand the multidisciplinary implications for each recent development.
3. Identify methods to integrate findings into clinical practice.
4. Develop methods to keep up to date with the complex care literature.

**LL12 - STANDARDIZING PSYCHOSOCIAL EVALUATIONS WHEN ASSESSING CANDIDACY FOR INTRATHECAL BACLOFEN THERAPY IN CHILDREN WHO DO NOT AMBULATE**

*Fabiola I. Reyes, MD; Holly Roach, OT; Whitney Herge, PhD; Julie Rogers, MSW*

Learning Objectives:

1. Understand the complexity of psychosocial dynamics in the pediatric field and how it affects ITB therapy
2. Incorporate diverse points of view from multiple team members to standardize psychosocial assessments in children who are ITB candidates
3. Become familiar with tools used to identify and prioritize functional, comfort, and care goals
4. Identify barriers that can affect financial coverage and identify strategies and resources to address them

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**LL13 - UNMASKING THE RESEARCH POTENTIAL IN RARE DISEASES: CREATION OF A MULTI-STAKEHOLDER REGISTRY**
*Noemi Dahan-Oliel, OT, PhD; Vasiliki Betty Darsaklis, OT, MSc; Michael Aiona, MD; Frank Rauch, MD*

Learning Objectives:
1. Understand the steps in creating, validating and piloting a registry in early-onset childhood conditions
2. Identify strategies for identifying data that matters to youth, families, clinicians and researchers
3. Recognize the potential of registries for advancement of knowledge and evidence-based practice
4. Understand the importance of stakeholder engagement and knowledge translation for registry development and sharing of findings

**LL14 - NONTRADITIONAL RHIZOTOMY APPLICATIONS: STEPPING OUTSIDE OF THE BOX FOR HEMIPLEGIA, DIPLEGIC SPASTICITY OF NON-CEREBRAL ORIGIN, NONAMBULATING AND ADULT PATIENTS.**
*Marcie Ward, MD; Patrick Graupman, MD; Tim Feyma, MD*

Learning Objectives:
1. Describe the history of surgical rhizotomy which guides the application of that procedure in clinical practice currently.
2. Understand the importance of careful patient selection for surgical rhizotomy based on patient and family goals, neuroanatomy principles, and the predictability of outcomes.
3. Identify atypical patient presentations that may benefit from selective dorsal rhizotomy, and discuss the anticipated outcomes.
4. Recognize patients who may benefit from dorsal-ventral rhizotomy, and discuss the anticipated outcomes.

**12:05 PM - 12:20 PM**
**Let's Move! Yoga**
Yoga postures will work on balance, strength, and flexibility. A great way to focus and refresh your mind and body and start the morning off right!

## Thursday, September 24, 2020

**FREE PAPER SESSIONS**

### 12:30 PM – 2:15 PM

**Free Paper Session A: Ortho-Lower Extremity**

**A1 - ASSESSING SURGEON DECISION MAKING FOR TREATMENT OF UNILATERAL HIP DISPLACEMENT IN CHILDREN WITH CEREBRAL PALSY**
*Maria Juricic, PT; Stacey Miller, PT; Nandy Fajardo, BS; Judy So, BS; Benjamin Shore, MD MPH; Unni Narayanan, MD; Kishore Mulpuri, MBBS, MS(Ortho), MHSc(Epi)*

**A2 - PALLIATIVE TREATMENT OPTIONS FOR SPASTIC HIP DISLOCATIONS IN CEREBRAL PALSY CHILDREN WITH SEVERE PAIN COMPLAINTS**
*Aleksander Koch, MD; Joanna Krasny, MD; Maria Wolff; Marek Jozwiak, PhD*

**A3 - HIP SURVEILLANCE: A MULTI-DISCIPLINARY QUALITY-IMPROVEMENT INITIATIVE WITH STANDARDIZED REPORTING FOR CHILDREN WITH CEREBRAL PALSY**
*Amanda T. Whitaker, MD*

**A4 - SURGICAL OUTCOMES OF CHILDREN WITH SYNDROMIC HIP DYSPLASIA**
*Sayan De, MD; Wade Coomer, BS; Sophie Seward, BS; Jason Rhodes, MD; Lori Silveira, PhD*

**A5 - INTRAOPERATIVE HIP ARTHROGRAPHY IN NEUROMUSCULAR HIP RECONSTRUCTION: CAN WE RELIABLY DECIDE WHICH CHILDREN REQUIRE CONCOMITANT PELVIC OSTEOTOMY?**
*Colyn Watkins, MD; Laura Lins, MPH; Patricia Miller, MS; Travis Matheney, MD; Brian Snyder, MD PhD; Kemble Wang, MD; H. Kerr Graham, MD; Benjamin Shore, MD MPH*

**A6 - GENU VALGUM FOLLOWING DISTAL FEMORAL EXTENSION OSTEOTOMY IN CHILDREN WITH CEREBRAL PALSY**
*Sayan De, MD; Wade Coomer, BS; Patrick Carry, MS; Marisa Flores, BS; Jason Rhodes, MD*

**A7 - ANTERIOR DISTAL FEMORAL HEMIEPIPHYSIODESIS WITH AND WITHOUT PATELLAR TENDON ADVANCEMENT FOR FIXED KNEE CONTRACTURES IN CHILDREN WITH CEREBRAL PALSY**
*Robert M. Kay, MD; Susan Rethlefsen; Alison Hanson; Tishya Wren; Oussama Abousamra*

**A8 - FACTORS ASSOCIATED WITH GROSS MOTOR RECOVERY DURING REHABILITATION FOLLOWING SINGLE-EVENT MULTILEVEL SURGERY (SEMLS) FOR YOUTH WITH CEREBRAL PALSY**
*Nancy Lennon, PT; Grace E. Gerry; Jason Beaman, MPT; Nicole Mamula, OTR/L; Abigail Gilmore, OTR/L; Tim Niiler, PhD, MS, MA, BS; Laura L. Owens, MD*

**A9 - LONG-TERM OUTCOMES OF FEMORAL DEROTATION OSTEOTOMY IN AMBULATORY INDIVIDUALS WITH CEREBRAL PALSY**
*Elizabeth R. Boyer, PhD; Kathryn Walt, DPT; Antonio Munoz, MD; Michael Healy, MD; Michael H. Schwartz, PhD; Tom F. Novacheck, MD*

**A10 - DOES ORTHOPEDIC SURGERY MITIGATE JOINT PAIN IN INDIVIDUALS WITH CEREBRAL PALSY?**
*Zachary B. Novaczyk, BS; Tom F. Novacheck, MD; Chantel C. Barney, PhD; Frank Symons, PhD; Elizabeth R. Boyer, PhD*

**Free Paper Session B: Early Intervention**

**B1 - DEVELOPMENT OF REACHING BEHAVIORS ACROSS TIME IN INFANTS WITH VARYING LEVELS OF MOTOR DELAY**
*Andrea Baraldi Cunha, PhD; Iryna Babik, PhD; Rachel Gaston; Regina T. Harbourne, PhD; Stacey Dusing, PhD; Sarah Westcott McCoy, PhD; James A. Bovaird, PhD; Michele A. Lobo, PT, PhD*

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**B2 - STRUCTURED NEONATAL PHYSICAL THERAPY (SNP) PROGRAM IN MODERATE TO LATE PRETERM (MLP) INFANTS: OUTCOME ON MOTOR, COGNITION AND LANGUAGE DEVELOPMENT AT 3 AND 6 MONTHS OF AGE.**
*Sonia Khurana, PhD; Bhamini K. Rao, PhD; Leslie E. Lewis, MBBS, DCH, DNB; Senthil Kumaran, PhD; Asha Kamath, PhD; Stacey Dusing, PhD*

**B3 - INFANT MOTOR PROFILE: PREDICTIVITY OF NEURODEVELOpmENTAL DISORDERS IN A POPULATION OF HIGH-RISK INFANTS**
*Giuseppina Sgandurra, MD, PhD; Riccardo Rizzi, MD; Valentina Menici, PT; Veronica Barzacchi, PT; Elena Beani, PT, PhD; Martina Orlando, PT; Matteo Giampietri, MD; Giovanni Cioni, MD;*

**B4 - MEASURING EARLY PROBLEM SOLVING SKILLS IN YOUNG CHILDREN WITH MOTOR IMPAIRMENTS: A VALIDATION STUDY**
*Rebecca M. Molinini, DPT; Natalie A. Koziol, PhD; Tanya Tripathi, PhD; Ketaki Inamdar, MPT; Regina T. Harbourne, PhD; Michele A. Lobo, PT, PhD; Sarah Westcott McCoy, PhD; James A. Bovaird, PhD; Stacey Dusing, PhD*

**B5 - QUALITY OF LIFE AND MOTOR IMPAIRMENTS IDENTIFIED AT 3.5-5.5 YEARS OF AGE USING THE MOVEMENT ASSESSMENT BATTERY FOR CHILDREN-2**
*Raye-Ann deRegnier, MD Lynn Boswell, MS; MaryKay Santella, PT; Annamarie Russow, MEd; Deborah Gaebler, MD;*

**B6 - RELATIONSHIP BETWEEN REACHING AND TYPE OF TOYS IN INFANTS WITH HEMIPARETIC CEREBRAL PALSY**
*Gardenia O. Barbosa, PhD; Thais Invencao Cabral, PhD; Tanya Tripathi, PhD; Menglin Xu, PhD; Amy Darragh, PhD, OTR; Sharon Ramey, PhD; Stephanie C. DeLuca, PhD; Jill Heathcock, MPT, PhD*

**B7 - EFFECTIVENESS OF ASSOCIATIVE LEARNING-BASED INTERVENTIONS ON MOTOR, COGNITIVE AND FEEDING OUTCOMES IN INFANTS: A SYSTEMATIC REVIEW**
*Ketaki Inamdar, MPT; Sonia Khurana, PhD; Stacey Dusing, PhD*

**B8 - UNDERSTANDING PARENTS EXPERIENCES OF THEIR INFANT'S DIAGNOSIS OF CEREBRAL PALSY AND HEALTH PROFESSIONALS' PERSPECTIVES ON EARLY DIAGNOSIS.**
*Catherine Mak, PhD; Corrine Dickinson; Jeanie Sheffield, PhD; Roslyn N. Boyd, PhD; Koa Whittingham, PhD, BA, BSc (Hons), MAPS*

**B9 - LONG TERM CHANGE IN OBJECT PERMANENCE IN INFANTS WITH MOTOR DELAYS: GROUP AND INDIVIDUAL DIFFERENCES IN START-PLAY AND USUAL EARLY INTERVENTION**
*Karl Jancart; Regina T. Harbourne, PhD; Stacey Dusing, PhD; Michele Lobo; Natalie A. Koziol, PhD; James A. Bovaird, PhD; Sarah Westcott McCoy, PhD; Lin-Ya Hsu, PhD; Andrea Baraldi Cunha, PhD; Mihee An*

## Free Paper Session C: Adult

**C1 - AN INTERNATIONAL CLINICAL STUDY ON IMPAIRMENTS AND DISABILITY IN ADULTS WITH CEREBRAL PALSY AS A BASE FOR DEVELOPING AN ICF CORE SET**
*Suzie Noten, MSc; Elisabet Rodby-Bousquet, PhD; Chonnanid Limsakul, MD; Fay Visser, MSc; Suttipong Tipchatyotin, MD, PhD; Vincent de Groot, MD, PhD; Anneke Grootoonk, PA; Manin Konijnenbelt, Drs; Francisca E. Meuzelaar-Kiezebrink, MD; Wilma M. van der Slot, MD, PhD; Rita J. van den Berg-Emons, PhD; Melissa Selb, MSc; Marij E. Roebroeck, PhD*

**C2 - THE MORTALITY AND CHRONIC DISEASE BURDEN OF NON-TRAUMA FRACTURE FOR ADULTS WITH CEREBRAL PALSY**
*Daniel Whitney, PhD; Edward A. Hurvitz, MD; Mark Peterson, PhD*

**C3 - DISABILITY DUE TO PAIN AND HEALTH RELATED QUALITY OF LIFE IN ADOLESCENTS AND ADULTS WITH CEREBRAL PALSY LIVING IN URBAN SOUTH AFRICA.**
*Roshaan Salie, MSc; Maaike M. Eken, PhD; A G. Fieggen, MD, FCS(SA); Kirsten A. Donald, PhD; Nelleke G. Langerak, MSc, PhD*

**C4 - ADULTS WITH CEREBRAL PALSY REPORT SIMILAR LEVELS OF PATIENT REPORTED OUTCOMES DESPITE UNDERGOING TWO DISTINCT SPASTICITY MANAGEMENT STRATEGIES DURING CHILDHOOD: PRELIMINARY RESULTS OF A LONG-TERM MULTI-CENTER STUDY**
*Meghan F. Munger, MPH; Brian Po-Jung Chen, MD; Elizabeth A. Duffy, MPH; Bruce A. MacWilliams, PhD; Mark L. McMulkin, PhD; Lisa H. Carter, PT; Shelley L. Mader, PT; Brianna Hayes, MS; Tom F. Novacheck, MD; Kristen L. Carroll, MD; Alan k. Stotts, MD; Glen O. Baird, MD; Michael H. Schwartz, PhD*

**C5 - IMPACT OF PAIN LOCATION, INTENSITY, AND INTERFERENCE ACROSS THE ADULT LIFE COURSE: PILOT FINDINGS FROM THE ADULT CEREBRAL PALSY PATIENT REPORTED OUTCOMES REGISTRY**
*Mary E. Gannotti, PT, PhD; Deborah E. Thorpe, PT, PhD; Edward A. Hurvitz, MD; Garey Noritz, MD; Michael E. Msall; Bethann Sennett, EdD; Linda E. Krach, MD; Henry G. Chambers, MD; Susan Horn, PhD; Paul H. Gross, BA*

**C6 - EXPERIENCES OF AGEING AND SEXUAL AND REPRODUCTIVE HEALTHCARE FOR WOMEN WITH CEREBRAL PALSY (CP) ACROSS THE LIFE COURSE**
*Sonali Shah, PhD; Caroline Bradbury-Jones, PhD; Julie Taylor, PhD*

**C7 - EARLY INDICATORS OF CARDIOVASCULAR DISEASE ARE EVIDENT IN CHILDREN AND ADOLESCENTS WITH CEREBRAL PALSY**
*Nevin Hammam, PhD; Harald Becher, PhD, MD; John Andersen, MD; Patricia J Manns, PhD; Jackie Whittaker, PhD; Lesley Pritchard-Wiart, PhD*

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**C8 - DETERMINING BLOOD PRESSURE LEVELS IN ADULTS WITH CEREBRAL PALSY: A SYSTEMATIC REVIEW AND META-ANALYSIS OF INDIVIDUAL PARTICIPANT DATA**
*Suzie Noten, MSc; Wilma M. van der Slot, MD PhD; Deborah E. Thorpe, PT, PhD; Patricia C. Heyn, PhD; Christina M. Marciniak, MD; Patrick G. McPhee, PhD; Robert P. Lamberts, MSc, PhD, FECSS; Nelleke G. Langerak, MSc, PhD; Olaf Verschuren, PhD; Tommi Salokivi, MD; Katherine Morrison, PhD; Grigorios Papageorgiou, MSc; Rita J. van den Berg-Emons, PhD*

**C9 - PHYSICAL ACTIVITY IN ADULTS WITH CEREBRAL PALSY**
*Maaike M. Eken, PhD; Thulfieq Behardien, MPH; Roshaan Salie, MSc; Robert Lamberts, PhD; Nelleke G. Langerak, MSc, PhD*

**C10 - MICROSTRUCTURAL CHANGES WITHIN THE CERVICAL SPINAL CORD OF ADULTS WITH CEREBRAL PALSY**
*Michael P. Trevarrow, BS; Sarah Baker; Tony W. Wilson, PhD; Max J. Kurz, PhD*

**Free Paper Session D: Basic Science**

**D1 - DIFFERENTIAL TRANSCRIPTOMIC AND EPIGENETIC SIGNATURES CHARACTERIZE IMPAIRMENT OF MUSCLE-GENERATING STEM CELLS FROM CONTRACTURED MUSCLE IN CEREBRAL PALSY.**
*Andrea A. Domenighetti, PhD; Lydia A. Sibley, BS; Nicole Broda, BS; Vineeta T. Swaroop, MD; Henry G. Chambers, MD; Richard L. Lieber, PhD*

**D2 - GENETICS OF CEREBRAL PALSY: WHO TO TEST**
*Halie J. Holmes, MS; Jason B. Carmel, MD, PhD; Jennifer Fasheun; Joshua E. Hyman; David P. Roye, Jr.; Evan H. Baugh; Anya Revah-Politi; Natalie Lippa; Sulagna Kushary; Jennifer M. Bain; Vimla Aggarwal; David Goldstein*

**D3 - SMALL RNA SEQUENCING OF CIRCULATING VESICULAR RNA AT REST AND IN RESPONSE TO AEROBIC EXERCISE IN INDIVIDUALS WITH CEREBRAL PALSY AND TYPICALLY DEVELOPED SUBJECTS**
*Ferdinand von Walden, MD, PhD; Ivan J. Vechetti, Jr., PhD; Jessica Pingel, PhD; Rodrigo Fernandez-Gonzalo, PhD; Emma Hjalmarsson, MPT; Eva M. Pontén, MD, PhD; John McCarthy, PhD; Björn Alkner, PhD, MD*

**D4 - CORTICAL SURFACE METRICS AND VOLUMETRICS AT TERM PREDICT MOTOR DEVELOPMENT IN VERY PRETERM INFANTS**
*Karen Harpster, PhD; Matthew C. Bugada; Julia E. Klein, PhD; Venkata Sita Priyanka Illapani, MA; Nehal A. Parikh, DO*

**D5 - ROBOTIC MAPPING OF MOTOR CORTEX IN CHILDREN WITH PERINATAL STROKE AND HEMIPARESIS**
*Hsing-Ching Kuo, PhD; Ephrem Zewdie, PhD; Adrianna Giuffre, BS; Liu Shi Gan, PhD; Helen Carlson, PhD; Adam Kirton, MD MSc FRCPC*

**D6 - CORTICAL OSCILLATIONS THAT UNDERLIE WORKING MEMORY ARE ALTERED IN ADULTS WITH CEREBRAL PALSY**
*Rashelle Hoffman, DPT; Christine Embury; Elizabeth Heinrichs-Graham, PhD; Tony W. Wilson, PhD; Max J. Kurz, PhD*

**D7 - EYE-GAZE CONTROL TECHNOLOGY IN CLINICAL PRACTICE TO ENHANCE PARTICIPATION: CONSENSUS-BASED CLINICAL GUIDELINES**
*Margaret Wallen, PhD; Petra Karlsson, PhD; Tom Griffiths, MA, BA; Michael Clarke, PhD; Rene Pereksles, PT; Saranda Bekteshi, MSc; Kate Himmelmann, PhD; Elegast Monbaliu; Abigail Allsop, MPH; Claire Galea, MS*

**D8 - PLASMA AND CEREBROSPINAL FLUID CONCENTRATIONS OF BACLOFEN IN CHILDREN WITH CEREBRAL PALSY FOLLOWING ORAL ADMINISTRATION**
*Matthew McLaughlin, MD; DJ Murry, PharmD; Yashpal Singh Chhonker, PhD; Michael Partington, MD; J. Steven Leeder, PharmD; Susan Abdel-Rahman, PharmD*

**D9 - DIFFUSION IMAGING SHOWS IMPROVED MYELINATION FOLLOWING AN INTERVENTION TARGETING SKILLED LOWER EXTREMITY MOVEMENT IN CHILDREN WITH SPASTIC BILATERAL CEREBRAL PALSY**
*Andy Vuong, MS; Eileen G. Fowler, PhD, PT; Loretta A. Staudt, MS, PT; Marcia Greenberg, MS, PT; Hajime Yokota, MD, PhD; Joyce H. Matsumoto, MD; Shantanu H. Joshi, PhD*

**D10 - FREE AUTOMATED DYSTONIA IDENTIFICATION USING SMARTPHONE-QUALITY VIDEOS ACQUIRED IN AN OUTPATIENT CLINIC SETTING**
*Bhooma R. Aravamuthan, MD, DPhil; Keisuke Ueda, MD; Toni Pearson, MD*

## Thursday, September 24, 2020

**INSTRUCTIONAL COURSES**

**2:30 PM – 4:30 PM**

**IC01 - ASPIRATIONAL THINKING: REFLECTIONS ON MEALTIME MANAGEMENT FOR CHILDREN WITH CEREBRAL PALSY (CP) WITH EATING AND DRINKING DIFFICULTIES**
*Gina R. Rempel, FRCPC; Diane Sellers, PhD; Cindy B. Dodds, PhD; Consuelo Ibarra*

Learning Objectives:
1. Identify points of controversy in the literature regarding aspiration during swallowing that influence mealtime management for children with eating and drinking difficulties
2. Recognize and value international strategies used to support eating and drinking in children with cerebral palsy (CP)
3. Consider quality of life and supportive care models to mitigate risk and optimize mealtime participation for children with CP
4. Explore the influence of training care-providers in supportive mealtime management to expand eating and drinking activities for children with CP

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**IC02 - AVOIDING MISTAKES IN THE SURGICAL TREATMENT OF GAIT DYSFUNCTION IN CHILDREN WITH CEREBRAL PALSY**
*Elizabeth W. Weber, MD, MS; Tom F. Novacheck, MD; Michael Healy, MD; Patrick Graupman, MD*

Learning Objectives:
1. Define methods of tone control which aid in comfort and gait efficiency in children with Cerebral Palsy.
2. List the secondary and tertiary deformities affecting gait in ambulatory children with Cerebral Palsy.
3. Describe how atypical tone during growth results in lever arm dysfunction in children with Cerebral Palsy.
4. List the reasons why historical strategies in the surgical treatment of CP have been ineffective and know alternative approaches which are more durable and effective.

