Armeo® Spring Pediatric
Functional Arm and Hand Therapy for Children

- Functional movements guided by the ergonomic exoskeleton specifically designed for children.
- Simultaneous arm and hand therapy in an extensive 3D workspace.
- Augmented Performance Feedback with motivating exercises to train activities of daily living.
- Self-initiated, active and repetitive movement therapy for children.
- Improved efficiency and efficacy through self-directed therapy.
- Assessment Tools for an objective analysis and documentation of the patients’ progress.

Hocoma Inc., info.usa@hocoma.com, phone 877-944-2200, www.hocoma.com

Welcome to Austin!

Thank you for taking the time out of your busy schedules to explore NEW FRONTIERS at the AACPDM 69th Annual Meeting. We are a unique multidisciplinary society united in our mission to provide excellence in education, research and service. This year’s program is diverse, innovative and responsive to your feedback from previous meetings. As a result, we offer you four days filled with learning opportunities, engaging keynote speakers and networking events in a city known for its musical influence, barbecue and fun loving atmosphere.

They say that everything is “bigger in Texas” and this year, we have expanded educational offerings to include more sessions and continuing education credit opportunities. The work of Scientific Program Committee, led by Dr. Jilda Vargus-Adams and Dr. Benjamin Shore, along with your excellent submissions resulted in a program that offers state-of-the-science in cerebral palsy and other childhood-onset disabilities. The program includes 120 Free Paper Presentations, over 90 Poster Displays, 27 Breakfast Seminars and 36 Instructional Courses. Wednesday Pre-Conference opportunities include the morning Gait & Clinical Movement Analysis Society (GCMAS) symposium, three afternoon sessions (early intervention, physical and mental health, orthopedics in the upper extremity) and an all-day ultrasound techniques course. Please take the time to explore the program to ensure you don’t miss anything!

In addition to the educational program, networking opportunities are available around the clock. We start the meeting with a Welcome Reception at the Palmer Events Center on Wednesday evening, view posters and exhibits during the Wine and Cheese Reception on Thursday, celebrate Friday night in the open air at Stubb’s Bar-B-Q and connect with others throughout the conference using a mobile app that will keep attendees informed and connected.

We would like to say a big “Thank You” to our supporters and exhibitors who contribute to the success of our annual meetings. Please visit the exhibit hall to learn about innovations and products that inspire us to continue our forward thinking.

So let’s saddle up and ride toward NEW FRONTIERS together!

Eileen G. Fowler, PhD, PT
First Vice President

Peter William Shapiro Chair
Director of Research & Education, UCLA Center for Cerebral Palsy
### Wednesday, October 21

- **GCMAS Pre-Course**
  - 8:00 AM – 12:00 PM
  - Lone Star GH
- **Ultrasound All-day Pre-Course**
  - 8:00 AM – 5:00 PM
  - Brazos
- **Pre-Conference Luncheon**
  - 11:30 AM – 12:45 PM
  - Lone Star C
- **Breakfast and Committee Meetings**
  - 7:30 AM – 11:15 AM
  - See itinerary
- **Board of Directors Meeting**
  - 1:00 PM – 5:00 PM
  - 205

### Thursday, October 22

- **Continental Breakfast**
  - 7:00 AM – 8:00 AM
  - Level 3
- **Advisor Program Meet & Greet**
  - 7:00 AM – 8:00 AM
  - Brazos
- **General Session**
  - 8:15 AM – 10:15 AM
  - Lone Star DE
  - Jan Willem Gorter, MD, PhD, FRCP(C)
  - Presidential Guest Lecture
  - Michael Merzenich, PhD
- **Free Paper Presentations A-D**
  - A: Upper Extremity Assessment and Treatment
  - B: Tone Management Strategies and Pain Control
  - C: Health Outcomes in Adolescence and Adulthood
  - D: Epidemiology and Research Frontiers
  - 10:45 AM – 12:45 PM
  - Lone Star GH
  - Lone Star AB
  - Lone Star C
  - Lone Star F
- **AACPDM Membership Business Meeting & Boxed Lunch**
  - 12:45 PM – 2:00 PM
  - Lone Star DE
- **General Session**
  - 2:00 PM – 3:30 PM
  - Lone Star DE
  - Cerebral Palsy Foundation Update
    - Richard Ellenson, CEO
  - Cerebral Palsy Foundation Lecture
    - Elizabeth Laugesen, PsyD
  - Making a Difference Award
    - Paul Gross
- **Instructional Courses 1-12**
  - 4:00 PM – 6:00 PM
  - See pages 32-36
- **IAACD Meeting**
  - 5:00 PM – 6:00 PM
  - 311
  - **Wine & Cheese Poster and Exhibit Review**
    - 6:15 PM – 7:45 PM
    - Griffin Hall

### Friday, October 23

- **Continental Breakfast**
  - 7:00 AM – 8:00 AM
  - Griffin Hall
- **Breakfast Seminars 10-18**
  - 7:00 AM – 8:00 AM
  - See pages 37-40
- **Poster Crawl**
  - 7:00 AM – 8:00 AM
  - Griffin Hall
- **General Session**
  - 8:15 AM – 9:45 AM
  - Lone Star DE
  - 1. Mac Keith Press Basic Science Lecture
    - Jerry Mendell, MD
  - 2. Lifetime Achievement Award
    - William Oppenheim, MD
- **Free Paper Presentations E-H**
  - E: Outcome Measures
  - F: Pediatric Medical Complexities
  - G: Early Intervention
  - H: New Orthopaedic Strategies in Cerebral Palsy
  - 10:30 AM – 12:30 PM
  - Lone Star C
  - Lone Star F
  - Lone Star DE
  - Lone Star GH
- **International Networking Luncheon**
  - 12:30 PM – 1:30 PM
  - Brazos
- **Medtronic Presentation Theater - non CME**
  - 12:30 PM – 1:30 PM
  - Lone Star AB
- **General Session**
  - 1:30 PM – 3:30 PM
  - Lone Star DE
  - Gayle G. Arnold Lecture
    - Linda Fetters PT, PhD, FAPTA
  - Member Hot Topic Lecture
    - Kathleen Fried, PhD
- **Instructional Courses 13-24**
  - 4:00 PM – 6:00 PM
  - See pages 43-49
- **Networking Dinner**
  - 7:00 PM – 12:00 AM
  - Stubb’s Bar-B-Q

### Saturday, October 24

- **Continental Breakfast**
  - 7:00 AM – 8:00 AM
  - Griffin Hall
- **Breakfast Seminars 19-27**
  - 7:00 AM – 8:00 AM
  - See pages 50-53
- **Poster Crawl**
  - 7:00 AM – 8:00 AM
  - Griffin Hall
- **Free Paper Presentations I-L**
  - I: Imaging and Early Development
  - J: Current Issues in Childhood Disability
  - K: Therapy Interventions
  - L: Gait
  - 8:15 AM – 10:15 PM
  - Lone Star C
  - Lone Star F
  - Lone Star DE
  - Lone Star GH
- **General Session**
  - 10:30 AM – 12:00 PM
  - Lone Star DE
  - Cathleen Lyle Murray Award & Lecture
    - Zach Anner
  - Presidential Guest Lecturers
    - Sharon Levy, MD, MPH
    - Alan Shackelford, MD
- **Committee Lunch Meetings**
  - 12:00 PM – 1:30 PM
  - See itinerary
- **Board of Directors Meeting**
  - 1:30 PM – 5:00 PM
  - Brazos
- **Family Forum**
  - 12:45 PM – 3:45 PM
  - Lone Star ABC
- **Instructional Courses 25-36**
  - 1:30 PM – 3:30 PM
  - See pages 56-60

**Ticket Required**
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2014-2015 AACPDM Board of Directors

Darcy Fehlings, MD, MSc, FRCP(C) – President
Eileen Fowler, PhD, PT – First Vice President
Unni Narayanan, MBBS, MSc, FRCS(C) - Second Vice President
Joshua Hyman, MD – Treasurer
Johanna Darrah, PhD, PT – Secretary
Richard Stevenson, MD – Past President
Maureen O’Donnell, MD MSc FRCP – Past President
Deirdre McDowell, PT, PCS – Director
Mark Romness, MD – Director
Lisa Samson-Fang, MD – Director
Lisa Thornton, MD – Director
Laura Vogtle, PhD, OTR/L, FAOTA – Director
Gordon Worley, MD – Director

Ex-Officio Board Members

Alfred Scherzer, MD, EdD - Historian
Peter Baxter, MD – Editor, DMCN
Susan Sienko, PhD - Webmaster
Tracy Burr, CAE – Executive Director

Office Staff

Tracy Burr, CAE – Executive Director
Amanda Senkbeil – Meetings Manager
Jesse Cunningham – Project Coordinator

2015 Scientific Program Committee

Benjamin Shore, MD, MPH, FRCSC
Jilda Vargus-Adams, MD, MSc
Joshua Hyman, MD
Sarah McIntyre, PhD, MPS, BScOT
Karim Baker, MD
Rachel DiFazio, PhD, RN, CPNP
Uri Givon, MD
Laurie Glader, MD
Karen Harpster, PhD, OTR/L
Brad Landry, DO
Eric Levey, MD
Veronica Schiariti, MD, MHSc, PhD
Susan Sienko, PhD
Beth Smith, PhD, PT
Elaine Stashinko, PhD, RN
Ann Tilton, MD
Michele Tourne, DPT, PCS
Sarah Winter, MD
Kathy Zebracki, PhD

2015 Local Hosts

Maureen Nelson, MD
Edward Wright, MD

The American Academy for Cerebral Palsy and Developmental Medicine (AACPDM) is an academy of over one thousand people of multiple professional disciplines dedicated to the improvement in the care of people with childhood-onset disabilities, their families and communities. We are pediatricians, neurologists, surgeons, therapists, nurses, special educators, engineers, and scientists from all over the world. Together we strive daily in our quest to perform the highest quality research, offer education opportunities for ourselves and others in the field, and work to elevate society and culture by recognizing the value and dignity of our fellow citizens with disabilities. Each year, about 1,000 medical professionals gather for the AACPDM Annual Meeting to participate in the high-quality dissemination of information in the basic sciences, prevention, diagnosis, treatment, and technical advances as applied to persons with cerebral palsy and other childhood-onset disabilities.

This year’s program was developed from a submission total of 544 abstracts. All electronically submitted abstracts were independently rated by the multidisciplinary scientific program committee of 19 members (noted above). The committee met in March 2015 to review the abstracts and finalize the program (e.g. Scientific paper or poster, instructional course/breakfast 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 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 2015 program includes:

120 Scientific Papers
59 Scientific Posters
33 Demonstration Posters
3 Pre-Conference Sessions
1 All-Day Ultrasound Techniques Course

1 GCMAS Symposium
36 Instructional Courses
27 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 Breakfast Seminars are rated on:
Course Objectives
Content/Presenters
Impact, Relevance & Importance
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<th>Name</th>
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<td>Harold B. Levy, MD</td>
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<td>George G. Deaver, MD</td>
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<td>Robert V. Groover, MD</td>
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<td>Leslie B. Hohman, MD</td>
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<td>Meyer A. Perlstein, MD</td>
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<td>Alfred Healy, MD</td>
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<td>Lenox D. Baker, MD</td>
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<td>Margaret H. Jones Kanaar, MD</td>
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<td>James R. Gage, MD</td>
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<td>Nicholson J. Eastman, MD</td>
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<td>John F. McLaughlin, MD</td>
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<td>William T. Green, MD</td>
<td>1958</td>
<td>Michael A. Alexander, MD</td>
<td>1993</td>
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<td>Alvin J. Ingram, MD</td>
<td>1959</td>
<td>Helen M. Horstmann, MD</td>
<td>1994</td>
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<td>Raymond R. Rembolt, MD</td>
<td>1960</td>
<td>Charlene Butler, EdD</td>
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<td>Russell Meyers, MD</td>
<td>1963</td>
<td>Dennis C. Harper, PhD</td>
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<td>Eric Denhoff, MD</td>
<td>1964</td>
<td>John F. Mantovali, MD</td>
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<td>Chester A. Swinyard, MD</td>
<td>1965</td>
<td>Michael D. Sussman, MD</td>
<td>2001/2002</td>
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<td>Samuel B. Thompson, MD</td>
<td>1966</td>
<td>James A. Blackman, MD</td>
<td>2003</td>
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<td>Sedgwick Mead, MD</td>
<td>1967</td>
<td>Robert W. Armstrong, MD</td>
<td>2004</td>
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<td>William Berenberg, MD</td>
<td>1968</td>
<td>Luciano S. Dias, MD</td>
<td>2005</td>
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<td>William J. Hillman, MD</td>
<td>1969</td>
<td>Barry S. Russman, MD</td>
<td>2006</td>
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<td>Harriet E. Gillette, MD</td>
<td>1970</td>
<td>William L. Oppenheim, MD</td>
<td>2007</td>
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<td>Henry H. Banks, MD</td>
<td>1971</td>
<td>Diane L. Damiano, PhD PT</td>
<td>2008</td>
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<td>Lawrence T. Taft, MD</td>
<td>1972</td>
<td>Hank G. Chambers, MD</td>
<td>2009</td>
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<td>Robert L. Samilson, MD</td>
<td>1973</td>
<td>Deborah J. Gaebler-Spira, MD</td>
<td>2010</td>
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<tr>
<td>Elliott D. O'Reilly, MD</td>
<td>1974</td>
<td>Scott A. Hoffinger, MD</td>
<td>2011</td>
</tr>
<tr>
<td>Hans U. Zellweger, MD</td>
<td>1975</td>
<td>Joseph P. Dutkowsky, MD</td>
<td>2012</td>
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<tr>
<td>Eugene E. Bleck, MD</td>
<td>1976</td>
<td>Maureen E. O'Donnell, MD MSc FRCP (C)</td>
<td>2013</td>
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<tr>
<td>Leon Greenspan, MD</td>
<td>1977</td>
<td>Richard D. Stevenson, MD</td>
<td>2014</td>
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<tr>
<td>Gerald Solomons, MD</td>
<td>1978</td>
<td>Darcy Fehlings, MD MSc FRCP (C)</td>
<td>2015</td>
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<td>Hyman H. Soboloff, MD</td>
<td>1979</td>
<td>Eileen Fowler, PhD PT</td>
<td>2016</td>
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<td>Leonard F. Bender, MD</td>
<td>1980</td>
<td>Unni Narayanan, MBBS MSc FRCP (C)</td>
<td>2017</td>
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<td>Fred P. Sage, MD</td>
<td>1981</td>
<td>Sarah Winter, MD</td>
<td>2018</td>
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<td>Paul H. Pearson, MD</td>
<td>1982</td>
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This mobile app allows you to:

- View schedules, explore sessions, and find networking events.
- Curate your own personal schedule for easy conference attendance.
- Access location and 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, most popular photos, and popular discussion topics.
- Earn points and badges for being active on the app and at the event.
- Expand your professional network and have fun!

Features of the App:

- Agenda - view the full agenda and related information (session time, room number, speaker info, 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 - see who’s at the event, and connect with them on the app
- Exhibitors - find exhibitors and supporters, and leave comments or ratings

Download the AACPDM 2015 MOBILE APP!

Find members of the AACPDM Communications Committee identified with an “App Helper” ribbon onsite or visit the Registration Desk with questions!
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. The focus areas of the 2015 meeting include:

1. Barriers to participation in employment, community based activities and daily living skills in adults with childhood onset disability (transition)
2. Use and documentation of the Manual Ability Classification System (MACS)
3. Use and documentation of the Communication Function Classification System (CFCS)
4. The relationship between CP classification of function and hip subluxation

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, kinesthesiologists, nurses, psychologists, special education teachers and educators.

Note: All levels of skill will be addressed.

AACPDM Vision:
A global leader in the multidisciplinary scientific education for health professionals and researchers dedicated to the well-being of people with childhood-onset disabilities.

AACPDM Mission:
Provide multidisciplinary scientific education for health professionals and promote excellence in research and services for the benefit of people with cerebral palsy and childhood-onset disabilities.

Online Self-Reporting System for CME / CEU / CE Credits
After the AACPDM 69th Annual Meeting, all registrants will receive an instructional email about reporting and printing out their own continuing education certificates. The online self-reporting will be open by no later than November 2015. To verify your correct email address, please visit the registration desk before you leave the 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. Access this form at the Registration Desk.

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 31.50 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 has been approved by the Texas Board of Physical Therapy Examiners for 31.50 CCUs for PTS and PTAs.
- ProCert has awarded certification in the amount of 25 Continuing Competence Units (CCUs) to this activity. CCUs are a unit of relative value of an activity based on its evaluation against a rigorous and comprehensive set of standards representing the quality of an activity. The CCU determination is a valuation applying many factors including, but not limited to, duration of the activity. No conclusion should be drawn that CCUs correlate to time (e.g. hours).

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 a maximum of 3.15 AOTA CEU’s. All sessions during the 69th 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, for 31.50 Contact Hours.

Orthotist Credits
This program has been approved for up to 22.5 credits through the American Board for Certification (ABC). Full participation in this program is required for the full amount of credits. Must sign-in daily at the registration desk.
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 Program**

New! The AACPDM Membership Committee launched an Advisor Support Program to match veteran AACPDM members with new members to ensure they get everything they can out of their membership. Advisor areas include networking, committee involvement, research and grants, international experience and more!

**Networking**

Membership in AACPDM facilitates making contacts with medical professionals and researchers with similar interests. This diverse group of professionals is bound together by a unified interest in improving the lives of people with cerebral palsy and developmental disabilities.

**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.

AACPDM creates a quarterly newsletter and periodic broadcast emails about various events and activities in the industry. 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 not available to non-members including Sage Award Videos, membership contact information and other educational opportunities.

**Committees**

The heart of the Academy is our committees. These committees offer networking and opportunities to explore areas of deep interest with a wide range of professionals from the membership.

- Adapted Sports and Recreation
- Advocacy
- Awards
- Communications
- Complex Care
- Education
- International Affairs
- Lifespan Care
- Membership
- Nominating
- Research
- Scientific Program

**Member Events at the Meeting**

**AACPDM Board of Directors Meetings**

Wednesday, October 21, 2015
7:30 am – 8:15 am Lone Star C (Breakfast)
8:30 am – 11:30 am 205 (Executive Committee Meeting)
11:30 am – 12:45 pm Lone Star C (Lunch)
1:00 pm – 5:00 pm 205 (Board of Directors Meeting)

Saturday, October 24, 2015
1:30 pm – 5:00 pm Brazos (Lunch/ Board of Directors Meeting)

**AACPDM Committee Meetings**

Wednesday, October 21, 2015
7:30 am – 8:15 am Lone Star C (Breakfast)
8:30 am – 11:15 am See Committee Itinerary* (Committee Meetings)
11:30 am – 12:45 pm Lone Star C (Lunch)

Saturday, October 24, 2015
12:00 pm – 1:30 pm See Committee Itinerary* (Working Lunch)

*Committee Itinerary sent via email and available in the 2015 AACPDM Mobile App

**AACPDM Annual Membership Business Meeting and Lunch**

Thursday, October 22, 2015
12:45 pm – 2:00 pm Lone Star DE

Current members only. Pre-registration is required. Agenda is available on page 12.

NEW! Advisor Support Program Meet & Greet Breakfast

Thursday, October 22, 2015
7:00 am – 8:00 am Brazos
2015 Membership Business Meeting Agenda

12:45-12:55 pm  Welcome/Farewell departing Board Members
     Eileen Fowler – President

12:55-1:05 pm  Treasurer’s Report
     Joshua Hyman - Treasurer

1:05-1:20 pm  Webmaster Opportunity
     Darcy Fehlings - Past President

1:20-1:30 pm  Strategic Plan Update
     Eileen Fowler/Darcy Fehlings

1:30-2:00 pm  Committee Reports
     Eileen Fowler - President

Committee Reports
Adapted Sports & Recreation Chair: Keiko Shikako-Thomas, PhD OT
Advocacy Co-Chairs: Stephanie DeLuca, PhD / Kerstin Sobus, MD PT
Awards Chair: Karin Baker, MD
Communications Chair: Bradford Landry, DO
Complex Care Chair: Jim Plews-Ogan, MD
Education Chair: Michele Tourne, PT DPT PCS
International Affairs Chair: Jorge Carranza, MD
Lifespan Care Chair: Wilma Van Der Slot, MD PhD
Membership Chair: Susan Rethlefson, PT DPT
Publications Chair: Hank Chambers, MD
Research Chair: Elaine Stashinko, PhD RN

INNOVATING WITH PATIENTS AND PROVIDERS IN MIND

Helping patients get healthy, feel better, live longer is all in a day’s work at Medtronic. Helping healthcare systems be more efficient is, too.

Learn about how we’re taking healthcare Further, Together by visiting Medtronic.com.
**Wednesday**

**Gait and Clinical Movement Analysis Society**
The GCMAS hosts a Wednesday session on The Role of Motion Analysis in “Other” Neuromuscular Disabilities.

**NEW! All Day Ultrasound Pre-Course**
This sold out course will allow attendees to experience hands-on training for Chemodenervation Procedures with 90 minutes of didactic lectures. Details are on page 22.

**Pre-Conference Sessions**
The AACPDM offers three afternoon Pre-Conference Sessions to jumpstart your learning. Choose one of three topics: Early Intervention, Orthopedics in the Upper Limb, and Physical and Mental Health.

**Welcome Reception**
Connect with other AACPDM meeting attendees outdoors while getting a small taste of Austin’s culinary scene with the city’s skyline as your background at the Palmer Events Center. Buses will be provided from the JW Marriott.

**Thursday**

**Advisor Support Program Meet & Greet**
Learn more about the brand new AACPDM Advisor Program! You will hear a panel of AACPDM leadership describe benefits of AACPDM Membership, ask them questions, and network. It’s also a chance for matches in the Advisor Program to meet for the first time!

**Wine & Cheese Poster and Exhibit Review**
Explore the Poster and Exhibit Hall (Griffin Hall) on Thursday evening. Don’t forget to complete your Visit and Win Card for a chance to win a tablet!

**Austin Dine Around**
Get a taste of Austin’s culinary scene after the Wine and Cheese Poster and Exhibit Review! Sign up for the Dine Around at the Austin table near the Registration Desk where we make the reservations for your Thursday dinner.

**LifeShots Photo Gallery**
Please plan some time in your schedule to walk through the LifeShots Photo Gallery to view selected submissions of the recent photo contest. The AACPDM held a contest for individuals to submit photos of those living with cerebral palsy and other developmental disabilities doing what they enjoy, completing a task, or celebrating an accomplishment. Thank you to the Weinberg Family Cerebral Palsy Center at Columbia University for supporting this contest. The winners will be announced during the final General Session.

**Friday**

**Poster Crawl**
Join an Academy expert as they highlight some of the 2015 poster displays for an intimate, interactive experience!

**International Networking Luncheon**
Help foster the AACPDM International community! The AACPDM International Affairs Committee is showcasing the International Scholarship winners by inviting winners from all areas of the globe to present at the luncheon about their services at home and how the AACPDM meeting will be shared and dispersed on their return.

**Medtronic Presentation Theater**
This sold out event is a non-CME learning opportunity to hear Dr. Rez Farid’s talk, New Approaches; New Conversations- Best Practices of Intrathecal Therapy over lunch.

**Networking Dinner**
Strengthen your connections at Stubb’s Bar-B-Q! In true Austin style, a lip-smackin’ authentic Texan Bar-B-Q buffet will be served while enjoying Austin’s local music scene in the amphitheater. Transportation will be provided from JW Marriott.

**Saturday**

**Poster Crawl**
Join an Academy expert as they highlight some of the 2015 poster displays for an intimate, interactive experience!

**Complex Care SIG Meeting**
Please join the Complex Care SIG as we review progress over the last year and chart a course for the coming year. The meeting will consist of updates from the Complex Care Committee as well as group discussion about a project to create interdisciplinary educational competencies for complex care teams.
**Hours at a Glance**

**Registration – Lone Star Ballroom Foyer (Level 3)**
- **Tuesday, October 20**
  - 5:00 pm – 8:00 pm
- **Wednesday, October 21**
  - 7:00 am - 5:30 pm
- **Thursday, October 22**
  - 6:30 am - 6:00 pm
- **Friday, October 23**
  - 6:30 am – 6:00 pm
- **Saturday, October 24**
  - 6:45 am – 4:00 pm

**Exhibit Hall Hours – Griffin Hall (Level 2)**
- **Thursday, October 22**
  - 10:15am – 10:45am Attendee Break in Exhibit Hall
  - 3:30pm – 4:00pm Attendee Break in Exhibit Hall
  - 6:15pm – 7:45pm Wine & Cheese Poster and Exhibit Review
- **Friday, October 23**
  - 7:00am – 8:00am Poster Crawl and Continental Breakfast in Exhibit Hall
  - 9:45am – 10:30am Attendee Break in Exhibit Hall
  - 3:30pm – 4:00pm Attendee Break in Exhibit Hall
- **Saturday, October 24**
  - 10:00 am – 10:15 am Poster Viewing
  - 12:00 pm – 1:30 pm Poster Viewing

**Visit & Win Returns!** Have a minimum of 20 exhibitors place a sticker on our card next to their company organization. Turn in your completed card to the Meeting Registration desk by 3:00pm Friday, October 23rd. The winner of the drawing will receive a tablet device.

**Poster Viewing Presentation Times**

**Poster Viewing – Griffin Hall (Level 2)**
- **Thursday, October 22**
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  - 3:30pm – 4:00pm Attendee Break in Exhibit Hall
  - 6:15pm – 7:45pm Wine & Cheese Poster and Exhibit Review
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  - 12:00 pm – 1:30 pm Poster Viewing

**Ticketed Sessions**

Various sessions and events at the Annual Meeting require a ticket for admission. This aids in controlling room capacity. Pre-registered attendees will find event tickets in their registration envelope. Additional tickets for courses and events may be obtained at the registration desk. For some events or sessions, an additional fee may apply. All tickets are distributed pending availability. Door monitors will be present for ticketed sessions.

**Guest Attendance**

AACPDM asks registered attendees to refrain from taking children, spouses, or guests to any educational sessions or functions offered at the Annual Meeting that are not included in the guest attendance registration. Please urge your guests to wear their name badges at all times.

**No Smoking**
Smoking is prohibited at all Annual Meeting sessions and events.

**Attire**
Attire for the educational sessions of the meeting is business casual. Please bring a jacket or sweater, as room temperatures may vary.
Camera/Recording Policy
It is the policy of AACPDM that no cameras are permitted in the meeting sessions, exhibit hall, or poster sessions. Please refrain from taking any photos in those locations. Audio or videotaping is strictly prohibited.