**IC03 - BRINGING GENOMICS TO THE CEREBRAL PALSY CLINIC**
*Michael C. Kruer, MD; Francisca Millan; Julie S. Cohen; Bhooma R. Aravamuthan, MD, DPhil*

Learning Objectives:
1. Understand fundamental genetic concepts and how these relate to clinical genetic testing for CP.
2. Evaluate a genetic testing report and interpret different test outcomes (negative, positive and uncertain significance).
3. Discuss the implications and challenges of genetic counseling for patients with CP and their families.
4. Customize patient management based on results of genetic testing.

**IC04 - DILEMMAS IN INTRATHECAL BACLOFEN PUMP (ITB) PATIENTS- CHALLENGING CASES**
*Jane Anne Emerson, MD; Rez Farid, MD; Kristin Buxton, MSN*

This course will present challenging Intrathecal Baclofen Pump (ITB) patient problems utilizing case studies and including group discussion and interaction. We will provide multiple videos and slides.

Learning Objectives:
1. Develop critical thinking skills in managing ITB pumps.
2. Explore solutions for challenging ITB complications.
3. Allow interactive dialog between multidisciplinary ITB providers.
4. Improve ITB management skills and patient outcomes.

**IC05 - FIXING THE FEMURS, FIBERS AND FEET. IMPACT ON FITNESS, FUNCTION, FRIENDSHIPS AND THE FUTURE.**
*Pam Thomason, MPT; Kate L. Willoughby, B Physio, D Physio; Abhay Khot, MD*

Learning Objectives:
1. Understand musculoskeletal outcomes in children and adolescents within the ICF framework and how this may impact future management
2. Understand the importance of the "f words" to inform our practise and influence our management decisions
3. Understand the orthopaedic management of lower limb deformities in order to achieve stability of gait correction post MLS
4. Recognise positive and negative predictors of musculoskeletal health at skeletal maturity and its impact on the "f-words"

**IC06 - NEUROPSYCHOLOGY OF CEREBRAL PALSY: UPDATES AND RECOMMENDATIONS**
*Seth Warschausky, PhD; Kristine Stadskleiv, PhD; Jennifer Larson, PhD*

Learning Objectives:
1. Describe the specific neuropsychological impairments associated with CP including risks associated with preterm birth, epilepsy and HIE.
2. Describe the changes in assessment strategy over the course of development.
3. Identify implications of neuropsychological status for medical and educational planning, and self-management.
4. List the do's and don'ts of referring for neuropsychological assessment.

**IC07 - OPTIMAL SEGMENT KINEMATICS & ALIGNMENT APPROACH TO REHABILITATION (OSKAR): A BIOMECHANICAL APPROACH TO ORTHOTIC MANAGEMENT.**
*Kristie Bjornson, PT, PhD; Garth Shippen, L/CO*

Learning Objectives:
1. Describe normal standing, stepping and full gait cycle walking kinematics.
2. Demonstrate clinical observation skill of sagittal plane kinematics and interpretation employing the clinical decision algorithms.
3. Describe orthotic prescription algorithms for fixed and non-fixed ankle orthoses (AFO).
4. Describe orthotic prescription algorithms for Ankle foot Orthoses-Footwear Combinations (AFO-FC) (Owen, 2010, 2016).

**IC08 - PRESSURE ULCER AND WOUND MANAGEMENT IN CHILDREN AND YOUNG ADULTS WITH DISABILITIES**
*Mark Gormley, Jr., MD; Supreet Deshpande, MD; Jennifer Wilhelmy, CNP*

Learning Objectives:
1. Describe pressure sore classification, risk assessment, skin assessment, and preventive measures.
2. Describe the nutrition assessment and intervention, pressure relief, supportive cushions, and medical devices that help prevent and treat pressure sores.
3. Describe pressure sore cleansing, debridement, and dressing, and treatments with biophysical agents and growth factors.
4. Describe the infection and surgical treatments to manage pressure sores, including antibiotic use, biofilm management, tissue transfers, bone resections, and bowel/bladder diversions.

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**IC09 - PROJECT TEAM: A GROUP INTERVENTION TO TEACH TRANSITION AGE YOUTH WITH DEVELOpmENTAL DISABILITIES TO PROBLEM SOLVE PHYSICAL AND SOCIAL ENVIRONMENTAL BARRIERS TO PARTICIPATION**

*Jessica Kramer, PhD; Ariel Schwartz, PhD; ITing Hwang*

Learning Objectives:

1. Describe how the Game Plan problem solving approach can facilitate the participation of transition age youth with DD and cognitive impairments.
2. Describe the theoretical tenets underlying Project TEAM.
3. Describe the preliminary evidence supporting the potential efficacy of Project TEAM to increase participation of transition age youth.
4. Identify strategies and resources to support the implementation of Project TEAM in attendee's practice context.

**IC10 - SUPPORTING PARENTS OF INFANTS WITH CEREBRAL PALSY THROUGH PARENTING AND MINDFULNESS-BASED APPROACHES**

*Koa Whittingham, PhD, B.A., B Sc, MAPS; Catherine Mak, PhD; Roslyn N. Boyd, PhD*

Learning Objectives:

1. Understand the current need to support parents of children with disability and how parenting impacts on child development.
2. Recognize possible challenges clinicians may experience in supporting parents.
3. Recognize and take opportunities to support parents and the connection between parents and children in a manner that promotes parental resilience
4. Understand how Mindfulness-based practices and Acceptance and Commitment Therapy (ACT) may be beneficial to parents and how simple ACT strategies can be adopted by all clinicians.

**IC11 - THE GROSS MOTOR FUNCTION MEASURE AT AGE 30: "WHAT'S NEW"?**

*Marilyn Wright Wright, MSc; Peter Rosenbaum, MD, FRCP(C), DSc (HC); Rachel Teplicky, MSc*

Learning Objectives:

1. Understand the validation, administration, scoring, and interpretation of the GMFM-88 and GMFM-66, including the Item Sets and Basal & Ceiling approaches and to practice the scoring of selected items.
2. Appreciate new resources, including instructional tools, criterion testing, and the GMAE-3 (the most current and robust computer-based GMFM-66 scoring algorithm).
3. Avoid misuses of the GMFM and obtain the most valid and meaningful results.
4. Share perspectives on their use of the GMFM tools to inform future developments.

**IC12 - THE POTENTIAL AND POWER TO PEDAL: CYCLING FOR PEOPLE WITH CEREBRAL PALSY OR OTHER CHILDHOOD ONSET DISABILITIES**

*Ellen L. Armstrong, BExSc, MSc(APA), MPT; Rachel Toovey, PhD, MPHTM, BPhysio(Hons); Jennifer E. Miros, MPT; Jennifer Angeli, PT, DPT, PhD*

Learning Objectives:

1. Describe evidence associated with cycling as an intervention for people with CP or other COD.
2. Compare successful adapted and non-adapted cycling program operational structures/approaches.
3. Identify and address barriers to participation and develop a basic understanding of appropriate cycles for individuals considering relevant personal/environmental factors to maximize opportunities for success.
4. Apply the cycling algorithm presented, and generalize lessons from adapted and non-adapted cycling programs for possible integration in local places of practice.

**IC13 - OPTIMIZING INCLUSION ACROSS THE LIFESPAN IN EDUCATIONAL, MEDICAL, AND RESIDENTIAL SETTINGS.**

*Tracy Pickar, MSW; Laurie Glader, MD; Jennifer Lyman, BS, MS*

Learning Objectives:

1. Explore different models of inclusion in educational and healthcare settings across the lifespan.
2. Review literature on attitudes and bias towards individuals with disabilities.
3. Identify barriers to participation in school, home, and medical settings.
4. Define strategies on how to implement and support inclusion in your medical setting.

**IC14 - REESTABLISHING MUSCULOSKELETAL CARE FOR ADULTS WITH CEREBRAL PALSY: FOCUSED ON SPASTICITY MANAGEMENT**

*Heakyung Kim, MD; Hana Azizi, MD; Paulo Selber, MD; Amber Newell, CPNP, OTR/L*

Learning Objectives:

1. Understand the trajectory of spasticity over the lifespan for people with CP.
2. Identify common reasons for referral to physiatry and understand efficacy and goal achievement of chemoneurolysis for adults with CP.
3. Identify common orthopedic conditions in adults with CP and understand the indications for orthopedic intervention in this population.
4. Understand spasticity..

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**4:35 PM – 4:50 PM**
**Let's Move! Cardio Dance**
Take a quick energizing break by moving to upbeat dance music. All are welcome. No experience (or even ability) necessary!

**GENERAL SESSION**

**5:00 PM – 7:00 PM**

**Opening Address & Gavel Exchange**
*Mauricio R. Delgado, MD; Susan E. Sienko, PhD*

**Presidential Guest Lecture**
*Ann Tilton, MD*
*"The Neurology of Voodoo"*

**Lifetime Achievement Award**
*Michael D. Sussman, MD*

**Gayle G. Arnold Lectureship**
*Yvonne W. Wu, MD, MPH*

**7:00 PM – 8:00 PM**
**Poster Crawl with AACPDM Past Presidents**



## Friday, September 25, 2020

**LUNCH & LEARN SEMINARS (FORMERLY 'BREAKFAST SEMINARS')**

**11:00 AM – 12:00 PM**

**LL15 - ACTIVE INGREDIENTS OF ACTIVITY AND PARTICIPATION FOCUSED REHABILITATION FOR CHILDREN WITH CEREBRAL PALSY**
*Roslyn N. Boyd, PhD; Leanne Sakzewski, PhD, OT*

Learning Objectives:
1. Summarize and understand the evidence for and active ingredients of activity-based rehabilitation for children with cerebral palsy (CP).
2. Summarize and understand the emerging evidence for and active ingredients in Participation-focused interventions for children with CP.
3. Discuss the implications for clinical practice of (1) and (2).

**LL16 - COMMUNICATION CLASSIFICATION: HOW CAN IT INFORM CLINICAL PRACTICE?**
*Katy D. Caynes, BSpPath, PhD student; Leanne Johnston, PhD; Tanya Rose, PhD, BSpPath(Hon1); Debbie Burmester, BSpPath*

Learning Objectives:
1. Describe the development, theoretical underpinnings and psychometric properties of the Functional Communication Classification System (FCCS) for children and youth with CP.
2. Demonstrate understanding and skill in rating communication performance using the FCCS.
3. Consider how communication classifications can inform communication goal setting and intervention.
4. Incorporate communication classification as relevant into clinical practice.

**LL17 - DEVELOPING AND TESTING A MENTAL HEALTH INTERVENTION FOR YOUNG ADULTS WITH DEVELOpmENTAL DISABILITIES USING A PARTICIPATORY APPROACH**
*Ariel Schwartz, PhD; Jessica Kramer, PhD*

Learning Objectives:
1. Describe the current gaps in treatment for young adults with IDD-MH.
2. Describe the theory underlying peer mentoring interventions.
3. Identify how to involve young adults with IDD in intervention development.
4. Describe theory-driven strategies to support utilization of coping strategies.

**LL18 - INTERDISCIPLINARY CONTINENCE CLINIC: BENEFITS OF COLLABORATION OF NURSING AND BEHAVIORAL THERAPY IN TREATING BOWEL AND BLADDER INCONTINENCE IN CHILDREN WITH NEURODEVELOpmENTAL DISABILITIES.**
*Susan Demetrides, MS, CRNP; Bridget G. Gibbons, MA*

Learning Objectives:
1. Describe how combining behavioral clinicians with coordination of care/educational support from nursing increases adherence and enhances compliance with recommended interventions in medical settings.
2. Identify potential barriers and facilitators to achieving bowel and bladder continence in children including a learned response to pain or chronic medical condition.
3. Explain how the use of diagnostic tools, including exam, Bristol scale, x-ray and pain assessment, may neutralize negative attributions about child with incontinence.
4. Define the impact of incontinence on a diverse patient population in terms of developmental and medical concerns.

**LL19 - MAKING A DIFFERENCE - ARE WE? WHAT'S THE GOAL?**
*Unni Narayanan, MD; Pam Thomason, MPT*

Learning Objectives:
1. Understand the Patient Priority Framework, and how it can be used to understand patient preferences
2. Understand the rationale, development and validation of the Gait Outcomes Assessment List (GOAL) Questionnaire
3. Understand the scoring and interpretation of the GOAL Questionnaire
4. Appreciate the features of the GOAL relative to other measures both for measuring outcomes and informing clinical decision making for ambulatory children with cerebral palsy

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**LL20 - ORTHOPEDIC MANAGEMENT OF RETT SYNDROME: WHAT'S TRIED AND TRUE AND WHAT'S NEW**

*Michael W. Shrader, MD; Jason Howard; Uri Given*

Learning Objectives:
Define the pathophysiology and diagnosis of Rett Syndrome.

1. Understand the orthopedic impairments of Rett Syndrome, the principles of non-operative care, and the care of children with RS in a Cerebral Palsy clinic.
2. Describe the typical orthopedic surgical procedures that children with Rett Syndrome typical undergo, including spine fusion and the typical outcomes that can be expected
3. List how Rett Syndrome differs from Cerebral Palsy, but how typical patients with RS receive multi-disciplinary care in a CP clinic.

**LL21 - POSTURAL CONTEXTS FOR PARTICIPATION: INCREASING AUTONOMY AND SELF-EFFICACY OF CHILDREN WITH GMFCS IV AND V.**

*Sandra Saavedra, MS, PT, PhD; Donna Snowdon, PT, MS, DPT; Danielle M. Bellows, PT, MHS, DHSc*

Learning Objectives:

1. Understand a framework to assess effects of postural contexts for children with deficits in trunk control.
2. Identify challenges and opportunities for self-efficacy and autonomy in children with deficits in trunk control.
3. Interpret and apply principles of a segmental approach to improve functional movement in the home, educational, and community settings.
4. Recognize new avenues of adaptive positioning to maximize functional autonomy and self-efficacy for children with deficits in trunk control.

**LL22 - PROGRESS IN MULTIMODAL BRAIN IMAGING FOR NEUROREHABILITATION RESEARCH IN CHILDREN WITH CEREBRAL PALSY: TOWARDS REPRODUCIBLE AND OPEN SCIENCE**

*Samuel T. Nemanich, II, PhD, MSCI; Claudio L. Ferre, PhD; Christos Papadelis, PhD*

Learning Objectives:

1. Describe the current research and applications of diffusion and functional MRI to understand brain function and recovery in children with CP.
2. Describe the current research and applications of functional near infrared spectroscopy (fNIRS) to understand brain function and recovery in children with CP.
3. Describe the current research and applications of magnetoencephalography (MEG) and high-density electroencephalography (HD-EEG) to understand brain function and recovery in children with CP.
4. Demonstrate an understanding of the exciting potential of open science: reproducibility, data sharing, and analysis pipelines for building a collaborative community in neuroimaging research.

**LL23 - Withdrawn by Author**

**LL24 - SYSTEMS CHANGE: PROMOTING EARLY DETECTION AND INTERVENTION OF CEREBRAL PALSY**

*Sandra Heimerl, DPT; Viriginia Paleg, DScPT*

Learning Objectives:

1. Discuss the International Clinical Practice Guideline that is the result of neuroscience advancement and the urgency for timely guideline implementation.
2. Describe the systems change process that includes the resources, activities, and current and intended outputs and outcomes for implementation of the guideline on a statewide basis.
3. Describe the systems change process that includes the resources, activities, and current and intended outputs and outcomes for implementation of the clinical guideline on an organizational basis.
4. Discuss the successes and challenges in statewide and organizational implementation of the clinical guideline.

**LL25 - TRANSITION FOR PEOPLE WITH SPINA BIFIDA: UPDATE AND DISCUSSION OF NATIONAL INITIATIVES FOR LOCAL APPLICATIONS**

*Richard C. Adams, MD; Timothy J. Brei, MD; Paula Peterson, MS*

Learning Objectives:

1. Understand areas of need re: support efforts in building/ sustaining transition into adult medical care.Learning Objective 2: To understand resources available to the clinician to better achieve the above.
2. Understand resources available to the clinician to better achieve the above.
3. Understand additional options for setting measureable outcome goals and for development of clinic-based / hospital-based written transition policy.
4. Understand ways to monitor one clinical practice using the specific tools for self-assessment and QI purposes.

**LL26 - UNLOCKING THE POTENTIAL OF YOUTH ENGAGEMENT IN CHILDHOOD DISABILITY RESEARCH**

*Linda Nguyen, BHSc, MSc; Tram D. Nguyen, MS, PhD; Keiko Shikako-Thomas; Jan Willem Gorter, MD, PhD*

Learning Objectives:

1. Learn about frameworks, approaches, and strategies to facilitate meaningful youth engagement in childhood disability research.
2. Learn from the experiences of researchers and stakeholders about youth engagement.
3. Reflect on reasons and methods to engage youth in research.
4. Develop directives/next steps to advance youth engagement in childhood disability research.

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**LL27 - UPPER EXTREMITY INTERVENTIONS FOR INFANTS AND TODDLERS WITH CP: STATE OF THE SCIENCE AND IMPLEMENTATION CASE STUDY**
*Kelly J. Tanner, PhD; Jill Heathcock, MPT, PhD*

Learning Objectives:
1. List important considerations for designing early interventions, including components of dosage.
2. Demonstrate use of an evidence-based clinical decision-making algorithm to select appropriate dose and model for early upper limb intervention.
3. Discuss how they might modify their clinical program to incorporate the latest evidence for early upper limb interventions.
4. Describe barriers and facilitators to modifying upper extremity interventions at their institution.

**12:05 PM – 12:20 PM**
**Let's Move! Cardio Dance**
Take a quick energizing break by moving to upbeat dance music. All are welcome. No experience (or even ability) necessary!



## Friday, September 25, 2020

### FREE PAPER SESSIONS

### 12:30 PM – 2:15 PM

**Free Paper Session E: Gait**

**E1 - THE GAIT OUTCOMES ASSESSMENT LIST (GOAL) QUESTIONNAIRE: REPLICATION OF VALIDATION IN A GAIT ANALYSIS CENTER**
*Jean L. Stout, MS, PT; Kathryn Walt, DPT; Andrew Georgiadis, MD*

**E2 - PERCEIVED LIMITATIONS OF WALKING IN INDIVIDUALS WITH CEREBRAL PALSY**
*Jennifer A. Nelson, DPT; Elizabeth R. Boyer, PhD*

**E3 - LONG-TERM EVOLUTION OF WALKING IN PATIENTS WITH CEREBRAL PALSY: PERCEPTION AND OBJECTIVE GAIT PARAMETERS**
*Alice Bonnefoy-Mazure, PhD; Geraldo de Coulon, MD; Stéphane Armand, PhD*

**E4 - CHARCOT-MARIE-TOOTH TYPE 1 AND 2: A COMPARISON OF GAIT FUNCTION USING LOWER EXTREMITY MECHANICAL WORK IN YOUTH**
*Sylvia Ounpuu, MSc; Erin Garibay; Kelly Pogemiller; Gyula Acsadi; Kristan A. Pierz, MD*

**E5 - CAN COMMUNITY AMBULATION MEASURES SERVE AS COMPLIMENTARY DATA TO GAIT ANALYSIS VARIABLES?**
*Kelly A. Jeans, MS; Wilshaw Stevens, Jr., BS; Robert Wimberly, MD; Lori A. Karol, MD*

**E6 - GAIT ANALYSIS AT YOUR FINGERTIPS: ACCURACY AND RELIABILITY OF MOBILE APP ENHANCED OBSERVATIONAL GAIT ANALYSIS IN CHILDREN WITH CEREBRAL PALSY**
*Vedant A. Kulkarni, MD; Donald Kephart, MD; Anita Bagley, PhD, MPH; Jon R. Davids, MD*

**E7 - LONG AND SHORT TERM KINEMATIC OUTCOMES OF RECTUS FEMORIS TRANSFERS IN AMBULATORY CHILDREN WITH CEREBRAL PALSY**
*Rubini Pathy, MD; Mary E. Gannotti, PT, PhD; Brianna Liquori, MS; George Gorton*

**E8 - REACTIVE BALANCE RESPONSES TO REPEATED SURFACE PERTURBATIONS DURING TREADMILL WALKING IN ADULTS WITH CEREBRAL PALSY AND ADULTS WITHOUT DISABILITIES.**
*Ilana Levin, PT, DPT, PhD; Michael D. Lewek, PT, PhD; Christopher K. Rhea, PhD; Richard Faldowski, PhD; Deborah E. Thorpe, PT, PhD*

**E9 - FACTORS ASSOCIATED WITH WALKING ACTIVITY IN ADULTS WITH CEREBRAL PALSY**
*Nancy Lennon, PT; Chris Church, MPT; Michael W Shrader, MD; Tim Niiler, PhD, MS, MA, BS; Thomas Shields; Julieanne Sees, DO; Freeman Miller, MD; John Henley, PhD*

**E10 - EFFECT OF PEDIATRIC ORTHOPEDIC INTERVENTION ON AMBULATORY ADULTS WITH CEREBRAL PALSY: A LONG-TERM LONGITUDINAL ASSESSMENT.**
*Julieanne Sees, DO; Tanyawat Saisongcroh, MD; Freeman Miller, MD; Michael W Shrader, MD; Chris Church, MPT; Nancy Lennon, MPT*

**Free Paper Session F: Rehab**

**F1 - PARENTING ACCEPTANCE AND COMMITMENT THERAPY (PACT): PRELIMINARY FINDINGS FROM A RCT WITH FAMILIES OF CHILDREN WITH CEREBRAL PALSY (CP)**
*Catherine Mak, PhD; Koa Whittingham, PhD, BA, BSc, MAPS; Jeanie Sheffield, PhD; Roslyn N. Boyd, PhD*

**F2 - IMPROVEMENTS IN HAND FUNCTION AFTER UNIMANUAL OR BIMANUAL TRAINING ARE INDEPENDENT OF CORTICOSPINAL TRACT LATERALITY**
*Claudio L. Ferre, PhD; Marina B. Brandao, PhD; Karen Chin, MA; Veronique H. Flamand, PhD, OT; Ana Bonouvrié-Smorenburg, PhD; Talita C. Campos, MA; Maxime Robert, PhD; Yannick Bleyenheuft, PhD; Jason B. Carmel, MD, PhD; Andrew M. Gordon, PhD; Kathleen M. Friel, PhD; Hsing-Ching Kuo, PhD*

**F3 - REORGANIZATION OF THE SENSORI-MOTOR SYSTEM IN CHILDREN WITH CONGENITAL HEMIPLEGIA AFTER ACTION OBSERVATION TRAINING AFFECTS: A PILOT STUDY**
*Giuseppina Sgandurra, MD, PhD; Laura Biagi, PhD; Adriano Ferrari, MD; Leonardo Fogassi, Prof; Elisa Sicola, PT; Andrea Guzzetta, MD, PhD; Giovanni Cioni, MD; Michela Tosetti*

**F4: MANUAL ABILITIES ARE ASSOCIATED WITH COGNITION IN CHILDREN WITH CEREBRAL PALSY**
*Thais Invencao Cabral, PhD; Tanya Tripathi, PhD; Jill Heathcock, MPT, PhD*

**F5: Quantifying and Examining Engagement Levels during Therapeutic Interventions in Children with Cerebral Palsy**
*Dalina Delfing, MS; Larissa Hentrich, BA; Jaya Rachwani, PhD; Victor Santamaria, PT, MS, PhD; Christine Imms, PhD, MSc, BAppScOT; Andrew M. Gordon, PhD*

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**F6 - TO WHAT EXTENT CAN MOTOR SKILL TRAINING IMPROVE THE STRUCTURAL CONNECTIVITY OF THE CORTICOSPINAL TRACT FIBERS IN CHILDREN WITH CEREBRAL PALSY?**
*Yannick Bleyenheuft, PhD; Laurence Dricot, UCLouvain, PhD, Ir; Daniela Ebner-Karestinos, PT; Julie Paradis, PhD; Geoffroy Saussez; Anne Renders; Anne De Volder; Rodrigo Araneda, PhD; Andrew M. Gordon; Kathleen M. Friel, PhD*

**F7 - REHABILITATION STATUS OF CHILDREN WITH CEREBRAL PALSY IN LOW-AND MIDDLE-INCOME COUNTRIES: FINDINGS FROM THE GLOBAL LMIC CP REGISTER**
*Mahmudul Hassan Al Imam, CSF Global, MPH; Israt Jahan, MPH; Mohammad Muhit, PhD; Manik C. Das, MBBS; Denny Hardianto, MPH; Francis Laryea, BS; Amir Banjara Chhetri, MA; Nadia Badawi, PhD; Gulam Khandaker, PhD*

**F8 - EVIDENCE FOR SPECIFICITY IN PEDIATRIC NEUROREHABILITATION**
*Megan Metzler, MSc; Linda Fay, n/a; Kathleen O'Grady; John Andersen; Darcy Fehlings, MD, MSc, FRCP(C); Shannon Harvey; Mia Herrero; Adam Kirton*

**F9 - RELATIONSHIP BETWEEN MOBILITY AND PROBLEM SOLVING SKILLS IN YOUNG CHILDREN WITH HETEROGENEOUS MOTOR ABILITIES**
*Keiko Shikako-Thomas; Miriam Gonzalez, PhD; Jonathan Weiss, PhD; Connie Putterman; Annette Majnemer, OT, PhD, FCAHS*

## Free Paper Session G: International

**G1 - EPIDEMIOLOGY OF EPILEPSY IN CHILDREN WITH CEREBRAL PALSY IN SOUTHERN NIGERIA**
*Roseline E. Duke, MBBS; Chimaeze Tory, FWACP; Richard Bowman, MD; Kathryn Burton, MD*

**G2 - EPIDEMIOLOGY OF CEREBRAL PALSY IN LOW AND MIDDLE- INCOME COUNTRIES: PRELIMINARY FINDINGS FROM AN INTERNATIONAL MULTI-CENTRE CEREBRAL PALSY REGISTER.**
*Israt Jahan, MPH; Gulam Khandaker, PhD; Mohammad Muhit, PhD; Mahmudul Hassan Al Imam, MPH; Denny Hardianto, MPH; Francis Laryea, BS; Amir Banjara Chhetri, MA; Tasneem Karim, MBBS, MPH; Hayley SmithersSheedy; Sarah McIntyre, PhD; Nadia Badawi, PhD*

**G3 - DEVELOPING INDIAN PARTICIPATION AND ENVIRONMENT MEASURE- CHILDREN AND YOUTH USING APPLIED CULTURAL EQUIVALENCE FRAMEWORK**
*Vrushali Kulkarni, BOTh.; Roopa Srinivasan, DnB Pediatrics*

**G4 - UPDATE FROM THE CEREBRAL PALSY RESEARCH NETWORK- 2020**
*Garey Noritz, MD; Lama Albarqawi, MS; Kristie Bjornson, PT, PhD; Robert J. Bollo, L, MD; Jeffrey Raskin; Jacob Kean, PhD; Jeffrey Leonard, MD; Brandon Rocque, MD, MS; Manish N. Shah, MD; Benjamin Shore, MD MPH; Paul H. Gross, BA*

**G5 - MAPPING THE USE OF THE INTERNATIONAL CLASSIFICATION OF FUNCTION, DISABILITY AND HEALTH (ICF) IN CHILD HEALTH CARE REFERENCE CENTERS IN BRAZIL**
*Ana R. Lindquist; Isabelly R. Regalado; Keiko Shikako-Thomas; Camila R. Simão; Letícia D. Maciel; Egmar Longo, PhD*

**G6 - PREVALENCE AND SEVERITY OF INDIVIDUALS WITH CEREBRAL PALSY IN SCANDINAVIA AND SCOTLAND, A CP-NORTH STUDY**
*Sandra J. Hollung, MS, PhD; Gunnar Hägglund, MD, PhD; Mark Gaston, MD; Bjarne Møller-Madsen, MD, DMSc; Ann Alriksson-Schmidt, MSPH, PhD; Guro L. Andersen, MD, PhD*

**G7: CEREBRAL PALSY AND HEALTH INEQUITY IN BANGLADESH CEREBRAL PALSY REGISTER**
*Tasneem Karim, MBBS, MPH; Israt Jahan, MPH; Manik C. Das, MBBS; Mahmudul Hassan Al Imam, MPH; Mohammad Muhit, PhD; Nadia Badawi, PhD; Gulam Khandaker, PhD*

**G8 - PREVALENCE AND SEVERITY OF CHILDREN WITH CEREBRAL PALSY BORN IN NORWAY TO IMMIGRANT MOTHERS**
*Sandra J. Hollung, MS, PhD; Torstein Vik, MD, PhD; Guro L. Andersen, MD, PhD*

**G9 - EPIDEMIOLOGY OF MALNUTRITION AMONG CHILDREN WITH CEREBRAL PALSY (CP) IN LOW- AND MIDDLE- INCOME COUNTRIES (LMICS): PRELIMINARY FINDINGS FROM THE GLOBAL LMIC CP REGISTER.**
*Israt Jahan, MPH; Mohammad Muhit, PhD; Mahmudul Hassan Al Imam, CSF Global, MPH; Manik C. Das, MBBS; Denny Hardianto, MPH; Francis Laryea, BS; Nadia Badawi, PhD; Gulam Khandaker, PhD*

**G10 - ADULT CEREBRAL PALSY PATIENT REPORTED OUTCOMES REGISTRY: PRELIMINARY REPORT ON CHANGES ACROSS LIFESPAN IN GROSS MOTOR, MANUAL ABILITIES, AND COMMUNICATION FUNCTION**
*Mary E. Gannotti, PT, PhD; Deborah E. Thorpe, PT, PhD; Edward A. Hurvitz, MD; Garey Noritz, MD; Bethann Sennett, EdD; Linda E. Krach, MD; Michael E. Msall; Henry G. Chambers, MD; Susan Horn, PhD; Paul H. Gross, BA*

## Free Paper Session H: Classification and Medical Mix

**H1 - THE FUNCTIONAL COMMUNICATION CLASSIFICATION SYSTEM — EXTENDED RELIABILITY AND VALIDITY FOR CHILDREN WITH CEREBRAL PALSY AGED 2 TO 4 YEARS.**
*Katy D. Caynes, BSpPath; Tanya Rose, PhD, BSpPath; Debbie Burmester, BSpPath; Robert Ware, PhD; Leanne Johnston, PhD*

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**H2: TESTING THE RELIABILITY OF THE AUTISM CLASSIFICATION SYSTEM OF FUNCTIONING: SOCIAL COMMUNICATION- INTEGRATED FOR CHILDREN AND YOUTH AGES 2 TO 21 YEARS**
*Briano Di Rezze, PhD, OT Reg(Ont.); Peter Rosenbaum, MD, FRCP(C), DSc (HC); Mary Jo C. Hidecker, PhD, MS, MA, CCC-A/SLP; Lonnie Zwaigenbaum, MD, FRCP(C); Caroline Roncadin, C.Psych.; Eric Duku, PhD., P.Stat; Stephen J Gentles, MSc, PhD; Stelios Georgiades, BA, MA, PhD; Helena Viveiros, BA, BSc; Hanna Fang, BSc, MSc*

**H3 - HIGH PRACTICE VARIABILITY IN CEREBRAL PALSY DIAGNOSIS: NEED FOR CLARIFICATION OF THE CONSENSUS DEFINITIONS?**
*Bhooma R. Aravamuthan, MD, DPhil; Darcy Fehlings, MD, MSc, FRCP(C); Sheetal Shetty, PhD; Michael Fahey, MD; Laura Gilbert, DO MBA; Ann Tilton, MD; Michael C. Kruer, MD*

**H4 - NOVICE RATER ACCURACY AND RELIABILITY FOLLOWING ORIENTATION TO THREE DIFFERENT COMMUNICATION CLASSIFICATIONS.**
*Katy D. Caynes, BSpPath; Tanya Rose, PhD, BSpPath; Debbie Burmester, BSpPath; Robert Ware, PhD; Leanne Johnston, PhD*

**H5 - ADVANCED GROSS MOTOR ASSESSMENT TOOLS FOR AMBULANT SCHOOL-AGED CHILDREN WITH CEREBRAL PALSY: A SYSTEMATIC REVIEW AND DECISION TREE.**
*Georgina L. Clutterbuck, BS*

**H6 - HOW CONGENITAL ZIKA VIRUS IMPACTED MY CHILD'S FUNCTIONING AND DISABILITY: A BRAZILIAN QUALITATIVE STUDY GUIDED BY THE ICF**
*Verónica Schiariti, PhD; Taynah Neri C. Campos; Melissa Gladstone, PhD; Egmar Longo, PhD*

**H7 - DIFFERENCES IN ATTENTION AND COGNITIVE OUTCOMES IN CHILDREN AT EIGHT/NINE YEARS OF AGE FOLLOWING NEONATAL CARDIAC AND NON-CARDIAC SURGERY**
*Natalie Fairbairn, MPH; Iona Novak, PhD; Nadia Badawi, PhD; Antoinette Hodge; Claire Galea, MS; Alison Loughran-Fowlds*

**H8 - UNDERSTANDING THE USE OF THE AFFECTED AND UNAFFECTED ARM BY MAPPING SIMPLE AND COMPLEX FINE MOTOR SKILLS IN CHILDREN WITH HEMIPARESIS.**
*Tanya Tripathi, PhD; Thais Invencao Cabral, PhD; Gardenia Barbosa, PhD; Amy Darragh, PhD, OTR; Sharon Ramey, PhD; Stephanie C. DeLuca, PhD; Jill Heathcock, MPT, PhD*

**H9 - INTERVENTIONS FOR IMPROVING UPPER EXTREMITY FUNCTION IN CHILDREN WITH SEVERE INVOLVEMENT: A SYSTEMATIC REVIEW**
*Alice Chu, MD; Yash M. Shah, BS; Kunj Jain, BA; Vaishali Ravikumar, BS; Anugya Mittal, BA*

**H10 - NONINVASIVE VAGUS NERVE STIMULATION (VNS) INCREASES ACTIVITY-DEPENDENT PLASTICITY AND FEEDING VOLUMES IN DOSE RESPONSIVE MANNER IN INFANTS SLATED FOR G-TUBE**
*Patricia Coker-Bolt, PhD, OTR/L, FAOTA, FNAP; Dorothea Jenkins, MD; Turki Aljuhani, MA, BAppSc (OT)*

## Friday, September 25, 2020

### INSTRUCTIONAL COURSES

### 2:30 PM – 4:30 PM

**IC15 - ACQUIRE CONCEPTUAL FRAMEWORK: IDENTIFYING THE MOVING PIECES TO AN INTENSIVE BEHAVIORAL APPROACH TO THE TREATMENT OF CHILDREN WITH DISABILITIES**
*Dory Wallace, MS; Mary Rebekah Trucks, MS; Stephanie C. DeLuca, PhD*

Learning Objectives:
1. Discuss the history of developmental literature and how it relates to the ACQUIRE Framework
2. Educate the participants on the components of the ACQUIRE Framework
3. Identify the components of the ACQUIRE Framework treatment video and express how these components work together during a treatment session
4. Discuss how the ACQUIRE Framework can be used to shape future interventions of children with varying disabilities

**IC16 - ASSESSING ACTIVITY LEVEL OUTCOMES USING THE PEDIATRIC EVALUATION OF DISABILITY INVENTORY-COMPUTER ADAPTIVE TEST (PEDI-CAT) FAMILY OF MEASURES**
*Jessica Kramer, PhD; Maria A. Fragala-Pinkham, PT, DPT, MS; Benjamin Shore, MD MPH; Rawan AlHeresh, PhD, OTR/L*

Learning Objectives:
1. Describe the psychometric properties of the Pediatric Evaluation of Disability Inventory Computer Adaptive Test (PEDI-CAT)
2. Understand how to administer, score, and interpret the PEDI-CAT.
3. Demonstrate the ability to identify and select PEDI-CAT and specialty measures for specific diagnoses, rehabilitation contexts, and ages.
4. Apply knowledge to case examples using the PEDI-CAT and specialty measures.

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**IC17 - CUTTING EDGE TECHNOLOGY: "UNMASKING THE POTENTIAL OF INDIVIDUALS WITH CHILDHOOD ACQUIRED DISABILITIES." HYPE OR HOPE?**

*Anna M. McCormick, MD FRCPC; Cole Galloway, PT, PhD, FAPTA; Deborah J. Gaebler-Spira, MD; Sarah H. Evans, MD; Hana Alazem, MD, FRCPC; Adam Kirton, MD MSc FRCPC*

Learning Objectives:

1. Describe why technology advancement is important in rehabilitation.
2. Describe what makes technology development meaningful and impactful in pediatric rehabilitation.
3. List five examples of newly developed high tech devices utilized in pediatric rehabilitation.
4. List possible impacts of technology development on function, activity and participation.

**IC18 - ADULTS WITH CEREBRAL PALSY: BRINGING RESEARCH INTO THE CLINIC**

*Edward A. Hurvitz, MD; Mark Peterson, PhD; Daniel G. Whitney, PhD; Heidi Haapala, MD; Mary Schmidt, DO; Dayna K. Ryan, PT, DPT, NCS, DPT, NCS*

Learning Objectives:

1. Describe research findings related to health and wellness outcomes in adults with cerebral palsy, including risk of chronic diseases such as cardiovascular diseases, musculoskeletal syndromes and mental health issues.
2. Construct a clinic protocol using the research and clinical information provided in the course that they can apply to their own clinic environment.
3. List several significant problems seen in the adults with cerebral palsy clinic and strategies for managing each of them.
4. Describe physical therapy protocols applicable to adults with cerebral palsy that are designed to address the common problems seen in the clinic and identified through research findings.

**IC19 - IN NEED OF RESPITE?: RESILIENCE BUILDING FOR PROVIDERS CARING FOR CHILDREN WITH MULTIDISCIPLINARY CARE NEEDS.**

*Kristie Malik, MD; Emily Goodwin, MD; Kathleen Huth, MD MMSc*

Learning Objectives:

1. Identify established techniques for resiliency and potential application to the participant's practice.
2. Discuss methods to build resilience leveraging experiences of others.
3. Develop goals for self-improvement in three domains of resilience.
4. Synthesize themes of resiliency that develop during workshop to be used in daily clinical practice.