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 aids 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 69th 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.

Please take a moment to provide your feedback on 69th 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. You will be able to access the internet on various internet café kiosks OR take time in your hotel room – all attendees receive complimentary internet in your hotel room. VISIT: http://www.aacpdm.org/meetings/2015/
• Participants will be asked to provide input on the educational program of the 69th Annual Meeting through the online CME / CEU Claim 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 at 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 = Consultant/Advisory Board
B = Employment
C = Other Research Support includes receipt of drugs, supplies, equipment or other in-kind support
D = Ownership Interest includes stock, stock options, patent or other intellectual property
E = Research Grant includes principal investigator, collaborator or consultant and pending grants as well as grants already received
F = Speaker/Honoraria includes speakers bureau, symposia, and expert witness
G = Other Financial or Material Support
H = Other Research Support
I = Royalties
J = Stock Shareholder (excluding mutual funds)
K = Stockholder/Ownership Interest (excluding diversified mutual funds)
L = Nothing to Disclose

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.

MEETING INFORMATION

69TH ANNUAL MEETING • NEW FRONTIERS
GAYLE G. ARNOLD LECTURE:
GOING GREEN: EVIDENCE BASED INGREDIENTS TO PROMOTE ACTION FOR INFANTS AND CHILDREN

Linda Fetters, PT, PhD, FAPTA
Dr. Fetters is Professor and Sykes Family Chair in Pediatric Physical Therapy, Health and Development, Division of Biokinesiology & Physical Therapy and Department of Pediatrics, Keck School of Medicine, University of Southern California. She directs the Development of Infant Motor Performance Laboratory where her research focuses on very early intervention using discovery learning as an intervention and experimental paradigm. Dr. Fetters teaches development, motor control, pediatric physical therapy and evidence-based physical therapy practice. Dr. Fetters was named Editor-in-Chief of the journal Pediatric Physical Therapy, effective January 1, 2016. Dr. Fetters is a Catherine Worthingham Fellow of the APTA, the highest honor the association bestows upon its members. She has taught and given scientific presentations throughout the United States and Sweden, the Netherlands, Tanzania, Taiwan, Japan and Brazil. She was recently named a Fulbright Scholar to Australia for 2015-2016.

MEMBER HOT TOPIC:
STIMULATING CONTROVERSY, STIMULATING THE BRAIN: NON-INVASIVE BRAIN STIMULATION AS A POTENTIALLY DISRUPTIVE CHANGE AGENT

Bernadette Gillick, PT, MSPT, PhD
Dr. Bernadette Gillick is an Assistant Professor at the University of Minnesota, School of Medicine, Department of PM&R, Program in Physical Therapy. Her research surrounds cortical plasticity and recovery from neurologic insult in pediatric populations. Her research encompasses applications of non-invasive brain stimulation, neuroimaging and rehabilitation for improved motor function.

Kathleen Friel, PhD
Assistant Professor, Department of Neurology & Neuroscience, Weill Cornell Medical College, New York, NY. Director, Clinical Laboratory for Early Brain Injury Recovery, Burke-Cornell Medical Research Institute, White Plains, NY. Director, Cerebral Palsy Research, Blythedale Children’s Hospital, Valhalla, NY.

Dr. Kathleen Friel’s research aims to improve hand function in children with cerebral palsy (CP) by understanding the neural underpinnings of motor dysfunction. Her research focuses on the importance of motor activity in neurorehabilitation. Her laboratory uses non-invasive brain stimulation to study motor circuits that are important for rehabilitation.

CHAMBERS FAMILY LIFESPAN LECTURE:
FIT FOR LIFE

Jan Willem Gorter, MD, PhD, FRCP(C)
Jan Willem Gorter, MD, PhD, FRCP(C) is a Professor of Pediatrics at McMaster University. He is Director of CanChild Centre for Childhood Disability Research (www.canchild.ca). He holds the Scotiabank Chair in Child Health Research.

Dr. Gorter has training in pediatric and adult rehabilitation medicine (physiatry) with a special clinical and research interest in transitional services and lifespan. He leads a teen-transition clinic for teenagers with cerebral palsy / developmental disabilities and their families at McMaster Children’s Hospital.

His research focuses on the themes of family, function (daily activities & participation) with a special interest in fitness / active lifestyle and in transitions from adolescence to adulthood.

He works with a number of undergraduate and graduate students at several universities in Canada and the Netherlands. He is author/co-author of > 125 papers published in international peer-reviewed journals and book chapters on cerebral palsy, transition to adulthood, and sexual development & health.

CEREBRAL PALSY FOUNDATION LECTURE:
THE SCIENCE OF MAKING FRIENDS FOR ADOLESCENTS AND YOUNG ADULTS WITH SPECIAL NEEDS: THE UCLA PEERS PROGRAM

Elizabeth Laugeson, Psy.D.
Dr. Elizabeth Laugeson is an Assistant Clinical Professor in the Department of Psychiatry at the UCLA Semel Institute and is a licensed clinical psychologist. Dr. Laugeson is the Founder and Director of the UCLA PEERS Clinic, which is an outpatient hospital-based program providing parent-assisted social skills training for individuals with social impairments from preschool to adulthood. She is also the Training Director for the UCLA Tarjan Center for Excellence in Developmental Disabilities (UCEDD) and Director of The Help Group – UCLA Autism Research Alliance, which is a collaborative research initiative dedicated to developing and expanding applied clinical research in the treatment of children and adolescents with autism spectrum disorder. Having trained thousands of mental health professionals, educators, and families in the PEERS method, Dr. Laugeson is dedicated to developing and testing evidence-based treatments to improve social skills across the lifespan, and disseminating these empirically supported programs across the globe.
PRESIDENTIAL GUEST LECTURE: CANNABINOID BIOLOGY AND MARIJUANA POLICY
Sharon Levy, MD, MPH
Sharon Levy, MD, MPH is a board certified Developmental-Behavioral Pediatrician and an Assistant Professor of Pediatrics at Harvard Medical School. She is the Director of the Adolescent Substance Abuse Program (ASAP) in the Division of Developmental Medicine at Boston Children’s Hospital, which is comprised of clinical, research, training and policy arms. She has evaluated and treated over thousands adolescents with substance use disorders, and has taught national curricula and published extensively on the outpatient management of substance use disorders in adolescents, including screening and brief advice in primary care, the use of drug testing and the outpatient management of opioid dependent adolescents. She is the co-PI of a SAMHSA-funded curriculum project, an NIAAA-funded study validating the youth alcohol screening tool youth with chronic medial illness, and a Conrad N. Hilton funded study that aims to validate adolescent SBIRT measures and test a brief intervention for medically vulnerable youth.

Alan Shackelford, MD
Alan Shackelford, MD is a graduate of the University of Heidelberg School of Medicine and completed postgraduate medical training at major teaching hospitals of the Harvard Medical School, including a residency in internal medicine and clinical and research Fellowships in nutritional and behavioral medicine. He has accumulated a considerable amount of clinical experience on the medical uses of cannabis since 2009 and advised several state and foreign governments on medical cannabis legislation and regulatory structures. Dr. Shackelford has also served on several state and local governmental advisory boards in Colorado dealing with cannabis regulation.

Dr. Shackelford is the founder and principle physician of Amarimed of Colorado, a medical practice devoted to evaluating and following patients for whom cannabis is a medical treatment option.

MAC KEITH PRESS BASIC SCIENCE LECTURE: UPDATE ON MOLECULAR THERAPY FOR PEDIATRIC NEUROMUSCULAR DISEASE
Jerry Mendell, MD
Jerry R. Mendell, MD, is an attending neurologist at Nationwide Children’s, Director of the Center for Gene Therapy at The Research Institute of Nationwide Children’s, Director of the Paul D. Wellstone Muscular Dystrophy Cooperative Research Center, Co-director of the Muscular Dystrophy Association Clinic, and Professor of Pediatrics, Neurology, Pathology, and Physiology and Cell Biology at The Ohio State University College of Medicine. Dr. Mendell was among the first to test muscle cell transplantation for Duchenne muscular dystrophy in the early 1990’s and the first person to study viral mediated gene therapy for muscular dystrophy in humans. Dr. Mendell was awarded the S. Mouchly Small Scientific Achievement Award, Distinguished Scholar Award and is named among the “Best Doctors in America.”

PRESIDENTIAL GUEST LECTURE: BRAIN PLASTICITY AND CEREBRAL PALSY
Michael M. Merzenich, Ph.D., professor emeritus, UCSF
Merzenich is the emeritus Francis A. Sooy Professor and Coleman Laboratory Director in Neuroscience at UCSF. He led a team that created what has become one of the major commercial forms of cochlear implants, and his research group has conducted extensive research on brain system organization and function, with a key focus on infant and adult brain plasticity. His research team has modeled brain changes contributing to the expressions of a long series of clinical indications including CP. With UCSF’s permission, he co-founded two companies (Scientific Learning; Posit Science) dedicated to producing and distributing brain plasticity-based training programs designed to help neurologically and psychiatrically impaired child and adult populations. His teams’ research efforts have been acknowledged by their being awarded more than 50 US patents, and by numerous honors and awards.
Cathleen Lyle Murray Award
The Cathleen Lyle Murray Foundation award recipient is selected on the basis of their impact on society through their humanitarian efforts to enhance the lives of persons with severe multiple disabilities. The award recipient demonstrates an effective and unique humanitarian approach through advocacy, legislation, clinical services, life experiences, etc., that can be shared with the AACPDM to help promote better understanding of and advancement in society of persons with disabilities.

2015 Winner: Zach Anner

WORKING WITH WHAT YOU’VE GOT
Zach Anner is an award-winning comedian, show host, author and public speaker. In 2011, he won his own travel show on the Oprah Winfrey Network, “Rollin’ With Zach”. He also hosted the web series “Have A Little Faith” for Rainn Wilson’s media company SoulPancake and “Riding Shotgun” and “Workout Wednesdays” on his YouTube channel which has over 8 million hits. His comedic memoir, If at Birth You Don’t Succeed will be published by Henry Holt and released in early March of 2016. Zach lives in Buffalo, NY and Austin, TX, and spends most of his spare time in his underwear, thinking about how he can change the world.

Making a Difference Award
The AACPDM Making a Difference Award is periodically given to individuals identified as making a substantial impact in the community.

2015 Winner: Paul Gross

Paul Gross is a driving force in accelerating clinical and translational research in neuroscience for cerebral palsy and hydrocephalus. He is leading the charge in the development of the Cerebral Palsy Clinical Research Network – a twenty center effort in North America to conduct high quality clinical research for CP. He is the past chair of the Hydrocephalus Association, the co-founder of the Hydrocephalus Clinical Research Network (hcrn.org). He recently completed his term as an advisor to the National Institute of Neurological Disorders and Stroke. Prior to ramping up his focus on advancing medical research, he was CEO of a web startup, a Senior Vice President with the Microsoft Corporation and with Borland International. In his personal life, he is married and the father of two children, one of whom has hydrocephalus and cerebral palsy. He is also an avid Ultimate Frisbee player and mountain biker.

Lifetime Achievement Award
This 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.

2015 Winner: William Oppenheim, MD

William L. Oppenheim, MD was born in Bangor, Maine, grew up in the Washington, DC area attending the University of Maryland and then Georgetown Medical School, graduating magna cum laude. After interning at the San Francisco General Hospital, he served in the USAF in San Antonio, Texas and at the Pentagon in Washington, DC. His residency in Orthopaedics was at the University of Washington, and included a year as the Girdlestone Fellow in Oxford, England. After a Fellowship in Pediatric Orthopaedics at the Los Angeles Orthopaedic Hospital, he joined UCLA where he helped found the Orthopaedic Hospital / UCLA Center for Cerebral Palsy which now includes two endowed Chairs, a Research Fund, and a Gait Laboratory. He is currently Emeritus Chief of Pediatric Orthopaedics, Director of the Center for Cerebral Palsy, and the Margaret Holden Jones Kanaar Professor of Cerebral Palsy. In 2006 he served as President of the AACPDM.

Duncan Wyeth Award
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.

2015 Winner: Wendy Fryke

Wendy Fryke is a horse woman, a wife, and a mother of two amazing daughters. She also has spastic hemiplegia. A lifelong love of horses led her to riding in her late 30’s. She has ridden in varying disciplines such as hunter jumper, 3 day eventing, dressage and most notably Para-dressage. She represented the USA in international competition at the World Equestrian Games in Kentucky in 2010. Currently she is training her new prospect FS Cabana Boy, a 6 year old German riding pony. She runs a small breeding farm in Elizabeth, CO and is completing her first program to become a recognized dressage judge.
**Gayle G. Arnold Award for Best Free Paper**

The 2015 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.

*2015 Winner: Alicia Spittle, PhD*

**Corbett Ryan Pathways Pioneer Award**

The recipient of the award will represent excellence in the pursuit of and quality of life who also happens to live with a personal physical challenge. The recipient will have the following:

- Motivation and achievement in pursuing and accomplishing personal and vocational/professional goals
- A creative approach to their pursuit of education and participation in their vocation/profession
- A positive approach to life. The recipient serves as a role model to persons in their sphere of influence and demonstrates sensitivity to others and respect for self.

*2015 Winner: Andrew McAleavey*

**Fred P. Sage Award**

The Sage Award is given to the best audio/visual submission presenting clinical, research, or educational material on CD-ROM, DVD or in a digital format. The award is named after Fred 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 Fred P. Sage Award for the best program submitted each year.

*2015 Winner: Veronica Schiariti, MD MHSc PhD*

**Mentorship Award**

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.

*2015 Winner: Kerr Graham, MD*

**Mac Keith Press Promising Career Award**

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 on site and awarded after the Annual Meeting.

*2015 Winner: To Be Announced*

**Best Scientific Poster Award**

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

*2015 Winner: To Be Announced*

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**Family Forum:**

**Saturday, October 24th**

12:45 – 3:45 pm

**Lone Star ABC**

**Program Agenda:**

- **Adapted Sports & Recreation Activities**
  - Speakers: Jennifer Miro, MPT; Carolina Schaber, RN, BSN, MBA

- **Medical Marijuana Treatments**
  - Speaker: Sharon Levy, MD, MPH

- **Pain Management**
  - Speaker: Kevin Murphy, MD

- **Transitions in Care**
  - Speaker: Jan Willem Gorter, MD PhD FRCP(C)

- **New Technology**
  - Speaker: Richard Ellenson, Cerebral Palsy Foundation CEO

- **Parents as Navigators**
  - Speakers: Karen R. Fratantoni, MD, MPH; Cara Biddle, MD, MPH; Michelle Jiggetts, MD
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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.

2015 International Scholarship Winners
Atilola O. Adebambo, MSc
Nelci A. Cicuto Ferreira Rocha, PhD
Bulent Elbasan, PhD
Lin Feng, PhD, MD
Jayathri S. Jagoda, MD
Angelina Kakooza M, MD
Maria Jose Martinez Caceres, Jr., PhD
Shruti Jagdish More, OT
Ahmed A. Omran, MD
Teerada Ploypetch, MD
Prakash Poudel, MD
Monika Sharma, MD
Susan L. Taylor, BSc

2015 Student Scholarship Winners
Joice Luiza Arnoni, MD
Ermann B. Baque, BPhy (Hons)
Katherine A. Benfer, BSpPath, MPH
Samantha J. D’Souza, HBSc.
Sophie-Krystale Dufour, PT
Vivek Dutt, MD
Briar B. Findlay
Tamara Germani, OT
Tugba Gokbel
Kent R. Heberer, MS
Sarah T. James, B0cc Thy (Honours)
Piyapa Keawutan, PT, MSc.
Hsing-Ching Cherie Kuo
Elizabeth Martin, MD, MPH
Patrick G. McPhee
Elaine Meehan, BSc (Hons)
Lucia F. Mourao, PhD
Stina Oftedal, B Hlth Sc (Nut&Diet)
Tonya Rich, MA, OTR/L
Veronica Schiariti, MD, MHS,PhD
Bhavini K. Surana, PT
Shelun Tsai

2015 Orthopediatrics Travel Scholarship Winners
Vivek Dutt, MD
Ratna Ashok Johari, MD
Karma Lhaki, PT
Belinda McLean, BSc OT (Hons)
Mohammed Sadiq, Sr., MBBS, MS
Heather A. Souders, DO

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Helping Kids lead healthier, happier lives®
Pre-Conference Sessions  
Wednesday, October 21

8:00 AM – 5:00 PM

Neuromuscular Ultrasound: Hands On Ultrasound Training Course for Chemodenervation Procedures (Full day course)

Location: Brazos

Presenters: Katharine E. Alter, MD; Steffan Berweck, MD; Bradley Fullerton, MD; Florian Heinen, MD; Sebastian Schroeder, MD

Target Audience: Physicians, nurse practitioners, therapists

Course Summary: This full day course includes 100 minutes of didactic lectures including the following: advantages and limits of guidance techniques used for chemodenervation procedures, the principles/physics of ultrasound (US), US scanning techniques/tips, sonoacoustic properties of relevant tissues and clinical applications of US imaging in pain conditions in patients with cerebral palsy. The remainder of the course is comprised of hands on ultrasound training. Head and neck, upper limb and lower limb muscles and nerves will be reviewed. Procedural guidance training using phantoms or other models will also be included.

Learning Objectives:
At the end of the Pre-Conference Session, participants will be able to discuss:
1. Discuss the limits and advantages of EMG, E-Stim, palpation and US guidance for chemodenervation procedures
2. Discuss the sonoacoustic appearance of muscles, nerves, vessels and tendons in transverse and longitudinal plane
3. Identify key muscles in the neck, upper and lower limbs
4. Identify the parotid and submandibular gland
5. Identify the limits and benefits of in-plane and out of plane injection techniques

8:00 AM – 12:00 PM

New Frontiers – The Role of Motion Analysis in “Other” Neuromuscular Disabilities (Hosted by GCMAS)

Location: Lone Star GH

Presenters: Sylvia Öunpuu, MSc; Kristan Pierz, MD; Haluk Altıok, MD; Joseph Krzak, PhD, PT, PCS; Kirsten Tulchin, PhD; Susan Sienko, PhD; Michael Sussman, MD; Kent Heberer, PhD

Purpose: The purpose of this course is to highlight the role of motion analysis in understanding complex gait disorders other than cerebral palsy. Gait pathologies that will be discussed through the lens of motion analysis will include: Charcot-Marie-Tooth, myelomeningocele, familial spastic paraplegia and Duchene’s muscular dystrophy. The role of motion analysis in these populations in both the standard of care for treatment decision-making as well as knowledge gained through research that both incorporate motion analysis techniques will be discussed. Case examples will be provided that illustrate knowledge gained, treatment decisions made and treatment outcomes evaluated using gait analysis data.

Course Summary: This course will provide a detailed review of how comprehensive motion analysis techniques has changed our understanding of the pathomechanics of gait and treatment outcomes in children with neuromuscular disorders other than cerebral palsy.

Target Audience: Clinicians who evaluate and provide treatment for ambulatory children and youth with cerebral palsy and other movement disorders will benefit from this symposium. Prior experience analyzing and interpreting motion analysis data is beneficial, but not required.

Learning Objectives:
At the end of the symposium participants will be able to:
1. Appreciate the limitations of a visual assessment in comparison to comprehensive gait analysis in understanding gait pathology
2. Describe the typical gait patterns characteristic of a variety of neuromuscular disorders
3. Understand the gait indications for specific treatment options
4. Identify “new frontiers” in motion analysis and how these may influence understanding and treatment of neuromuscular disorders
**PC 1: STARTING EARLY: EARLY INTERVENTION CONCEPTS, STRATEGIES AND DELIVERY OF THERAPY FOR INFANTS IN THE FIRST TWO YEARS**

**Location:** Lone Star GH  
**Presenters:** Melissa Tally, PT, MPT, ATP; Julie Linebach, OTR/L; Elizabeth Willing-Kroner, MA, CCC-SLP  
**Target Audience:** Therapists, Nurses, Physicians, Parents  
**Course Summary:** With the use of General Motor Assessment, we not only have the tools to identify infants at high risk for CP within the first months of life, but the opportunity to initiate interventions that may have lifelong benefits. This course will present tools, strategies and expected outcomes that support a multidisciplinary “first program” for infants and parents, which targets functional motor learning, is goal-driven and relies on enriching the infant’s environment for maximum outcomes. This model addresses all areas of development, as well as the important role and influence of the parent. This presentation will engage learners in discussion, case examples and video of three critical aspects of the early intervention paradigm. 1) Engaging parents in goal-setting and identifying high value interventions that can become part of the home routine is described as an effective means of increasing therapy intensity. Emphasis is placed on those interventions that support healthy bonding, parent-child communication and parent confidence. 2) Child-centered therapy strategies will be shared that are guided by solid tenets of early learning and development. Emphasis will be on environmental enrichment, early motor learning, exploratory play and mastery, as well as early communication and feeding...all supported by novel interventions, assistive technology, 24-hour positioning, environmental adaptations and tools such as the TIMP and DAYC-2. 3) A multidisciplinary small group delivery model involving occupational, physical and speech therapists, as well as social workers, will be presented as an effective means of developing a holistic plan of care and promoting parent-to-parent support. In addition, several pieces of commercial products, adaptive equipment and assistive technology currently available to support the enriched environment will be available for demonstration.

**Objectives:**

At the end of the Pre-Conference Session, participants will be able to discuss:

1. New evidence supporting early intervention for the high risk infant for CP from birth to two years and the potential to maximize outcomes.
2. How to engage parents in goal setting and high value interventions developed around daily routines to foster parent confidence and parent-child relationships
3. The importance of Child-centered therapy within an enriched environment focuses on early motor learning, exploratory play and mastery
4. Current commercial products, adaptive equipment and assistive technology available to support an enriched environment

**PC 2: THE INTERFACE BETWEEN PHYSICAL AND MENTAL HEALTH: MEETING THE NEEDS OF ADULTS WITH INTELLECTUAL/DEVELOPMENTAL DISABILITY**

**Location:** 203  
**Presenters:** Wilma Van Der Slot, PhD, MD; Patricia Cloppert, BSFS; Garey Noritz, MD; Diane Treadwell-Deering, MD  
**Target Audience:** Clinicians who work with adolescents and adults with Intellectual/Developmental Disabilities  
**Course Summary:** At least 40% of Adults with I/DD experience a period of disturbed behavior. Causes of severe, challenging behaviors include adaptive dysfunction, medication side effects, organic causes, and psychiatric disorders. The first three must be systematically examined before aberrant behavior can be ascribed to a psychiatric disorder. Since Adults with I/DD commonly have complex medical problems, difficulties with communication, and polypharmacy, this is a difficult task. This course will examine the medical and psychiatric approaches to the care of adults with I/DD, and the often blurry lines between them. A family member will also present on specific challenges of navigating the medical and psychiatric systems.

**Objectives:**

At the end of the Pre-Conference Session, participants will be able to:

1. Construct a framework for the medical evaluation of adults with I/DD who present with a change in behavior
2. Demonstrate skill in psychiatric intervention for adults with I/DD
3. Integrate the family perspective in the treatment of adults with I/DD and difficult behaviors

**PC 3: ORTHOPEDIC MANAGEMENT OF THE UPPER EXTREMITY**

**Location:** 201 & 202  
**Presenters:** Benjamin Shore, MD; Carley Vuillermin, MBBS; Andrea Bauer, MD; Jon Davids, MD; Freeman Miller, MD; Anne Van Heest, MD; Allan Peliovich, MD; Doug Hutchinson, MD; Michelle James, MD; Loren Davidson, MD; Laura Peace, OTR; Lisa Wagner, OTR  
**Target Audience:** Pediatric Orthopedic Surgeons, Physiatrists, Occupational and Physical therapists  
**Course Summary:** This pre-course will be a moderated case-based discussion with experts addressing patient selection and preoperative assessment, intra-operative decision making and surgical techniques, as well as postoperative care and rehabilitation including assessment of functional change.

Panel discussions will be led by a moderator including short presentations by experts on key techniques and practice tips.

- Evaluation of the Upper Extremity in CP - How do I know what to do?
- Principles of tone management in CP upper extremity
- Outcome assessment - How do I know if I made a difference?
- Surgical Techniques and Alternatives
  - Shoulder/Elbow
  - Forearm/Wrist
  - Fingers/Thumb
- Postoperative Rehabilitation
Objectives:
After the completion of this course, the attendee will be able to:
1. Identify patients with Cerebral Palsy that may benefit from upper extremity surgery and discuss preoperative assessment and planning.
2. Discuss the surgical details of reconstruction of the upper extremity from shoulder to fingertip.
3. Discuss the outcome measurement tools that can be used for the assessment and quantification of functional change and discuss the postoperative occupational and physical therapy and rehabilitative goals.

Welcome Reception • 6:30 PM – 8:30 PM
Connect with AACPDM meeting attendees at the AACPDM’s evening reception, allowing you to experience the Palmer Events Center to kickoff the AACPDM 69th Annual Meeting. Transportation will be provided from the JW Marriott starting at 6:15 pm at the 2nd Street entrance.
BRK 1: ESSENTIAL INGREDIENTS OF LIFE-SKILLS PROGRAMS AIMING TO ENHANCE TRANSITIONS TO ADULTHOOD FOR YOUTH WITH DISABILITIES

Location: 212
Amy McPherson, PhD; Jan Willem Gorter, PhD, FRCPC, MD; Kimberlea Jones-Galley, MEd

Purpose
This breakfast seminar will provide direction for those designing and/or evaluating life-skills programs for youth with disabilities.

Target Audience
Clinicians and researchers in pediatric rehabilitation who have an interest in designing life-skills programs for young people with disabilities.