**IC20 - ROLES OF DISTAL FEMORAL EXTENSION OSTEOTOMY AND PATELLAR TENDON ADVANCEMENT IN THE TREATMENT OF SEVERE PERSISTENT CROUCH GAIT IN ADOLESCENTS AND YOUNG ADULTS WITH CEREBRAL PALSY.**

*Tom F. Novacheck, MD; Elizabeth R. Boyer, PhD; Jackie Norling, MPT; Jean L. Stout, MS, PT; Elizabeth W. Weber, MD, MS*

Learning Objectives:

1. Discuss the indications for DFEO+PTA surgery for severe crouch gait in adolescents & young adults with cerebral palsy and operative- and post-operative care insights.
2. Describe insights gained from advanced musculoskeletal models regarding the function of the hamstrings, rectus femoris, and patella position in understanding severe crouch gait.
3. Explain the essential components of post-surgical rehabilitation.
4. Compare long-term case vs. control functional outcomes of DFEO+PTA surgery across the entire spectrum of the ICF domains.

**IC21 - SAVING THE HIPS: THERAPISTS AND PHYSICIANS WORKING TOGETHER**

*Virginia Paleg, DScPT; Unni Narayanan, MD; Elisabet Rodby-Bousquet, PhD; Wade Shrader, MD; Jan Willem Gorter, MD, PhD*

Learning Objectives:

1. Formulate rationale for participating in an active hip clinical and radiographic surveillance program
2. List four risk factors for hip dislocation seen by the therapist in a clinical assessment
3. Describe the proactive vs. reactive model of surgical hip health interventions
4. Describe how early intervention programs can facilitate participation in hip surveillance

**IC22 - SEX IN THE CP- SEXUALITY AND LIFE SPAN CARE IN PEOPLE WITH CEREBRAL PALSY**

*Heakyung Kim, MD; Jan Moskowitz, LCSW, CCLS; Susan C. Labhard, MSN*

Learning Objectives:

1. Understand the importance of including sex/sexuality in assessments and learn how to initiate meaningful conversation relating sex/sexuality.
2. Understand physical challenges and limitation that people with CP experience related to sexual activity.
3. Be educated on available treatment options for management of medical conditions that people with CP experience related to sexual activity.
4. Discuss adaptive means of seeking and having sex.

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**IC23 - USING IMPLEMENTATION SCIENCE TO ACCELERATE THE ADOPTION OF EVIDENCE-BASED PRACTICES FOR RESISTANCE TRAINING IN CEREBRAL PALSY**
*Nicole Harris, MPT; Noelle G. Moreau, PhD, PT; James B. Hedgecock, DPT; Michelle M. Roy, PT; Matthew Prowse, MD, FRCPC, CSCN (EMG)*

Learning Objectives:
1. Evaluate recent evidence regarding the effects of resistance training for children with CP across the ICF.
2. Integrate the knowledge of dosing parameters from evidence-based research with clinical expertise for practical application for patients with CP and other neuromotor diagnoses.
3. Evaluate the success of current resistance training programs after presentation of case studies and combined data of participants.
4. Identify how Implementation Science methodology and tools can be used to accelerate the adoption of evidence-based resistance training at a rehabilitation center or hospital.

**IC24 - THE ROLE OF JOINT KINETICS IN UNDERSTANDING GAIT PATHOLOGY AND TREATMENT DECISION-MAKING**
*Sylvia Ounpuu, MSc; Kristan A. Pierz, MD; Jennifer Rodriguez-MacClinitic*

Learning Objectives:
1. Be familiar with basic concepts needed to interpret kinetic data.
2. Be familiar with typically developing and common atypical kinetic patterns.
3. Be familiar with the relationship between trunk position and joint kinetics.
4. Understand the clinical utility of joint kinetics in treatment decision-making for gait disorders.

**IC25 - THE YEAR'S TOP TEN ARTICLES IN DEVELOpmENTAL DISABILITIES**
*Richard C. Adams, MD; Nancy A. Murphy, MD*

Learning Objectives:
1. Summarize the major conclusions of each of the ten articles presented.
2. Identify areas in which additional research is needed.
3. Evaluate the utility of each of the articles for their own clinical practice.
4. Be inspired to seek articles on their own.

**IC26 - UNMASKING NEUROMUSCULAR ELECTRICAL STIMULATION POTENTIAL TO IMPROVE FUNCTION FOR INDIVIDUALS WITH CEREBRAL PALSY**
*Kelly R. Greve, PT, DPT, PhD; Christopher F. Joseph, DPT; Jessica Rose, PhD*

Learning Objectives:
1. Recognize concepts, technologies, and protocols for the clinical application of NMES as a strengthening intervention for individuals with CP.
2. Understand patient rehabilitation goals for the use of NMES in a clinical setting to improve strength and function, and alter muscle tone in individuals with CP.
3. Identify future innovations for step-initiated, multichannel NMES-assisted gait to improve function for individuals with CP.
4. Familiarize and implement NMES that can be used for individuals with CP in the clinical setting.

**4:35 PM – 4:50 PM**
**Let's Move! Yoga**
Yoga postures will work on balance, strength, and flexibility. A great way to focus and refresh your mind and body and start the morning off right!

**GENERAL SESSION**

**5:00 PM – 7:00 PM**

**Mac Keith Press Basic Science Lecture**
*Joanne Kurtzberg, MD*

**Mentorship Award**
*Mauricio R. Delgado, MD*

**Point/Counter-Point Lecture**
*Jason J. Howard, MD; Mark E. Gormley, Jr., MD*

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## Saturday, September 26, 2020

### LUNCH & LEARN SEMINARS (FORMERLY 'BREAKFAST SEMINARS')

### 11:00 AM – 12:00 PM

**LL28 - AN EXAMINATION OF STRESS AND PROMOTING COUPLE AND FAMILY RELATIONSHIP HEALTH IN FAMILIES OF CHILDREN WITH CEREBRAL PALSY**

*Carrie M. Sewell-Roberts, LCSW; Michael W Shrader, MD; Carol M. Shrader, BA*

Learning Objectives:

1. Understand the body of evidence surrounding caregiver stress and its effect on couple relationships and families.
2. Understand from a first-person perspective how stress can affect a caregiver's ability to cope and maintain healthy relationships.
3. Appreciate why mitigating caregiver stress and promoting parent relationship health is important for achieving best outcomes for children with developmental disabilities.
4. Identify evidence-based tools for assessing caregiver stress and intervention strategies to reduce psychosocial risk and promote relationship health.

**LL29 - CELLULAR DETERMINANTS OF MUSCLE GROWTH AND ADAPTATION TO EXERCISE IN CEREBRAL PALSY: PRACTICAL IMPLICATIONS**

*Ferdinand von Walden, MD, PhD; Sudarshan Dayanidhi, PT, PhD*

Learning Objectives:

1. Understand cellular aspects of skeletal muscle growth during postnatal development.
2. Learn about recent evidence of cellular dysfunction in skeletal muscles with fixed contractures in children with CP and how this relates to findings in animals and cells in culture.
3. Discuss how these findings at the cellular level theoretically influence the response to acute and chronic exercise.
4. Highlight current recommendations for physical activity in children and adolescents with cerebral palsy.

**LL30 - EARLY OCCUPATIONAL AND PHYSICAL THERAPY FOR INFANTS AT HIGH RISK FOR CEREBRAL PALSY, IMPLEMENTING STRATEGIES INTO YOUR PRACTICE**

*Nancy Batterson, OT/L, SCFES; Ilene Crabtree, DPT; Lindsey Tobias, DPT, ABPTS; Kelly J. Tanner, PhD*

Learning Objectives:

1. Describe the importance, implications of early diagnosis and evaluations of infants as it relates to occupational and physical therapy.
2. Describe evidence-base therapeutic approaches for treating infants with or at high-risk for cerebral palsy.
3. Articulate the importance of family centered goals and caregiver involvement to the treatment of young infants at high risk for cerebral palsy.
4. Use the Prioritization Matrix to be able to develop an individualized implementation plan for your institution.

**LL31 - EFFICACY OF ACTIVITY-BASED INTERVENTIONS TO EXPAND MOTOR FUNCTION & MOBILITY IN INFANTS & TODDLERS**

*Susan V. Duff, EdD, MPT, OT/L, CHT; Jill Heathcock, MPT, PhD; Laura A. Prosser, PT, PhD*

Learning Objectives:

1. Describe current findings on constraint induced movement therapy (CIMT) to improve upper limb function in young children.
2. Identify low- and high technology-based strategies that use contingent reinforcement to improve muscle activation and function.
3. Understand how technology can be used as a tool to foster independent mobility such as crawling and walking.
4. Describe the current evidence and feasibility of early pediatric neurorehabilitation strategies.

**LL32 - HOW TO PARTICIPATE IN REGISTRY BASED RESEARCH AND QUALITY IMPROVEMENT WITH THE CEREBRAL PALSY RESEARCH NETWORK**

*Paul H. Gross, BA; Garey Noritz, MD*

Learning Objectives:

1. Define the types of institutions and clinicians that can collaborate with the CPRN to accelerate clinical research in CP.
2. Describe the type of data that is collected in the CPRN Clinical Registry and how that data can be gathered through usual clinical care.
3. List the benefits of contributing data to the CPRN clinical registry to their work as clinical researchers in cerebral palsy.
4. Describe the steps to join the CPRN and list the research resources available to members of the network.

**LL33 - INFANT INTERVENTION TRIALS: A BRAINSTORMING SESSION ON GOALS, METHODS, AND CHALLENGES**

*Stacey Dusing, PhD; Shaaron Brown, DPT; Barbara Sargent, PhD, PT, PCS; Richard D. Stevenson, MD*

Learning Objectives:

1. Understand why infant intervention trials are needed and barriers to completion.
2. Describe methodology to improve the measurement, fidelity, and recruitment in infant intervention trials.
3. Identify topics, teams, and methods to advance infant intervention research.
4. List 3 strategies to improve enrollment and retention in infant intervention trials.

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**LL34 - IS IT TIME FOR THE NEW ERA OF FAMILY - CENTRED SERVICE?**

*Monika Novak-Pavlic, MSc; Rachel E. Martens; Peter Rosenbaum, MD, FRCP(C), DSc (HC)*

Learning Objectives:

1. Gain knowledge on the theoretical foundation of family-centred service
2. Raise the awareness of the importance of family-centred service
3. Identify challenges for family-centred rehabilitation service implementation in the pediatric clinical settings
4. Determine the state of the current research evidence on family-centred service.

**LL35 - MAINTAINING AND PROGRESSING SKILLS AFTER PEDIATRIC CONSTRAINT INDUCED MOVEMENT THERAPY (P-CIMT): DEVELOPMENT AND USE OF AN INDIVIDUALIZED TRANSFER PACKAGE**

*Mary Rebekah Trucks, MS; Dory Wallace, MS; Stephanie C. DeLuca, PhD*

Learning Objectives:

1. Discuss the history of P-CIMT and the use of transfer packages.
2. Discuss the science of promoting successful maintenance of skills post P-CIMT.
3. List the core components of a successful transfer package to maximize children's daily use of their impaired arm and hand.
4. Discuss the implications of transfer packages for use with P-CIMT and other therapeutic approaches.

**LL36 - STRATEGIES FOR ADDRESSING SELF INJURIOUS BEHAVIORS IN CHILDREN WITH NEURODEVELOpmENTAL DISABILITIES**

*Emily Goodwin, MD; Irene C. Dietz, MD; Alison M. Ruby, MA; Eliana M. Pizarro, PhD*

Learning Objectives:

1. Describe the evaluation and treatment options for managing self-injurious behaviors.
2. Describe available evidence for treatments including non-pharmacologic interventions for self-injurious behaviors across transdisciplinary teams.
3. Recognize the impact of these behaviors on quality of life and participation for individuals and their families.
4. Discuss gaps where further research or clinical care guidelines are needed for the treatment of self-injurious behaviors in children with neurodevelopmental disabilities.

**LL37 - TRANSITIONING YOUTH WITH CHILD-ONSET CONDITIONS TO ADULTHOOD: PERSON-CENTERED AND EVIDENCE-BASED METHODS TO ADDRESS TRANSITION ISSUES IN A VARIETY OF CLINICAL SETTINGS AND GEOGRAPHIC LOCATIONS**

*Susan C. Labhard, MSN*

Learning Objectives:

1. Encourage the inclusion and attention to incorporating a person-centered transitions program into practice, for families and youth affected with child-onset conditions, citing evidence-based practice models.
2. Explore creative and effective methods in providing transition resources to patients and families in diverse settings, to promote quality-of-life.
3. Apply best practice tools, including an innovative computer-based Transition Resources mind-map, for effectively locating adult specialists and resources related to disabilities, in geographic locations throughout the United States and abroad.
4. Discuss national and international transition concerns and solutions to increase knowledge and support for participants and for their youth with child-onset conditions.

**LL38 - UNANTICIPATED BENEFITS FOLLOWING INTENSIVE NEUROREHABILITATION IN CHILDREN WITH CEREBRAL PALSY**

*Yannick Bleyenheuft, PhD; Andrew M. Gordon, PhD; Ya-Ching Hung, EdD*

Learning Objectives:

1. Define which upper extremity intensive intervention might induce changes in gait and interlimb coordination in children with unilateral CP.
2. Define which upper extremity intensive intervention might induce changes trunk excursion in children with unilateral CP.
3. Define which upper extremity intensive intervention might induce changes in visuo-spatial attention in children with unilateral CP.
4. Define whether intensive interventions might induce changes in executive functions of children with CP.

**LL39 - WHEN TO REFER: EARLY INDICATORS FOR COMMUNICATION CONCERNS IN CEREBRAL PALSY**

*Mary Jo C. Hidecker, PhD, MS, MA, CCC-A/SLP; Helen L. Long, MS, CCC-SLP*

Learning Objectives:

1. Identify early indicators for abnormal communication development
2. Describe information gathering techniques to determine a need for referral to audiology or speech-language pathology
3. Understand assessment of common speech, language, and hearing disorders in individuals with CP

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**LL40 - UPDATES FROM THE NATIONAL INSTITUTES OF HEALTH ON PEER REVIEW AND FUNDING OPPORTUNITIES**
*Ralph Nitkin, PhD; Maria Nurminskaya, PhD*

Learning Objectives:
1. Understand the NIH peer review process and criter
2 Learn how to get involved with NIH as a reviewer
3. Learn about current funding opportunities from the National institute of Child and Human Development
4. Learn about current funding opportunities from the National Center for Medical Rehabilitation Research (NCMRR)

**12:05 PM – 12:20 PM**
**Let's Move! Adaptive Camp Activities**
Learn how an adapted camp worked around the pandemic to promote movement. Watch the videos and join in the fun.

## Saturday, September 26, 2020

**FREE PAPER SESSIONS**

### 12:30 PM – 2:15 PM

**Free Paper Session I: Ortho Spine and Neuromuscular**

**I1 - DEVELOPMENT OF A RISK SCORE FOR SCOLIOSIS IN CHILDREN WITH CEREBRAL PALSY.**
*Katina Pettersson, PhD; Elisabet Rodby-Bousquet, PhD*

**I2 - PREDICTED LIFE EXPECTANCY IN PATIENTS WITH CEREBRAL PALSY AND NEUROMUSCULAR SCOLIOSIS UNDERGOING SPINAL FUSION: AN EXPLORATORY ANALYSIS FROM A SINGLE INSTITUTION OVER 15-YEARS.**
*Michael W Shrader, MD; Arun R. Hariharan, MD; Carlos Pargas, MD; Margaret Baldwin, MD; Joseph Petfield, MD; Kenneth Rogers, MD; Julio Jauregui, MD; Suken Shah, MD; Julieanne Sees, DO; Freeman Miller, MD;*

**I3 - DETERMINING INCIDENCE AND RISK FACTORS OF PRESSURE ULCERATION AFTER ORTHOPAEDIC SURGERY IN CHILDREN WITH NEUROMUSCULAR COMPLEX CHRONIC CONDITIONS**
*Benjamin Shore, MD MPH; Aneesh V. Samineni, BA; Jodie Shea, BS; Patricia Miller, MS; Lanna Feldman, MS; Christopher Hopkinson, RN; Rachel L. DiFazio, PhD*

**I4 - IMPACT OF HOSPITAL AND CHILD CHARACTERISTICS ON RECEIVING INPATIENT PHYSICAL THERAPY AFTER ORTHOPEDIC LOWER EXTREMITY SURGERY IN CHILDREN WITH CEREBRAL PALSY**
*Amy F. Bailes, PhD; Colleen Mangeot, MS; Natalie J. Murphy, MPH; Zachary S. Richardson, PhD; James McCarthy, MD; Beth M. McManus, PT, MPH, ScD*

**I5 - MUSCULOSKELETAL PATHOLOGY IN CHILDREN WITH CEREBRAL PALSY: A CLASSIFICATION SYSTEM.**
*Tandy Hastings-Ison, PhD; H. Kerr Graham, MD; Pam Thomason, MPT; Erich Rutz, MD; Kate L. Willoughby, B Physio, D Physio; Abhay Khot, MD*

**I6 - SAGITTAL PLANE DEFORMITIES IN CHILDREN WITH SMA2 FOLLOWING POSTERIOR SPINAL INSTRUMENTATION**
*Matthew Halanski, MD; James T. Bernatz, MD; Rewais Hanna; Mark Sharafinski*

**I7 - PROGRESSION OF HIP INSTABILITY IN CHILDREN WITH SPINAL MUSCULAR ATROPHY**
*Sayan De, MD; Wade Coomer, BS; Alexis Gerk, BS; Cosmo Kwok, MD; Zhaoxing Pan, PhD; Joyce Oleszek, MD; Anne Stratton, MD; Frank Chang, MD*

**I8 - SPINA BIFIDA FUNCTIONAL CLASSIFICATION SYSTEM: A PRELIMINARY STUDY**
*Vedant A. Kulkarni, MD; Maya Evans, MD; Donald Kephart, MD; Dana Sheng, MD; Jon R. Davids, MD; Anita Bagley, PhD, MPH*

**I9 - AMBULATION INCREASES THE RISK OF AMPUTATION IN PATIENTS WITH SPINA BIFIDA WHO HAVE A LOWER EXTREMITY PRESSURE SORE**
*Caroline Gormley, BS; Supreet Deshpande, MD; Mark Gormley, Jr., MD*

**I10 - NEUROSURGICAL PROCEDURES FOR CO-MORBID CONDITIONS AFTER CLOSURE OF MYELOMENINGOCELE BY FETAL SURGERY VERSUS BY POSTNATAL SURGERY: A MATCHED COHORT STUDY.**
*Gordon Worley, MD; Rachel Greenberg, MD; Brandon Rocque, MD; Tiebin Liu, PhD; Brad Dicianno, MD; Richard C. Adams, MD; Jonathan Castillo, MD; Heidi Castillo, MD; Elizabeth Ward, RN; Tonya Williams, PhD; Jeffrey Blount, MD; John Wiener, MD*

**Free Paper Session J: Tone**

**J1 - SAFETY OF BOTULINUM TOXIN INJECTIONS IN CHILDREN UNDER ONE YEAR OF AGE**
*Nikhil Deshpande; Supreet Deshpande, MD; Mark Gormley, Jr., MD*

**J2 - LOWER LIMB INJECTIONS OF ONABOTULINUMTOXINA: IMPROVEMENT IN GAIT AND TREATMENT GOAL ACHIEVEMENT IN PEDIATRIC PATIENTS WITH CEREBRAL PALSY**
*Heakyung Kim, MD; Brad Racette, MD; Courtney Dunn; Shubhra Mukherjee, MD; Emily McCusker, PhD; Chengcheng Liu, PhD; Rozalina Dimitrova, MD, MPH*

**J3 - BOTULINUM TOXIN A AND OSTEOPENIA IN EXPERIMENTAL ANIMAL MODELS: A SYSTEMATIC REVIEW**
*Kelsey Davidson, MD; Min Jia Tang, MBBS; Tandy Hastings-Ison, PhD; Jason J. Howard, MD; Abhay Khot, MD; H. Kerr Graham, MD*

**J4 - EFFICACY AND SAFETY OF ABOBOTULINUMTOXINA FOR UPPER LIMB SPASTICITY IN CHILDREN WITH CEREBRAL PALSY: RESULTS FROM AN INTERNATIONAL, PHASE 3, PIVOTAL STUDY**
*Mauricio R. Delgado, MD; Ann Tilton, MD; Jorge Carranza, MD; Nigar Dursun, MD; Marcin Bonikowski, MD; Resa Aydin, MD; Iwona Maciag-Tymecka, MD; Joyce Oleszek, MD; Edward Dabrowski, MD; Anne-Sophie Grandoulier, BS; Philippe Picaut, PharmD*

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**J5 - INDIVIDUALIZED ONABOTULINUMTOXINA TREATMENT FOR SPASTICITY IN ADULT CEREBRAL PALSY PATIENTS RESULTED IN HIGH PATIENT AND CLINICIAN SATISFACTION IN THE ASPIRE STUDY**
*Gerard F. Francisco, MD; Daniel S. Bandari, MD; Ganesh Bavikatte, MD; Wolfgang Jost, MD; Aleksej Zuzek, PhD; Joan Largent, PhD, MPH; Alberto Esquenazi, MD*

**J6 - LONG-TERM SAFETY AND EFFICACY OF ONABOTULINUMTOXINA FOR THE TREATMENT OF UPPER LIMB SPASTICITY IN CHILDREN WITH CEREBRAL PALSY: OPEN-LABEL EXTENSION STUDY**
*Emily McCusker, PhD; Darcy Fehlings, MD, MSc, FRCP(C); Rozalina Dimitrova, MD, MPH; Kayla Chen, PhD; Marta Banach, PhD; Marcin Bonikowski, MD*

**J7 - UPPER EXTREMITY PERFORMANCE CHANGES IN CHILDREN WITH SPASTIC CEREBRAL PALSY FOLLOWING SELECTIVE DORSAL RHIZOTOMY**
*Patricia Mortenson, MSc; Nishanth Sadashiva, MCh; Mandeep S. Tamber, MD PhD; Paul Steinbok, MBBS*

**J8 - QUALITY OF LIFE, LEVEL OF DISABILITY AND MENTAL HEALTH OF ADULTS WITH CEREBRAL PALSY MORE THAN 25 YEARS AFTER SELECTIVE DORSAL RHIZOTOMY**
*Nelleke G. Langerak, MSc, PhD; Berendina E. Veerbeek, PhD; A G. Fieggen, MD, FCS(SA); Robert P. Lamberts, MSc, PhD, FECSS*

**J9 - OUTCOMES OF INTENSIVE VERSUS MINIMAL SPASTICITY MANAGEMENT STRATEGIES ON INDIVIDUALS WITH CEREBRAL PALSY: PRELIMINARY RESULTS OF A LONG-TERM MULTI-CENTER STUDY**
*Meghan E. Munger, MPH; Brian Po-Jung Chen, MD; Elizabeth A. Duffy, MPH; Bruce A. MacWilliams, PhD; Mark L. McMulkin, PhD; Lisa H. Carter, PT; Shelley L. Mader, PT; Brianna Hayes, MS; Tom F. Novacheck, MD; Kristen L. Carroll, MD; Alan K. Stotts, MD; Glen O. Baird, MD; Michael H. Schwartz, PhD*

**J10 - PHARMACOLOGICAL AND NEUROSURGICAL INTERVENTIONS FOR MANAGING DYSTONIA IN CEREBRAL PALSY: A SYSTEMATIC REVIEW UPDATE AND META-ANALYSIS USING GRADE**
*Emma Bohn; Darcy Fehlings, MD, MSc, FRCP(C); Katherine Goren, BHSc; Lauren Switzer, MSc; Yngve Falck-Ytter, MD*

## Free Paper Session K: Home and Community Care

**K1 - SUPPORTED MOBILITY DEVICES FOR PEOPLE WITH CEREBRAL PALSY: STAKEHOLDER PERSPECTIVES AND NEEDS**
*Heather A. Feldner, PT, PhD, PCS; Kristie Bjornson, PT, PhD; Deborah Gaebler-Spira, MD; Varun Awasthi*

**K2 - THE FRIENDS PROJECT: A RANDOMISED CONTROLLED TRIAL OF A GROUP SOCIAL SKILLS PROGRAM, PEERS®, IN YOUTH WITH ACQUIRED BRAIN INJURIES AND CEREBRAL PALSY.**
*Rose Gilmore; Jenny Ziviani; Nicola Hilton; Sarah McIntyre, PhD; Hayley SmithersSheedy; Tracey Williams, PhD; MCN; Elizabeth Laugeson; Leanne Sakzewski, PhD, OT*

**K3 - PARENTING AND SOCIAL FACTORS PROMOTE DEVELOpmENTAL RESILIENCE IN FORMER PRETERM CHILDREN AT PRESCHOOL AGE**
*Mary Lauren M. Neel, MD, MSCI; Tyler Busch, BS; Aryanne De Silva, PhD; Melissa Moore-Clingenpeel, MS; Hudson (Gerry) Taylor, PhD; Nathalie Maitre, MD, PhD*

**K4 - FATHERS MATTER: BLENDING OF PATIENT-ORIENTED AND KNOWLEDGE TRANSLATION APPROACHES TO ENHANCE HEALTHCARE EXPERIENCES AMONG FATHERS OF CHILDREN WITH DEVELOpmENTAL DISABILITIES**
*Tatiana Ogourtsova, PhD; Maureen O'Donnell, MD MSc; Derrick Chung; Frank Gavin; Aline Bogossian, PhD; Annette Majnemer, OT, PhD, FCAHS*

**K5 - RELATIONSHIP BETWEEN MOBILITY AND PARENT-PROVIDED COGNITIVE OPPORTUNITIES IN YOUNG CHILDREN WITH HETEROGENEOUS MOTOR ABILITIES**
*Audrey E. Kane, PhD, OTR/L; Natalie A. Koziol, PhD; Lin-Ya Hsu, PhD; Ketaki Inamdar, MPT; Rebecca M. Molinini, DPT; Regina T. Harbourne, PhD; Michele A. Lobo, PT, PhD; Sarah Westcott McCoy, PhD; James A. Bovaird, PhD; Stacey Dusing, PhD*

**K6 - AGE OF CP DIAGNOSIS, BUT NOT CURRENT REHABILITATION SERVICES, ARE RELATED TO GROSS MOTOR FUNCTION LEVEL IN SCHOOL-AGED CHILDREN**
*Rachel L. Bican, DPT; Jill Heathcock, MPT, PhD; Rachel Ferrante, DPT; Sarah Hendershot, DPT*

**K7 - Withdrawn by Author**

**K8 - A PRE-OPERATIVE BOWEL EVACUATION PROTOCOL WHICH REDUCES POST-OPERATIVE GASTROINTESTINAL AND FEEDING PROBLEMS IN CHILDREN WITH CEREBRAL PALSY WHO UNDERGO A MAJOR SURGERY**
*Alexander Kulkarni; Supreet Deshpande, MD; Mark Gormley, Jr., MD; Annette Lowell, RN; Marie Krisik, RN*

**K9 - HOME NURSING FOR US CHILDREN WITH HOME MECHANICAL VENTILATION (HMV): KEY INFORMANT PERSPECTIVES**
*Sarah A. Sobotka, MD, MSCP; Ayesha Dholakia, BA; Jay Berry, MD, MPH; Maria Brenner, PhD, MSc; Robert Graham, MD; Denise Goodman, MD; Rishi Agrawal, MD, MPH*

## Free Paper Session L: Pain and Train

**L1 - PAIN MANAGEMENT AFTER HIP RECONSTRUCTION IN CEREBRAL PALSY: IS EPIDURAL ANALGESIA SAFE AND EFFICACIOUS IN THE PRESENCE OF A BACLOFEN PUMP?**
*Benjamin Shore, MD MPH; Samineni, BA; Susan E. Eklund, MD; Patricia Miller, MS; Jodie Shea, BS; Kristin Buxton, MSN; Brian Snyder, MD, PhD; Travis Matheney, MD; Scellig Stone, MD, PhD; Colyn Watkins, MD; Walid Alrayashi, MD*

**L2 - PAIN PHENOTYPE AND PREVALENCE IN ADULTS LIVING WITH CEREBRAL PALSY AND SPINA BIFIDA: A COHORT STUDY OF PRIVATELY-INSURED BENEFICIARIES**
*Mark Peterson, PhD; Neil Kamdar; Paul Lin; Heidi Haapala, MD*

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**L3 - PAIN IN ADULTS WITH CEREBRAL PALSY**
*Elisabet Rodby-Bousquet, PhD; Ann Alriksson-Schmidt, MSPH, PhD; Johan Jarl, PhD*

**L4 - CAREGIVER REPORTED PAIN-RELIEVING APPROACHES AND ASSOCIATED EFFECTIVENESS BY PAIN TYPE IN INDIVIDUALS WITH CEREBRAL PALSY**
*Abagail Raiter, BA; Alyssa Merbler, MA; Lisa Lykken, BS; Chantel C. Barney, PhD; Frank Symons, PhD*

**L5 - CHRONIC PAIN, ACTIVITIES, AND PARTICIPATION IN CHILDREN WITH CEREBRAL PALSY**
*Gavin Colquitt, EdD; Haresh Rochani, DrPH, MPH, M.B.B.S.; Christopher Modlesky, PhD; Li Li, PhD; Barbara Weissman, MD; Joshua Vova, MD*

**L6 - TRAIN, GAIN AND MAINTAIN: MAINTENANCE OF FUNCTIONAL GAINS FOLLOWING AN EIGHT-WEEK GOAL-DIRECTED TRAINING PROGRAM FOR CHILDREN WITH CEREBRAL PALSY**
*Ellen L. Armstrong, BExSc, MSc(APA), MPT; Christopher Carty; Sean Horan; Roslyn N. Boyd, PhD; Robert Ware, PhD; Megan Kentish*

**L7 - SPORTS STARS: A PRACTITIONER-LED, PEER-GROUP SPORTS INTERVENTION IMPROVES PHYSICAL ACTIVITY COMPETENCE FOR AMBULANT CHILDREN WITH CEREBRAL PALSY.**
*Georgina L. Clutterbuck, BS*

**L8 - PLAY ABILITIES IN CHILDREN WITH CEREBRAL PALSY ARE DELAYED IN MULTIPLE DOMAINS OF DEVELOpmENT**
*Tanya Tripathi, PhD; Thais Invencao Cabral, PhD; Rachel L. Bican, DPT; Gardenia Barbosa, PhD; Jill Heathcock, MPT, PhD*

**L9 - IMPACT OF AN INTENSIVE MOTOR SKILL LEARNING INTERVENTION ON THE TOP-DOWN EXECUTIVE CONTROL OF CHILDREN WITH CEREBRAL PALSY AND ITS RELATIONSHIP WITH DAILY LIFE ACTIVITIES: A RANDOMIZED CONTROL TRIAL.**
*Rodrigo Araneda, PhD; Daniela Ebner-Karestinos, PT; Geoffroy Saussez; Julie Paradis, PhD; Yannick Bleyenheuft, PhD*

**L10 - A COMPARISON OF CYCLING SMOOTHNESS, RHYTHM AND CADENCE IN CHILDREN WITH AND WITHOUT CEREBRAL PALSY**
*Ashwini Sansare, PT; Ahad Behboodi, PhD; James Alesi; Samuel C.K. Lee, PT,PhD*

## Saturday, September 26, 2020:

### INSTRUCTIONAL COURSES

### 2:30 PM – 4:30 PM

**IC27 - TOE WALKING: HOW DO YOU KNOW WHO TO WORRY ABOUT?**
*Kristan A. Pierz, MD; Sylvia Ounpuu, MSc; Jennifer Rodriguez-MacClinitic*

Learning Objectives:
1. Become familiar with the limitations of assessing toe walking by observation alone.
2. Become familiar with many of the underlying diagnoses associated with the clinical presentation of toe walking.
3. Become familiar with the components of computerized gait analysis relevant to the assessment of toe walking.
4. Be aware of "red flags" or gait features of toe walkers that warrant additional evaluation or treatment.

**IC28 - HEREDITARY SPASTIC PARAPARESIS: A MULTIDISCIPLINARY APPROACH TO DIAGNOSIS AND TREATMENT**
*Robert Wimberly, MD; Michelle Christie, MD; Fabiola Reyes, MD*

Learning Objectives:
1. Describe the clinical features, natural history and diagnostic workup to evaluate patients with uncomplicated and complicated HSP.
2. Review the genetics of HSP highlighting the most common genes and genes with specific clinical phenotypes or imaging findings.
3. Construct medical management strategies to reduce spasticity and urinary urgency including the use of oral drugs, botulinum toxin injections, bracing, assistive devices and therapy strategies.
4. Develop surgical management plans for patients with joint contractures, rotational deformities, or gait limiting pathologies. Review outcomes may be more difficult to predict given the progressive nature of the disorder.

**IC29 - MANAGEMENT OF KNEE DISORDERS IN AMBULATORY CEREBRAL PALSY**
*Mauro C. de Morais Filho, MD, MSc, PhD; Francesco C. Blumetti, MD; Paulo Selber, MD*

Learning Objectives:
1. Identify and understand the indications of the most frequent treatment options for correcting knee flexion deformity in cerebral palsy.
2. Identify the positive and negative aspects related to the most frequent surgical options for the management of knee flexion deformity in cerebral palsy.
3. Define the advantages and disadvantages of semitendinosus transfer to distal femur in comparison to hamstrings surgical lengthening.
4. Identify clinical and gait aspects for recommending or deferring rectus transfer in the presence of a decreased/delayed peak knee flexion in swing.

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**IC30 - NEURO-ORTHOPAEDIC JOURNAL CLUB: TOP ARTICLES IN THE LAST YEAR RELATING TO THE ORTHOPAEDIC MANAGEMENT OF CHILDREN WITH NEUROMUSCULAR DISORDERS AND CLASSIC PERSPECTIVES**

*Amanda T. Whitaker, MD; Jon R. Davids, MD; Benjamin Shore, MD, MPH*

Learning Objectives:

1. Introduction to a standardized format for the critical analysis of scientific articles from the medical literature.
2. Become familiar with the most significant recent advances in the orthopaedic management of children with neuromuscular disorders and how they relate to historical data.
3. Incorporate new techniques and technologies into clinical practice.
4. Appreciate current research trends and historical perspective in this area and be inspired to make a contribution to the body of knowledge!

**IC31 - MANAGEMENT OF DIFFICULT CLINICAL PRESENTATIONS OF HYPERTONIA AND COMPLEX MOVEMENT DISORDERS IN CHILDREN WITH DISABILITIES**

*Mark Gormley, Jr., MD; Tim Feyma, MD; Patrick Graupman, MD*

Learning Objectives:

1. Understand difficult hypertonic and complex movement disorders and possible treatment options, including the importance of a team approach in patient management.
2. Understand when a deep brain stimulator can be useful in managing severe dystonic and dyskinetic conditions.
3. Understand which patients may be successfully treated with a ventral-dorsal rhizotomy or a selective dorsal rhizotomy.
4. Understand when intrathecal baclofen, phenol neurolysis, and botulinum toxin injections may be useful in treating hypertonic conditions.

**IC32 - SPORTS INTERVENTIONS FOR YOUNG PEOPLE WITH CEREBRAL PALSY- FUN AND EFFECTIVE INTERVENTIONS FOR ALL AGES, GMFCS LEVELS, AND PARTICIPATION LEVELS**

*Georgina L. Clutterbuck, BS; Iain Dutia, BS; Paula Wilson; Leanne Johnston, PhD*

Learning Objectives:

1. Understand our SPORTS Participation Model- the 6-step pathway from individualised interventions to performance-focussed sport.
2. Apply the Physical Literacy Framework to identify physical, social, psychological and/or cognitive barriers and facilitators to each sports participation stage.
3. Facilitate sports entry- Design practitioner-led introduction-to-sport groups for children with different abilities and interests.
4. Facilitate sports potential- Collaborate with community sports professionals to design and facilitate performance-focussed sports interventions.

**IC33 - STAKEHOLDER ENGAGEMENT IN THE CREATION OF NEW DIGITAL PLATFORMS: KNOWING WHAT TOMORROW'S NEEDS ARE TODAY.**

*Tracy Pickar, MSW; Peter Rosenbaum, MD, FRCP(C), DSc (HC); Sarah Kim, MS*

Learning Objectives:

1. Explore different methods of stakeholder engagement.
2. Review literature on how to create materials in plain language and identify strategies on how to present one's research in plain language and reach a broad audience.
3. Develop a working knowledge of an inclusion in the digital landscape.
4. Evaluate the use of apps in a clinical setting for enhanced patient education.

**IC34 - WHEN IT COMES TO DOSING, JUST OK IS NOT OK — WHY WE SHOULD BE DOING 1-REPETITION MAXIMUM TESTING IN CHILDREN WITH CEREBRAL PALSY**

*Noelle G. Moreau, PhD, PT; Mattie Pontiff, DPT; Corbin Lemon, BS, MPH*

Learning Objectives:

1. Evaluate the current evidence related to maximal strength testing in CP.
2. Identify the limitations with current clinical strength testing procedure.
3. Describe the key principles of 1RM testing in those with CP.
4. Integrate 1RM testing procedures into clinical practice in children and adolescents with CP.