Course Summary
Youth with disabilities often experience challenges engaging in traditional roles of young adulthood, such as employment, schooling, independent living, and establishing meaningful personal relationships. One important reason is a documented lack of life-skills among these youth. Life-skills are adaptive behaviors enabling individuals to deal effectively with the demands of everyday life, and include problem-solving, goal-setting, communication skills, awareness, self-awareness, and stress management. Many programs have been designed to assist youth with disabilities to develop life-skills, often harnessing real-world learning within a group environment. These programs typically include a formalized curriculum and a combination of structured group education sessions, one-to-one support, informal and formal peer mentorship, role-playing, coaching, and/or experiential learning opportunities. The capacity development, environmental opportunities, resources and supports provided by these programs are seen as critical to the development of self-determination, which is associated with better life outcomes for youth with disabilities. These programs appear to have the power to create personal change and empowerment, thereby launching youth in new life directions. More attention is now being devoted to understanding the key features required in life-skills programs to provide the best outcomes. This seminar will provide guidance on the development of life-skills programs, such as the format features, program content and service provider skills required for optimal delivery. We will also address how to create opportunities for the different types of learning and experiences that are critical to skill development and generalization. The seminar material is underpinned by a program of mixed-method research, carried out over the past 4 years across multiple sites by the presenters and a multi-disciplinary team, including strong clinician involvement. We have conducted extensive in-depth interviews with service providers, youth and parents to identify the key features that contribute to transformative learning experiences for all stakeholders. In addition, quantitative measures and surveys have evaluated objective and subjective life-outcomes for those taking part in life-skills programs. We have also developed reliable and valid measures to support both staff training and evaluation.

From these data, key replicable processes and service provider strategies related to program impacts will be discussed in the seminar. The presenters represent both scientists and clinicians, ensuring that this breakfast seminar is both clinically useful and scientifically robust.

Learning Objectives
1. Understand the importance of promoting life-skills within transition planning for youth with disabilities
2. Identify key ‘active ingredients’ of life-skills programs for youth with disabilities
3. Understand the higher-order cognitive skills that life-skills programs can foster in young people
4. Discuss the relevance to participants’ own clinical practice, implications for ongoing research, and potential collaborative work to advance our understanding

BRK 2: SEDENTARY BEHAVIOR VERSUS PHYSICAL INACTIVITY IN CEREBRAL PALSY: WHAT ARE THE IMPLICATIONS FOR CHRONIC DISEASE RISK?

Location: 208
Mark D. Peterson, PhD, M.S.; Edward A. Hurvitz, MD

Purpose
This session will discuss the fundamental differences in defining sedentary behavior and physical inactivity among individuals with cerebral palsy (CP), and will specifically highlight findings from two of our new studies that delineate the extent to which these factors contribute to increased chronic diseases in this population.

Target Audience
Physicians, Therapists, Nurses, Program Coordinators, Investigators, Exercise Physiologists

Course Summary
Along with the hallmark motor impairments among children and adults with CP, the pronounced sedentary behavior that occurs has prompted a comparison model of health risk to spinal cord injury. Evidence indicates that movement proficiency among children with CP is inversely associated with sedentary behavior and positively linked to habitual physical activity. This suggests that preserving functional capacity is critical to ensure sustainable participation among individuals with motor-disabilities, and that medical rehabilitation should focus on both function and novel interventions to reduce inactivity. However, the operational definitions of sedentary behavior and physical inactivity are largely misunderstood, as are the implications of each as predictors of early and latent chronic disease risk in CP. Although decrements in muscle mass and strength are typically considered the primary contributing factors of gross motor decline in this population, it is conceivable that these changes are actually the direct consequence of years spent accumulating extremely sedentary lifestyles and insufficient participation in moderate-to-vigorous physical activity (MVPA). The associated outcomes of functional deficit and chronic sedentary behavior may also serve as contributing risk factors for other chronic disease processes (e.g. obesity, diabetes, cardiovascular disease, asthma, etc.). We have recently completed two separate studies which represent substantial additions to the current body of literature pertaining to characterizing (1) the age- and sex-specific patterns of sedentary behaviors and physical activity across GMFCS levels, and (2) the prevalence of chronic diseases among a large population-representative sample of individuals with CP.
Learning Objectives
1. Understand fundamental differences between currently accepted definitions of “sedentary behavior” and “physical inactivity,” as well as the challenges in applying these to the care and study of individuals with CP
2. Describe findings from a new meta-analysis that characterizes the age- and sex-specific patterns of sedentary behaviors and physical activity across GMFCS levels
3. Delineate new findings pertaining to the increased prevalence of chronic diseases in CP, such as diabetes, asthma, hypertension, cardiovascular disease, stroke, and arthritis
4. Understand the dose-response relationship between level of gross motor dysfunction, volume of activity participation, and time spent in sedentary behavior

Target Audience
Physicians, mid-level practitioners, physical therapists, orthotists, kinesiologists and others interested in understanding how gait analysis can improve treatment decision-making for a progressive disorder with multiple clinical presentations

Course Summary
Because CMT represents a spectrum of neurological dysfunction and the condition has a progressive nature, there is no single treatment that can be applied to all patients. Despite this variability, individuals with CMT frequently present with foot and ankle problems such as pain, weakness, deformity, and difficulty with shoe wear. Treatment (observation, therapy, orthotics, or surgery) must be tailored to an individual’s complaints, distribution of muscular weakness, flexibility of the foot deformity, and current as well as future demands.

Gait analysis is a useful tool for documenting and analyzing gait pathology and has allowed for the identification of three characteristic presentations in CMT: flail foot, cavovarus foot, and toe walking. Treatment decision-making can be improved if we understand the presenting gait patterns and apply appropriate treatment for specific functional goals. This course will provide participants with information necessary to identify gait patterns and critically evaluate treatment options.

Learning Objectives
1. Upon completion, participant will be able to explain the difficulty of treating a progressive condition with variable presentation
2. Upon completion, participant will be able to describe the three characteristic foot and ankle disorders seen in patients with CMT
3. Upon completion, participant will be able to explain how gait analysis can help guide treatment decision-making
4. Upon completion, participant will be able to describe operative and non-operative treatments for foot disorders in patients with CMT

BRK 5: FIDELITY MEASURES FOR INTERVENTION INTEGRITY: AN INNOVATIVE APPROACH TO TRAINING

Location: 213
Stephanie DeLuca, PhD; Amy Darragh, PhD, OTR/L; Sharon Ramey, PhD

Purpose
Fidelity refers to the accuracy with which a therapeutic intervention adheres to its underlying theoretical constructs and treatment principles. A fidelity measure assesses the essential components of an intervention to determine the integrity with which that intervention is delivered. Individuals who consistently provide specified and defined treatments with high fidelity are critical for the successful implementation of most treatment protocols. However, the use of fidelity measures as a tool for training therapists in new or complex techniques is not well documented. The proposed presentation will describe a fidelity measure and training process developed for use in a multi-site clinical trial, specifically designed to enhance treatment fidelity for a manualized therapeutic approach. The objective of this seminar is to improve the fidelity of therapeutic intervention by 1) educating clinicians and scientists about this innovative methodology and 2) facilitating discussion of fidelity as recommended practice for improving quality and consistent delivery of highly specific and complex interventions.
Target Audience
Research scientists, clinicians, therapists, including physicians, psychologists, occupational therapists, physical therapists, speech language pathologists, scientists

Course Summary
The Fidelity Training Program is a multi-step process, integrated into the training and quality assurance program for an NIH-funded multi-site randomized controlled trial. This training program is based on the premise that fidelity of all intervention protocols must be assessed when highly specified treatments are taught to new therapists, as well as previously trained therapists, in order to ensure consistency and maximize treatment efficacy. The proposed presentation will describe the 20-item fidelity measure that identifies and assesses specific components key to implementation of our targeted study intervention. The following procedures will be presented, followed by discussion and question & answer. Using the measure, multiple therapy sessions are videotaped and scored by a supervisory team. For training purposes and fidelity improvement, therapists who are providing treatment self-identify two treatment sessions, one they feel demonstrates high fidelity to treatment components and one that demonstrates less adherence to treatment components. Therapists then score these sessions using the fidelity measure. A supervisory team reviews their choices and also scores the sessions. The supervisory team meets with the therapists to compare and discuss any differences between fidelity scores. Finally, therapists and supervisors meet as an entire team to review selected treatment sessions, identify strengths and discuss areas for improvement. Participants will learn about this process and participate in a discussion of the benefits and challenges of this approach in both research and clinical settings. From a scientific perspective, this approach ensures intervention integrity, hence increases the internal validity of the study and confidence in study results. From a quality assurance perspective, this approach increases the ability of the rehabilitation community to consistently conform to evidence-based practice.

Learning Objectives
1. Articulate the contribution of fidelity assessment to intervention integrity
2. Define the essential elements of fidelity measures
3. Apply principles of fidelity to therapist training approaches
4. Discuss benefits and challenges to fidelity measure development and implementation as a training methodology

BRK 6: RELATIONSHIPS AND SEXUALITY: IMPORTANT TRANSITION ISSUES TO ADDRESS IN HELPING YOUTH WITH PHYSICAL OR DEVELOPMENTAL DISABILITIES TO IMPROVE QUALITY OF LIFE

Location: 204
Susan C. Labhard, MS

Purpose
Relationships and sexuality are an important part of the transition to adulthood for youth with developmental and physical disabilities. This topic, often overlooked or deferred by parents as well as pediatric and adult health professionals will be explored so that participants will be able to provide appropriate diagnosis-related teaching in a creative, practical and professional manner. Providers, clinicians and therapists will learn that dealing with the sexual consequences of disabilities may not be a barrier to personal fulfillment.

Target Audience
Clinicians, therapists, care providers, and educators of all disciplines.

Course Summary
Care providers are in unique positions to offer appropriate information on relationships and sexuality, for youth/young adults with developmental or physical disabilities. Initiating this conversation is essential for youth in transition, to develop a satisfactory type of relationship to improve social success and quality of life. To improve knowledge of the importance of relationships and sexuality for youth with child-onset disabilities, evidence-based and diagnosis-based teaching solutions will be provided using a variety of media. Participants will learn how to approach this subject with creativity, efficiency and confidence! “Healthy Relationships and Sexuality References and Resources” list will be provided for future use. Q & A is encouraged through scenarios and clinical problem solving situations.

Learning Objectives
1. To elevate understanding of the importance of friends, relationships and sexuality for individuals with disabilities, in helping youth to attain a satisfactory quality of life--throughout the life-span
2. Apply evidence-based practice guidelines for teaching youth with disabilities about the importance of social success in developing healthy relationships and sexuality
3. Learn how to apply useful references and resources for teaching an individual with a disability about relationships and sexuality related to their diagnosis
4. List innovative methods for clinicians, teachers, and care providers to provide information on relationships and sexuality to youth and young adults in a variety of settings

BRK 7: SADDLING UP FOR EPISODIC CARE – A 2015 UPDATE

Location: 205
Amber Lowe, OTR/L; Karen Harpster, BA, PhD, OT; Jennifer Schmit, PhD, DPT; Amy Wenz, OTD

Purpose
To describe the updates implemented to an episodic care therapeutic delivery model following the previously delivered course “To Boldly Give it a Try.” Updates will include exploration of measures of value of this model including reported family experience and therapist perspectives. A new, evidence-based goal setting process will also be discussed.

Target Audience
Physicians, Therapists, Nurses

Course Summary
A brief introduction to the episodic care model will be presented for those who did not attend the 2014 course, including discussion of historical models of care and the impetus for change. In this seminar, speakers will share an update of their experience with episodic care applications in outpatient pediatric therapies. Content will focus on determining the value of the model including costs, rates of goal attainment, and qualitative data describing the patient/ family and provider experiences. Speakers will also present a family-centered goal setting process they have developed during their experience with episodic care.
Learning Objectives
1. Understand outcomes, experience, and values associated with an episodic care model of therapy service delivery
2. List components of the value of the episodic care model
3. Describe a new, evidence-based goal setting process
4. Identify potential barriers to implementation of this model of care and develop solutions to support transition to episodic care when appropriate

BRK 8: DYSPHAGIA AND NUTRITIONAL ISSUES IN NEURODEVELOPMENTAL DISORDERS - CHALLENGES AND DILEMMAS

Location: 203
Helen M. Somerville, MBBS

Purpose
To present case studies, clinical data, management challenges in children and adults with dysphagia and nutritional issues associated with cerebral palsy and other developmental disorders. Evidence-informed clinical practice guidelines for nutritional rehabilitation will be discussed. Challenges and dilemmas associated with transition from paediatric to adult health care and the impact on families and carers will be highlighted. Troubleshooting of common problems related to enteral medical devices and medication administration will also be addressed.

Target Audience
Medical, nursing and allied health practitioners and social workers, psychologists and individuals with neurodevelopmental disorders and carers.

Course Summary
Swallowing difficulty (dysphagia) and undernutrition are frequently associated with a range of neuromuscular and other neurological impairments (including cerebral palsy). Dysphagia may result in or adversely affect a number of additional health conditions, including severe gastrointestinal disorders, chronic lung disease, osteopenia/porosis and epilepsy, contributing to chronic ill health, reduced participation, compromised quality of life and ultimately shortened lifespan. The impact on the individual as well as the family and carers, is very significant. There are sometimes “behavioural” aspects of feeding difficulty, further complicating the clinical picture. Troubleshooting of common problems related to enteral medical devices and to medication administration and some challenges and dilemmas will be addressed. Model management plans will be presented. End of life issues will also be discussed.

Learning Objectives
1. Define some of the challenges and dilemmas faced by people experiencing dysphagia and other feeding challenges and how to assist in their solution
2. Understand the value of multidisciplinary clinical assessment and pros and cons of certain investigations, for example endoscopy
3. Appreciate the impact upon families and carers of complex health issues sometimes associated with feeding difficulties
4. Troubleshoot problems associated with enteral medical devices and medication administration

BRK 9: THEORY AND IMPLEMENTATION OF THE AQUATIC EVALUATION: WATER ORIENTATION TEST ALYN 1 & 2 (WOTA 1 & 2)

Location: 209
Ruth Tirosh, MSc

Purpose
The aim of this course is to present the Water Orientation Test Alyn (WOTA) and to demonstrate how it can be used to set treatment goals. The WOTA 1 & 2 are reliable and valid assessment tools for assessing mental adjustment and function in the aquatic environment.

Target Audience
Professionals who use the aquatic environment for treating patients. For example: physical therapists, occupational therapists, aquatic therapists, recreational therapists, speech therapists, swimming instructors etc.

Course Summary
Water Orientation Test Alyn (WOTA) 1 and 2 evaluate the patient’s mental adjustment and function in the aquatic environment. WOTA 1 & 2 were developed based on the principles of the Halliwick Concept, one of the leading approaches to aquatic therapy specifically in neurology and pediatrics. The tests were found to be valid and reliable and show that both are appropriate tools to track change over time. The WOTA has been used in evidence based studies and aquatic therapy worldwide for over 10 years. The tools have been translated into 10 languages. The tests enable the therapist to evaluate the patient’s mental adjustment to the water and to receive information on all domains of the International Classification of Functioning, Disability and Health (ICF). These include body function and structure as well as activity and participation levels in the aquatic environment. From this information, the therapist can set relevant goals for each patient.

Learning Objectives
1. Explain the importance of an assessment tool relevant to the aquatic environment
2. Use the WOTA (1 & 2) for assessment in the aquatic environment
3. Describe the relationship between aquatic and land-based activities
4. Set functional goals in the aquatic environment based on the WOTA evaluation form and land-based goals
8:15 AM – 10:15 AM General Session (Lone Star DE)
Welcome and Exchange of Gavel
Chambers Family Lifespan Lecture
FIT FOR LIFE
Jan Willem Gorlin, MD, PhD, FRCPC(c)
Presidential Guest Lecture
BRAIN PLASTICITY AND CP
Michael Merzenich, PhD

10:15 AM – 10:45 AM Coffee Break - Poster and Exhibits
(Griffin Hall)
Expanded breaks throughout the AM and PM sessions will give you a chance to visit the exhibits and posters. Plan to meet a friend during one of these times and just catch up!

10:45am – 12:45 PM Free Papers A-D
Free Paper Session A: Upper Extremity Assessment and Treatment
Location: Lone Star GH
10:50 AM – 10:57 AM A1: HAND-ARM BIMANUAL INTENSIVE THERAPY INCLUDING LOWER EXTREMITIES (HABIT-ILE) IMPROVES FUNCTIONAL HAND USE AND EXPANDS THE MOTOR MAP OF THE AFFECTED HAND IN CHILDREN WITH UNILATERAL SPASTIC CEREBRAL PALSY
Kathleen M. Friel, PhD; Daniela Ebner-Karestinos, PT; Inmaculada Riquelme Aguillo, MD; Andrew M. Gordon, PhD; Yannick Bleyenheuft, PhD
10:58 AM – 11:05 AM A2: BEST RESPONDERS FOLLOWING WEB-BASED THERAPY FOR CHILDREN WITH UNILATERAL CEREBRAL PALSY
Sarah James, OT; Leanne Sakzewski, PhD, OT; Jenny Ziviani, PhD; Roslyn N. Boyd, PhD, PT
Michael J. Majsak, PT, EdD; Joelle Mast, PhD, MD; Linda Monterroso, BA, MPH; Peter Altenburger, PhD; Ryan Cardinal, DPT; Mindy Aisen, MD; Cheryl Wolcott, PhD; Hermano Krebs, PhD
11:14 AM – 11:21 AM A4: EFFECT OF CONSTRAINT INDUCED MOVEMENT THERAPY ON ACTIVITY AND PARTICIPATION IN CHILDREN WITH HEMIPLEGIC CEREBRAL PALSY: A SYSTEMATIC REVIEW WITH META-ANALYSIS
Hsiu-Ching Chiu, PhD; Louise Ada, PhD
11:22 AM – 11:29 AM A5: COMBINED UNIMANUAL/CONSTRAINT AND BIMANUAL INTENSIVE OCCUPATIONAL THERAPY IMPROVES UPPER EXTREMITY FUNCTION IN CHILDREN WITH UNILATERAL BRAIN INJURY
Ka Lai Kelly Au, OTR/L; Julie L. Knitter, OTR/L; Linda Monterroso, BA, MPH; Susan E. Morrow-McGinty, MS, OTR/L; Jason B. Carmel, BA, PhD, MD; Kathleen M. Friel, PhD
11:30 AM – 11:45 AM QUESTIONS AND ANSWERS

11:46 AM – 11:53 AM A6: INVESTIGATING SENSORY PLASTICITY IN HEMIPLEGIC CEREBRAL PALSY FOLLOWING MODIFIED CONSTRAINT-INDUCED MOVEMENT THERAPY (MCIMT)
Samantha D’Souza, BS; Sabah Master, PhD; Cecilia J T. Jobst, BS, MSc; Lauren Switzer, HBSc, MSc; Douglas Cheyne, PhD; Darcy Fehlings, FRCP(c), MD, MSc
11:54 AM – 12:01 PM A7: TACTILE DEFICIT AND ITS ADAPTABILITY ASSOCIATED WITH INTENSIVE BIMANUAL THERAPY AND TACTILE TRAINING IN CHILDREN WITH UNILATERAL SPASTIC CEREBRAL PALSY
Hsiao-Ching Kuo, MS, PT; Andrew M. Gordon, PhD; Kathleen M. Friel, PhD; Sylvie Hautfenne, BS; Aline Henrionnet, BS; Yannick Bleyenheuft, PhD
12:02 PM – 12:09 PM A8: FLEXOR CARPI ULNARIS FRACTIONAL MYOTENDINOUSLENGTHENING IMPROVES FUNCTION IN CHILDREN WITH SPASTIC HEMIPLEGIC CEREBRAL PALSY
Matthew B. Burn, MD; Gloria R. Gogola, MD
12:10 PM – 12:17 PM A9: CORRELATION BETWEEN STANDARD UPPER EXTREMITY IMPAIRMENT MEASURES AND ACTIVITY BASED FUNCTION TESTING IN UPPER EXTREMITY CEREBRAL PALSY
Michelle A. James, MD; Anita Bagley, PhD, MPH; James Vogler, BS; Jon R. Davids, MD; Ann E. Van Heest, MD
12:18 PM – 12:25 PM A10: CONSTRUCT VALIDITY OF THE WRIST POSITION SENSE TEST AND FUNCTIONAL TACTILE OBJECT RECOGNITION TEST
Susan L. Taylor, BS, OT; Catherine Elliott, PhD; Sonya Girdler, PhD; Jane Valentine, MD; Leeanne Carey, PhD; Belinda McLean, BS, OT; Eve Blair, PhD; Richard Parsons, PhD
12:26 PM – 12:45 PM QUESTIONS AND ANSWERS

Free Paper Session B: Tone Management Strategies and Pain Control
Location: Lone Star AB
10:50 AM – 10:57 AM B1: EFFECT OF ABOTULINUMTOXINA (DYSPORT®) INJECTIONS ON FUNCTIONING IN CHILDREN WITH DYNAMIC EQUINUS FOOT DEFORMITY DUE TO CEREBRAL PALSY: ANALYSIS OF TREATMENT GOALS, GAIT AND QUALITY OF LIFE FROM A PHASE 3 STUDY
Mauricio R. Delgado, MD, FRCP(C), FAAN; Barry Russman, MD; Mark Gormley, MD; Jorge Jorge Carranza, MD; Nigar Dursun, MD; Marcin Bonikowski, MD; Resa Ayse. Aydin, MD; Umit Dincer, MD.; Ozlen Peker, MD; Zbigniew Lipczyk, MD; Anissa Tse, MBBS; Philippe Picaut, PharmD
10:58 AM – 11:05 AM B2: BOTULINUM TOXIN HAS NO ADDED THERAPEUTICAL VALUE OR COST-EFFECTIVENESS FOR GROSS MOTOR FUNCTION, EVERYDAY PHYSICAL ACTIVITY OR QUALITY OF LIFE WHEN COMBINED WITH INTENSIVE FUNCTIONAL PHYSIOTHERAPY
Fabienne C. Schasfoort, PhD, PT; Annet J. Dallmeijer, PhD; Robert Pangalila, MD; Jules G. Becher, PhD, MD; Coriene Catsman, PhD, MD; Suzanne Polinder, PhD; Ewout Steyerberg, PhD; Henk Stam, PhD; Johannes (Hans) Bussmann, PhD, PT
Free Paper Session C: Health Outcomes in Adolescence and Adulthood

Location: Lone Star C

10:50 AM – 10:57 AM
C1: THE CLINICAL SIGNIFICANCE OF SLEEP QUALITY FOR ADULTS WITH PEDIATRIC-ONSET SPINAL CORD INJURY
Alicia M. January, PhD; Kathy Zebracki, PhD; Kathleen Chian, BA; Lawrence C. Vogel, MD

10:58 AM – 11:05 PM
C2: PARTICIPATION TRAJECTORIES OF YOUTH WITH AND WITHOUT SPINAL CORD INJURY
Mi Mutaheey, PhD, OTR/L; Mary Slavin, PhD, PT; Lawrence C. Vogel, MD; Pengsheng Ni, PhD, MD, Alan Jette, PhD, PT

11:06 AM – 11:13 AM
C3: RELATIONSHIPS BETWEEN CAREGIVER CHARACTERISTICS AND PHYSICAL AND PSYCHOSOCIAL QUALITY OF LIFE AMONG YOUTH WITH SPINAL CORD INJURY
Eri H. Kelly, PhD; Anne Riordan, MA; Sara Thorpe, BA; Kathy Zebracki, PhD; Lawrence C. Vogel, MD

11:06 AM – 11:13 AM
C4: INTENSE PARTICIPATION MODERATES THE MENTAL HEALTH OF YOUTH WITH DISABILITIES WHO HAVE EXPERIENCED VICTIMIZATION
Michael E. Msall, FAAP, MD; Chengshi Shiu, MS, MSW, PhD; Kruti Acharya, FAAP, MD; Kristin Berg, MSW, PhD

11:22 AM – 11:29 AM
C5: IMPLEMENTATION OF DEPRESSION SCREENING USING THE PATIENT HEALTH QUESTIONNAIRE TO IDENTIFY AT RISK INDIVIDUALS, REFER FOR DEPRESSION MANAGEMENT PLAN, AND MONITOR EFFECTIVENESS
Kim B. Marben, DNP, RN, CPN; Courtney Marben, BS

11:30 AM – 11:45 AM QUESTIONS AND ANSWERS

11:46 AM – 11:53 AM
C6: A PROFILE OF PARTICIPATION IN ADOLESCENTS WITH CONGENITAL HEART DEFECTS AT HIGH RISK FOR RESTRICTED ENGAGEMENT
Annette Mainemer, PhD, OT; Charles V. Rohlicht, BS, PhD, FRCP, MD; Noemi Kahan, MSc; Richard Selway, FRCS(C); Jean Pierre Latourelle, BSc, MSc

11:54 AM – 12:01 PM
C7: BIOMEDICAL AND SOCIAL RISKS FOR LATE ADOLESCENT FUNCTIONING AND SOCIAL PARTICIPATION AFTER PREMATURITY
Michael E. Msall, FAAP, MD; Suzy B. Winchester, MA; Mary C. Sullivan, PhD

12:02 PM – 12:09 PM
C8: EXAMINING THE RELATIONSHIP BETWEEN PHYSICAL FATIGUE AND PHYSICAL ACTIVITY LEVELS IN ADULTS WITH CEREBRAL PALSY ACROSS THE FUNCTIONAL SPECTRUM
Patrick G. McPhee, MSc; Laura K. Brunton, PhD, MPT; Brian W. Timmons, PhD; Todd Bentley, FAAP, FRCP, MD, MSc; Jan Willem Gorter, PhD, FRCP, MD
12:10 PM – 12:17 PM  
C9: ASSESSMENT OF SELF-DETERMINATION IN ADOLESCENTS WITH NEONATAL BRACHIAL PLEXUS PALSY (NBPP)  
Donna Bergman, EdD; Lynnette Rasmussen, BS, OTR/L; Kate Wan-Chu Chang, MA, MS; Virginia S. Nelson, MD, MPH

12:18 PM – 12:25 PM  
C10: NEUROPSYCHOLOGICAL AND MOTIVATIONAL CONTRIBUTIONS TO HEALTH SELF-MANAGEMENT OF PERSONS WITH CONGENITAL NEURODEVELOPMENTAL CONDITIONS  
Seth Warschausky, PhD; Jacqueline Kaufman, PhD; Edward A. Hurvitz, MD

12:26 PM – 12:45 PM  
QUESTIONS AND ANSWERS

Free Paper Session D: Epidemiology and Research Frontiers

Location: Lone Star F

10:50 AM – 10:57 AM  
D1: HAS THE PREVALENCE OF CEREBRAL PALSY PREVALENCE CHANGED OVER TIME? TRENDS BY BIRTH WEIGHT, GESTATIONAL AGE, AND RACE/ETHNICITY IN A UNITED STATES POPULATION-BASED STUDY, 1985-2002  
Kim Van Naarden Braun, PhD; Deborah Christensen, PhD; Laura Schieve, PhD; Alyson Goodman, MD; Marshalyn Yeargin-Allsopp, MD

10:58 AM – 11:05 AM  
D2: PREVALENCE OF CHRONIC DISEASES IN A POPULATION-REPRESENTATIVE SAMPLE OF INDIVIDUALS WITH CEREBRAL PALSY  
Mark D. Peterson, PhD, M.S; Jennifer Ryan, PhD; Elham Mahmoudi, PhD; Edward A. Hurvitz, MD

11:06 AM – 11:13 AM  
D3: TEMPORAL TRENDS IN CEREBRAL PALSY AND IMPAIRMENT SEVERITY  
Susan M. Reid, PhD; Elaine M. Meehan, BSc (Hons); Sarah McIntyre, PhD; Shona Goldsmith, PT; Nadia Badawi, PhD, FRACP, MBBS, MSc

11:14 AM – 11:21 AM  
D4: TERTIARY PAEDIATRIC HOSPITAL ADMISSIONS IN CHILDREN AND YOUNG PEOPLE WITH CEREBRAL PALSY  
Elaine M. Meehan, BSc (Hons); Gary L. Freed, MD, MPh; Susan M. Reid, PhD; Katrina Williams, PhD, FRACP, MBBS; Jill Sewell, FRACP, MBBS; Barry Rawicki, FRACP, MBBS; Dinah S. Reddihough, FRACP, MBBS, MD

11:22 AM – 11:29 AM  
D5: ASSOCIATION BETWEEN NEUROMUSCULAR BLOCKING AGENT SENSITIVITY DURING ANESTHESIA AND NEUROMOTOR SYNAPSE MICROANATOMY IN CHILDREN WITH CEREBRAL PALSY  
Stephanie Yeager, BA; Karyn Robinson, BA, MS; Robert Akins, BA, PhD

11:30 AM – 11:53 AM  
D6: IS PLACENTAL WEIGHT AND PLACENTAL WEIGHT RELATIVE TO THE INFANT SIZE AT BIRTH ASSOCIATED WITH RISK OF CEREBRAL PALSY?  
Kristin M. Strand, MD; Guro L. Andersen, PhD, MD; Torstein Vik, PhD, MD; Anne Eskild, PhD, MD

D7: NEUROBEHAVIOUR AT TERM IS PREDICTIVE OF NEURODEVELOPMENTAL OUTCOMES AT TWO YEARS OF AGE FOR CHILDREN BORN MODERATE-LATE PRETERM  
Gayle G. Arnold Best Scientific Paper Award Winner

12:02 PM – 12:09 PM  
D8: FACTORS INFLUENCING TRAJECTORIES OF EARLY ADAPTIVE BEHAVIOR AMONG CHILDREN BORN PREMATURELY  
Anne M. DeBattista, PhD; Lynne C. Huffman, MD; Abbey Alkon, PhD, MPH; Bruce A. Cooper, PhD; Sandra Weiss, PhD

12:18 PM – 12:25 PM  
D9: STABILITY OF THE GROSS MOTOR FUNCTION CLASSIFICATION SYSTEM: COMPARISON BETWEEN HIGH AND LOW-RESOURCE COUNTRIES  
Katherine A. Benler, MPH; Rachel Jordan, BS; Sasaka Bandaranayake, MBBS; Christine Finn, PT; Robert Ware, PhD; Roslyn N. Boyd, PhD, PT

12:26 PM – 12:45 PM  
QUESTIONS AND ANSWERS

12:45 PM – 2:00 PM  
AACPDM Annual Membership Business Meeting and Lunch (Lone Star DE)  
This ticketed event is about the business of the Academy and serves a very important role – and lunch will be provided. Be sure to come if you are an AACPDM member!