**GENERAL SESSION**

**5:00 PM – 7:00 PM**

**Duncan Wyeth Award**
*Clayton Frech*

**Chambers Family Lifespan Lecture**
*Patrick Lawrence; Cody Jones; Clayton Frech; Gracie and Lanie Lockwood; Tessa and Janie Taylor*

**Closing Remarks**
*Susan E. Sienko, PhD*

**2021 Annual Meeting Introduction**
*Tom Novacheck, MD*

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## Adults and Transition

### SP01 - A case control pilot study assessing nociceptive flexion reflex in women with cerebral palsy

C Hagen[1], E Boyer[2], R Summers[3], L Lykken[4], C Barney[5], F Symons[6]

[1]Gillette Children's Specialty Heath Care, St Paul, MN, USA; [2]Gillette Children's Specialty Healthcare, St. Paul, MN, USA; [3]University of Minnesota, Saint Paul, MN, USA; [4]Gillette Children's Specialty Healthcare, St Paul, MN, USA; [5]Gillette Children's Specialty Healthcare, University of Minnesota, Saint Paul, MN, USA; [6]University of Minnesota, Minneapolis, MN, USA

### SP02 - Contributing Factors and Self-Management of Fatigue in Adolescents and Adults with Cerebral Palsy

L Brunton[1], P McPhee[2], J Gorter[3]

[1]Western University, CanChild Centre for Childhood Disability Research, London, ON, Canada; [2]McMaster University, CanChild Centre for Childhood Disability Research, Hamilton, ON, Canada; [3]CanChild, McMaster University, Hamilton, ON, Canada

### SP03 - Withdrawn by Author

### SP04 - Withdrawn by Author

### SP05 - The Impact of Environmental Factors on Workplace Participation of Transition-aged Young Adults with Brain-based Disabilities: A Scoping Review

S Shahin[1], M Reitzel[2], B Di Rezze[3], S Ahmed[4], D Anaby[4]

[1]McGill University, Saint-Bruno de Montarville, PQ, Canada; [2]McMaster University, CanChild, Hamilton, ON, Canada; [3]McMaster University, Hamilton, ON, Canada; [4]McGill University, Montreal, PQ, Canada

### SP06 - Transition to Adulthood Outcomes in Youth with Spinal Cord Injuries: Risk and Protective Factors

K Deane Phd[1], L Nicholson Ma[2], J Cwik BA[3], S Mukherjee Md[4], L Vogel Md[5], K Zebracki Phd[6]

[1]Shriners Hospitals for Children Chicago, Chicago, IL, USA; [2]Loyola University Chicago, Chicago, IL, USA; [3]University of Colorado, Chicago, IL, USA; [4]Shriners Hospitals for Children-Chicago, Northwestern University Feinberg School of Medicine, Chicago, IL, USA; [5]Shriners Hospitals for Children Chicago, Rush Medical College, Chicago, IL, USA; [6]Shriners Hospitals for Children-Chicago, Northwestern University Feinberg School of Medicine, Chicago, IL, USA

### SP07 - Visualize to Realize: Visual Feedback Supplemented Power Training for Adolescents and Adults with Cerebral Palsy

B Corr[1], H Reelfs[1], S Baker[1], H Bergwell[1], M Trevarrow[1], R Hoffman[2], N Moreau[3], M Kurz[2]

[1]Munroe-Meyer Institute, University of Nebraska Medical Center, Omaha, NE, USA; [2]Department of Physical Therapy, Munroe-Meyer Institute, University of Nebraska Medical Center, Omaha, NE, Center for Magnetoencephalography, College of Medicine, University of Nebraska Medical Center, Omaha, NE, Omaha, NE, USA; [3]LSUHSC-New Orleans, New Orleans, LA, USA

## Basic Science - Brain/Muscle/Genetics

### SP08 - Altered DNA methylation profiles in blood and satellite cells from individuals with spastic CP

K Robinson[1], A Marsh[2], E Crowgey[1], S Lee[1], R Akins[3]

[1]Nemours - Alfred I. duPont Hospital for Children, Wilmington, DE, USA; [2]Genome Profiling LLC, University of Delaware, Newark, DE, USA; [3]Nemours - Alfred I. duPont Hospital for Children, University of Delaware, Wilmington, DE, USA

### SP09 - An effective approach for high-resolution 3D MRI reconstruction on highly motion-corrupted neonatal data

S Saha[1], A Pagnozzi[2], J George[3], P Colditz[4], S Rose[5], D Bradford[5], R Boyd[4], K Pannek[6], J Fripp[7]

[1]CSIRO, Doncaster East, Victoria, Australia; [2]The Australian e-Health Research Centre, Brisbane, Queensland, Australia; [3]Queensland Health; The University of Queensland, Brisbane, Queensland, Australia; [4]The University of Queensland, Brisbane, Queensland, Australia; [5]CSIRO, Brisbane, Queensland, Australia; [6]Health and Biosecurity, The Australian e-Health Research Centre, CSIRO, Brisbane, Queensland, Australia; [7]CSIRO, Herston, Queensland, Australia

### SP10 - Automated segmentation of subcortical grey and white matter segmentation in children with cerebral palsy

A Pagnozzi[1], R Boyd[2], D Bradford[3], S Rose[3]

[1]The Australian e-Health Research Centre, Brisbane, Queensland, Australia; [2]The University of Queensland, Brisbane, Queensland, Australia; [3]CSIRO, Brisbane, Queensland, Australia

### SP11 - Clinically-calculable striatal and thalamic injury on MRI can predict dystonic cerebral palsy following neonatal hypoxic-ischemic encephalopathy

K Chintalapati, B Miao, B Aravamuthan

Washington University School of Medicine, St. Louis, MO, USA

### SP12 - Epigenetic marks at the ribosomal DNA promoter in skeletal muscle are negatively associated with degree of impairment in cerebral palsy

E Pontén[1], R Fernandez-Gonzalo[2], J Pingel[3], P Stål[4], F Von Walden[1]

[1]Karolinska Institutet, Stockholm, Stockholms Lan, Sweden; [2]Karolinska Institutet, Huddinge, Stockholms Lan, Sweden; [3]Department of Neuroscience, University of Copenhagen Denmark, Copenhagen, Hovedstaden, Denmark; [4]Laboratory of Muscle biology, Integrative Medical Biology, Umeå University, Umeå, Vasterbottens Lan, Sweden

### SP13 - Skeletal muscle myonuclear domain does not differ between ambulatory children with cerebral palsy and children with typical development

S Dennis[1], P Henricksen[1], A Rudofski[1], B Shieh[1], C Young[1], S Dayanidhi[2]

[1]Northwestern University, Chicago, IL, USA; [2]Shirley Ryan AbilityLab, Northwestern University, Chicago, IL, USA

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**SP14 - Inflammatory Responses are Significantly Altered Through Adulthood in a Clinically Translatable Rat Model of Cerebral Palsy**

*Y Kitase[1], E Chin[2], C Burkhardt[3], S Ramachandra[4], C Lenz[5], A Hoon[6], S Robinson[7], L Jantzie[8]*

*[1]Division of Neonatology, Pediatrics, Johns Hopkins School of Medicine, Baltimore, MD, USA; [2]Kennedy Krieger Institute, Baltimore, MD, USA; [3]Johns Hopkins University, Glen Rock, PA, USA; [4]Johns Hopkins University, Baltimore, MD, USA; [5]Johns Hopkins University, Kennedy Krieger Institute, Sparks Glencoe, MD, USA; [6]Phelps Center for Cerebral Palsy and Neurodevelopmental Medicine, Baltimore, MD, USA; [7]Johns Hopkins Children's, Baltimore, MD, USA; [8]Johns Hopkins University School of Medicine, Kennedy Krieger Institute, Baltimore, MD, USA*

**SP15 - A feasibility study of a novel early participation-focused physiotherapy intervention for preterm infants in a regional Australian context**

*C Mobbs[1], A Spittle[2], L Johnston[3]*

*[1]The University of Queensland, Toowoomba Hospital Queensland Health Australia, Toowoomba, Queensland, Australia; 2University of Melbourne Victoria Australia, Murdoch Children's Research Institute Melbourne Victoria Australia, Calton, Victoria, Australia; [3]The University of Queensland, Brisbane, Queensland, Australia*

**SP16 - Accurate and rapid automated detection of cramped-synchronized general movements in a large cohort of NICU infants**

*A Jeanvoine, J Knebel, M Nelin, B Sowers, N Maitre*

*Nationwide Children's Hospital, Columbus, OH, USA*

**SP17 - Are Spanish physical therapists using evidence-based assessment tools for early cerebral palsy detection? Findings from a national survey.**

*Á Hidalgo-Robles[1], J Merino-Andres[1], F Fernández-Rego[2], V Paleg[3]*

*[1]Toledo PedPT Research Lab, Toledo Physical Therapy Research Group, Faculty of Physical Therapy and Nursing, University of Castilla-La Mancha, Toledo, Castilla-La Mancha, Spain; [2]Physical Therapy Department. University of Murcia, Lorca, Murcia, Spain; [3]MCITP, Silver Spring, MD, USA*

**SP18 - Diagnostic accuracy of the combination of neurological assessment at term equivalent age and General Movements assessment at 3 months to predict 2-year cognitive outcome in infants born very preterm**

*J George[1], R Ware[2], M Chatfield[3], K Pannek[4], S Rose[5], P Colditz[6], R Boyd[6]*

*[1]Queensland Health; The University of Queensland, Brisbane, Queensland, Australia; [2]Menzies Health Institute Queensland, Griffith University, Brisbane, Australia, Brisbane, Queensland, Australia; [3]QCPRRC, Faculty of Medicine, The University of Queensland, Brisbane, Queensland, Australia; [4]Health and Biosecurity, The Australian e-Health Research Centre, CSIRO, Brisbane, Queensland, Australia; [5]CSIRO, Brisbane, Queensland, Australia; [6]The University of Queensland, Brisbane, Queensland, Australia*

**SP19 - Prediction of Motor Outcomes at 2 years from the PPREMO Toolbox**

*J George[1], R Ware[2], M Chatfield[3], S Fiori[4], A Guzzetta[4], K Pannek[5], S Rose[6], P Colditz[7], R Boyd[7]*

*[1]Queensland Health; The University of Queensland, Brisbane, Queensland, Australia; [2]Menzies Health Institute Queensland, Griffith University, Brisbane, Australia, Brisbane, Queensland, Australia; [3]QCPRRC, Faculty of Medicine, The University of Queensland, Brisbane, Queensland, Australia; [4]Stella Maris Scientific Institute, Department of Developmental Neuroscience, The University of Pisa, Pisa, Italy, Pisa, Liguria, Italy; [5]Health and Biosecurity, The Australian e-Health Research Centre, CSIRO, Brisbane, Queensland, Australia; [6]CSIRO, Brisbane, Queensland, Australia; [7]The University of Queensland, Brisbane, Queensland, Australia*

**SP20 - Systematic review of clinical assessment tools used between birth and six months to predict motor and cognitive delay in at risk preterm infants at 2 years corrected age**

*R Caesar[1], R Boyd[2], P Colditz[2], G Cioni[3]*

*[1]The University of Queensland, Sunshine Coast, Queensland, Australia; [2]The University of Queensland, Brisbane, Queensland, Australia; [3]The University of Pisa, Pisa, Toscana, Italy*

## Gait and Balance

**SP21 - Effect of Xbox Kinect on Balance in Spastic Hemiparetic Children**

*M Ata[1], E Elnegmy[2], Y Salem[3]*

*[1]CUNY-BROOKLYN COLLEGE, Brooklyn, NY, USA; [2]Cairo University, Cairo, Al Qahirah, Egypt; [3]University of North Texas Health Science Center, Fort Worth, TX, USA*

**SP22 - Factors affecting subjective symptoms of idiopathic pes planovalgus deformity in children and adolescents**

*J Min[1], S Kwon[2], K Sung[1], K Lee[1], C Chung[1], M Park[1]*

*[1]Seoul National University Bundang Hospital, Seongnam-si, Kyonggi-do, Republic of Korea; [2]Ajou University Department of Mathematics, Suwon-si, Kyonggi-do, Republic of Korea*

**SP23 - Instrumented Gait Analysis for the Clinical Management of Children with Cerebral Palsy: A Scoping Review**

*Y Salem[1], R States[2], E Godwin[3], L Hoffecker[4], J Krzak[5], M Mcmulkin[6], A Bodkin[7]*

*[1]University of North Texas Health Science Center, Fort Worth, TX, USA; [2]Long Island University, Brooklyn, NY, USA; [3]Long Island University, VA NY Harbor Health Care System, Brooklyn, NY, USA; [4]Univeristy of Colorado, Boulder, CO, USA; [5]Midwestern University, Shriners Hospitals for Children-Chicago, Downers Grove,, IL, USA; [6]Shriners Hospital for Children Spokane, Spokane, Washington, USA, Spokane, WA, USA; [7]Children's Hospital Colorado, Aurora, CO, USA*

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**SP24 - Kinematic analysis of static balance and temporal and spatial characteristics of gait in 2- to 3-year-old preterm and full-term infants**

Y Nomura[1], H Sato[2], K Kamide[3], M Ooka[4], M Kemmochi[5]

[1]Kitasato University Hospital, Rehabilitation department, Sagamihara, Kanagawa, Japan; [2]Kitasato University, School of Allied Health Sciences, Sagamihara, Kanagawa, Japan; [3]Meisei University, Faculty of Education, Hino, Tokyo, Japan; [4]Kitasato University, Pediatrics, Sagamihara, Kanagawa, Japan; [5]Kitasato University, Pediatrics, Sagaminara, Kanagawa, Japan

**SP25 - Stochastic resonance stimulation improves control of balance during walking in children with Cerebral Palsy: a pilot study**

A Sansare, H Reimann, A Behboodi, S Lee

University of Delaware, Newark, DE, USA

**SP26 - The natural progression of knee flexion in gait over repeated assessments in bilateral cerebral palsy**

R O'sullivan[1], F Horgan[2], H French[2]

[1]Central Remedial Clinic/Royal College of Surgeons in Ireland, Dublin 3, Dublin, Ireland; [2]Royal College of Surgeons in Ireland, Dublin, Dublin, Ireland

**SP27 - Withdrawn by Author**

## Medical and Pain

**SP28 - Bedtime Stories: An exploratory sequential mixed methods study of the reasons for, experience and impact of sleep disturbance for children with cerebral palsy and their parents**

S Petersen[1], D Reddihough[2], S Lima[3], A Harvey[4], F Newall[5]

[1]RMIT University, Royal Children's Hospital Melbourne, Murdoch Children's Research Institute, Bundoora, Victoria, Australia; [2]Murdoch Children's Research Institute, Royal Children's Hospital, Parkville, Victoria, Australia; [3]Bendigo Health, The University of Melbourne, Bendigo, Victoria, Australia; [4]Murdoch Children's Research Institute, Parkville, Victoria, Australia; [5]The Royal Children's Hospital, The University of Melbourne, Melbourne, Victoria, Australia

**SP29 - Characterizing Pain Phenotypes in Cerebral Palsy**

M Peterson[1], L Marra[2], H Haapala[3], E Hurvitz[4]

[1]University of Michigan, Ann Arbor, MI, USA; [2]University of Michigan, Ann Arbor, MI, USA; [3]Physical Medicine & Rehabilitation, University of Michigan, Ann Arbor, MI, USA; [4]Michigan Medicine/ University of Michigan, Ann Arbor, MI, USA

**SP30 - Clinical Pain Ratings in Cerebral Palsy: A Retrospective "Big Data" Approach**

E Chin[1], X Ye[2], C Lenz[3], C Campbell[4], E Stashinko[1], A Hoon[5], L Jantzie[6], S Robinson[7]

[1]Kennedy Krieger Institute, Baltimore, MD, USA; [2]Johns Hopkins University School of Medicine, Baltimore, MD, USA; [3]Johns Hopkins University, Kennedy Krieger Institute, Sparks Glencoe, MD, USA; [4]Johns Hopkins Bayview Medical Center, Baltimore, MD, USA; [5]Phelps Center for Cerebral Palsy and Neurodevelopmental Medicine, Baltimore, MD, USA; [6]Johns Hopkins University School of Medicine, Kennedy Krieger Institute, Baltimore, MD, USA; [7]Johns Hopkins Children's, Baltimore, MD, USA

**SP31 - Growth in children from 6 to 180 months of age with unilateral and bilateral cerebral palsy**

M Ruiz Brunner[1], E Cuestas[2], F Heinen[3], A Schroeder[4]

[1]Instituto de Investigacion en Ciencias de la Salud (Conicet-Universidad Nacional de Cordoba), Facultad de Ciencias Médicas de la Universidad Nacional de Cordoba (UNC), Córdoba, Cordoba, Argentina; [2]Instituto de Investigación en Ciencias de la Salud (Conicet- Universidad Nacional de Cordoba), Catedra de Pediatría. Hospital Misericordia de la Facultad de Ciencias Médicas de la Universidad Nacional de Córdoba (UNC), Cordoba, Cordoba, Argentina; [3]University Hospital of Munich (LMU), Hauner Children´s Hospital- Department of Pediatric Neurology- Developmental Medicine and Social Pediatrics, Munich, Bayern, Germany; [4]University Hospital of Munich (LMU). Hauner Children´s Hospital. Department of Pediatric Neurology. Developmental Medicine and Social Pediatrics, Munich, Bayern, Germany

**SP32 - Impact of Etiology in Children with Cerebral Palsy (CP) and Medically Intractable Epilepsy (MIE) Undergoing Hemispherotomy/Hemispherectomy**

J Pindrik[1], H Johnson[2], A Ostendorf[3], N Rosenberg[4], J Leonard[5], A Shaikhouni[5]

[1]Nationwide Children's Hospital and The Ohio State University Department of Neurosurgery, Columbus, OH, USA; [2]Nationwide Children's Hospital, Columbus, OH, USA; [3]Nationwide Children's Hospital, The Ohio State University Department Pediatrics & Neurology, Columbus, OH, USA; [4]Assisant Professor of Physical Medicine and Rehabilitation, Ohio State University, Columbus, OH, USA; [5]Nationwide Children's Hospital, The Ohio State University Department of Neurosurgery, Columbus, OH, USA

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**SP33 - Malignancy Risk Due to Medical Imaging in Children with Cerebral Palsy**

*B Jivraj[1], L Johnson[2], J So[3], S Miller[4], A Aarvold[5], J Bone[6], A Sandhu[7], K Mulpuri[8], B Graeber[9]*

*[1]South Tees Foundation Trust, Middlesbrough, England, United Kingdom; [2]University of British Columbia, Centre for Hip Health and Mobility, BC Children's Hospital, Vancouver, BC, Canada; [3]BC Children's Hospital, Vancouver, BC, Canada; [4]BC Children's Hospital, Department of Physical Therapy, University of British Columbia, Vancouver, BC, Canada; [5]Southampton General Hospital, Southampton, England, United Kingdom; [6]Department of Obstetrics and Gynaecology, University of British Columbia, Vancouver, BC, Canada; [7]Department of Obstetrics and Gynecology UBC, Vancouver, BC, Canada; [8]Department of Orthopaedics, University of British Columbia, Department of Orthopaedic Surgery, BC Children's Hospital, Vancouver, BC, Canada; [9]BC Children's Hospital, Department of Radiology, University of British Columbia, Vancouver, BC, Canada*

**SP34 - Orthopaedic Manifestations of Transverse Myelitis in Children**

*A Hariharan[1], J Howard[2], R Cook[3], J Choi[3], K Neal[4], E Loveless[4], M Shrader[5]*

*[1]Nemours/A.I. duPont Hospital for Children, Wilmington, DE, USA; [2]Nemours A.I. duPont Hospital for Children, Wilmington, DE, USA; [3]Nemours, Wilmington, DE, USA; [4]Nemours, Jacksonville, FL, USA; [5]Nemours/Alfred I duPont Hospital for Children, Wilmington, DE, USA*

**SP34 - Self- versus proxy reported pain in children with cerebral palsy**

*A Burman Rimstedt[1], G Hägglund[2], A Alriksson-Schmidt[2], T Czuba[3]*

*[1]Lund University, Skåne, Sweden, Lund, Skane Lan, Sweden; [2]Lund University, Lund, Skane Lan, Sweden; [3]Lund University, Department of Clinical Sciences, Lund, Skane Lan, Sweden*

**SP36 - Withdrawn by Author**

## Ortho - Hip/Knee

**SP37 - A Review of Radiology Reports from Hip Surveillance X-Rays Completed in Community Hospitals**

*S Miller[1], J Coates[2], K Mulpuri[3]*

*[1]BC Children's Hospital, Department of Physical Therapy, University of British Columbia, Vancouver, BC, Canada; [2]BC Children's Hospital, Vancouver, BC, Canada; [3]Department of Orthopaedics, University of British Columbia, Department of Orthopaedic Surgery, BC Children's Hospital, Vancouver, BC, Canada*

**SP38 - Establishing surgical indications for hamstring lengthening and femoral derotational osteotomy in ambulatory children with cerebral palsy using the Delphi technique-early learning**

*J Mccarthy[1], J Davids[2], A Van Campenhout[3], H Graham[4], K Pierz[5], R Kay[6], B Shore[7], W Shrader[8], H Chambers[9], T Theologis[10], T Novacheck[11], U Narayanan[12], E Rutz[13]*

*[1]Cincinnati Children's Hospital, Cincinnati, OH, USA; [2]Shriners Hospitals for Children - Northern California & UC Davis, Sacramento, CA, USA; [3]UH and KULeuven, Leuven, Vlaams-Brabant, Belgium; [4]Royal Children's Hospital Melbourne, Parkville, Victoria, Australia; [5]Connecticut Children's Medical Center and University ` of CT School of Medicine, Hartford, CT, USA; [6]Children's Hospital Los Angeles, Los Angeles, CA, Los Angeles, CA, USA; [7]Boston Children's Hospital, Boston, MA, USA; [8]Thomas Jefferson University, Wilmington, DE, USA; [9]University of California, San Diego, San Diego, CA, USA; [10]University of Oxford, Oxford, England, United Kingdom; [11]Gillette Children's Specialty Healthcare, St. Paul, MN, USA; [12]Sick Kids Toronto, Toronto, ON, Canada; [13]The Royal Children's Hospital, Parkville, Victoria, Australia*

**SP39 - Hip SPICA Casting is Not Necessary after Hip Reconstruction in Children with Cerebral Palsy**

*D Frumberg[1], A Tagawa[2], L Silveira[3], A Skinner[2], A Vasconcellos[4], S De[5], J Rhodes[5]*

*[1]Yale University, New Haven, CT, USA; [2]Children's Hospital Colorado, Aurora, CO, USA; [3]University of Colorado, Aurora, CO, USA; [4]University of Colorado Anschutz Medical Campus, Aurora, CO, USA; [5]Children's Hospital Colorado, University of Colorado, Aurora, CO, USA*

**SP40 - Natural history of patella alta in patients with cerebral palsy**

*J Min[1], S Kwon[2], K Sung[1], K Lee[1], C Chung[1], M Park[1]*

*[1]Seoul National University Bundang Hospital, Seongnam-si, Kyonggi-do, Republic of Korea; [2]Ajou University Department of Mathematics, Suwon-si, Kyonggi-do, Republic of Korea*

**SP41 - Remodeling of femoral head deformity after hip reconstructive surgery in patients with cerebral palsy**

*J Min[1], S Kwon[2], K Sung[1], K Lee[1], C Chung[1], M Park[1], K Youn[3]*

*[1]Seoul National University Bundang Hospital, Seongnam-si, Kyonggi-do, Republic of Korea; [2]Ajou University Department of Mathematics, Suwon-si, Kyonggi-do, Republic of Korea; [3]DIDIM, Seoul, Seoul-t'ukpyolsi, Republic of Korea*

**SP42 - Screw anterior distal femoral hemi epiphysiodesis in children with cerebral palsy, knee flexion contractures and crouch gait: a retrospective case control study**

*J Mccarthy[1], J Long[2], D Laron[3]*

*[1]Cincinnati Children's Hospital, Cincinnati, OH, USA; [2]Cincinnati Children's Hospital Medical Center, Cincinnati, OH, USA; [3]Shriners Portland, Portland, OR, USA*

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**SP43 - Severe Hip Subluxation in Non-Ambulatory Cerebral Palsy; What Factors Lead to Lasting Success of Reduction?**
K Carroll[1], W Moss[2], B Macwilliams[1], M Talmage[1], M Mcmulkin[3], G Baird[4], A Stotts[5], A Thorman[6]

[1]Shriners Hospitals for Children, SLC, UT, USA; [2]Shriners Hospitals for Children, SLC, UT, USA; [3]Shriners Hospital for Children Spokane, Spokane, Washington, USA, Spokane, WA, USA; [4]SHC-Spokane, Spokane, WA, USA; [5]Universiy of Utah, SLC, UT, USA; [6]Univerisity of Utah, Shriners Hospital for Children- SLC, SLC, UT, USA

**SP44 - Withdrawn by Author**

## Other Developmental Disorders

**SP45 - A collective case study of inclusion in mainstream community programs for children with autism**
S Thompson-Hodgetts[1], S Phelan[2], J Ryan[3], D Nicholas[4], A Mckillop[3]

[1]Department of Occupational Therapy, Faculty of Rehabilitation Medicine, University of Alberta, Edmonton, AB, Canada; [2]Department of Occupational Therapy, University of Alberta, Edmonton, AB, Canada; [3]Faculty of Rehabilitation Medicine, University of Alberta, Edmonton, AB, Canada; [4]Faculty of Social Work, University of Calgary, Edmonton, AB, Canada

**SP46 - A Prospective, Cross-Over Survey Study of Child- and Proxy-Reported Quality of Life According to Spinal Muscular Atrophy Type and Medical Interventions**
M Halanski[1], M Weaver[1], R Hanna[2], S Hetzel[3], K Patterson[4], A Yuroff[5], S Sund[2], M Schultz[6], M Schroth[2]

[1]University of Nebraska Medical Center, Children's Hospital of Omaha, Omaha, NE, USA; [2]University of Wisconsin School of Medicine and Public Health, Madison, WI, USA; [3]University of Wisconsin - Madison Department of Biostatistics and Medical Informatics, Madison, WI, USA; [4]University of Wisconsin-Madison Physical Therapy Program, Mesa, AZ, USA; [5]University of Wisconsin, Madison, WI, USA; [6]AveXis, Middleton, WI, USA

**SP47 - Assessment of motor function in patients with Duchenne Muscular Dystrophy**
A Jesus[1], P Mitchell, R Sutyla, I Lee, S Rebecca[2]

[1]University of Virginia, Crozet, VA, USA; [2]University of Virginia, Charlottesville, VA, USA

**SP48 - Improved Motor Function in Children with AADC Deficiency Treated with Eladocagene Exuparvovec (PTC-AADC): Compassionate Use Study**
P Wuh-Liang Hwu[1], Y Chien[2], N Lee[2], S Tseng[2], A Conway[3], M Pykett[3], C Tai[2]

[1]National Taiwan University Hospital, Zhongzheng District, Taipei, Taiwan (Republic of China); [2]National Taiwan University Hospital, Zhongzheng District, Taipei, Taiwan (Republic of China); [3]PTC Therapeutics, South Plainfield, NJ, USA

**SP49 - Intracranial hypertension in pediatric patients receiving nusinersen for spinal muscular atrophy**
M Baldwin[1], W Marks[2], S Acord[3]

[1]Cook Childrens' Medical Center, North Richland Hills, TX, USA; [2]Cook Children's Medical Center, Fort Worth, TX, USA; [3]Cook Children's Medical Center, Fort Worth, TX, USA

**SP50 - Is the use of technology feasible to provide a home exercise program for youth with arthrogryposis?**
M Gagnon[1], G Marino Merlo[2], J Collins[2], R Yap[2], C Elfassy[1], R Hamdy[3], L Veilleux[1], N Dahan-Oliel[1]

[1]McGill University, Shriners Hospital for Children-Canada, Montreal, PQ, Canada; [2]Shriners Hospital for Children-Canada, Montreal, PQ, Canada; [3]Shriners Hospitals for Children - Canada, McGill University Faculty of Medicine, Montreal, PQ, Canada

**SP51 - Withdrawn by Author**

**SP52 - Prevalence of pressure injuries in individuals with myelomeningocele**
J Stockman[1], M Bendt[2], A Alriksson-Schmidt[3]

[1]Habilitation Center Nyköping, Region Sörmland and Lund University, Skåne University Hospital, Department of Clinical Sciences Lund, Orthopedics, Lund, Sweden, Tystberga, Sodermanlands Lan, Sweden; [2]Department of Neurobiology, Care Sciences and Society, Karolinska Institutet, Solna, Stockholm, Stockholms Lan, Sweden; [3]Lund University, Lund, Skane Lan, Sweden

## Physical Activity and Physical Therapy

**SP53 - CAMP: Climbing, Activity, Music, Physical Therapy, and Parents – Effectiveness of an ICF-based pilot intervention for infants and Toddlers with CP**
K Levengood[1], L Pietruszewski[1], R Byrne[2], M Lightfoot[1], S Burkhardt[1], M Neel[1], N Batterson[1], N Maitre[1]

[1]Nationwide Children's Hospital, Columbus, OH, USA; [2]Cerebral Palsy Foundation, Columbus, OH, USA

**SP54 - Effectiveness of the Serial Casting Method to Correct the Rigid and Severe Equinus Deformity in Children with Cerebral Palsy**
B Moreira[1], L Salomão[2], A Silva[2], T Gomes[2], L Oliveira[2], L Rhoden[2], R Carvalho[3], I Serpa[4]

[1]The Sarah Network of Rehabilitation Hospital, Brasilia, Distrito Federal, Brazil; [2]Sarah Network of Rehabilitation Hospital, Sao Luis, Maranhao, Brazil; [3]Sarah network of Rehabilitation Hospital, Sao Luis, Maranhao, Brazil; [4]Instituto Universitário Italiano de Rosário, Rosario, Santa Fe, Argentina

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**SP55 - Fuzzy, funny and fun! A thematic analysis of the experiences of children with cerebral palsy and their families in a goal-directed cycling program, 'Let's Ride a Bike'.**
E Armstrong[1], B Goodlich[2], R Boyd[3], C Carty[1], M Kentish[4], S Horan[2]

[1]Griffith University, South Brisbane, Queensland, Australia; [2]Griffith University, Southport, Queensland, Australia; [3]The University of Queensland, Brisbane, Queensland, Australia; [4]Children's Health Queensland, South Brisbane, Queensland, Australia

**SP56 - Is adapted cycling training achievable in children with cerebral palsy with poor motor function?**
C Dussault-Picard[1], B Sinclair[2], A Pouliot-Laforte[3], A Parent[4], J Lachappelle[5], M Lemay[6], L Ballaz[6]

[1]Université du Québec à Montréal (UQAM), laval, PQ, Canada; [2]Centre de recherche du CHU Sainte Justine, Montreal, PQ, Canada; [3]Centre de recherche du CHU Sainte Justine, Montréal, PQ, Canada; [4]Université du Québec à Montréal (UQAM), Montréal, PQ, Canada; [5]École Victor-Doré, Montréal, PQ, Canada; [6]Centre de recherche du CHU Sainte-Justine, Montréal, PQ, Canada

**SP57 - Mental health benefits of physical activity in youth with cerebral palsy: a scoping review**
J Starowicz[1], K Pratt[1], L Brunton[2]

[1]Western University, London, ON, Canada; [2]Western University, CanChild Centre for Childhood Disability Research, London, ON, Canada

**SP58 - Mobility devices for children with physical disabilities - Use, effectiveness and satisfaction**
B Gudjonsdottir[1], S Gudmundsdottir[2]

[1]University of Iceland, Reykjavik, Hofuoborgarsvaoio, Iceland; [2]Háskóli Íslands, Reykjavik, Hofuoborgarsvaoio, Iceland

**SP59 - Social and Ecological Determinants of Physical Activity for Youth with Cerebral Palsy**
G Gorton[1], J Oliphant[2]

[1]Shriners Hospitals for Children - Springfield, Springfield, MA, USA; [2]Walden University, Minneapolis, MN, USA

**SP60 - The effect of performance-focused swimming training on gross motor function in young people with Cerebral Palsy, GMFCS IV: A longitudinal study using single case experimental design and meta-analysis**
I Dutia, M Connick, E Beckman, L Johnston, P Wilson, A Macaro, S Tweedy

The University of Queensland, Brisbane, Queensland, Australia

**SP61 - What physical parameters are important for performance in RaceRunning?**
E Hjalmarsson[1], R Fernandez-Gonzalo[2], L Barrero Santiago[3], A Palmcrantz[4], E Pontén[5], O Kvist[6], J Pingel[7], F Von Walden[5]

[1]Karolinska Institutet, Sollentuna, Stockholms Lan, Sweden; [2]Karolinska Institutet, Huddinge, Stockholms Lan, Sweden; [3]Karolinska Institutet, Universidad Europea Miguel de Cervantes., Valladolid, Castilla y Leon, Spain; [4]Karolinska University Hospital, Bromma, Stockholms Lan, Sweden; [5]Karolinska Institutet, Stockholm, Stockholms Lan, Sweden; [6]PhD student Karolinska Institute, Karolinska University Hospital, Stockholm, Stockholms Lan, Sweden; [7]Department of Neuroscience, University of Copenhagen Denmark, Copenhagen, Hovedstaden, Denmark

## Spasticity Management

**SP62 - Botulinum Toxin-A for Paediatric hypertonicity management: Current Australian practice**
S O'flaherty[1], K Stewart[2]

[1]Sydney Children's Hospital Randwick Australia, Randwick, New South Wales, Australia; [2]The Children's Hospital at Westmead, The University of Sydney, Westmead, New South Wales, Australia

**SP63 - Case Series: Evaluation of outcomes of individuals with inability to aspirate from intrathecal baclofen pump catheter access port**
L Krach[1], F Symons[2], C Barney[3]

[1]Gillette Children's Specialty Healthcare, St. Paul, MN, USA; [2]University of Minnesota, Minneapolis, MN, USA; [3]Gillette Children's Specialty Healthcare, University of Minnesota, Saint Paul, MN, USA

**SP64 - Changes of mass of muscle after botulinum toxin injection in children with spastic hemiplegic cerebral palsy**
D Jang[1], J Kim[2], D Lee[2]

[1]Department of Rehabilitation Medicine, Incheon St. Mary's Hospital, College of Medicine, The Catholic University of Korea, Houston, TX, USA; [2]Department of Rehabilitation Medicine, Incheon St. Mary's Hospital, College of Medicine, The Catholic University of Korea, Bupyeong-gu, Inch'on-jikhalsi, Republic of Korea

**SP65 - Complications of intrathecal Baclofen pump in children with spastic cerebral palsy. Comparative analysis of patients weighting more or less than 20 kg at the time of implantation**
G De Coulon[1], F Canavese[2], A Tabar[3]

[1]University Hospital Geneva, Presinge, Geneve, Switzerland; [2]Hospital CHU Estaing, Clermont Ferrand, Auvergne, France; [3]University Hospital of Geneva, Geneva, Geneve, Switzerland

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**SP66 - Dosing from a phase 3, pivotal study of abobotulinumtoxinA injection in upper-limb muscles in pediatric patients with cerebral palsy**

J Oleszek[1], A Tilton[2], J Carranza[3], N Dursun[4], M Bonikowski[5], E Dabrowski[6], B Regnault[7], M Delgado[8]

[1]University of Colorado School of Medicine, Aurora, CO, USA; [2]LSUHSC and Children's Hospital of New Orleans, New Orleans, LA, USA; [3]Hospital San José Celaya, Celaya, Guanajuato, Mexico; [4]Kocaeli University Faculty of Medicine Department of Physical Medicine and Rehabilitation, Istanbul, Istanbul, Turkey; [5]MCN Zagórze Neurorehabilitation Dep, Józefów, Mazowieckie, Poland; [6]Beaumont Health, Oakland University School of Medicine, Grosse Pointe, Michigan, 48230, MI, USA; [7]Ipsen, Les Ulis, Ile-de-France, France; [8]University of Texas Southwestern Medical Center and Texas Scottish Rite Hospital for Children, Dallas, TX, USA

**SP67 - Effect of Single Event Multi Level Chemoneurolysis with AbobotulinumtoxinA on Energy Expenditure and Walking Efficiency in Children with Cerebral Palsy**

N Lee[1], H Kim[2], A Newell[1]

[1]Columbia University Irving Medical Center, New York, NY, USA; [2]Columbia University Medical Center/New York Presbyterian Hospital, New York, NY, USA

**SP68 - Efficacy and safety of abobotulinumtoxinA in pediatric lower limb spasticity: 2nd interim results from a phase IV, prospective, observational, multicenter study**

M Gormley[1], E Dabrowski[2], A Tilton[3], A Christian[4], S Evans[5], P Maisonobe[6], S Wietek[7]

[1]Gillette Children's Specialty Healthcare, St Paul, MN, USA; [2]Oakland University School of Medicine & Beaumont Hospital, Royal Oak, MI, USA; [3]LSUHSC and Children's Hospital of New Orleans, New Orleans, LA, USA; [4]Good Shepherd Rehabilitation Hospital, Allentown, PA, USA; [5]Children's Hospital of Philadelphia, Philadelphia, PA, USA; [6]Ipsen, Boulogne-Billancourt, Ile-de-France, France; [7]Ispen, Cambridge, MA, USA

**SP69 - Intrathecal Baclofen Dosing Changes after Spinal Fusion Surgery**

W Truong[1], K Defoe[2], J Atkinson[3], J Stansbury[1], A Sinner[1]

[1]Gillette Children's Specialty Healthcare, St Paul, MN, USA; [2]St. Olaf College, Northfield, MN, USA; [3]University of Minnesota, Minneapolis, MN, USA

**SP70 - Management of Upper Extremity with Botulinum Toxin A and Occupational Therapy: Factors Influencing Treatment Outcome in Children with Cerebral Palsy**

N Dursun[1], C Cekmece[2], T Gokbel[3], E Dursun[4]

[1]Kocaeli University Faculty of Medicine Department of Physical Medicine and Rehabilitation, Istanbul, Istanbul, Turkey; [2]Kocaeli University, Kocaeli, Kocaeli, Turkey; [3]Kocaeli University, Kocaeli, Kocaeli, Turkey; [4]Kocaeli University, Kocaeli, Istanbul, Turkey

## Spasticity Management

**SP71 - ENGAGE: Engaging families in the implementation of surgical plans of care for children with complex cerebral palsy undergoing orthopedic surgery**

E Casto[1], L Bastianelli[1], J Palfrey[2], L Glader[1], J Berry[3], N Emara[1]

[1]Boston Children's Hospital, Boston, MA, USA; [2]Boston Children's Hospital, Harvard Medical School, Boston, MA, USA; [3]Harvard Medical School, Boston, MA, USA

**SP72 - Factors influencing blood loss and associated changes in laboratory values after single-event multilevel surgery and hip reconstructive surgery in patients with cerebral palsy**

J Min[1], S Kwon[2], K Sung[1], K Lee[1], C Chung[1], M Park[1]

[1]Seoul National University Bundang Hospital, Seongnam-si, Kyonggi-do, Republic of Korea; [2]Ajou University Department of Mathematics, Suwon-si, Kyonggi-do, Republic of Korea

**SP73 - Fascia Iliaca Pain Block Results in Lower Overall Narcotic Usage and Shorter Hospital Stays than Epidural Anesthesia after Hip Reconstruction in Children with Cerebral Palsy**

D Laron[1], J Mccarthy[2], J Kelley[3]

[1]Shriners Portland, Portland, OR, USA; [2]Cincinnati Children's Hospital, Cincinnati, OH, USA; [3]Cincinnati Children's, Cincinnati, OH, USA

**SP74 - Peri-Operative Management of Children with Spinal Muscular Atrophy**

M Halanski[1], A Steinfeldt[2], S Sund[2], K Patterson[3], S Hetzel[4], R Hanna[2], M Schroth[2], B Muldowney[5]

[1]University of Nebraska Medical Center, Children's Hospital of Omaha, Omaha, NE, USA; [2]University of Wisconsin School of Medicine and Public Health, Madison, WI, USA; [3]University of Wisconsin-Madison Physical Therapy Program, Mesa, AZ, USA; [4]University of Wisconsin - Madison Department of Biostatistics and Medical Informatics, Madison, WI, USA; [5]Univeristy of Wisconsin, Madison, WI, USA

**SP75 - Reasons for delayed treatment for spastic hip instability: results of parents' survey**

V Kenis

The H. Turner Institute for Children's Orthopaedics, Saint-Petersburg, Saint Petersburg City, Russia

**SP76 - Revealing utilization of outpatient services for children with cerebral palsy after single event multi-level surgery**

K Greve[1], A Bailes[1], J Long[1], J Mccarthy[2], J Vargus-Adams[3], B Aronow[1], A Mitelpunkt[4]

[1]Cincinnati Children's Hospital Medical Center, Cincinnati, OH, USA; [2]Cincinnati Children's Hospital, Cincinnati, OH, USA; [3]Cincinnati Children's, University of Cincinnati College of Medicine, Cincinnati, OH, USA; [4]Division of Biomedical Informatics, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, USA

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**SP77 - Tranexamic Acid Use Decreases Transfusion Rate in Children with Cerebral Palsy Undergoing Proximal Femoral Varus Derotational Osteotomy**

*E Compton[1], R Goldstein[2], A Nazareth[2], S Shymon[3], L Andras[1], R Kay[4]*

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## Testing and Validation

**SP78 - A new approach for the assessment of postural control while standing in childhood**

*F Beani[1], G Martini[1], N Mazzantini[1], G Cioni[2], G Sgandurra[2]*

*[1]IRCCS Fondazione Stella Maris, Pisa, Toscana, Italy; [2]IRCCS Fondazione Stella Maris, Department of Clinical and Experimental Medicine, University of Pisa, Pisa, Toscana, Italy*

**SP79 - Associations between Canadian Occupational Performance Measure Change Scores and Cerebral Palsy Functional Classification System Severity Levels**

*C Lyu[1], E Russel[2], L Woo[3]*

*[1]Los Angeles County Department of Public Health, Huntington Beach, CA, USA; [2]Los Angeles County Department of Public Health, Burbank, CA, USA; [3]Los Angeles County Department of Public Health, Children's Medical Services, California Children's Services, Medical Therapy Program, El Monte, CA, USA*