2:00 PM – 3:30 PM  
General Session (Lone Star DE)  
Fred P Sage Award  
Veronica Schiariti, MD, MHSc, PhD  
Cerebral Palsy Foundation Update  
Richard Ellenson, Cerebral Palsy Foundation CEO  
Cerebral Palsy Foundation Lecture  
THE SCIENCE OF MAKING FRIENDS FOR ADOLESCENTS AND YOUNG ADULTS WITH SPECIAL NEEDS; THE UCLA PEERS PROGRAM  
Elizabeth Laugeson, Psy.D  
Making a Difference Award  
Paul Gross

3:30 PM – 4:00 PM  
Coffee Break - Poster and Exhibits (Griffin Hall)
**IC 1: LONG-TERM OUTCOMES FOR PEDIATRIC SPINAL CORD INJURIES AND LIFE-CARE PLANNING**

**Location:** 209

Lawrence C. Vogel, MD; Kathy Zebracki, PhD; MJ Mulcahey, PhD, OTR/L

**Purpose**
The purpose of this course is to highlight the long-term outcomes of individuals with pediatric-onset SCI in order to:
1. provide patients and their families realistic expectations for adult outcomes and 2. provide the basis for life-care planning

**Target Audience**
This course is applicable to health-care professionals who care for youth who have sustained a SCI.

**Course Summary**
The course will consist of five sections. First, a brief overview of pediatric SCI, including epidemiology as a function of age at injury, and unique medical and orthopaedic complications.

The second discussion will provide an overview of a long-term longitudinal study of adults with pediatric-onset SCI, including the following outcomes: secondary health conditions, psychological, social (e.g. relationships), community participation (e.g. employment), and life-satisfaction. The third discussion will review rehabilitation needs for individuals with SCI from childhood throughout adulthood to the aging adult.

The fourth session will be an overview of life-care planning for youth with a SCI. The final section will be an interactive session to develop a life-care plan for a child with a SCI.

**Learning Objectives**
1. Prescribe the proper wheelchair for a youth with a C6 complete SCI at 1, 5 and 18 years of age
2. State the employment rate of adults with pediatric-onset SCI
3. Identify at least two factors that are significantly associated with greater life satisfactions in adults with pediatric-onset SCI
4. Critically review a life care plan developed for an individual who sustained a SCI as a child

**IC 2: CLINICAL EXERCISE TESTING IN YOUTH WITH CEREBRAL PALSY**

**Location:** 203

Annet J. Dalimeijer, PhD; Astrid CJ Balemans, PhD; Eline AM Bolster, MSc; Jules G. Becher, PhD, MD

**Purpose**
This course provides a basic understanding of clinical exercise testing principles, insight in the application of energy cost and fitness assessments, and insight in the interpretation of test results for diagnostics and treatment evaluation in youth with cerebral palsy (CP).

**Target Audience**
Pediatric physiatrists, orthopaedic surgeons, pediatric physical therapists and staff of gait labs who are involved in the treatment of mobility limitations in children and adolescents with CP.

**IC 3: EARLY NATURAL HISTORY OF CEREBRAL PALSY TO INFORM SURVEILLANCE AND MANAGEMENT: OUTCOMES OF THE AUSTRALIAN CEREBRAL PALSY CHILD STUDIES**

**Location:** 211 & 212

Roslyn N. Boyd, PhD, PT; Rachel Jordan, BS; Katherine A. Benfer, MPH; Stina Oftedal, BS; Camilla Davenport, BS

**Purpose**
To review the current evidence for early natural history of children across the spectrum of severity of cerebral palsy; 2. To understand the relationship between brain structure on MRI (Fiori scale) and early motor capacity as well as other functions: hip development, gait patterns, communication, Habitual Physical Activity, oropharyngeal dysphagia (OPD), feeding, social function; 3. To understand current prospective outcomes that will build prediction models of potential later outcome. To discuss novel data on health care costs and consequences that could inform the provision of clinical services.

**Target Audience**
Suitable for any level of Clinicians and/or Researchers including PT’s, OT’s, Psychologists, Physicians, Surgeons, Dieticians, Speech Pathologists.

**Course Summary**
Assessment of energy cost and fitness is becoming increasingly important in the treatment of walking problems of youth with CP. A common complaint in this group is a reduced walking distance and early fatigue during daily life activities. These problems can both be associated with increased energy cost during walking and/or reduced fitness levels. Appropriate assessment of these outcomes is important for adequate treatment decisions. This instructional course provides a basic background in exercise physiology that is required to understand and interpret results of energy cost and fitness tests. Indications for exercise testing are presented, as well as interpretation of results and how test results can be used for treatment decisions. Several clinical cases are presented and discussed with the audience using examples of the application of energy cost and fitness assessments in the treatment of spasticity, orthotic treatment, orthopaedic surgery and physical training. Future developments in the application of exercise testing are discussed with the audience. The presenters have a background in pediatric rehabilitation medicine (JB), pediatric physiotherapy (EB) and human movement sciences (AB, AD), and have many years of experience with clinical treatment and research of children and adolescents with CP and walking problems.

**Learning Objectives**
1. Understand the value of clinical exercise testing in the treatment of mobility problems of youth with CP
2. Obtain knowledge about the indications for energy cost and fitness assessments
3. Be able to interpret energy cost and fitness test results for clinical decision making
4. Be able to evaluate test results of energy cost and fitness testing in different treatments
Course Summary
Two overlapping prospective population based cohort studies of preschool aged children with CP (Motor and Brain development study, n=310 and Growth Nutrition and Physical Activity study, n=190) have followed the longitudinal comprehensive development of children (n=394, 188 (62%) male) from 18 months to 5 years. Our multidisciplinary team have unique data using gold standard measures (doubly labelled water) and ActiGraph®, bioelectrical impedance measures, three day weighed food diaries, on: (i) early development and prediction of hip outcomes, (ii) gait patterns, motor development and brain structure, (iii) social function, (iv) energy requirements, body composition, nutritional status, dietary intake, habitual physical activity, time spent sedentary and (iv) oropharyngeal dysphagia (OPD) and feeding ability. The domains of school readiness (mobility, self-care, social function, communication) have been determined at school entry. All data have been compared to quantitative measure of brain structure (Fiori). These unique data have enabled an understanding of the early factors that predict comprehensive outcomes of children across the spectrum of functional severity at 5 years.

Learning Objectives
1. Upon completion, Participants will understand the current evidence for early natural history of children across the spectrum of severity of cerebral palsy
2. Upon completion, participants will understand the relationship between brain structure on MRI and early motor capacity, hip development, gait patterns, communication, Habitual Physical Activity and oropharyngeal dysphagia (OPD)
3. Upon completion, Participants will understand current prospective outcomes that will build prediction models of potential later outcome
4. Upon completion, participants will be able to problem solve priorities of surveillance and management of young children with CP across the spectrum of severity based on comprehensive case discussions of natural history

IC 4: MANAGEMENT OF THE HIP IN CEREBRAL PALSY: THE REVISED AUSTRALIAN STANDARDS OF CARE FOR HIP SURVEILLANCE AND THEIR RELEVANCE TO MANAGEMENT

Location: 301 & 302
Pamela J. Thomason, MPT; Kate Willoughby, PT; Abhay Khot, MD; Kerr Graham, MD

Purpose
This updated course will focus on the practical application of evidence for the surveillance and management of hip displacement in children with cerebral palsy (CP). It will help participants navigate the management options in relation to complex and sometimes competing needs of the child and family.

Target Audience
Physical therapists, paediatricians, orthopaedic surgeons, rehabilitation physicians

Course Summary
In the context of previously presented and new evidence this course will provide an overview and practical approach to the management of hip displacement in CP. The difficulties of developing and implementing management algorithms will be explored. Early experience from a RCT of orthopaedic surgery will be presented. Participants learning will be enhanced through interactive case studies including management of children with hemiplegia and children for whom the complex nature of their disability extends far beyond the hip. The recently revised Australian Standards of Care for hip surveillance will be presented. The outcome of surgical and non-surgical management including evidence of the effectiveness of non surgical options such as complementary/alternative medicine (CAM) explored. A copy of the revised Australian Standards of Care will be available to all participants and there will be ample time to discuss the revisions and their implications. A focus will be interactive case studies that will provide participants with rationale to support their decision making about managing hip displacement for children in their care.

Learning Objectives
1. Understand the evidence for the management of hip displacement in children with CP
2. Understand the rationale and timing of various forms of surgical intervention
3. Understand the management of hip displacement in relation to the severity of the motor disorder and in the context of complex and competing needs of the child and family
4. Evaluate the evidence for long term outcomes of surgical and non surgical interventions, including injections of BoNT-A, bracing and CAM approaches and be able to communicate this to families/carers

IC 5: CUSTOMIZED EMPLOYMENT AS AN EVIDENCE-BASED PRACTICE FOR TRANSITION-AGE YOUTH WITH CEREBRAL PALSY

Location: 201
Eugenio A. Monasterio, MD; Rachel Rounds, MS; Stephanie Lau, MAT

Purpose
This course will present “evidence-based” practices for facilitating competitive employment for youth with cerebral palsy (CP). The purpose is to help attendees understand the importance of employment in the over-all health and well-being of youth who have traditionally been under-employed or unemployed. In addition, practitioners who are knowledgeable of employment best practices can assist individuals with CP in achieving employment outcomes.

Target Audience
Physicians, Occupational and Physical Therapists, Speech and Language Therapists, Nurses, and other health care practitioners

Course Summary
This course will present the preliminary findings from a research study on competitive employment for transition-age youth with cerebral palsy and other physical disabilities. The Rehabilitation Research and Training Center on Employment of Physical Disabilities (RRTC) at Virginia Commonwealth
University (VCU) is partnering with VCU’s Children’s Hospital to conduct this research on customized employment as an evidence-based practice. The presenters will discuss the model that is being researched as well as the partnership with VCU Children’s Hospital and how the link is creating employment opportunities for transition-age youth.

Learning Objectives
1. To understand the importance of competitive employment for transition-age youth with physical disabilities, specifically cerebral palsy
2. To understand the components of customized employment including the application of assistive technology and its impact on employment outcomes
3. To discuss how physicians and other practitioners can assist in facilitating employment outcomes
4. Consider the possibilities of establishing their own programs or partnerships

IC 6: AVOIDING PITFALLS IN THE MANAGEMENT OF GAIT DYSFUNCTION IN CHILDREN WITH CEREBRAL PALSY

Location: Lone Star F
Elizabeth W. Weber, MD; Tom Novacheck, MD; Michael Healy, MD; Peter D. Kim, MD, PhD

Purpose
This course will be a case-based format to illustrate some common mistakes in the surgical management of gait dysfunction in cerebral palsy. It is designed to help providers avoid over treating or mistreating common issues affecting children with cerebral palsy.

Target Audience
Physicians and Physical Therapists

Course Summary
This interactive course will provide background pathophysiology in the development of lever arm dysfunction and soft tissue contractures in children with cerebral palsy. This will provide the basis for discussion around the treatment options and timing of interventions. An audience participation system and open discussion will engage the audience in clinical decision-making. Pre and post intervention gait data will be used to illustrate the gait issues and to demonstrate some common treatment mistakes based on post intervention or recurrence in long term follow up.

Learning Objectives
1. Recognize the natural history of ambulatory decline in patients with cerebral palsy
2. Understand the effect of timing of intervention on the natural history of patients with cerebral palsy
3. Understand the effect that tone management and lever arm alignment can have on the natural history of gait in children with cerebral palsy
4. Understand how computerized gait analysis can facilitate decision making regarding intervention in children with cerebral palsy

IC 7: EMBARKING ON NEW FRONTIERS IN UPPER EXTREMITY INTERVENTIONS: ORTHOTICS, SERIAL CASTING AND TAPING

Location: 202
Jenny M. Dorich, OTR/L; Kristy Morales, OTR/L

Purpose
This course will present an evidenced-based algorithm to guide clinical decision making in applying orthotics, serial casting and taping to enhance upper extremity mobility and function in children, adolescents and young adults with neuromotor upper extremity impairment. This workshop will help participants to assess when these interventions may be integral tools to achieving client-centered goals.

Target Audience
Occupational Therapists, Physiotherapists, Physicians, and Nurses

Course Summary
This course will review the current evidence available to guide clinical decision making in applying orthotics, serial casting and taping to manage upper extremity neuromotor dysfunction and associated secondary impairments. Course instructors will utilize video case presentations to illustrate clinical assessment of range of motion, muscle tone and movement patterns of the elbow, wrist and hand to guide course participants in applying the proposed algorithm for implementing these interventions to achieve client-centered goals. The course will cover a broad spectrum of children, adolescents and young adults at all MACS levels with impairment ranging from limitations in refined dexterity to severe contractures of the elbow, wrist and hand that impede skin care and upper body dressing. The body of research evaluating the effectiveness of these interventions continues to be limited. In their systemic review of The Effectiveness of Hand Splints in Children with Cerebral Palsy, Jackman, Novak and Lannin (2013) challenge us to further research to evaluate the effectiveness of hand splints. Additionally, there limited research evaluating the effectiveness of taping, orthotics and serial casting in achieving long term improvements on family centered goals. Therefore, the workshop will conclude by engaging course participants in discussion to identify opportunities for collaborative research to further investigate the effectiveness of these interventions.

Learning Objectives
1. To describe the current evidence supporting the use of orthotics, serial casting and taping for improving mobility and function in individuals with upper extremity neuromotor impairment
2. Demonstrate clinical assessment of upper extremity range of motion, muscle tone and movement patterns of individuals at all MACS levels for applying the algorithm
3. To demonstrate skill in applying an algorithm to guide clinical decision making in applying these interventions for achieving client centered goals
4. To identify opportunities for collaboration among participants both clinically and for research regarding the effectiveness of kinesiology taping, orthotics and serial casting in enhancing upper extremity function
IC 8: FAMILY-RESEARCHER COLLABORATION: BRINGING THE FAMILY’S VOICE TO RESEARCH

Location: 204

Robert J. Palisano, PT, ScD, FAPTA; Lisa Chiarello, PT, PhD, PCS, FAPTA; Barbara Taylor, BA; Tina Hjorngaard, MEd

Purpose
To provide background knowledge on including key stakeholders as members of the research team and share the presenters’ (parents of children with cerebral palsy and clinical researchers) experiences conducting large, multisite studies of parents and children with cerebral palsy. A desired outcome is for course participants to envision innovative possibilities for family-researcher collaborations.

Target Audience
Professionals from all disciplines including those involved in research and education; parents and family members

Course Summary
Parents and families are key stakeholders in research related to children and youth with disabilities. Although family-centered services are recognized as best practice, advocacy for engaging families in research is still emerging. Including parents on the research team may better address consumer priorities, ensure interventions are feasible and acceptable to children and families, and lead to dissemination of findings in ways that enhance use by families and practitioners. Family-researcher collaboration, however, is not without challenges. The presenters’ will: a) provide background knowledge on including parent stakeholders as members of the research team, b) summarize models for stakeholder participation (e.g. consultative, collaborative), c) share their research team’s experiences, and d) engage course participants in discussion of challenges to family-researcher collaboration and solutions to challenges.

Learning Objectives
1. Describe the rationale for including parents or family stakeholders as members of the research team and models for stakeholder participation
2. Discuss parent perspectives on participation in research
3. Describe successes, challenges, and solutions to family-researcher collaboration
4. Develop and implement strategies for engagement of family members in research

IC 9: THE YEAR’S TOP TEN ARTICLES ON DEVELOPMENTAL DISABILITIES

Location: 303 & 304

Richard C. Adams, MD; Nancy Murphy, MD

Purpose
To present summaries of the ten most intriguing articles on developmental disabilities published in the past year (2014 to 2015), and to encourage discussion about them by participants.

Target Audience
Physicians, nurses, and others who treat children with developmental disabilities and want to keep abreast of the latest evidence-based, scientific findings that have the greatest translational impact on care. Cross disciplinary participation is welcome and encouraged. The articles selected are generally grounded in a medical context; however, the articles should be relevant to those whose practices are focused on children and youth with disabilities.

Course Summary
The top ten clinically relevant articles published in English between Autumn 2014 and Summer 2015 will be presented to the audience. Articles will be chosen from the presenters’ personal experience as well as from searches in Medicine and CINAHL (Current Information in Nursing and Allied Health Literature). Categories from which the articles are typically chosen include the following: attention deficit hyperactivity disorder, autism, cerebral palsy, Down syndrome. Intellectual Disabilities, spina bifida, and spinal cord injury. They will be selected using the following criteria: (1) impact on clinical care, (2) scientific merit of the study [strength / validity], and (3) translation to various practice settings. The presenters will summarize the ten articles in reverse order (saving number one for last). Their impact on clinical practice, place in the context of current care, and their implications for future research will be discussed. The audience will be encouraged to respond to each article as it is presented. A copy of the references and abstracts will be provided to the attendees.

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 by the presentations to seek articles on their own

IC 10: TRANSFORMING THE HEALTHCARE OF WOMEN WITH DISABILITIES

Location: 213

James A. Blackman, MD, MPH; David P. Roye, MD; Katharine Hayward, PhD, MPH; Laurie Glader, FAAP, MD; Deborah Gaebler-Spira, MD; Judy Panko Reis, BA, MA, MS; Beth Rackow, MD

Purpose
This course will present best practices and preliminary data collected on health disparities encountered by women with disabilities when accessing obstetrical, gynecological and breast care. This course will increase the knowledge of attendees on these topics and inform them of methods that can be used to enhance care for women with disabilities.

Target Audience
Healthcare providers involved with the care of adolescents and women with cerebral palsy (CP) and similar physical disabilities.

Course Summary
This preliminary data is from a two year multi-site project designed to improve healthcare for women with disabilities. This course will present the results of base-line surveys distributed to women with disabilities to better understand their needs. Disparities and best practices will be discussed on gynecological care, reproductive life planning, adolescent health and transition and mammography techniques as they relate to women with disabilities. The panel will include speakers who are medical and public health professionals affiliated with each project site focused on one of the domains of healthcare indicated. The data and best practices will lay the framework...
for the implementation of various interventions to improve care for women with disabilities. This course will also examine the initial implications for modifying clinical care for patients. The project is funded by the Cerebral Palsy International Research Foundation (CPIRF).

Learning Objectives:
1. Identify the best practices and barriers to care that women with cerebral palsy (CP) encounter when accessing gynecological care
2. Describe the best practices of reproductive life planning and pregnancy as they pertain to women with CP
3. Employ knowledge of best practices and adolescent health and transition with regard to females with CP
4. List the best practices and barriers in mammography for women with CP

IC 11: FEEDING AND SWALLOWING IN CEREBRAL PALSY: EVIDENCE-BASED PRACTICE AND BEYOND
Georgia A. Malandraki, PhD, CCC-SLP BCS-S; Jaime Bauer Malandraki, MS, CCC-SLP; Justine Joan Sheppard, Ph,D, CCC-SLP, BCS-S

Location: 205

Purpose
This course will present the current state of evidence for the evaluation and treatment of swallowing and feeding disorders in children with cerebral palsy (CP). It will also help attendees understand which techniques and strategies are evidence-based and what their options are when evidence is limited.

Target Audience
Speech and Language Therapists, Physiotherapists, Occupational Therapists

Course Summary
This course will present the up-to-date information on the evaluation and treatment of oropharyngeal dysphagia in children with cerebral palsy (CP). A scientific review of the recent evidence will first be presented based on extensive literature searches and systematic reviews. Available evaluation tools will be reviewed for validity and reliability. In addition, both compensatory and rehabilitative swallowing treatments will be discussed. Next, the course will present ways to address limited evidenced practices by incorporating principles of motor learning and neuroplasticity into clinical practice. Case examples will be shared with the audience and the audience will be engaged in active discussion.

Learning Objectives
1. To define specific swallowing evaluation and treatment techniques and identify those that are evidence-based
2. To describe the limitations of current swallowing evaluation and treatment techniques
3. To identify the principles of motor learning and brain plasticity they can use in clinical practice
4. To develop skills in how to incorporate principles of motor learning and neuroplasticity into clinical practice

IC 12: TROUBLE SHOOTING AND MANAGING INTRATHECAL BACLOFEN THERAPY

Freeman Miller, MD; Julieanne P. Sees, DO; Maura McManus, MD

Purpose
The goal of this course is to provide clinical guidelines for addressing problems encountered with intrathecal baclofen therapy (ITB). When and how to address poor response to ITB, medical complications, and how to work up possible catheter malfunctions. Multiple case examples will be used to illustrate the issues discussed.

Target Audience
Physicians who treat children with ITB, physicians and Nurses who manage the ITB treatment, and therapists interested in understanding the risks and complications of ITB.

Course Summary
The course will cover the common complications such as constipation and urinary retention. The protocol to address poor or non-response to ITB will include a series of planned dose adjustments such as a bolus dose and the use of complex programming. Parameters for more invasive catheter and pump work up will be presented. The methods for these work ups using CT scan will be outlined with multiple examples of expected findings. Treatment options for each of the finding will be presented. Patients who present with possible infections will be discussed with a work up algorithm, as well as treatment options and outcome expectations for pump pocket and catheter infections.

Learning Objectives
1. Understand the expected complications related to ITB including the initial treatment response
2. Upon Completion, participant will understand the role and method for using CT scan to work up suspected catheter malfunction
3. Upon Completion, participant will be aware of the risk of ITB infections, presentations and make treatment options
4. Upon Completion, participant will be able to develop an over all plan to manage the problems related to ITB management

6:15 PM – 7:45 PM Wine & Cheese Poster and Exhibit Review (Griffin Hall)
Always popular and well attended. Enjoy a glass of wine and light hors d’oeuvres in the Exhibit Hall while visiting our Exhibitors and viewing the Scientific and Demonstration Posters. Posters will be displayed on both bulletin boards and at E-Poster kiosks. This is an opportunity to meet with the 2015 exhibiting participants who are key contributors to the success of our meeting. Don’t forget your Visit and Win Card!

Dine Around:
Once on site, you can sign up to dine at a great local restaurant at which reservations have already been made for you. See the Registration Desk for more details.
**Friday, October 23**

7:00 AM – 8:00 AM  **Continental Breakfast (Griffin Hall)**

7:00 AM – 8:00 AM  **Poster Crawl – NEW!** Join Academy experts as they guide you through select 2015 Poster displays in Griffin Hall.

7:00 AM – 8:00 AM  **Breakfast Seminars 10-18**

**BRK 10: CEREBRAL PALSY RESEARCH FUNDING IN THE UNITED STATES: PAST, PRESENT AND FUTURE**

Location: 212

Paul H. Gross, BA; Yvonne W. Wu, MD, MPH

**Purpose**

To learn about funding opportunities and new directions from NIH and PCORI for Cerebral Palsy research.