**SP80 - Withdrawn by Authors**

**SP81 - Reliability of a progressive lateral step up test and its relationship with physical activity in children with cerebral palsy**

*T Batson[1], H Singh[2], C Zhang[1], G Colquitt[3], C Modlesky[1]*

*[1]University of Georgia, Athens, GA, USA; [2]University of Alabama at Birmingham, Birmingham, AL, USA; [3]Georgia Southern University, Statesboro, GA, USA*

**SP82 - Reliability of the Danish version of the Challenge advanced motor skills test in children with cerebral palsy**

*K Nordbye-Nielsen[1], F Wright[2], T Maribo[3], O Rahbek[4], B Møller-Madsen[1]*

*[1]Aarhus University Hospital, Aarhus N, Midtjylland, Denmark; [2]Bloorview Research Institute and University of Toronto, Canada, Toronto, ON, Canada; [3]Aarhus University, Denmark, Aarhus C, Midtjylland, Denmark; [4]Aalborg University Hospital, Denmark, Aalborg, Nordjylland, Denmark*

**SP83 - Sensitivity of the Means-End Problem Solving Assessment Tool (MEPSAT) for Discriminating Among Infants with Varying Levels of Motor Delay**

*A Baraldi Cunha[1], I Babik[2], N Koziol[3], R Harbourne[4], S Westcott Mccoy[5], S Dusing[6], J Bovaird[7], M Lobo[1]*

*[1]University of Delaware, Newark, DE, USA; [2]Boise State University, Boise, ID, USA; [3]Nebraska Center for Research on Children, Youth, Families & Schools, University of Nebraska-Lincoln, Lincoln, NE, USA; [4]Duquesne University, Pittsburgh, PA, USA; [5]University of Washington, Seattle, WA, USA; [6]Virginia Commonwealth University and Children's Hospital of Richmond, Richmond, VA, USA; [7]University of Nebraska-Lincoln, Lincoln, NE, USA*

**SP84 - The How, What, When and Where of infant participation -Towards a clearer understanding of the constructs and content of infant participation: a Delphi study**

*C Mobbs[1], A Spittle[2], L Johnston[3]*

*[1]The University of Queensland, Toowoomba Hospital Queensland Health AUSTRALIA, Toowoomba, Queensland, Australia; [2]University of Melbourne Victoria AUSTRALIA, Murdoch Children's Research Institute Melbourne Victoria AUSTRALIA, Calton, Victoria, Australia; [3]The University of Queensland, Brisbane, Queensland, Australia*

**SP85 - The Pediatric Evaluation of Disability Inventory-Patient Reported Outcome software interface: Initial investigation of usability and reliability for youth with neurodevelopmental disabilities**

*J Kramer[1], A Schwartz[2]*

*[1]University of Florida, Gainesville, FL, USA; [2]Boston University, Arlington, MA, USA*

## Therapy - Speech/Swallow/Cognition

**SP86 - Anamnesis questions to identify dysphagia and aspiration in Argentinian children with cerebral palsy**

*M Ruiz Brunner[1], M Cieri[2], E Cuestas[3]*

*[1]Instituto de Investigacion en Ciencias de la Salud (Conicet-Universidad Nacional de Cordoba), Facultad de Ciencias Médicas de la Universidad Nacional de Cordoba (UNC), Córdoba, Cordoba, Argentina; [2]Instituto de Investigacion en Ciencias de la Salud (Conicet- Universidad Nacional de Cordoba), Facultad de Ciencias Medicas de la Universidad Nacional de Cordoba, Cordoba, Cordoba, Argentina; [3]Instituto de Investigación en Ciencias de la Salud (Conicet- Universidad Nacional de Cordoba), Catedra de Pediatría. Hospital Misericordia de la Facultad de Ciencias Médicas de la Uiniversidad Nacional de Córdoba (UNC), Cordoba, Cordoba, Argentina*

**SP87 - Cognitive and Learning Profiles of School-Aged children with Cerebral Palsy**

*J Wotherspoon[1], K Whittingham[1], J Sheffield[2], R Boyd[2]*

*[1]The University of Queensland, South Brisbane, Queensland, Australia; [2]The University of Queensland, Brisbane, Queensland, Australia*

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**SP88 - Pre-speech and early speech development of young children diagnosed with cerebral palsy**

H Long[1], D Oller[1], K Romer[2], L Friener[3], W Warner[4], D Spence[5], L Rhodes[6]

[1]University of Memphis, Memphis, TN, USA; [2]Campbell Clinic, Memphis, TN, USA; [3]LeBonheur Children's Hospital, Memphis, TN, USA; [4]University of Tennessee Health Science Center, LeBonheur Children's Hospital, Campbell Clinic, Memphis, TN, USA; [5]University of Tennessee Health Science Center, Le Bonheur Children's Hospital, Campbell Clinic, Memphis, TN, USA; [6]University of Tennessee Health Science Center, LeBonheur Children's Hospital, Memphis, TN, USA

**SP89 - What is Most Frequent Diagnoses in Children with Swallowing Disorders?**

M Tanriverdi[1], Ö Çalim[1], O Özturan[2]

[1]Bezmialem Vakıf University, İstanbul, Istanbul, Turkey; [2]Bezmialem Vakıf University, Istanbul, Istanbul, Turkey

## Therapy - Trunk Control and Upper Extremity

**SP90 - A Repeat Dose of Pediatric Constraint Induced Movement Therapy**

H Roberts[1], A Shierk[2], N Clegg[3], D Baldwin[3], L Smith[3], M Delgado[4]

[1]Scottish Rite Hospital for Children, Texas Woman's University, Denton, TX, USA; [2]Scottish Rite Hospital for Children, Texas Woman's University, Dallas, TX, USA; [3]Scottish Rite Hospital for Children, Dallas, TX, USA; [4]University of Texas Southwestern Medical Center and Texas Scottish Rite Hospital for Children, Dallas, TX, USA

**SP91 - Adaptive Arm Training for Children with Hemiparesis as a Result of Acquired Brain Injury**

T Campos, K Friel

Burke Neurological Institute, White Plains, NY, USA

**SP92 - Does prematurity impact trunk control and early reaching behavior?**

N Silva Sato[1], A Baraldi Cunha[2], G Antonio[1], E Tudella[1]

[1]Universidade Federal de Sao Carlos, Sao Carlos, Sao Paulo, Brazil; [2]University of Delaware, Newark, DE, USA

**SP93 - Improved Sitting Balance in Children with Cerebral Palsy: Body Functions to Activity and Participation**

M Akyuz[1], N Dursun[2], T Gokbel[3], C Cekmece[4], E Dursun[5]

[1]Kocaeli University, Bursa, Bursa, Turkey; [2]Kocaeli University Faculty of Medicine Department of Physical Medicine and Rehabilitation, Istanbul, Istanbul, Turkey; [3]Kocaeli University, Kocaeli, Kocaeli, Turkey; [4]Kocaeli University, Kocaeli, Kocaeli, Turkey; [5]Kocaeli University, Kocaeli, Istanbul, Turkey

**SP94 - Relationships between proprioception, unilateral, bilateral and functional performance changes after an intensive upper extremity training in children with unilateral cerebral palsy**

V Flamand[1], M Paquet[2], M Demers[3], C Piquemal[4], M Therrien[4], C Mercier[5]

[1]Université Laval, CIRRIS, Quebec City, PQ, Canada; [2]Université Laval, Québec, PQ, Canada; [3]Université Laval, Lévis, PQ, Canada; [4]Université Laval, Quebec, PQ, Canada; [5]Center for interdisciplinary research in rehabilitation and social integration (Cirris), Laval University, Quebec City, PQ, Canada

**SP95 - Rotational movement between trunk and pelvis during rolling in preterm, very low birth weight, and full-term infants**

H Sato[1], Y Nomura[2], H Sato[3], M Kemmochi[4]

[1]Kitasato University, School of Allied Health Sciences, Sagamihara, Kanagawa, Japan; [2]Kitasato University Hospital, Rehabilitation Department, Sagamihara, Kanagawa, Japan; [3]Kitasato University School of Allied Health Sciences, Sagamihara, Kanagawa, Japan; [4]Kitasato University, Pediatrics, Sagaminara, Kanagawa, Japan

**SP96 - The relationship between bimanual performance and self-care in children with cerebral palsy aged 8-12 years**

A Burgess[1], R Boyd[1], J Ziviani[2], M Chatfield[3], L Sakzewski[1]

[1]The University of Queensland, Brisbane, Queensland, Australia; [2]School of Health and Rehabilitation Sciences, The University of Queensland, Brisbane, Queensland, Australia; [3]QCPRRC, Faculty of Medicine, The University of Queensland, Brisbane, Queensland, Australia

## Posters

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### Clinical Observation/Case Study Posters

**CO01 - Rotatory Subluxation of the Knee Joint in Non-Ambulatory Children with Cerebral Palsy: Case Report.**
*N Fajardo BS, M Juricic PT, S Miller PT, K Mulpuri MBBS, MS(Ortho), MHSc(Epi), L Leveille MD, MHSc, J Coates BS*

**CO02 - Serial Casting with Intensive Physical Therapy to Regain Ambulation in a Adolescent Male with Cerebral Palsy**
*B Driscoll PT*

**CO03 - Surgical Hip Relocation with Femoral Varus Derotational Osteotomy in Two Children With Spinal Muscle Atrophy Type 2 Treated with Nusinersen**
*E Gladstone DO, S Deshpande MD, M Gormley MD*

**CO04 - Targeted Ballet Class Alters Stretch Reflex Response While Improving Motor Scores: A Single Case Study**
*M He BS C López-Ortiz MA, PhD*

**CO05 - Unprovoked Extensive Deep Venous Thrombosis in Cerebral Palsy: A Case Report**
*J Roberts MD, H Azizi MD*

**CO06 - A Rare CP Presentation of Angelman Syndrome**
*J Shah MD, M Carlson MD, PhD, J Pruente MD*

**CO07 - A Trauma Informed Interdisciplinary Approach Facilitates Rehabilitation for a Child with Cerebral Palsy Who Experienced Severe Neglect**
*A Torres MS, V Meneses MD, C Sherrod MD*

**CO08 - Ataxia-Telangiectasia Versus Cerebral Palsy in a Toddler: A Case Report**
*J Roberts MD, H Azizi MD*

**CO09 - Baclofen Toxicity in Children with Acute Kidney Injury: Case Series**
*R Mishaal MD, N Lanphear, E Armarnik MD, E van Rensburg MD, D Matsell MDCM*

**CO10 - Botulinum Toxin A in the Management of Children with Brachial Plexus Injury: Case Presentations**
*T Gokbel, N Dursun MD, C Cekmece, M Akarsu, E Dursun*

**CO11 - Cervical Myelopathy in an Ambulatory Patient with Cerebral Palsy**
*J Norman MD, A Schwabe MD*

**CO12 - Deep Brain Stimulator Improves Speech Articulation in Child with ADCY5 Gene Mutation**
*C Gormley BS, S Deshpande MD, M Gormley MD, P Graupman MD, T Feyma MD*

**CO13 - Glutaric Aciduria Type I Presenting Like Non-Accidental Trauma in a 7 Month Old Male**
*M Lynch MD, S Driscoll MD*

**CO14 - Identification of Structural and Functional Brain Asymmetry in an Infant with Perinatal Stroke**
*D Lench PhD, E Sutter, S Nemanich PhD, MSCI, B Mueller PhD, B Gillick PhD, PT*

**CO15 - Implementing Influenza Vaccinations in a Multi-Disciplinary Cerebral Palsy Clinic**
*K Romer BSN, L Rhodes, D Spence MD, W Warner MD*

**CO16 - Motor Learning Labs: Connecting Developmental Movement with Academic Achievement**
*L Rhodes, K Romer BSN, F Galvan, A Owens, D Spence MD, W Warner MD*

**CO17 - Petrie Hip Reduction Splint in Abduction and Internal Rotation for Rapid Progression of Hip Subluxation: A Case Study with Demonstration of the Splint Fabrication Process**
*D O'Young OTR/L, K Mulpuri MBBS, MS(Ortho), MHSc(Epi)*

**CO18 - Preliminary Data from a Group Fitness and Nutrition Program Involving Children with Neurodevelopmental Disabilities and Obesity**
*T Dendinger MPT, A Heyman MS, T Zabel PhD*

**CO19 - 3 Cases of Atypical CP-Related Spasms/Dystonia Exacerbation with Psychotropic Agents with Concurrent Use of Intrathecal Baclofen**
*K Buxton MSN, E Barkoudah MD, A Hauptman MD*

**CO20 - Knee Instability: A Case Study**
*S Sohrweide BS/PT, T Novacheck MD*

### Demonstration Posters

**DP01 - A Biomechanical Approach to Examining Bimanual Coordination in Children with Bilateral Cerebral Palsy: The Drawer-Opening Task**
*G Herard DPT, Y Hung EdD, A Gordon PhD, M Brandao PhD*

**DP02 - A Clinically Feasible Functional Imaging Method to Map Cerebrovascular Reactivity and Hemodynamic Lag in Children with Cerebral Palsy**
*K Zvolanek BS, R Stickland PhD, M Bright D.Phil.*

**DP03 - A Novel Checklist to Promote Collaborative Stakeholder Partnerships in Pediatric Research**
*H Shearer MSc, K McGuire, A Cross PhD, C Putterman, D Thomson BA*

**DO04 - A Vulnerable Dyad: Early Parent-Infant Interactions in Infants at High-risk of Cerebral Palsy**
*F Festante PhD, C Antonelli MD, A Bancale PT, S Mazzotti PhD, L Bozicevic, L De Pascalis PhD, L Murray PhD, A Guzzetta MD, PhD*

**DP05 - An Integrated Collaborative Model to Promote Shared Decision Making and Parent-Provider Partnerships in the Clinical Management of Cerebral Palsy**
*J Jezequel DPT, P Selber MD, M Gannotti PT, PhD, D Frumberg MD, B Liquori MS, M O'Neil PhD, PT, MPH*

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**DP06 - Build your own Sit to Stand Box: Promoting movement transitions for children with GMFCS levels III to V.**
*J Hubeny BS, B Huynh BS, D Snowdon PT, MS, DPT, S Saavedra MS, PT, PhD, D Bellows PT, MHS, DHSc*

**DP07 - Building a Peer Network to Support Pediatric Baclofen Pump Management**
*K Buxton MSN, E Del Rosario MSN, FNP-BC*

**DP08 - Caring for Complex Children: One Size Does Not Fit All**
*T Diaczun MSN, C van Breemen MSN, E Lee FRCPC, E Grant FRCPC, G Bibas FRCPC*

**DP09 - Changes in Functional Activities and Participation of Ugandan Children with Disability following Delivery of RoughRider Wheelchairs**
*H Knapp SPT, C Dodds PhD, A Karren BS, K Burke DPT*

**DP10 - Does This Patient Have a Baclofen Pump Problem? Should I Alert the ITB Team?**
*K Buxton MSN, A Morgan MSN*

**DP11 - Effects of Remote Limb Ischemic Conditioning on Muscle Power, Motor Learning, and Functional Mobility in Children with Cerebral Palsy: Study Protocol for a Randomized Controlled Trial**
*S Surkar PhD, J Willson PhD, C Lin PhD, K Bjornson PT, PhD*

**DP12 - Engagement in Rehabilitation: Key Components and Outcome Variables**
*D Delfing MS, J Rachwani PhD, V Santamaria PT, MS, Ph.D, C Imms PhD, MSc, BAppScOT, A Gordon PhD*

**DP13 - Exploring the Association between Emotional Availability and Dyadic Emotional Affect on Early Therapeutic Interventions for Children with Motor Delays**
*C Stuyvenberg DPT, R Molinini DPT, S Khurana PhD*

**DP14 - Feasibility of Using a Wearable Robotic Device for Children With Moderate to Severe Mobility Impairments**
*M Bueti PT, DPT, CSCS, E Alfonso DPT,PCS, MBA, S Natale BS, P Koch PT, H Berlin MD*

**DP15 - Identification of Co-Contraction of the Tibialis Anterior and Gastrocnemius in Patients with Hemiplegic Cerebral Palsy**
*R Wimberly MD, K Tulchin-Francis PhD, K Jeans MS, W Stevens BS, M Delgado, MD*

**DP16 - Identification of Sucking Measures to Predict Infants Who May Experience Difficulties in Achieving Independent Oral Feeds**
*S Fucile PhD, K Dow MD*

**DP17 - Intensive Intermittent Sports Based Therapy for Motor, Social and Cognitive Development**
*B Wishart DO*

**DP18 - Kinematic EMG as a Possible Biomarker for Gait Decline in Youth with CMT**
*S Ounpuu MSc, M Solomito, G Acsadi, K Pierz MD*

**DP19 - Let's Participate! Implementing PREP in Children's Rehabilitation Services**
*L Turner MSc, R Teplicky MSc, K Hesketh MScPT, BKIH, D Anaby PhD*

**DP20 - Measuring Physical Activity in Children with Severe and Profound Disability: An Exploratory Study**
*N Mensah DPT, L Quinn EdD, PT*

**DP21 - Novel Techniques to Promote Community Mobility for Multi-Disability Pediatric Powered Wheelchair Users**
*E Patchell DPT, C Bagdonavicius DPT*

**DP22 - Pediatric Registry for Arthrogryposis: Unmasking the Clinical, Genomic and Machine Learning Potential**
*N Dahan-Oliel OT, PhD, H van Bosse MD, M Aiona MD, P Giampietro MD, PhD, M James MD, V Darsaklis OT, MSc, F Rauch MD, R Hamdy MD*

**DP23 - Peri-Operative Care Standardization for Patients with Cerebral Palsy Undergoing Orthopedic Surgery: A Multidisciplinary Collaboration in a Tertiary Care Pediatric Center**
*M Salzbrenner Hoopes MSN, M Shrader MD, J Sees DO, L Owens, E Fingado MD, FAAP, K DiAlessandro, A Helms*

**DP24 - Withdrawn by Author**

**DP25 - RaceRunning in Chicago: Initial Implementation**
*T Sukal-Moulton PT, DPT, PhD, T Egan PT, DPT, C Lein, D Gaebler-Spira MD*

**DP26 - Revealing the Potential of Sibling Engagement in Research**
*L Nguyen BHSc, MSc, H Davis BSc, M Ketelaar PhD, B Di Rezze PhD, OT Reg(Ont.), S Jack RN BScN PhD, J Gorter MD, PhD*

**DP27 - Segmental Intensive Training for Children with Cerebral Palsy GMFCS IV-V**
*B Surana PT, EdM, V Santamaria PT, MS, PhD, T Luna MS, J Rachwani PhD, A Gordon PhD, S Agrawal PhD*

**DP28 - The Effectiveness of Improved Access to Durable Medical Equipment on Community Participation for Children and Adolescents with Cerebral Palsy**
*V Polega BS, K Croll PT, MSPT, C/NDT*

**DP29 - The Role of Cardiopulmonary Exercise Testing in the Evaluation of Children with Progressive Neuromuscular Disease**
*L Luker DPT, W Marks, S Acord MD*

**DP30 - The Use of Virtually Reality for Pain and Anxiety Management Following Orthopedic Surgery.**
*A Raiter BA, L Lykken BS, A Berg RN, C Hagen BS, T Dalberg DO, C Barney PhD, S Koop MD1*

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**DP31 - Tracheostomy is Associated with Delayed Development of Head Control and Rolling in Infants**
*H Shin MD, M Bang PhD, S Hyun MA*

**DP32 - Updates to the National Institute of Neurological Disorders and Stroke (NINDS) Cerebral Palsy Common Data Elements: Participant Condition Characteristics.**
*R Feldman BS, MBA, J Brandenburg MD, I Edun BA, J Esterlitz MS, C Mendoza-Puccini MD*

**DP33 - Rat Models of Hemiplegic CP Enable Targeting of Sensory and Motor Circuits for Injury and Repair**
*J Carmel MD, PhD, T Wen DrPH*

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