**Target Audience**

Physicians, Therapists and Basic Scientists interested in conducting research in cerebral palsy

**Course Summary**

This course will provide a systematic review of a recent 12-year period of cerebral palsy research funding by the National Institutes of Health. Dr. Yvonne Wu will present a summary of the categories and types of funding by NIH not only by categorizing the basic and clinical research topics but also which institutes provided funding and what types of populations were being addressed. Key gaps or declines in funding will be brought to light. Paul Gross will then be contrast these findings with what patients and families attitudes toward research based on a very large survey conducted in the fall of 2014. He will share how this contrast is being used to influence research priorities at NIH. As an initiator and organizer of the NIH Workshop on the State of Science and Treatment for Cerebral Palsy and as an outgoing member of NINDS Advisory Council, Paul will present progress toward new priorities for cerebral palsy research within NIH. He will also provide an review of the initiatives for new research and workshops borne out of the NIH Workshop.

**Learning Objectives**

1. Understand the past trends in NIH funding for cerebral palsy research
2. Understand what the patient and caregiver community values most highly for cerebral palsy research investments and how those investments contrast with NIH funded research
3. Learn the most current priorities and new developments in funding opportunities for cerebral palsy research at NIH and the Patient Centered Outcomes Research Institute
4. Get an inside look at how NINDS Council makes funding decisions about its research priorities and how recent legislation and workshops will positively affect future grant applications

**BRK 11: BONE HEALTH IN CHILDREN WITH PHYSICAL DISABILITIES**

Location: 201

Steven Bachrach, MD; Heidi H. Keckemethy, RDN, CSP, CBDT

**Purpose**

To review the evidence around prevention, surveillance and treatment of osteoporosis and fragility fractures in children with mobility restrictions while providing practical strategies to translate knowledge into practice on this topic.

**Target Audience**

Physicians, Nurses, Therapists, Dietitians, Parents

**Course Summary**

Children with physical disabilities and mobility restrictions are at increased risk for developing osteoporosis. Approximately 20% of children and young adults with cerebral palsy who cannot walk independently develop fragility fractures. Fractures can cause significant pain and impairment, as well as impact family functioning. Therefore, it is important for caregivers and health care providers to know how to improve bone mineral density and possibly prevent fragility fractures in these children. We will review the evidence around prevention, surveillance and treatment of osteoporosis and fragility fractures in children with mobility restrictions. We will also introduce a proposed clinical practice guideline for children with cerebral palsy and other physical disabilities at risk for osteoporosis, as well as practical tools to facilitate the translation of this knowledge into practice. The presenters will prompt participants to engage in discussion about gaps in the evidence and challenges in their own clinical practice, specifically around monitoring vitamin D levels, use of DXA scans and decision making around the use of bisphosphonates. We will also discuss the evidence regarding use of vibration to improve bone density

**Learning Objectives**

1. To identify key components of the prevention and evaluation of low bone mineral density in children with disabilities
2. To develop skill in implementing nutrition based interventions for preventing and treating low bone mineral density in children with disabilities
3. To understand how bone density is measured in patients with disabilities and what the measurements mean
4. To understand the evidence for treatment modalities of osteoporosis of children with physical disabilities, including bisphosphonates and vibration

**BK 12: DOES MY PATIENT WITH A PROGRESSIVE NEUROMUSCULAR DISEASE QUALIFY FOR A CLINICAL TRIAL?**

Location: 209

Jerry R. Mendell, MD; Linda P. Lowes, PhD; Lindsay N. Alfano, DPT

**Purpose**

There are many exciting clinical trials underway for progressive neuromuscular disorders such as Duchenne muscular dystrophy and spinal muscular atrophy. This lecture will present current data on the natural history disease progression. Attendees will learn about factors influencing clinical trial inclusion and exclusion criteria
Target Audience
Physicians, Occupational and Physical Therapist, Nurse Practitioners and Nurses

Course Summary
This course will provide an overview of the state of clinical trial research in Duchenne muscular dystrophy and spinal muscular atrophy. The importance of accurate genetic testing will be discussed as a prerequisite for trial selection. Clinical trials will be subdivided into categories based on mechanism of action, such as genetic mutation-specific or general enrollment, and will include gene therapy, small molecule, antisense oligonucleotide and re-purposing of current compounds. In addition to diagnostic criteria, disease progression and currently available outcomes will be discussed to better understand general trial inclusion/exclusion criteria. Resources will be provided to assist attendees in keeping up-to-date with trials in neuromuscular disease. The importance of and future directions of newborn screening will be presented in the context of early enrollment.

Learning Objectives
1. Identify resources for parents and profession to help with clinical trial eligibility criteria
2. Discuss the importance of genetic testing as it applies to enrollment in clinical trials
3. Understand trial eligibility based on compound mechanism of action
4. Identify inclusion and exclusion criteria for clinical trials and how to assess eligibility

BRK 13: PROVIDING QUALITY EARLY INTERVENTION: WALKERS TO WHEELERS

Location: 202
Ginny Paleg, DScPT, MPT, PT; Elisabet Rodby-Bousquet, PhD, PT

Purpose
To use the evidence to motivate clinicians to recommend mobility aids closer to 9 months of age, rather than the current age of 2-4 years.

Target Audience
Clinicians, PTs, PTAs, OTs, OTAs, Educators, Case Managers, Nurses, Physicians

Course Summary
Exploration and experiences drive neural plasticity through axonal budding and shedding. The peak for this sensitive period of motor and sensory track development is age 24 months (2 years). While many barriers exist, early intervention providers must find creative ways to use assistive technology to promote efficient mobility in infants with motor delays. This course will present the evidence behind using assistive technology to promote early mobility. Emphasis will be on dosing and sorted by GMFCS levels. Case story videos and interactive large group discussion will model practice patterns while assisting participants to problem-solves ways to provide vital experiences and facilitate exploration for infants and toddlers with moderate to severe (GMFCS III-V) gross motor dysfunction.

Learning Objectives
1. Describe the evidence supporting the use of augmentative mobility (power, gait trainers, normal baby, etc.) equipment
2. Analyze how mobility equipment can enhance activity and participation
3. Choose dosing parameters for a mobility program (type of device, amount of postural support, supervision, goal attainment, etc.)
4. Be able to describe how the evidence supports recommendation of mobility devices during the ages when children are typically in early intervention programs (0-3 years)

BRK 14: NEW FRONTIERS IN CARE AND COMMUNICATION: TELEMEDICINE IN THE PEDIATRIC THERAPEUTIC ENVIRONMENT

Location: 208
Jason Long, PhD; Karen Harpster, BA, PhD, OT

Purpose
To describe the conception of a telemedicine program within a pediatric therapeutic environment and present case studies of different tool applications used for therapy, communications, and care coordination.

Target Audience
Occupational Therapists, Physical Therapists, Physicians, and Nurses

Course Summary
The telemedicine environment for physical therapy and occupational therapy professionals has traditionally lagged that of physicians in terms of coverage by third party payors and licensure portability. However, as telemedicine programs scale up at hospitals and other patient care environments across the country, the tools and principles of telemedicine become more readily available to all clinical professionals. Within pediatric therapeutic environments, these telemedicine tools allow the clinician to engage with children and families in more natural environments, and to maintain an educational presence with the family even in the absence of physical interaction. The telemedicine program in the Division of Occupational Therapy, Physical Therapy, and Therapeutic Recreation (OTPTTR) at Cincinnati Children’s Hospital Medical Center (CCHMC) was developed using a Design Thinking strategy to better frame our approach. Drs. Long and Harpster will discuss this strategy for program conceptualization, as well as several case studies on pilot projects currently underway.

Learning Objectives
1. Understand a framework that can be utilized in developing a telemedicine care program
2. Describe the steps of the Design Thinking process used in the conceptualization of this program
3. Identify and explore different telemedicine tools and methods that can be used with pediatric patients and families
4. Discuss potential benefits and barriers to delivering care via telemedicine, and to consider solutions that support this approach
BRK 15: PARENT NAVIGATORS: A NEW CARE TEAM MEMBER IN YOUR MEDICAL HOME OR SPECIALTY PRACTICE

Location: 204
Karen R. Fratantoni, MD, MPH; Cara L. Biddle, MD, MPH; Michelle D. Jiggetts, MD

Purpose
To describe the role of Parent Navigators as partners in the medical home for children and youth with special health care needs (CYSHCN).

Target Audience
All interested in learning more about parent navigators

Course Summary
The Parent Navigator Program was established within the Children’s Health Center at Children’s National Medical Center in 2008 and links parents of CYSHCN with medical and community resources and programs. Each Parent Navigator is a parent of a CYSHCN and is uniquely able to provide peer to peer mentoring and support. At Children’s National, this family-centered program has proved to be extremely popular among our parents and has grown from 2 part-time to 6 full-time Parent Navigators working in 3 hospital- and community-based health centers and our Complex Care Program. Parent Navigators assist our most medically fragile patients, with an active case load of over 300 patients. Parent Navigators are lay health workers and members of the medical home who can provide services and support to complement and augment those provided by other members of the medical home team, including medical care providers, case managers, and social workers. The Navigators provide families with non-medical assistance and support to navigate tasks such as scheduling of medical appointments, coordination of care, finding education services, contacting durable medical equipment suppliers, finding transportation or daycare, helping with applications for Supplemental Security Income (SSI), helping with transition, finding employment and housing support for parents and caregivers, and hiring legal services. As lay health workers with personal experience caring for a child with special needs, they also provide emotional support.

Parent Navigators provide emotional support and access to resources to enable families of CYSHCN to better manage their complex medical conditions in the medical home. Further research is needed to explore the effects of parent navigation on health outcomes of CYSHCN and healthcare costs.

Learning Objectives
1. Define the concept of parent navigation in a medical home or specialty practice
2. Recognize the concept of the NCQA patient-centered specialty practice
3. Discuss the role of parent navigators in patient-centered medical homes and specialty practices
4. Identify benefits and barriers of incorporating parent navigation in your patient-centered medical home or specialty practice

BRK 16: SEATING AND POSITIONING FOR THE COMPLEX ORTHOPEDIC SURGICAL CANDIDATE: PRE AND POST CONSIDERATIONS

Location: 205
Melissa K. Tally, MPT; Elizabeth McCarty, OTR/L

Purpose
Present a suggested pre and post seating and positioning protocol for orthopedic surgeries of the hip and spine. Seating and positioning considerations can greatly affect the positive outcome of a surgery and need to be incorporated into the surgical plan of care.

Target Audience
Physicians, Therapists

Course Summary
The seating and positioning considerations of client’s with complex physical and medical needs can be complicated, ongoing, and variable. The long term effects of tone, common with these diagnosis; spastic quadriplegia, traumatic brain injury, and movement disorders can be severe and affect the musculoskeletal system dramatically. Often times the complex client will be a candidate for surgical intervention. Seating and positioning is a critical area of intervention that can support the outcome of surgical intervention. The orthopedic management including pre and post-surgical considerations are critical to determining the type of postural or mobility system. Implementation of a pre and post seating and positioning protocol is recommended for the multidisciplinary surgical team.

Learning Objectives
1. Upon completion, participant will be able to describe the benefits of a pre and post-surgical protocol for seating and positioning
2. Upon completion, participant will be able to discuss why seating and positioning is critical to the plan of care and how specific products can support the surgical intervention
3. Upon completion, participant will be able to understand how early assessment of postural seating needs will complement the benefits of surgical outcomes and improve overall function
4. Upon completion, participant will be able to describe key seating and positioning strategies for the complex client
BRK 17: MOTOR CONTROL MATTERS

Location: 203

Katherine M. Steele, BS, MS, PhD; Nanette Aldahondo, MD; Michael H. Schwartz, PhD

Purpose
Discuss clinical methods for evaluating motor control and how the theory of synergy-based control from neuroscience can quantify motor control in cerebral palsy.

Target Audience
Physicians, therapists, and researchers

Course Summary
Clinicians know that motor control matters – in diagnosis, in treatment planning, and in long-term quality of life. However, accurately describing and quantifying “good motor control” versus “poor motor control” remains challenging and hinders our ability to provide optimal treatment for individuals with cerebral palsy and other neurologic disorders. Recently, the theory of muscle synergies has emerged from neuroscience research. Muscle synergies are weighted groups of muscles calculated from electromyography that are consistently activated together and are theorized to provide a simpler neuromuscular control strategy compared to controlling each muscle individually. In humans and animals, synergies describe muscle activity across a broad range of tasks including postural control, walking, and reaching. The synergy method has been shown to be predictive of differences in functional ability and treatment outcomes for individuals with stroke and cerebral palsy. In this seminar, we will discuss current methods for evaluating motor control, introduce the theory of synergies, describe how synergies are calculated from electromyography, and discuss recent research that has evaluated synergies in both stroke and cerebral palsy.

Learning Objectives
1. List clinical descriptions of good and poor motor control
2. Define the theory of synergy-based control of movement
3. Describe how synergies are calculated from electromyography
4. Demonstrate how synergies and other measures of motor control may be useful for diagnosis and treatment planning for individuals with cerebral palsy, stroke, and other neurologic disorders

BRK 18: ROCK CLIMBING: ADAPTIVE RECREATION, COMPETITIVE SPORT, AND THERAPY MODALITY

Location: 213

JenFu Cheng, FAAPM&R, MD; Carolina Schaber, BS, MA

Purpose
This seminar will present the history of adaptive rock climbing techniques and equipment, the evidence that supports the benefits of participation for individuals with disabilities, ways to provide recreational and competitive rock climbing opportunities, and methods to utilize rock climbing as a physical and occupational therapy modality. The seminar will help attendees to become familiar with the various ways the activity of rock climbing can be used to improve the quality of life for individuals with disabilities.

Target Audience
Physicians, Therapists, Educators

Course Summary
Previously considered an extreme sport for the elite, rock climbing has become increasingly accessible to the general public due to improvements in safety equipment and techniques as well as the growth of indoor rock climbing gyms. The number of rock climbers in the United States alone is estimated to be in the several millions. Over the past decade, adaptive rock climbing programs have become increasingly available and with the introduction of adaptive competitive rock climbing, there are now opportunities for individuals with disabilities to compete on the local, national, and international levels. Safe participation in rock climbing for individuals with disabilities requires an integration of the understanding of the medical condition of each participant, climbing technique and safety principles, and the unique stresses placed on the physical and psychological systems of climbers. Seminar attendees will become familiar with these various areas and participate in discussions based on their clinical needs.

Learning Objectives
1. Be familiar with adaptive rock climbing opportunities for individuals with disabilities
2. Understand the safety aspects of adaptive rock climbing
3. Learn how to structure and implement an adaptive rock climbing program
4. Discuss the ways rock climbing can be utilized as a physical and occupational therapy tool
PROGRAM & EVENTS

FRIDAY, OCTOBER 23

8:15 AM – 9:45 AM  General Session (Lone Star DE)
Mac Keith Press Basic Science Lecture
UPDATE ON MOLECULAR THERAPY FOR PEDIATRIC NEUROMUSCULAR DISEASE
Jerry Mendell, MD
Mentorship Award
Kerr Graham, MD
Lifetime Achievement Award
William Oppenheim, MD

9:45 AM – 10:30 AM  Coffee Break - Poster and Exhibits
(Griffin Hall)
Expanded breaks throughout the AM and PM sessions will give you a chance to visit the exhibits and posters. Plan to meet a friend during one of these times and just catch up!

10:30 AM – 12:30 PM  Free Papers E-H

Free Paper Session E: Outcome Measures
Location: Lone Star C
10:35 AM – 10:42 AM  E1: WHICH MEASURE SHOULD I USE?: CONTENT ANALYSIS USING THE ICF CORE SETS FOR CHILDREN AND YOUTH WITH CEREBRAL PALSY
Veronica Schiariti, PhD, MD, MSc; Karen Saude, MSc, PT; Maureen O’Donnell, FRCP, MD, MD, Sindy A. Tatla, BS, MPT, MSc, OT
10:43 AM – 10:50 AM  E2: COMPARING MAXIMAL CARDIOPULMONARY EXERCISE TEST AND SHUTTLE RUN TEST OUTCOMES IN CHILDREN WITH CEREBRAL PALSY
Astrid CJ Balemans, PhD; Leontien van Wely, PhD; Jobjan Blonk, MSc; Jules C. Heathcock, PhD, DPT; Stephanie A. Combs Miller, PhD, PT
Helen J. Carey, PCS, PT, DHSc; Kathy Martin, PT; Jill C. Heathcock, PhD, DPT; Stephanie A. Combs Miller, PhD, PT
11:07 AM – 11:14 AM  E4: THE CANADIAN OCCUPATIONAL PERFORMANCE MEASURE (COPM): HOW DOES IT RESPOND OVER A 3-YEAR PERIOD FOR YOUNG CHILDREN WITH CEREBRAL PALSY?
Lauren Switzer, HBSc, MSc; Darcy Fehlings, FRCP, MD, MSc; Charles H. Goldsmith, PhD; Unni G. Narayanan, FRCS(C), MBBS, MSc; Peter Rosenbaum, FRCP, MD, F. Virginia Wright, PhD, PT
11:15 AM – 11:30 AM  QUESTIONS AND ANSWERS
11:31 AM – 11:38 AM  E5: RELIABILITY OF THE CHALLENGE MODULE IN MEASURING ADVANCED MOTORS SKILLS IN CHILDREN WITH CEREBRAL PALSY
Chun Ying Lam, BS; Bhavnita Mistry, MA; Joan Walker, BS; F. Virginia Wright, PhD, PT
11:39 AM – 11:46 AM  E7: THE DEVELOPMENT OF A PILOT TOOL TO ASSIST PRIMARY CARE PROVIDERS IN IDENTIFYING RISK AND OPTIMISING PHYSICAL FUNCTION IN AMBULANT ADULTS WITH CEREBRAL PALSY
Prue E. Morgan, PhD, MAppSc, BAppSc (physio); Cytle Williams, PhD; Jane Tracy, PhD; Rachael McDonald, PhD
11:47 AM – 11:54 AM  E8: RESPONSIVENESS OF THE PEDIATRIC EVALUATION OF DISABILITY INVENTORY-COMPUTER ADAPTIVE TEST IN MEASURING FUNCTIONAL OUTCOMES FOR INPATIENT PEDIATRIC REHABILITATION
Maria Fragala-Pinkham, PT, DPT, MS; Helene Dumas, BS, MS, PT; Kelly A. Lombard, BS, DPT; Jane E. O’Brien, FAAP, MD
11:55 AM – 12:02 PM  E9: THE QUALITY FUNCTION MEASURE: A STUDY EVALUATING RATER RELIABILITY & AGREEMENT WHEN A NEW MEASURE OF GROSS MOTOR PERFORMANCE IS USED IN AMBULANT CHILDREN WITH HYPERKINETIC MOVEMENT DISORDERS
Kylee Tustin, Bachelor of Physiotherapy
12:03 PM – 12:10 PM  F1: HEMATOCRIT MAY BE AN INDICATOR OF SURGICAL SITE INFECTION RISK IN CHILDREN WITH CEREBRAL PALSY
Eric Baranek, BS; Hiroko Matsumoto, MA; Benjamin D. Roye, MD, MPH; David P. Roye, MD; Michael Vitale, MD, MPh; Joseph Dukowsky, MD; Joshua Hyman, MD
12:11 PM – 12:30 PM  QUESTIONS AND ANSWERS

Free Paper Session F: Pediatric Medical Complexities
Location: Lone Star F
10:35 AM – 10:42 AM  F1: HEMATOCRIT MAY BE AN INDICATOR OF SURGICAL SITE INFECTION RISK IN CHILDREN WITH CEREBRAL PALSY
Eric Baranek, BS; Hiroko Matsumoto, MA; Benjamin D. Roye, MD, MPH; David P. Roye, MD; Michael Vitale, MD, MPH; Joseph Dukowsky, MD; Joshua Hyman, MD
10:43 AM – 10:50 AM  F2: FROM POLICY TO PLAY: LINKING POLICYMAKING AND PARTICIPATION IN LEISURE FOR CHILDREN WITH DISABILITIES
Keiko Shikako-Thomas, PhD, OT; Mary Law, PhD, OT
10:51 AM – 10:58 AM  F3: LONGITUDINAL EVALUATION OF BONE DENSITY AND STRENGTH USING PERIPHERAL QCT IN PRE-PUBERTAL CHILDREN WITH CP COMPARED TO AGE AND SEX MATCHED TYPICALLY GROWING CONTROLS
Christine Houlihan, MD; Monica Grover, MD; Richard Stevenson, MD; Mark Conaway, PhD
11:07 AM – 11:14 AM  F4: DEPENDENCE ON MULTIPLE TECHNOLOGIES: A RISK FACTOR FOR POST-OPERATIVE COMPLICATION IN NON-AMBULANT CHILDREN WITH CEREBRAL PALSY UNDERGOING BACLOFEN PUMP INSERTION OR ORTHOPAEDIC SURGERY
Shenandoah Robinson, MD; Elizabeth Barkoudah, MD; Sangeeta Mauskar, MD; Benjamin J. Shore, FRCS(C), MD, MPh; Patricia Miller, MS; Manahil N. Naqvi, BS; Lorian Jenkins, BSN, RN; Laurie Glader, FAAP, MD
11:15 AM – 11:30 AM  QUESTIONS AND ANSWERS
11:31 AM – 11:38 AM  F5: RELIABILITY OF THE CHALLENGE MODULE IN MEASURING ADVANCED MOTORS SKILLS IN CHILDREN WITH CEREBRAL PALSY
Chun Ying Lam, BS; Bhavnita Mistry, MA; Joan Walker, BS; F. Virginia Wright, PhD, PT
11:39 AM – 11:46 AM  F7: THE DEVELOPMENT OF A PILOT TOOL TO ASSIST PRIMARY CARE PROVIDERS IN IDENTIFYING RISK AND OPTIMISING PHYSICAL FUNCTION IN AMBULANT ADULTS WITH CEREBRAL PALSY
Prue E. Morgan, PhD, MAppSc, BAppSc (physio); Cytle Williams, PhD; Jane Tracy, PhD; Rachael McDonald, PhD
11:47 AM – 11:54 AM  F8: RESPONSIVENESS OF THE PEDIATRIC EVALUATION OF DISABILITY INVENTORY-COMPUTER ADAPTIVE TEST IN MEASURING FUNCTIONAL OUTCOMES FOR INPATIENT PEDIATRIC REHABILITATION
Maria Fragala-Pinkham, PT, DPT, MS; Helene Dumas, BS, MS, PT; Kelly A. Lombard, BS, DPT; Jane E. O’Brien, FAAP, MD
11:55 AM – 12:02 PM  F9: THE QUALITY FUNCTION MEASURE: A STUDY EVALUATING RATER RELIABILITY & AGREEMENT WHEN A NEW MEASURE OF GROSS MOTOR PERFORMANCE IS USED IN AMBULANT CHILDREN WITH HYPERKINETIC MOVEMENT DISORDERS
Kylee Tustin, Bachelor of Physiotherapy
12:03 PM – 12:10 PM  F1: HEMATOCRIT MAY BE AN INDICATOR OF SURGICAL SITE INFECTION RISK IN CHILDREN WITH CEREBRAL PALSY
Eric Baranek, BS; Hiroko Matsumoto, MA; Benjamin D. Roye, MD, MPH; David P. Roye, MD; Michael Vitale, MD, MPh; Joseph Dukowsky, MD; Joshua Hyman, MD
12:11 PM – 12:30 PM  QUESTIONS AND ANSWERS
11:07 AM – 11:14 AM
F5: INVESTIGATING THE IMPACT OF PAIN, AGE, GROSS MOTOR FUNCTION CLASSIFICATION SYSTEM LEVEL AND GENDER ON HEALTH-RELATED QUALITY OF LIFE IN CHILDREN WITH CEREBRAL PALSY
Briar B. Findlay, BS; Lauren Switzer, HBSc, MSc; Unni G. Narayanan, FRCS(C), MBBS, MSc; Darcy Fehlings, FRCP(C), MD, MSc
11:15 AM – 11:30 AM QUESTIONS AND ANSWERS

11:31 AM – 11:38 AM
F6: INTRINSIC FUNCTIONAL CONNECTIVITY OF THE SWALLOWING NEURAL NETWORK IN CHILDREN WITH UNILATERAL SPASTIC CEREBRAL PALSY (USCP) WITH AND WITHOUT DYSPHAGIA
Georgia A. Malandraki, PhD, CCC-SLP, BCS-S; Kausar Abbas, MS; Kathleen M. Friel, PhD; Justine Joan Sheppard, Ph.D, CCC-SLP, BCS-S; Andrew M. Gordon, PhD
11:39 AM – 11:46 AM
F7: MANAGEMENT OF EARLY DISLODGMENT OF GASTROSTOMY TUBES IN CHILDREN
Garey Noritz, FAAP, MD; Brandis Thornton, MS, RD; Melissa Madden, MPH
11:47 AM – 11:54 AM
F8: RELATIONSHIP BETWEEN OROPHARYNGEAL DYSPHAGIA, GROSS MOTOR FUNCTION AND DAY TO DAY VARIATION IN ENERGY INTAKES OF PRESCHOOL AGED CHILDREN WITH CEREBRAL PALSY
Camilla Davenport, BS; Marita Lofthouse, BS; Jiaxu Zhang, BS; Peter Davies, BS, MS, PhD; Kelly Weir, MSc; Richard Stevenson, MD; Roslyn N. Boyd, PhD, PT; Kristie L. Bell, BS, PhD
11:55 AM – 12:02 PM
F9: A LONGITUDINAL STUDY OF THE DEVELOPMENT OF FAT MASS AND LEAN MASS IN PRESCHOOL CHILDREN WITH CEREBRAL PALSY ACROSS THE SPECTRUM OF FUNCTIONAL CAPACITY
Stina Oftedal, BS; Kristie L. Bell, BS, PhD; Roslyn N. Boyd, PhD, PT; Richard Stevenson, MD; Peter Davies, BS, MS, PhD
12:03 PM – 12:10 PM
F10: PROPHYLACTIC AEROSOLIZED TOBRAMYCIN FOR THE PREVENTION OF TRACHEITIS IN CHILDREN
Elizabeth Lucas, MD; Garey Noritz, FAAP, MD; Paul Grace, MD; Chandar Ramanathan, MD; Lindsay C. Landgrave, PharmD, BCPS, AE-C; Linda P. Lowes, PhD
12:11 PM – 12:30 PM QUESTIONS AND ANSWERS

Free Paper Session G: Early Intervention
Location: Lone Star DE
10:35 AM – 10:42 AM
G1: INFANT EXPLORATORY LEARNING AND LEG JOINT COORDINATION: INFLUENCE OF PREMATURITY
Barbara A. Sargent, PhD, PT, PCS; Linda Fetters, PhD, PT
10:43 AM – 10:50 AM
G2: EARLY INTERVENTION FOR AUTISM WITH SENSORY TREATMENT TO ALLEVIATE TACTILE ABNORMALITIES REDUCES SEVERITY OF AUTISM: RANDOMIZED CONTROLLED TRIAL IN 103 PRE-SCHOOL CHILDREN WITH AUTISM
Louisa M. Silva, MD, MPH
10:51 AM – 10:58 AM
G3: EARLY VIBRATION ASSISTED PHYSIOTHERAPY IN CHILDREN WITH CEREBRAL PALSY (12-24 MONTHS OF AGE) – PILOT RCT
Christina Stark, BA, MSc; Eckhard Schoenau, MD; Oliver Semler, MD
10:59 AM – 11:06 AM
G4: IMPACT OF MOTHER-CHILD INTERACTION ON DEVELOPMENT DURING THE FIRST YEAR OF LIFE: A SYSTEMATIC REVIEW
Nelci Adriana Cicuto Ferreira Rocha, PhD, PT; Fernanda Pereira dos Santos silica, MS, PT; Stacey C. Dusing, PhD, PT, PCS
11:07 AM – 11:14 AM
G5: CAREGIVERS AS INTERVENTIONISTS: A RANDOMIZED TRIAL OF HOME-BASED INTENSIVE BIMANUAL TRAINING IN YOUNG CHILDREN WITH HEMIPLEGIA
Claudio L. Ferre, PhD; Marina Brandao, PhD, OT; Bhavini K. Surana, MPT, PT; Ashley P. Dew, DPT, PT; Noelle G. Moreau, PhD, PT
11:15 Am – 11:30 am QUESTIONS AND ANSWERS
11:31 AM – 11:38 AM
G6: GROWTH DURING INFANCY AND EARLY CHILDHOOD IN CHILDREN WITH CEREBRAL PALSY
Kristin M. Strand, MD; Magnus O. Dahlseng, PhD, MD; Stian Lydersen, MS, PhD; Torstein B. Roe, PhD, MD; Reidun Birgitta Jahnsen, PhD, PT; Guro L. Andersen, PhD, MD; Torstein Vik, PhD, MD
11:39 AM – 11:46 AM
G7: KINEMATIC AND KINETIC PERFORMANCES DURING UPRIGHT CYCLING IN YOUNG CHILDREN WITH CEREBRAL PALSY
Renate v. van Zandwijk, MS; Jody L. Jensen, PhD
11:47 AM – 11:54 AM
G8: THE EFFECT OF AN UPPER EXTREMITY POWER TRAINING INTERVENTION ON PAIN AND POWER AMONG YOUNG PEOPLE WITH CEREBRAL PALSY
Gavin Colquitt, EdD; Noelle G. Moreau, PhD, PT; Li Li, PhD; Kristina Kendall, PhD; Robert Vogel, PhD; Theophile Dipita, DrPH(c)
11:55 AM – 12:02 PM
G9: EFFECTIVENESS OF LOWER EXTREMITY INTENSIVE FUNCTIONAL TRAINING (LIFT) IN YOUNG CHILDREN WITH HEMIPLEGIA DELIVERED IN THE HOME SETTING: A RANDOMIZED CONTROL TRIAL
Bhavini K. Surana, MPT, PT; Noelle G. Moreau, PhD, PT; Ashley P. Dew, DPT, PT; Claudio L. Ferre, PhD; Marina Brandao, PhD, OT; Andrew M. Gordon, PhD
12:03 PM – 12:10 PM
G10: EFFECTS OF A COMMUNITY-BASED TREADMILL PROGRAM ON WALKING FUNCTION IN YOUNG, PRE-AMBULATORY CHILDREN WITH NEURODEVELOPMENTAL IMPAIRMENT
Katrin Mattern-Baxter, PT, DPT, PCS
12:11 PM – 12:30 Pm QUESTIONS AND ANSWERS

Friday, October 23
Free Paper Session H: New Orthopedic Strategies in Cerebral Palsy

Location: Lone Star GH

10:35 AM – 10:42 AM

H1: MINIMIZING COMPLICATIONS IN SCOLIOSIS SURGERY IN CHILDREN WITH CEREBRAL PALSY
M. Wade Shrader, MD; Miranda Falk, MSc; Lee S. Segal, MD; William Wood, MD; Carla J. Boan, MSc; Greg White, MD

10:43 AM – 10:50 AM

H2: FACTORS PREDICTING POSTOPERATIVE COMPLICATIONS FOLLOWING SPINAL FUSIONS IN CHILDREN WITH CEREBRAL PALSY SCOLIOSIS
Julianne P. Sees, DO; Freeman Miller, MD; Tristan Nishnianidze, PhD, MD; Ihlan A. Bayhan, MD; Oussama Abousamra, MD; Kenneth Rogers, PhD; Kirk Dabney, MD

10:51 AM – 10:58 AM

H3: PELVIC OBLIQUITY IN ADOLESCENTS WITH CEREBRAL PALSY: A POPULATION BASED STUDY OF PREVALENCE AND LONG TERM CONSEQUENCES
Christoph Heidt, MD; Karsten Hollander, MD; Joanna Wawrzuta, BS; Charlotte Molesworth, MS; Kate Willoughby, PT; Pamela J. Thomason, MPT; Abhay Khot, MD; Kerr Graham, MD

10:59 AM – 11:06 AM

H4: HIP HEALTH AT SKELETAL MATURITY IN ADOLESCENTS AND YOUNG ADULTS WITH CEREBRAL PALSY
Kate Willoughby, PT; Pamela J. Thomason, MPT; Joanna Wawrzuta, BS; Charlotte Molesworth, MS; Kerr Graham, MD

11:07 AM – 11:14 AM

H5: PROGRESSION OF HIP INSTABILITY DURING RADIOPHGRAPHIC SURVEILLANCE IN CHILDREN AND ADOLESCENTS WITH CEREBRAL PALSY
Gye Wang Lee, MD; Sang Young Moon, MD; Chin Youb Chung, MD; Ki-Jeong Kim, MD; Ju Seok Ryu, MD; Kyoung Min Lee, PhD, MD; Soon-Sun Kwon, MD; Myoung Ki Chung, MD; Byung Chae Jo, MD; Moon Seok Park, MD

11:15 AM – 11:30 AM QUESTIONS AND ANSWERS

11:31 AM – 11:38 AM

H6: AVASCULAR NECROSIS IN CHILDREN WITH CEREBRAL PALSY AFTER RECONSTRUCTIVE HIP SURGERY
Kim Hesketh, PT; Lisa Phillips, MD; Janice Andrade, BS; Jennifer L. Farr, BA; Kishore Mulpuri, MS

11:39 AM – 11:46 AM

H7: PERSISTENCE AND RECURRENCE FOLLOWING FEMORAL DEROOTATIONAL OSTEOTOMY IN AMBULATORY CHILDREN WITH CEREBRAL PALSY
Chris Church, MPT; Nancy Lennon, MS, PT; Kevin G. Pineault; Tim Niiler, PhD; John Henley, PhD; Oussama Abousamra, MD; Kirk Dabney, MD; Freeman Miller, MD

11:47 AM – 11:54 AM

H8: BENEFITS OF REPEAT HAMSTRING LENGTHENING IN CEREBRAL PALSY
Allison Scott, MD; Kip Murphy, MD; Matthew Jordan, MD; Judith Linton, MS, PT; Eliroy Sullivan, BS, MA, PhD

11:55 AM – 12:02 PM

H9: LONG-TERM EFFECTS OF PATELLAR TENDON ADVANCEMENT ON PATELLA HEIGHT AND PROXIMAL TIBIAL GROWTH
Jean Stout, MS, PT; Claire F. Beimesch, MD; Ranjit Varghese, MS, MBBS, MD; Michael H. Schwartz, PhD; Tom Novacheck, MD

12:03 PM – 12:10 PM

H10: LONG-TERM OUTCOME OF TIBIAL DERO TATION OSTEOTOMIES IN CHILDREN WITH CEREBRAL PALSY
Mehmet S. Er, MD; Oussama Abousamra, MD; Kenneth Rogers, PhD; Ihlan A. Bayhan, MD; Chris Church, MPT; John Henley, PhD; Freeman Miller, MD

12:11 PM – 12:30 PM QUESTIONS AND ANSWERS

12:30 PM – 1:30 PM Medtronic Presentation Theater

New Approaches; New Conversations- Best Practices of Intrathecal Therapy (Lone Star AB)
Rez Farid, MD
Lunch will be provided for this non-CME, ticketed lunch session.

12:30 PM – 1:30 PM International Networking Luncheon (Brazos)

1:30 PM – 3:30 PM General Session (Lone Star DE)

Corbett Ryan Pathways Pioneer Award
Andrew McAleavey
Gayle G Arnold Lecture
GOING GREEN: EVIDENCE BASED INGREDIENTS TO PROMOTE ACTION FOR INFANTS AND CHILDREN
Linda Fetters, PT, PhD, FAPTA
Member Hot Topic Lecture
STIMULATING CONTROVERSY, STIMULATING THE BRAIN: NON-INVASIVE BRAIN STIMULATION AS A POTENTIALLY DISRUPTIVE CHANGE AGENT
Bernadette Gillick, PT, MSPT, PhD
Kathleen Friel, PhD

3:30 PM – 4:00 PM Coffee Break - Poster and Exhibits (Griffin Hall)

4:00 PM – 6:00 PM Instructional Courses 13-24

IC 13: APPLYING THE NEW ICF CORE SETS FOR CHILDREN AND YOUTH WITH CEREBRAL PALSY IN CLINICAL PRACTICE
Location: 203
Veronica Schiariti, PhD, MD, MSc; Karen Sauve, MSc, PT; Maureen O’Donnell, FRCPC, MD, MSc; Sandy K. Tatla, BS, MPT, MSc, OT

Purpose
To demonstrate the clinical applications of the new International Classification of Functioning, Disability and Health (ICF) Core Sets for children and youth with cerebral palsy (CP) in everyday practice.
Target Audience
This course will be of interest to clinicians and researchers working with children and youth with CP.

Course Summary
The ICF provides a common language to describe functioning and disability. Of particular importance is the ICF’s holistic scope, highlighting the functional domains of activities and participation and contextual factors (i.e., environmental and personal factors) which play key roles in social integration. The development of ICF-based tools — namely the newly developed ICF Core Sets for children and youth with CP — facilitate the application of the ICF in everyday practice. With endorsement by the WHO, a rigorous, multi-step methodology was employed for the creation of the ICF Core Sets for children and youth with CP. The developed tools highlight the most relevant areas of functioning for this population, systematically outlining critical information for assessment and management. In applying the Core Sets, one ensures a comprehensive look at functioning with consideration of contextual factors which offer positive and negative influences on functional abilities of children and youth with CP. In this course, the developers of the ICF Core Sets will provide an overview of the Core Sets, in addition to utilizing practical clinical scenarios to illustrate the clinical application of the Core Sets. Specifically, the clinical scenarios will demonstrate how to select the appropriate ICF Core Set, how to facilitate interdisciplinary team communication, how to select appropriate measures that map to the content of the Core Sets, and how to plan functional family-centered goals.

Learning Objectives
1. Become familiar with the ICF model, and the new ICF Core Sets for children and youth with CP
2. Understand how the ICF Core Sets can promote interprofessional assessment, management and collaborative work
3. Plan functional client- and family-centered goals by applying the ICF Core Sets in everyday practice
4. Select psychometrically sound measure/s for clinical applications and/or research studies using the content of the ICF Core Sets

IC 14: TOXIN- SAFE TERRITORY FOR BOTH PATIENTS AND PROVIDERS

Location: 213

Ed Wright, MD; Deborah Gaebler-Spira, MD; Collin Hovinga, BS, MS, PharmD; Ana-Marie Rojas, MD; Clifton M. Bergfeld, JD

Purpose
Residency, fellowship and apprentice training with mentors, meeting podium presentations, scientific publications, and experience are primary influencers on the practice of botulinum toxin injections and vary throughout the world. The influences of industry, regulatory agencies, and litigation are less considered contributors to practice but are an increasingly important in system based competency. The purpose of the course is to highlight and update the practice usage patterns subsequent to the 2009 FDA “boxed warning” and provide an interactive forum with legal and pharmaceutical professionals to improve patient and provider safety.

Target Audience
Physicians and other providers who inject or influence patient decision making regarding botulinum toxin injections

Course Summary
Botulinum toxin injections for hypertonia have a 25 year history of use in cerebral palsy with the first presentation at AACPDM in 1992. Since then many countries have approval by their respective drug regulatory agencies, however at doses lower than commonly used in practice. In the United States there is frequent “off label” usage in pediatric cerebral palsy. Dose escalation occurred rapidly in the late 90’s and 2000’s which was prior to the recognition of the systemic effects that prompted product label changes and several dosing safety studies. Following a brief review of this history and the medico legal climate, current practices around dosing, consent, documentation, injection techniques, identifying and reporting of adverse events will be explored through an interactive, anonymous poll of participates. Regulatory awareness, documentation practices and litigation around toxins will be reviewed by a hospital lawyer/physician team. Systemic spread reports, risks and responses and accessing regulatory safety data will be presented by a Pharmacology PHD/physician team.

Learning Objectives
1. To understand issues around patient and practice safety related to neurolytics use
2. To understand the roles of federal regulatory agencies relative to the pharmaceutical industry and the practice of healthcare
3. To understand the treatment options and outcomes of systemic botulism
4. To understand the current variable use and practice of neurolytic injections

IC 15: LET’S DO A HIP OSTEOTOMY! A HANDS-ON LABORATORY INTRODUCTION TO THE SURGICAL SKILLS OF A VARUS DEROTATIONAL OSTEOTOMY

Location: 204

M. Wade Shrader, MD; Walter Truong, MD; David Scher, MD; Jennifer C. Laine, MD; Benjamin J. Shore, FRCS(C), MD, MPH

Purpose
This course will present an overview of the technical details involved in a varus derotational osteotomy (VDRO) in children with cerebral palsy (CP) and neuromuscular hip dysplasia. The indications for hip reconstruction in the context of CP will be briefly discussed, as will a review of the outcomes in the literature. The bulk of the course will focus on a hands-on laboratory where participants will be able to perform a VDRO on a saw-bones model with modern surgical instrumentations, guided by pediatric orthopedic surgeons.

Target Audience
Physicians, Occupational and Physical Therapists, Nurses

Course Summary
This course will provide an introductory level discussion of hip osteotomies for children and adolescents with cerebral palsy (CP) and neuromuscular hip dysplasia. The pathophysiology, prevalence, treatment indications, and outcomes of hip surgery for dysplasia in CP will be briefly presented. The step-by-step
IC 16: APPLYING SELECTIVE DORSAL RHIZOTOMY TO IMPROVE GAIT AND AMBULATORY FUNCTION IN THE CHILD WITH CEREBRAL PALSY

Location: 303 & 304

Marcie Ward, MD; Tom Novacheck, MD; Peter D. Kim, MD, PhD

Purpose
To educate providers regarding Selective Dorsal Rhizotomy (SDR), a collaborative approach to evaluating candidates including gait analysis, the surgical techniques, the rehabilitation postoperatively and outcome data which will elevate the quality of our practices and the care of our patients.

Target Audience
Developmental pediatricians, pediatric neurologists, neurosurgeons, orthopedists, physiatrists and physical therapists who want to know more about SDR, or who consider SDR as a potential treatment option for their patients.

Course Summary
This course is designed to discuss the selection criteria associated with predictable outcomes for tone reduction and improved ambulation after selective dorsal rhizotomy. This team’s collaborative approach will be explained and include selection criteria which suggest a favorable outcome can be predicted if SDR is pursued. Applicable gait analysis principles will be highlighted. Surgical technique and the postoperative rehabilitation treatment plan implemented by this team will be discussed. Evidence will be presented to show short term and long term outcome data regarding patients treated with selective dorsal rhizotomy. The audience will participate through an electronic audience response system. This will allow the speakers to adjust teaching points commiserate with the audience’s level of understanding of the material and to identify areas for further discussion during the course.

Learning Objectives
1. Discuss the prevalence of neuromuscular hip dysplasia in patients with CP
2. Understand the surgical indications for hip reconstruction in the context of neuromuscular hip dysplasia in patients with CP
3. List the technical steps involved in the surgical technique of a VDRO
4. Perform a simplified VDRO surgical procedure on a sawbones simulation model

IC 17: EVALUATION AND TREATMENT OF THE UPPER EXTREMITY IN CEREBRAL PALSY: AN UPDATE

Location: 301 & 302

Ann E. Van Heest, MD; Michelle A. James, MD; Wendy Tomhave, OTR/L

Purpose
The purpose of this instructional course lecture is to provide up to date information regarding the evaluation and treatment of the upper extremity in cerebral palsy. Assessment tools will be presented to evaluate all aspects of disability as defined by the WHO. Bodily impairment measures evaluate for a problem with body function or structure (e.g. pinch strength, grip strength, AROM, PROM, stereognosis). Activity limitation measures difficulty encountered by an individual in executing a task or an action (e.g. Shriner’s hospital for upper extremity evaluation, Assisting Hand Assessment, Box and Blocks). Participation restriction evaluates problems experienced by an individual in involvement in life’s situations (Pediatric Orthopaedic Data Collection Instrument, Pediatric Quality of Life Inventory, Childhood Assessment of Participation and Enjoyment; and the Canadian Occupational Performance Measure. The use of these evaluation tools to formulate treatment plans based on an individual’s specific disability profile will be discussed using case examples. Treatment options including hand therapy strategies, splinting, medications, and surgery. Specific surgeries will be presented, including surgical results.

Target Audience
Any individual treating or evaluating patients with upper extremity involvement due to cerebral palsy

Course Summary
This two hour instructional course will provide an overview for any person treating or evaluating patients with upper extremity involvement due to cerebral palsy. Assessment tools will be presented focused on bodily impairment, Activity limitation, and participation restriction, as defined by the WHO. Formulation of treatment plans based on individual patterns of hand involvement will be presented including therapy strategies, splints, medications, and surgeries. Specific upper extremity surgical options and results will be presented. Time for case presentations and audience participation will be available.
IC 18: FROM STABLE STANDING TO ROCK AND ROLL WALKING. A SEGMENTAL KINEMATIC APPROACH TO REHABILITATION

Location: 205
Elaine Owen, MSc; Kristie Bjornson, MS, PhD, PT; Stefania Fatone, PhD

Purpose
This course introduces participants to the importance of segment proportion, alignment, stiffness and profile for standing and walking activities. The principles will be demonstrated by gait laboratory case studies. Using clinical algorithms the participants will be given the opportunity to determine optimum orthotic prescriptions for cases presented.

Target Audience
Relevant to clinicians and researchers including Physical Therapists, Orthotists, Pediatricians, Orthopaedic Surgeons, Rehabilitation Engineers, Neurologists, Physiatrists, Kinesiologists, Occupational Therapists.

Course Summary
This course presents a fresh approach to the analysis of standing, stepping and walking with full gait cycles. It emphasizes the importance of segment proportion, alignment, stiffness and profile for these activities. Video, Video Vector, 3D gait laboratory and accelerometry-based walking activity examples will be used to demonstrate the principles. Three clinical algorithms, which facilitate orthotic decision making based on the segmental kinematic approach, will be introduced. Small groups will use the algorithms to determine the optimum prescription requirements for cases presented. The actual prescriptions, short and long term results will then be presented. Handouts & CD provided.

Learning Objectives
1. Upon completion, participants will be able to describe assessment tools for evaluation of bodily impairment, activity limitations, and participation restriction due to upper extremity involvement of cerebral palsy
2. Upon completion, participants will demonstrate understanding of treatment plans for upper extremity involvement due to cerebral palsy, including therapy strategies, splints, medications, and surgery
3. Upon completion, participants will describe surgical procedures and results for treatment of the elbow, forearm, wrist, and thumb deformities due to upper extremity involvement due to cerebral palsy
4. Upon completion, participants will review case examples of upper extremity involvement due to cerebral palsy, and will participate in discussion

IC 19: PUZZLE PIECES TO SUPPORT LIFELONG HEALTH-RELATED FITNESS AND ACTIVITY AMONG INDIVIDUALS WITH CEREBRAL PALSY: THE IMPORTANCE OF KNOWLEDGE SHARING ACROSS BORDERS

Location: 209
Wilma M.A. van der Slot, PhD, MD; Mark D. Peterson, PhD, M.S.; Jan Willem Gorter, PhD, FRCPC, MD

Purpose
This course will bring together the puzzle pieces from research in three countries focusing on underlying mechanisms and promotion of health-related fitness and physical activity of individuals with cerebral palsy during adolescence, and transition into and throughout adulthood.

Target Audience
Everyone interested in health-related fitness and activity in individuals with CP including researchers, therapists, physicians, and kinesiologists.

Course Summary
Despite a paucity of evidence, health-related physical fitness and activity are thought to have a positive effect on health and quality of life in individuals with cerebral palsy (CP). This symposium will integrate information based on research and ongoing clinical practice from the Stay-FIT Research Program in Canada, work pertaining to secondary health complications of chronic inactivity from the U.S.A., and the MoveFit Research Program in The Netherlands. Chronic disease burden in CP through the lifespan will be a central focus of this symposium, and specific attention will be given to outlining viable interventions that may lessen the health burden of ageing with CP. Health-related fitness impairments and intervention options will be discussed in the context for individuals with CP, but also with respect to other motor and developmental disabilities.

Learning Objectives
1. To gain knowledge about the chronic health burden in individuals with CP
2. To understand health-related fitness impairments in adolescence and adults with CP
3. To identify motivators and barriers to physical activity (PA) participation
4. To learn strategies to promote PA and fitness in individuals with CP

IC 20: GAIT ANALYSIS DATA INTERPRETATION: UNDERSTANDING KINEMATIC RELATIONSHIPS WITHIN AND ACROSS PLANES OF MOTION IN PERSONS WITH PHYSICAL DISABILITIES

Location: 201
Sylvia Ounpuu, MSc; Kristan Pierz, MD

Purpose
The purpose of this course is to demonstrate the role of motion analysis in gaining understanding of the relationship of joint and segment kinematics within and across planes of motion for a variety of gait pathologies.
Target Audience
This course is for physicians, mid-level practitioners, physical therapists, orthotists, kinesiologists and others who are interested in a more detailed understanding of motion data interpretation by exploring the relationships between joint and segment kinematics both within and across multiple planes of motion.

Course Summary
Gait analysis data interpretation is a difficult skill that takes time and requires a detailed understanding of both the motion data being analyzed as well as the gait pathology being studied. This tutorial will provide practical information through case studies to assist in gait data interpretation. The tutorial will be divided into two components: a) background and b) case examples. The tutorial will begin with a detailed review of the key information for understanding joint angle and segment definitions in the three planes of motion (coronal, sagittal, and transverse). This will be facilitated by illustrations of each angle definition. The logic for understanding within and across plane interactions will then be discussed followed by explanation of the difference between compensation and secondary deviation. The tutorial will conclude by reviewing examples of within and across plane interactions. These will not be full case studies; rather they will focus on the particular relationships in kinematics within and across plane and gait compensations for each case. Video and clinical exam data will be included when relevant. These examples of within and across plane interactions will include pre and post data as well as barefoot and brace data that help to define these relationships. The pathologies will include cerebral palsy, myelomeningocele as well as a variety of other gait disorders of neuromuscular origin.

Learning Objectives
1. Understand the importance of knowing angle and segment definitions
2. Understand the definition of within plane kinematic interactions
3. Understand the definition of cross plane kinematic interactions
4. Articulate common examples of within and across plane interactions for a variety of diagnoses of neuromuscular origin

IC 21: STRATEGIES FOR TRANSLATING RESEARCH EVIDENCE INTO PRACTICE FROM KNOWLEDGE TRANSLATION RESEARCH IN CEREBRAL PALSY

Location: 202
Leanne Sakzewski, PhD, OT; Iona Novak, PhD

Purpose
To provide clinicians with a comprehensive understanding of the processes and strategies for translating research evidence into practice.

Target Audience
Clinicians working with children with cerebral palsy.

Course Summary
Adopting research evidence into routine clinical practice takes an unpredictable and often long period of time, requiring theoretically informed implementation strategies to drive change in the workplace. For example, based on current evidence for upper limb training in children with unilateral CP and in the absence of clinical practice guidelines, four evidence criteria are proposed: Therapy should (1) be goal directed and goal attainment measured objectively pre and post intervention; (2) use contemporary motor learning approach; (3) achieve an adequate dose; (4) measure upper limb outcomes objectively pre and post intervention. Throughout the workshop, participants will work through a systematic process based on the Implementation of Change Model to determine practical ways to progress change in their workplace and adoption of research evidence into routine clinical practice.

Learning Objectives
1. Upon completion, participants will be able to understand methods for translating the latest CP intervention evidence into practice and determine ways it could be adapted for their work context
2. Upon completion, participants will be able to evaluate clinical performance against specific evidence criteria both before and after implementing changes in clinical practice
3. Upon completion, participants will be able to identify potential barriers and enablers to implementing changes in clinical practice
4. Upon completion, participants will be able to identify possible implementation strategies and identify and develop their own strategies to enable change to be integrated into routine clinical practice
IC 22: MAXIMIZING GAIT AND FUNCTION IN PEOPLE WITH CEREBRAL PALSY THROUGH TARGETED EXERCISE PRESCRIPTION – AN INTERACTIVE CASE APPLICATION

Location: 310 & 311
Noelle G. Moreau, PhD, PT; Mary Gannotti, PhD, PT; Andrew McAleavey, MS

Purpose
The purpose of this instructional course is to apply current best evidence regarding muscle response to exercise in children and adults with cerebral palsy (CP) and information from instrumented gait analysis in order to prescribe individualized, targeted exercise programs to maximize gait and functional ability. This course will utilize a unique, interactive case application design, where an adult with CP will be one of the presenters and will describe his surgical and therapy history from childhood to adulthood. Instrumented gait analysis and physical examination reports will be presented to the audience. He will discuss his goals and current exercise program, which includes indoor rock climbing, and will pose the question to the other presenters, “What exercises should I be doing to meet my goals and to prevent deterioration of my gait?” One of the presenters will respond with an individualized exercise program specifically designed to help the case subject to meet his personal goals for exercise and improving his gait.

Target Audience
Anyone interested in fitness, exercise prescription, or resistance training for individuals with cerebral palsy, including physical and occupational therapists, kinesiologists, biomechanists, pediatricians, and orthopedic surgeons.

Course Summary
Healthcare providers can and should play a vital role in prescribing exercise programs to maximize the ambulation abilities and overall health and wellness of people with cerebral palsy (CP) across the lifespan. Current knowledge about muscle physiology, function, and exercise response in children and adults with CP will be reviewed. Changes in gait parameters and function as measured by instrumented gait analysis from 8 years of age to present (35 years of age) for a person with CP will be reviewed. The influence of surgery, maturation, and changes in exercise routine from middle childhood to adulthood will be highlighted. The subject of the case study will discuss his current ambulation abilities, functional skills, and exercise program, providing a unique lifespan perspective. The case subject will pose questions to healthcare professionals about recommended exercises to meet his goals for function, health, and quality of life. An exercise prescription based on physiological principles will be outlined to meet his goals for gait, function and wellness. In addition, recommendations will be made for exercise for individuals with CP to maximize muscle performance and gait into adulthood.

Learning Objectives
1. Evaluate the role of exercise and resistance training in maximizing ambulation, functional status, and health in adults with CP.
2. Apply physiological principles for resistance training to design individualized, targeted exercise programs for ambulatory adults with CP.
3. Identify the role of interventions, maturation, and lifestyle/personal characteristics on functional abilities of adults with CP.
4. Empathize with the perspectives of adults with CP as consumers.

IC 23: SUPPORTING CHILDREN WITH NEUROMUSCULAR SPINAL DEFORMITY NEEDING SCOLIOSIS SURGERY: A TEAM APPROACH

Location: 307
Irene Cihon Dietz, FAAP, MD; Ranjit Varghese, MS, MBBS, MD; Gina Rempel, FAAP, FRCP, MD; Lisa Cantore Letzkus, MSN, RN; Cindy Dodds, PhD, PCS, PT; Mohan Belthur, MS, FRCS(C), MBBS, MD

Purpose
This Course will present “Evidence -informed Clinical Practice Guidelines” for team-based preoperative evaluation, perioperative support and post-surgical care for children GMFCS level 4/5. Integrating all care elements brought forward by team members with family goals improves the monitoring, preparation and decisions for surgical intervention in this complex and often fragile group of children. Speakers are members of the Complex Care Committee representing a broad multidisciplinary approach.

Target Audience
Physicians, Nurses, Occupational & Physical Therapists, Respiratory Therapists, Dieticians

Course Summary
Neuromuscular (NM) spinal deformities in children necessitating surgical intervention present management challenges for both families care teams because of the complex interplay of co-occurring conditions such as decreased cardiopulmonary function, inadequate nutrition, seizures, immunodeficiency, coagulopathies, decreased mobility, communication and cognitive difficulties. These comorbidities lead to extended hospital stays, significant complications, and social challenges in the perioperative period. Protocol-based care has been shown to successfully decrease the number of days on mechanical ventilation, improve mortality from sepsis and incidence of drug-resistant bacterial infections, thus reduced costs of hospitalization. Early evidence has emerged around standardizing preoperative risk assessment leading to better outcomes after major spine operations. A high-risk spine protocol involves dedicated professionals in multiple specialties focusing on all aspects of a patients care in the pre, intra and postoperative phases. This course will present the current knowledge informing providers for children with NM disorders GMFCS 4/5 in this process.
Learning Objectives
1. Identify modifiable risk factors, including cardiac, pulmonary, nutritional, musculoskeletal and psychosocial and necessary evaluation and treatments before undergoing high-risk spine surgery
2. Understand how a dedicated multidisciplinary team involved throughout the pre-, intra- and post-operative periods improves patient and family satisfaction, optimal utilization of healthcare dollars, and outcome
3. Understand and integrate how protocol-based care in spine surgery may lead to reduced complications and better outcomes with reduced length of stay and improve overall patient outcomes
4. Discuss how shared decision making and adequate preparation of the family before surgery, through the intraoperative and postoperative care improves outcomes

IC 24: DISCUSSING THE DISCLOSURE OF A NEURODEVELOPMENTAL DISABILITY (NDD) WITH PARENTS: INTEGRATING VISUAL AIDS WITH VERBAL COMMUNICATION

Location: 212
Manroop Gill, BS; Anna Maria L. Wilms Floet, MD; Eric Levey, MD; Alec Hoon, MD, MPH

Purpose
The purpose of this course is to weave both visual techniques and linguistic approaches into a mosaic of communication, while drawing in the experience of the audience.

Target Audience
Clinicians involved in the diagnostic evaluation of children with neurodevelopmental disabilities

Course Summary
When parents are worried about the development of their child, there are a myriad of questions in their minds. What is the matter? What can we do? Will our child go to regular school? Is it my fault? Can this happen again? Professionals in the field are cognizant of these questions and the inherent challenges in presenting the “truth” in a hopeful, realistic fashion. Much has been written about this, both from a general communication perspective as well as from the discussion in regard to specific disabilities. It is widely recognized that disclosure is a longitudinal process, with multiple opportunities to build parental understanding, thereby optimizing opportunities for children with NDD. One of the presenters (AH), has over the years adapted a drawing for use in these discussions. This drawing was originally intended to be discarded after feedback discussions, but parents frequently asked to take the diagram home. Now it is used routinely, with the hope that it can serve as a “road map,” which both parents and professionals can review again as needed. Beginning from our perspectives, we will move to active audience participation with shared insights and experiences.
**Course Summary**
The transition of patients from pediatric to adult providers and care is often overwhelming for both patients and families/caregivers. Gillette Lifetime Clinic offers a new service to assist in making a smooth transition. Components of a Transition Clinic appointment include extensive chart review in preparation for the appointment, a tour of Lifetime Clinic, an intake with a transition resource nurse, an extended visit with a nurse practitioner, which includes an holistic assessment of patient medical and psychosocial needs. Using best-practice skills, Gillette evidence based care pathways, and patient and family/caregiver input, referrals and orders are placed for appropriate services within Gillette Lifetime Clinic. All appointments are individualized to accommodate awareness of cognitive, physical, and cultural diversity. Care coordination and follow-up are essential to the success of the clinic, along with shared clinic notes and communication with providers both before and after appointments.

**Learning Objectives**
1. Upon completion, participant will be able to differentiate between transition (a long process) and transfer of care (an event)
2. Upon completion, participant will be able to describe three components of a transition visit
3. Upon completion, participants will identify potential outcome measures for a transition program
4. Upon completion, participants will be able to identify barriers to successful transition

**BRK 21: TRANSITIONING RESPONSIBILITY TO ADULTHOOD AND ADULT CARE: PRESENTING ONTRAC AND SUCCESSFUL APPLICATION OF PRACTICAL TOOLS FOR FAMILIES CLINICIANS AND CARE PROVIDERS USING A LIFESPAN APPROACH**

**Location:** 205

**Jacqueline Simone. Purtzki, FRCP; Susan C. Labhard, MS**

**Purpose**
To present OnTRAC – a newly developed comprehensive transition pathway and user friendly transition tools for youth with chronic developmental disabilities, their families and care providers.

**Target Audience**
Pediatric and Adult Care Physicians, Nurses, Therapists, Educators

**Course Summary**
A growing number of children with complex developmental disabilities require transition to adulthood. To meet their needs, a comprehensive approach to transition, encompassing medical, social-emotional and societal aspects of transition in a developmentally appropriate fashion, has been developed. Participants can expect to come away with practical, evidence-based transition tools for use in the clinical setting. This course will: 1. showcase OnTRAC, a provincial transition program with emphasis on transferrable transition tools for youth, families and providers for patients requiring complex care 2. provide an example of a successful youth and family-centered transition program with solutions and resources beyond medical needs alone. 1. ON TRAC is an internet accessible Provincial Transition
initiative for youth (12-24 years) with chronic health conditions and disabilities (CHC/Ds) to adult care. Special emphasis has been placed on youth engagement incorporating web and smartphone based tools and apps. Tools and materials, sharing a common framework, are intended for youth, families, pediatric, rehabilitation, community, and adult care providers, and are adaptable for condition-specific content. 2. Shriners Hospital-Portland, OR provides transition resources for families, and individuals with physical and developmental disabilities. The Transitions Nurse Specialist will present keys to: a) setting up a transitions program applicable in any setting and; b) engaging youth with special health needs in participating in their healthcare and personal goals. Participants will come away with creative approaches to a successful family-centered approach to transition and practical solutions to transition issues.

Learning Objectives
1. To understand the concerns of youth, families and care providers during the transition process from pediatric to adult life
2. To apply new tools and strategies designed to improve transparency and efficiency of a family-centred and developmentally appropriate transition process for persons with complex neuro muscular disabilities
3. To demonstrate the benefits of an integrated and comprehensive transition strategy and concept
4. Take home specific transition tool and resources which they can share with their patients and clinic providers

BRK 23: CEREBRAL PALSY DAY WITH THE EXPERTS: THE NEW FRONTIER - HOW TO BRING THE AACPDM TO OUR PATIENTS, FAMILIES AND COMMUNITY

Location: 204
Taryn M. Bragg, MS, MD; Emily Meyer, BS; Marcella Andrews, MPT, PCS; Mary Locast, OTR

Purpose
The purpose of the seminar is to discuss the benefits of developing a multidisciplinary, patient and family centered, interactive lecture series to integrate clinical knowledge and research with patient and family needs. Developing a Day with the Experts can help create community awareness of the complexity of cerebral palsy and can empower patients and families to themselves become the Experts. This interactive program provides patients and families with an opportunity to meet with surgeons, therapists, physiatrists and research scientists to learn about a wide variety of topics, from cutting edge research and treatments to the basics of day to day care. Patients and their families can then discuss their personal challenges and provide their unique perspective on living with cerebral palsy. The breakfast seminar will focus on development of a curriculum, organizational strategies, community involvement and continued lecture series.

Target Audience
All attendees including health care professionals, patients and families

Course Summary
The concept of a Day with the Experts developed from a patient driven need to understand the complexity and degrees of severity of cerebral palsy. It became very apparent in our practice that there is great variability in the timing of diagnosis, access to a multidisciplinary team, and local therapy resources. In addition, many providers, patients and families have limited knowledge about the basics of how a diagnosis is made and the relationship between the motor deficits, cognitive delay, speech and language development, and communication. Also of critical importance is developing patient goals and appropriate expectations. Our Day with the Experts sought to bridge these concepts and to identify key topics to integrate medicine, science and its translation to day to day life. Our first Day with the Experts focused on the basics of cerebral palsy, including
the diagnosis and overview of medical interventions. Experts from the Center for Disease Control discussed the incidence of cerebral palsy and its impact on the families and the medical community. Our second Day with the Experts focused on the importance of speech/language, swallowing and nutrition, and communication. Future topics include the importance of early intervention and the unique challenges of transitioning and independence. This course will allow participants to develop a patient and family centered interactive lecture series, organize hospital and community resources, encourage and foster family involvement, and truly bring the AACPDM from the podium to our patients and providers.

Learning Objectives
1. Create a multidisciplinary lecture series to highlight current clinical trends and translational research to community professionals, patients and families
2. Understand how Day with the Experts can foster a sense of community among health care workers, basic scientists, patients and families, providing educational opportunities and open access to community resources
3. Create a unique opportunity for researchers, clinicians, patients and families to learn from each other through open discussion
4. Invite patients and families to participate on a panel to share their experience of living with cerebral palsy with other families and medical providers

BRK 24: INDICATIONS AND EXPLICIT GUIDANCE FOR SOFT TISSUE SURGERY USING GAIT ANALYSIS

Location: 201
Jean Stout, MS, PT; Tom Novacheck, MD; Adam Rozumalski, MS

Purpose
To describe the role of gait analysis in decision-making for soft tissue surgery in children with cerebral palsy. Specific indications and contraindications for psoas, hamstring, and gastrocnemius procedures based on gait analysis data will be discussed. Surgical techniques and assessment of outcomes following surgery will also be described.

Target Audience
Pediatric orthopaedists, physiatrists, physical therapists, kinesiologists, biomechanists, and engineers who use gait analysis to make decisions for soft tissue surgery.

Course Summary
The translation of gait-analysis findings into an explicit clinical treatment plan has been difficult for many clinicians to implement. This course is designed to bridge the gap of understanding for decisions related to psoas, hamstring and gastrocnemius lengthening procedures to alleviate contractures that compromise gait. Drawing from previous research, biomechanical models (muscle lengths/velocities), mathematical classification methods, and clinical experience, a method for data interpretation and surgical planning will be illustrated. Specific indications and contraindications for each procedure based on data gathered in a gait analysis center will be described. Surgical techniques will be explicitly described (including intra-operative videos). Limitations of current surgical techniques and goals for future steps to improve the translation of gait analysis and techniques into the surgery will be discussed. Case examples will illustrate both favorable and adverse outcomes. Techniques for assessing outcomes of intervention will be presented which will further reinforce the knowledge incorporated into surgical decision making and problem-centric gait reporting.

Learning Objectives
1. Discuss how biomechanical models contribute to the understanding of surgical indications for hamstring & psoas procedures
2. Identify specific gait analysis findings which are indications/contraindications for psoas, hamstring, & gastrocnemius procedures in the child with CP
3. Describe common pitfalls in decision-making regarding psoas, hamstring, gastrocnemius procedures that lead to adverse outcomes

BRK 25: CHRONIC LUNG DISEASE IN THE PATIENT WITH NEURODISABILITY: CONCEPTS AND MANAGEMENT STRATEGIES

Location: 203
Robert H. Warren, MD; Farrah D. Jones, BS, RRT, CPFT

Purpose
This course will present unique concepts regarding the specific challenge of chronic lung disease in patients - infants to young adults - with a primary neurodisability diagnosis. The origins of secretions and how to manage them, the evolution of chronic lung disease, and the art of creating the respiratory management plan will be highlighted.

Target Audience
This course is relevant to physicians, nurses, and respiratory therapists. In addition, for those in other health related professions, chronic pulmonary disease impacts on the progress of physical, occupational, and speech therapy goals and objectives.

Course Summary
Discuss the specific factors that contribute to airway secretion production and retention present in the patient with a primary neurodisability. Present information regarding bacterial colonization in the airway. Discussion of clinical assessment and analysis of pulmonary function data. Review of respiratory therapy medications and devices. Case presentations to demonstrate the application of respiratory therapy management and the individualized respiratory therapy plan.

Learning Objectives
1. Understand the pathophysiology of airway secretions in the patient with neurodisability and potential for progressive pulmonary dysfunction
2. Understand the potential clinical application of the Pulmonary Composite
3. Understand the basic principles of respiratory care medications and devices
4. See, through the use of case presentations, the need for individualization of the respiratory therapy management plan
BRK 26: ORTHOPAEDIC SURGERY FOR THE UPPER AND LOWER LIMB IN CHILDREN WITH CEREBRAL PALSY

Location: 202
Robert M. Kay, MD; Nina Lightdale-Miric, MD

Purpose
To educate attendees regarding current methods for Orthopaedic evaluation and surgical treatments of common extremity problems in children with cerebral palsy (CP).

Target Audience
Physicians, physical therapists, occupational therapists

Course Summary
Faculty will discuss state-of-the-art and established evaluation and treatment techniques of lower and upper extremity problems in children with CP. Discussion will focus on common challenges encountered at the hip, knee, long bones, foot/ankle, elbow, wrist, and hand, as well as appropriate surgical / non-surgical treatment. Emphasis will be placed on common errors in problem identification and treatment recommendations, and ways to minimize such errors. Content will be based both on the presenters’ clinical expertise and evidence-based review of literature. Videos, photographs and x-rays will be used and handouts will be provided. Group discussion of difficult cases and clinical problems will be encouraged.

Learning Objectives
1. Accurately identify the most common upper and lower extremity problems in children with CP
2. Identify common pitfalls in surgery to the upper and lower extremity
3. Define one or more ways to avoid common treatment errors
4. Gain perspective on the complexity of surgical planning for children with CP

BRK 27: TRANSITION MODELS FOR PERSONS WITH CHILDHOOD ONSET COMPLEX CHRONIC CONDITIONS: ARE WE TRULY EFFECTIVE?

Location: 212
Irene Cihon Dietz, FAAP, MD

Purpose
This interactive session will discuss different approaches in developing an appropriate transition program, including identification of necessary resources for young adults with childhood onset complex chronic conditions associated with disabilities. Available outcomes data will be highlighted.

Target Audience
Physicians, Nurses, Social Workers, Therapists, Families

Course Summary
Changes in care during the developmental period has resulted in each year larger groups of adolescents and young adults with childhood onset chronic illness, and medical complexity needing to “graduate” from a pediatric to an “adult” care program. Several models exist, and programs have been variably successful in monitoring outcomes of the process itself, and not only reporting family satisfaction, but also identification of unmet medical and social/emotional needs after the family has left the pediatric setting. This course will review current knowledge, with then active discussion by participants in order to identify necessary change in existing models, and/or introduction of new models. Information available may also generate ideas on family preparation, and partner relationships with providers of health care in Pediatric and Adult Medicine.

Learning Objectives
1. To define and identify the necessary healthcare resources for adolescent and young adults with complex chronic conditions aging out of a pediatric practice
2. To interactively identify the pros and cons of several transition models and assess local ability to introduce these into new settings
3. Develop strategies to optimize age specific healthcare value and promote patient and family satisfaction while moving through an integrated transition process
4. Describe pros, cons, lessons learned, and address Patient, Family, Pediatric and Adult Provider satisfaction with a similar models based on local resources

Free Paper Session I: Imaging and Early Development

8:20 AM – 8:27 AM
I1: GREY MATTER INJURY PATTERNS IN CEREBRAL PALSY: ASSOCIATIONS BETWEEN STRUCTURAL INVOLVEMENT ON MRI AND CLINICAL OUTCOMES
Susan M. Reid, PhD; Michael R. Ditchfield, MBBS, MD; Dinah S. Reddihough, FRACP, MBBS, MD

8:28 AM – 8:35 AM
I2: WHAT CAN MAGNETIC RESONANCE IMAGING TELL US ABOUT WHITE MATTER INJURY IN TERM-BORN CHILDREN WITH CEREBRAL PALSY?
Susan M. Reid, PhD; Michael R. Ditchfield, MBBS, MD; Dinah S. Reddihough, FRACP, MBBS, MD

8:36 AM – 8:43 AM
I3: VERY EARLY BRAIN STRUCTURE AND NEUROLOGICAL FUNCTION DETECTS BRAIN INJURY IN PRETERM INFANTS AT 30 WEEKS AND 40 WEEKS POSTMENSTRUAL AGE
Joanne M. George, PT; Jurgen Fripp, PhD; Kerstin Pannek, PhD; Simona Fiori, MD; Andrea Guzzetta, PhD, MD; Robert Ware, PhD; Stephen Rose, PhD; Paul Colditz, PhD, FRACP, MBBS; Roslyn N. Boyd, PhD, PT

8:44 AM – 8:51 AM
I4: RESTING-STATE FUNCTIONAL BRAIN CONNECTIVITY DIFFERS IN PRETERM INFANTS WITH NORMAL AND ABNORMAL GENERAL MOVEMENTS
Colleen Peyton, OPT, PCS, PT; Michael E. Msall, FAAP, MD; Lars Adde, PhD, PT; Ragnhild Steen, PhD, MD; Toril Fjartoft, MSc, PT; Catherine Kennedy, MS, PT; Christa Einspieler, PhD; Arend F. Bos, PhD, MD; Michael Schreiber, MD; Alexander Drobyshovsky, PhD
PROGRAM & EVENTS

SATURDAY OCTOBER 24

8:52 AM – 8:59 AM  
I5: EARLY GENERAL MOVEMENT TRAJECTORIES AND MAGNETIC RESONANCE IMAGING IN INFANTS BORN < 30 WEEKS’ GESTATION  
Alicia J. Spittle, PhD, MSc, PT; Joy Olsen, PhD, OT; Nisha Brown, PhD, OT; Jeanie Cheong, FRACP, MBBS, MD; Lex W. Doyle, FRACP, MBBS, MD

9:00 AM – 9:15 AM  QUESTIONS AND ANSWERS

9:16 AM – 9:23 AM  
I6: ABNORMAL GENERAL MOVEMENTS DURING THE FIDGETY PERIOD ARE ASSOCIATED WITH MOTOR DEVELOPMENT AT 18-24 MONTHS IN HIGH RISK INFANTS FROM THE UNITED STATES  
Raye-Ann O. deRegnier, MD; Mary D. Weck, PT; Lynn Boswell, MS, PT; Annamarie Hayner, MS; Mary Kay Santella, PT; Cheryl Patrick, PT; Evette Coll, PT; Ragnhild Stoen, PhD, MD; Lars Adde, PhD, PT

9:24 AM – 9:31 AM  I7: RELATIONSHIP BETWEEN MOTOR PERFORMANCE AND POSTURAL CONTROL IN VERY PRETERM AND TERM BORN PRESCHOOL AGE CHILDREN  
Lucy E. Lorefice, PhD, PT; Mary P. Galea, PhD, PT; Lex W. Doyle, FRACP, MBBS, MD; Ross Clark, PhD; Peter J. Anderson, BA, PhD; Alicia J. Spittle, PhD, MSc, PT

9:32 AM – 9:39 AM  I8: THE HAND ASSESSMENT FOR INFANTS, A NEW TEST FOR MEASURING USE OF HANDS AND POSSIBLE ASYMMETRY IN INFANTS 3-10 MONTHS OF AGE  
Lena Krumlinde-Sundholm, PhD, OT; Elisa Sicola, PT; Linda Ek, OT; Andrea Guzzetta, PhD, MD; Giovanni Cioni, PhD, MD; Ann-Christin Eliasson, PhD, OT

Cathryn M. Crowle, OT (Hons)MSpecEd; Nadia Badawi, PhD, FRACP, MBBS, MSc; Karen Walker, PhD; Catherine J. Morgan, PT; Iona Novak, PhD

9:48 AM – 10:15 AM  QUESTIONS AND ANSWERS

Free Paper Session J: Current Issues in Childhood Disability

Location: Lone Star F

8:20 AM – 8:27 AM  
J1: STAKEHOLDER PERSPECTIVES’ ON SOCIAL PARTICIPATION IN PRE-SCHOOL CHILDREN WITH AUTISM SPECTRUM DISORDER  
Tamara Germani, QT; Joyce Magill-Evans, PhD; Lonnie Zwaigenbaum, FRCP, MD

8:28 AM – 8:35 AM  
J2: A COHORT COMPARISON STUDY OF PRENATAL VERSUS POSTNATAL SURGERY FOR CLOSURE OF MENINGOMYELOCELE, USING THE NATIONAL SPINA BIFIDA PATIENT REGISTRY: RATES OF VENTRICULOOPERITONEAL SHUNT INSERTION AND CHIARI II SURGERY  
Gordon Worley, MD; John S. Wiener, MD; Rachel Greenberg, MD; Tiebin Liu, PhD; Brad Dicianno, MD; Judy Thibadeau, MSN

8:36 AM – 8:43 AM  
J3: PHYSICAL FUNCTION IN CHILDREN WITH 22Q11.2 DELETION SYNDROME/VELO-CARDIO-FACIAL SYNDROME  
Yasser Salem, PT, PhD, NCS, PCS; Howe Liu, PhD, MD, PT; Kanlaya Dithakashem, MSN; Dianne M. Altona, BA, MS

8:44 AM – 8:51 AM  J4: RESPIRATORY MUSCLE TRAINING IN DUCHENNE MUSCULAR DYSTROPHY: A META-ANALYSIS  
Elizabeth Mae Williamson, PhD, PT; Natalie Pederson, BS; Hannah Schaper, BS

8:52 AM – 8:59 AM  
J5: ROLE OF MOTIVATION ON PERFORMANCE OF THE 6-MINUTE WALK TEST IN BOYS WITH DUCHENNE MUSCULAR DYSTROPHY  
Lindsay N. Alfano, DPT; Linda P. Lowes, PhD; Kate M. Berry, PT; Kevin M. Flanagan, MD; Linda H. Cripe, MD; Jerry R. Mendell, MD

9:00 AM – 9:15 AM  QUESTIONS AND ANSWERS

9:16 AM – 9:23 AM  
J6: CEREBRAL PALSY RESEARCH FUNDING FROM THE NATIONAL INSTITUTES OF HEALTH IN 2001-2013  
Yvonne W. Wu, MD, MPH; Alison Mehravari, BA; Adam L. Numis, MD; Paul H. Gross, BA

9:24 AM – 9:31 AM  
J7: FACTORS ASSOCIATED WITH ACCESS TO MEDICAL EQUIPMENT AND THERAPIES AMONG CHILDREN WITH SPECIAL HEALTHCARE NEEDS  
Elizabeth Martin, MD, MPH; Lynne C. Huffman, MD

9:32 AM – 9:39 AM  
J8: THE IMPACT OF A SERIES OF GROUP EDUCATIONAL CLASSES FOR PARENTS OF CHILDREN WITH CEREBRAL PALSY ON ANTICIPATORY GRIEF AND KNOWLEDGE OF THE DIAGNOSIS  
Catie Christensen, PT, DPT; Nancy Batterson, OT/L; Terri Venesy, OTR/L

9:40 AM – 9:47 AM  
J9: HEALTHCARE GAPS PERCEIVED BY WOMEN WITH CEREBRAL PALSY  
Jacqueline Boehme, BS; Julie Y. Yoshimachi, BA; Hiroko Matsumoto, MA; Mark Sullivan, BA; Tracy Pickar, MSW; Joseph Dutkowsky, MD; Heakyung Kim, MD; David P. Roye, MD

9:48 AM – 9:55 AM  
J10: IMPAIRED MUSCLE SATELLITE CELL MATURATION IN CHILDREN WITH CEREBRAL PALSY  
Andrea A. Domenighetti, PhD; Margie Mathewson, PhD; Hank G. Chambers, MD; Richard L. Lieber, PhD

9:56 AM – 10:15 AM  QUESTIONS AND ANSWERS
**Free Paper Session K: Therapy Interventions**

**Location:** Lone Star DE

**8:20 AM – 8:27 AM**

**K1: EFFECT OF INTERVENTION USING VIDEOGAME ON GROSS MOTOR FUNCTION OF CHILDREN WITH CEREBRAL PALSY: A RANDOMIZED CONTROLLED TRIAL**

Joice Luisa Bruno Arnoni; Fernanda Pereira dos Santos silva, MS, PT; Silvia Leticia Pavaoa, MS, PT; Stacey C. Dusing, PhD, PT, PCS; Nelci Adriana Ccouto Ferreira Rocha, PhD, PT

**8:28 AM – 8:35 AM**

**K2: RANDOMISED CONTROLLED TRIAL OF A WEB-BASED MULTIMODAL TRAINING PROGRAM ON ACTIVITY CAPACITY AND PERFORMANCE FOR CHILDREN WITH AN ACQUIRED BRAIN INJURY**

Emmah Baque, PT; Lee A. Barber, PhD, MPT; Leanne Sakzewski, PhD, OT; Roslyn N. Boyd, PhD, PT

**9:36 AM – 9:43 AM**

**K3: SELECTIVE VOLUNTARY MOTOR CONTROL INFLUENCES THE PRODUCTION OF KNEE JOINT TORQUE ACROSS A RANGE OF SPEEDS IN CHILDREN WITH SPASTIC CEREBRAL PALSY**

Loretta A. Staudt, MS, PT; Kent R. Heberer, MS; Steven H. Odom, BS; Marcia B. Greenberg, MS, PT; Eileen G. Fowler, PhD, PT

**9:44 AM – 9:51 AM**

**K4: THE PHYSICAL ACTIVITY-RELATED PERCEPTIONS OF YOUTH WITH CEREBRAL PALSY ARE ASSOCIATED WITH THEIR PHYSICAL ACTIVITY PERFORMANCE AND FITNESS**

Sophie-Krystale Dufour, PT; Nory Lansing, PT; Laurent J. Bouyer, PhD; Hélène Moffet, PhD, PT; Chantale Ferland, MS, PT; Desiree B. Mahtais, PhD, PT

**8:52 AM – 8:59 AM**

**K5: RELATIONSHIP BETWEEN HABITUAL PHYSICAL ACTIVITY AND QUALITY OF LIFE IN CHILDREN WITH CEREBRAL PALSY AT AGED 5 YEARS**

Piyapa Keawutan, BS, MS; Kristie L. Bell, BS, PhD; Richard Stevenson, MD; Peter Davies, BS, MS, PhD; Roslyn N. Boyd, PhD, PT

**9:00 AM – 9:15 AM**

**QUESTIONS AND ANSWERS**

**9:16 AM – 9:23 AM**

**K6: SYSTEMATIC REVIEW OF GAIT TRAINER OUTCOMES FOR CHILDREN WITH MOTOR IMPAIRMENTS**

Ginny Paleg, DScPT, MPT, PT; Roslyn Livingstone, MSc, OT

**9:24 AM – 9:31 AM**

**K7: PHYSICAL STRAIN OF WALKING IN CEREBRAL PALSY**

Astrid CJ Balemans, PhD; Eline AM, Bolster, MSc; Jacqueline Bakels, MSc; Rinske Blauw, MSc; Jules G. Becher, PhD, MD; Annet J. Dallmeijer, PhD

**9:32 AM – 9:39 AM**

**K8: EFFECTIVENESS OF INTENSIVE FAST-RECIPROCAL LEG TRAINING ON MOTOR COORDINATION AND GAIT IN AMBULATORY CHILDREN WITH CEREBRAL PALSY**

Diane Damiano, PhD; Christopher Stanley, BS, MS; Laurie Ohrlich, MS, PT; Katharine E. Alter, MD

**9:40 AM – 9:47 AM**

**K9: ROBOTIC RESISTANCE TREADMILL TRAINING IMPROVES LOCOMOTOR FUNCTION IN CHILDREN WITH CEREBRAL PALSY: A RANDOMIZED CONTROLLED STUDY**

Ming Wu, PhD; Janis Kim, MPT; Deborah Gaebler-Spira, MD; Brian Schmit, PhD; Pooja Arora, DPT

**9:48 AM – 9:55 AM**

**K10: RECOMMENDED TREADMILL TRAINING PARAMETERS FOR PERSONS WITH CEREBRAL PALSY BASED ON THE GMFCS LEVELS: A SYSTEMATIC REVIEW**

Susan Ronan, DPT; Erin Bingham, BA; Shani Mushkat, BA; Ethan Sedman, BS

**9:56 AM – 10:15 AM**

**QUESTIONS AND ANSWERS**

**Free Paper Session L: Gait**

**Location:** Lone Star GH

**8:20 AM – 8:27 AM**

**L1: PREVALENCE OF SPECIFIC GAIT ABNORMALITIES IN CHILDREN WITH CEREBRAL PALSY: INFLUENCE OF AGE, GENDER AND GMFCS LEVEL**

Susan A. Rethlefsen, PT, DPT; Gideon Blumstein, MS; Tishya Wren, PhD; Robert M. Kay, MD

**8:28 AM – 8:35 AM**

**L2: PREVALENCE OF GAIT DEVIATIONS IN BILATERAL CEREBRAL PALSY BY GROSS MOTOR FUNCTION CLASSIFICATION SYSTEM LEVEL**

Sylvia Ounpuu, MSc; George E. Gorton, BS, MS; Anita Bagley, PhD, MPH; Kristie L. Bell, BS, PhD; Peter Davies, BS, MS, PhD; Richard Stevenson, MD; Roslyn N. Boyd, PhD, PT

**8:36 AM – 8:43 AM**

**L3: LONGITUDINAL STUDY OF THE TRACKING OF PHYSICAL ACTIVITY LEVEL IN PRESCHOOL CHILDREN WITH CEREBRAL PALSY ACROSS THE SPECTRUM OF FUNCTIONAL CAPACITY**

Stina Oftedal, BS; Piyapa Keawutan, BS, MS; Kristie L. Bell, BS, PhD; Peter Davies, BS, MS, PhD; Richard Stevenson, MD; Roslyn N. Boyd, PhD, PT

**8:44 AM – 8:51 AM**

**L4: ROLE OF ENERGY EXPENDITURE IN DIFFERENTIATING BETWEEN MOVEMENT DISORDERS IN CHILDREN WITH CEREBRAL PALSY**

Vivek Dutt, MD; Jean Stout, MS, PT; Michael Healy, MD; Gilbert Chan, MD; Tom Novacheck, MD

**8:52 AM – 8:59 AM**

**L5: GAIT OUTCOMES AND ENERGY EFFICIENCY IN PATIENTS WITH HEREDITARY SPASTIC PARAPLEGIA**

Anthony M. Anderson, MS; Kirsten Tulchin-Francis, PhD; Linsley B. Smith, BS, RN; Mauricio R. Delgado, MD, FRCPC, FAAN

**9:00 AM – 9:15 AM**

**QUESTIONS AND ANSWERS**

**9:16 AM – 9:23 AM**

**L6: COMPLEXITY OF MOTOR CONTROL DURING WALKING PREDICTS TREATMENT OUTCOMES IN CEREBRAL PALSY**

Katherine M. Steele, BS, MS, PhD; Adam Rozumalski, MS; Michael H. Schwartz, PhD

**9:24 AM – 9:31 AM**

**L7: OBJECTIVE MEASUREMENT OF DYSTONIA DURING GAIT FROM KINEMATICS VARIABILITY**

Morgan Sangeux, PhD; Luke W. Robinson, BMedSci; Kerr Graham, MD

**9:32 AM – 9:39 AM**

**L8: GAIT PATTERNS OF CHILDREN WITH UNILATERAL SPASTIC CEREBRAL PALSY**

Mitell Sison-Williamson, MS; Sylvia Ounpuu, MSc; Anita Bagley, PhD, MPH; George E. Gorton, BS, MS; Donna Oeffinger, PhD
### IC 26: TOWARD BEST PRACTICES IN VIRTUAL REALITY AND ACTIVE VIDEO GAME USE WITHIN PEDIATRIC REHABILITATION: COMPETENCIES, CLINICAL DECISION-MAKING AND OUTCOME MEASUREMENT

**Location:** 209  
**Date:** SATURDAY OCTOBER 24  
**Time:** 9:40 AM – 9:47 AM  
**L9: RELATIONSHIP AMONG INDICES OF KINEMATIC DEVIATION AND FUNCTION IN CHILDREN WITH CEREBRAL PALSY**  
*Jon R. Davids, MD; Adit Kothari, BS; Anita Bagley, PhD, MPH*

**Time:** 9:48 AM – 9:55 AM  
**L10: SEMITENDINOSUS TRANSFER EXTENDS THE KNEE AND PREVENTS ANTERIOR PELVIC TILT IN SPASTIC DIPLEGIA: A LONG TERM OUTCOME STUDY**  
*Charlotte C. Frost, MD; Jillian M. Rodda, PhD; Kerr Graham, MD; Paulo Selber, MD*

**Time:** 9:56 AM – 10:15 AM  
**QUESTIONS AND ANSWERS**

### Learning Objectives
- **To understand the purposes of classification systems**
- **To classify individuals with cerebral palsy using the GMFCS, MACS, CFCS, & EDACS**
- **To use a functional profile of classifications to assist clinical decision-making and research objectives**
- **To describe how classification systems should not be used**

### Purpose
Building on an AACPDM 2014 instructional course that provided overviews of specific virtual reality (VR) and active video game (AVG) systems and the evidence supporting their use in pediatric rehabilitation, this course aims to deliver theoretical and practical knowledge that can be applied immediately in clinical practice. We will introduce clinical competencies and a decision-making framework to guide client-centered, evidence-based use of VR/AVGs. The course developers have clinical and research expertise in measuring the barriers and facilitators to VR/AVG use, developing resources to target these factors and evaluating their effectiveness. Our competency framework proposes key areas of knowledge and skill development and provides theoretical and clinical decision-making guidance to support VR/AVG use by clinicians. The purposes of this course are to 1) introduce participants to the competency and clinical decision-making framework; 2) familiarize participants with tools available to develop competencies; and 3) facilitate the application of the framework to clinical case examples as a means of reinforcing learning and of assessing its utility.

### Target Audience
Clinicians (occupational therapists, physical therapists, speech-language pathologists and physicians working in rehabilitation teams) interested in integrating VR/AVGs into their clinical practice.

### Course Summary
VR and AVG use in pediatric rehabilitation is gaining momentum as the evidence builds and new rehabilitation-specific platforms become as clinically accessible as commercial gaming systems. However, research demonstrates that therapists require training, support and clinical tools to facilitate their adoption of VR/AVGs. This course provides an overview of the theory, evidence, competencies and resources required by clinicians to effectively and sustainably integrate VR/AVGs across pediatric clinical practice settings. Course content specifically targets the VR/AVG learning needs of clinicians identified by a recent national research survey. Using both small and large group activities, participants will receive an overview of the most current evidence on rehabilitation-specific and commercially available systems for pediatric neuromotor conditions and of the competencies required for effective treatment using VR/AVGs. A clinical decision-making framework that provides guidance on the selection of VR/AVG systems and games that are congruent with client and therapist needs, goals and abilities will be applied through clinical case examples. The theoretical rationale for VR use with respect to motor learning...
will be applied throughout the course. Available tools to support the development and evaluation of these competencies, including online knowledge translation resources, will be highlighted, along with the outcome measures that are suitable for evaluating the effectiveness of VR/AVG interventions.

Learning Objectives
1. Understand the evidence and theory underlying the clinical application of virtual reality (VR) and active video games (AVG) in pediatric rehabilitation
2. Describe the competencies required by clinicians to implement and evaluate VR/AVG-based therapy, including:
   • System selection and operation
   • Goal-setting and treatment planning
   • Treatment implementation and monitoring
   • Transferring skills to real-life functional activities
   • Evaluating outcomes
3. Apply a clinical decision-making framework to guide VR system and game selection, with consideration of therapeutic requirements, therapist competencies, client goals and environmental factors
4. Identify existing online resources to support competency development and clinical integration of VR and active video game technology

IC 27: EARLY DETECTION AND EARLY INTERVENTION FOR CEREBRAL PALSY

Location: 211 & 212
Catherine J. Morgan, PT; Iona Novak, PhD; Alicia J. Spittle, PhD, MSc, PT; Linda Fetters, PhD, PT

Purpose
The purpose of this course is to examine research data on tools that accurately predict cerebral palsy in infants and emerging evidence for new and novel interventions that effectively treat cerebral palsy (CP).

Target Audience
Clinicians and researchers who diagnose, assess and treat children with CP will benefit from this symposium about case-based decision-making.

Course Summary
Recent research on neuroplasticity supports intensive, repetitive, task-specific intervention for CP that should commence early while the brain is most plastic, yet the average age for the diagnosis is 17 months. Early discrimination between CP and other diagnoses is essential for successful management since evidence-based interventions and prognoses now differ depending on diagnosis. Psychometrically sound early motor assessment tools, brain imaging, and neurological examinations assist in predicting CP. The most accurate predictive tool is the General Movements Assessment. We will discuss the growing systematic review and clinical trial evidence regarding available tools and the potential neuroplastic benefits of early intervention with the goal of earlier diagnosis and targeted intervention. This course describes evidence-based diagnostic, assessment, prognostic and treatment options for infants with CP and “at risk” of CP. Based on latest evidence, we recommend referral for intervention which occurs immediately when an infant is “at risk” of CP. New data from rigorous international trials investigating the efficacy of novel early intervention treatments will be presented. Clinical pathways and decision-making trees that include assessment, treatment, and expected outcomes will be presented based on best-available evidence. Interactive video case studies will be used to assist participants to simulate planning treatment activities using these new novel interventions.

Learning Objectives
1. Demonstrate an understanding of the etiology of cerebral palsy and implications for choice of early interventions
2. List evidence-based diagnostic, assessment, and prognostic tools for infants “at risk” of CP
3. Describe new research data and understand the latest early intervention options and the associated child outcomes
4. Understand the principles of implementing these new treatments

IC 28: PEDIATRIC CONSTRAINT INDUCED MOVEMENT AND BIMANUAL THERAPY IMPLEMENTATION INTO THE CLINIC SETTING

Location: 201
Karen Harpster, BA, PhD, OT; Teressa Garcia Reidy, MS, OTR/L; Kelly J. Tanner, PhD, OTR/L

Purpose
This panel will discuss the implementation of Pediatric Constraint Induced Movement Therapy (P-CIMT) and Bimanual Therapy (BIT) across multiple clinical settings around the country. Occupational therapists from three institutions will discuss their P-CIMT/BIT protocols with emphasis on intervention and outcomes. In addition, data about treatment efficacy and each program’s clinical effectiveness will be presented.

Target Audience
Therapists, Physicians, Nurses

Course Summary
Constraint Induced Movement Therapy (CIMT) and Bimanual Training (BIT) programs are considered gold standard interventions for improving arm and hand function and independence in daily activities for children with hemiplegia (Novak, 2013). A variety of protocols for P-CIMT and BIT exhibiting positive outcomes exist in the literature. Clinical implementation of P-CIMT/BIT varies significantly, in part due to the limited training on how to implement high dosage therapy programs in diverse clinical and community settings. Fidelity of service delivery and use of valid, sensitive, and reliable outcome measures are essential for providing quality, reimbursable, occupation-based treatment. Clinicians often report difficulty identifying ways to execute P-CIMT/BIT in their clinical settings while maintaining the fidelity of the intervention. The presenters have been engaged in developing and providing a variety of models of P-CIMT/BIT offered in both clinic-based and community settings. This presentation will describe current evidence based guidelines for P-CIMT/BIT. The presenters will share their experiences, provide video-based demonstrations of children engaged in P-CIMT/BIT, and discuss utilization of sensitive, reliable, and valid outcome measures appropriate for different age groups participating in P-CIMT/BIT. Additionally, the presenters will discuss how to actively engage
IC 29: SPINAL DEFORMITY IN CEREBRAL PALSY: AN INTRODUCTION FROM BRACING TO SURGERY

Location: 301

M. Wade Shrader, MD; Freeman Miller, MD; Kirk Dabney, MD

Purpose
This course will present an overview of the management of spinal deformities in children with cerebral palsy (CP). Specifically, the speakers will discuss initial treatment strategies (bracing), surgical indications, preoperative assessment, intraoperative deformity correction, postoperative care, and a review of the treatment outcomes.

Target Audience
Physicians, Occupational and Physical Therapists, Nurses

Course Summary
This course will provide an introductory level discussion of spine deformity for children and adolescents with cerebral palsy (CP). The impact of these deformities and spinal surgeries on the patient and their family will be discussed within the context of the International Classification of Functioning, Disability and Health (ICF). All types of spinal deformities that children with CP develop will be discussed, including the epidemiology and initial treatment strategies (bracing and seating modification). Surgical indications will be presented, and protocols for preoperative assessment will be demonstrated to reduce the risks of postoperative complications. Surgical management will be discussed thoroughly, including intraoperative management, deformity correction and implant selection. Postoperative pathways will be provided, including post-surgical seating adjustments. Finally, a review of the health-related quality of life (HRQoL) outcomes of spinal fusion from the literature will be presented.

Learning Objectives
1. Upon completion, participants will be able to identify the theoretical foundations of P-CIMT/BIT and current evidence related to intensive therapy models for children with hemiplegia
2. Upon completion, participants will be able to explain how to implement P-CIMT/BIT utilizing various protocols across different environments and taking into account stages of upper extremity development and therapy goals
3. Upon completion, participants will be able to develop a plan to engage parents in the P-CIMT/BIT process to promote occupation-based functional skills during and after P-CIMT/BIT intervention
4. Upon completion, participants will be able to describe strategies to document in a standardized way, the fidelity of P-CIMT/BIT treatment and children’s progress before, during, and after treatment

IC 30: ADVANCED MANAGEMENT OF HYPERTONIA IN PATIENTS WITH CEREBRAL PALSY

Location: 202

Warren A. Marks, MD; Eric Levey, MD; Alec Hoon, MD, MPH

Purpose
Participants will be able to differentiate dystonia and spasticity, both physiologically and clinically. This course is designed to enhance understanding of the role of intrathecal baclofen and deep brain stimulation in the management of spasticity and dystonia related to cerebral palsy.

Target Audience
This course is designed for physicians, nurses, advanced practitioners, rehabilitation therapists and others involved in medical management of patient with complex movement disorders including cerebral palsy.

Course Summary
Cerebral palsy is the most common disabling movement disorder in childhood. While spasticity is often the dominant abnormality of tone, especially in the lower extremities, dystonia of the upper extremities is often present and more functional disabling. Hypotonia of the trunk and neck often complicates treatment interventions. Treatment typically begins with therapy and oral medications, with chemodenervation for localized treatment of both spastic and dystonic hypertonia. The importance of differentiating spasticity and dystonia will be highlighted as the key to determining specific treatment options. When oral medications are inadequate, neurosurgical options for management of should be considered. There are both reversible destructive procedures as well as programmable options. We will explore the advanced management of spastic and dystonic hypertonia, with a focus on intrathecal baclofen and deep brain stimulation.
Learning Objectives
1. Upon completion, participants will be able to differentiate spasticity from dystonia.
2. Upon completion, participants will be able to use a treatment matrix for the management of hypertonia in patients with cerebral palsy.
3. Upon completion, participants will be able to recognize when intrathecal baclofen may be appropriate in the management of patients with cerebral palsy.
4. Upon completion, participants will understand the evolving role of deep brain stimulation in the management of dystonia in patients with cerebral palsy.

IC 31: PAIN IN CEREBRAL PALSY ACROSS THE LIFESPAN: AN EVIDENCE-BASED APPROACH TO UNDERSTANDING, ASSESSING, AND TREATING COMPLEX PAIN

Location: 208
Wilma M.A. van der Slot, PhD, MD; Kjersti Ramstad, PhD, MD; Chantel C. Barney, PhD; Reidun Birgitta Jahnson, PhD, PT

Purpose
This course will not only improve clinical knowledge of pain but also provides practical information for improving clinical practice. Attendees will better understand ways they can provide care for children and adults with CP who live with pain.

Target Audience
Physicians, Occupational Therapists, Physiotherapists, Nurses, Researchers

Course Summary
Pain is common in cerebral palsy (CP) and impacts activities of daily living, sleep, mood and communication. Although the challenge of pain in CP is well known, it is often under recognized and under treated in clinical practice. Presenters will describe the complex nature of pain in this vulnerable population including characteristics, causes, associated symptoms, aggravating and elevating factors, and pain’s impact on quality of life across the lifespan. Practical, evidence based information will be presented to guide clinical practice including efficient pain assessment and treatment approaches for individuals with CP across the lifespan.

Learning Objectives
1. To identify characteristics of pain and pain’s impact on quality of life in CP across the lifespan.
2. To learn effective means of assessing pain when typical methods are not sufficient.
3. To understand medical treatment options for pain in CP.
4. To understand physical therapy approaches to the treatment of pain in CP.

IC 32: CONTROVERSIES IN ORTHOPAEDIC MANAGEMENT OF PATIENTS WITH MYELOMENINGOCELE

Location: 213
Vineeta T. Swaroop, MD; Rachel Mednick, BA, MD; Luciano Dias, MD

Purpose
To review the orthopaedic care of patients with myelomeningocele, focusing on areas of controversy. Content covered will include new advances in treatment and current evidence-based treatment recommendations. Emphasis on a collaborative approach to evaluating patients using gait analysis and outcome data where appropriate.

Target Audience
This course is relevant to all clinicians caring for patients with myelomeningocele including orthopaedic surgeons, physiatrists, physical and occupational therapists, orthotists, and pediatricians.

Course Summary
This course will help attendees to identify the best strategies to provide individualized orthopaedic care to patients with myelomeningocele. Topics covered will include new advances in treatment and evidence-based guidelines will be highlighted. Case-based discussion and motion analysis studies will be used to promote audience involvement.

Learning Objectives
1. Identify functional benefits of hip surgery and select which patients are appropriate operative candidates.
2. Understand surgical indications for a patient with rotational deformity and when is the best time to intervene.
3. Understand the role computerized gait analysis plays in the assessment and treatment of patients with myelomeningocele.
4. Identify areas for future research.

IC 33: INTRODUCTION TO THE PEDIATRIC EVALUATION OF DISABILITY INVENTORY-COMPUTER ADAPTIVE TEST (PEDI-CAT): A NEW OPTION FOR MEASURING FUNCTION

Location: 205
Maria Fragala-Pinkham, PT, DPT, MS; Benjamin J. Shore, FRCS(C), MD, MPH; Jessica Kramer, PhD

Purpose
To provide information on a newly developed test designed to measure daily activities, mobility, social/cognitive, and responsibility abilities in youth with disabilities.

Target Audience
Physicians, therapists and other rehabilitation professionals interested in measuring functional abilities in youth with disabilities.
**IC 34: SERIAL CASTING FOR THE LOWER EXTREMITY: AN INTRODUCTION USING AN EVIDENCE-BASED CARE GUIDELINE**

**Location:** 302

*Heather R. Blackburn, MPT; Molly Thomas, DPT*

**Purpose**
This course will introduce the revised Serial Casting Evidence-Based Care Guideline at Cincinnati Children’s Hospital Medical Center (CCHMC), as well as provide practical examples and demonstrations of serial casting techniques for the lower extremities. This workshop will assist attendees in recognizing appropriate serial casting candidates and how serial casting recommendations can be incorporated into their practice.

**Target Audience**
Physical Therapists, Occupational Therapists, Physical Therapist Assistants, Certified Occupational Therapist Assistants, Physicians, Nurses

**Course Summary**
This course will present evidence supporting serial casting of the lower extremity in individuals diagnosed with cerebral palsy (CP), brain injury (BI), idiopathic toe walking (ITW), Duchenne muscular dystrophy (MDM), and spasticity. Content will also address the use of botulinum toxin injections in conjunction with lower extremity serial casting and the goals of serial casting in the lower extremities. Workshop participants will participate in discussion and lab sessions of serial casting of the lower extremity.

**Learning Objectives**
1. Describe the transition from the Pediatric Evaluation of Disability Inventory (PEDI) to the Pediatric Evaluation of Disability Inventory Computer Adaptive Test (PEDI-CAT)
2. Identify the PEDI-CAT test applications including intended populations, domains, test items, response scales, administration procedures, and scoring
3. Discuss applicability of the PEDI-CAT to measure abilities in youth with disabilities including psychometric properties specifically for youth with CP (GMFCS Levels I-V)
4. Discuss future development and preliminary findings of the PEDI-CAT: ASD option as well as other disability specific PEDI-CAT options

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**IC 35: AN OVERVIEW OF CHILDHOOD ONSET DYSTONIA: EVALUATION, DIAGNOSIS AND TREATMENT**

**Location:** 203

*Mark Gormley, MD; Timothy Feyma, MD; Peter D. Kim, MD, PhD*

**Purpose**
To review the differential diagnosis for childhood onset dystonia, the diagnostic work up, and the treatment options available. The distinction between primary and secondary dystonias work up and management will be covered. Treatment strategies reviewed will include nonsurgical and surgical options.

**Target Audience**
Developmental pediatricians, pediatric neurologists, neurosurgeons, orthopedists, physiatrists and therapists who want to know more about childhood onset dystonia, its work up and treatment.

**Course Summary**
This course will teach a recommended treatment algorithm for the evaluation and treatment of the primary and secondary dystonias. The work up that is required to distinguish between primary and secondary dystonias will be reviewed with a closer look at the diagnoses most amenable to treatment. A review of the treatment options available will include therapy strategies, oral medications, injectable medications, and surgical treatments. Surgical treatment options will be explained including intrathecal baclofen, intraventricular baclofen, rhizotomy, neurectomy, pallidotomy/thalamotomy and deep brain stimulation. Relevant research and advancements in dystonia will be discussed highlighting the newer opportunities for this patient population. The audience will participate through an electronic audience response system. This will allow the speakers to adjust teaching points commensurate with the audience’s level of understanding of the material and to identify areas for further discussion during the course.

**Learning Objectives**
1. Discuss some common conservative strategies for treating dystonia including positioning strategies, oral and injectable medications
2. Review the process for evaluating patients for primary dystonias and describe some that are most amenable to intervention
3. Explain the surgical options for the treatment of dystonia including the work currently being accomplished using deep brain stimulation
4. Learn how to apply an algorithm for the evaluation, diagnosis, and treatment of childhood onset dystonia

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**IC 36: COMPREHENSIVE ASPIRATION RISK MANAGEMENT PLAN FOR INDIVIDUALS WITH NEURODEVELOPMENTAL DISABILITIES**

**Withdrawn**

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**CoP: 31**

**AANDM: 126**

**Amc: 211**

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**Program & Events**

**Saturday October 24**

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**American Academy for Cerebral Palsy and Developmental Medicine • Final Program**
Scientific Posters

SP 1: AN EXPLORATION OF CARE MAPPING AMONG FAMILIES OF CHILDREN WITH MEDICAL COMPLEXITY (CMC)
Sherri Adams, MSN, CPNP, NP-Paed; Sanjay Mahant, FRCPC, MD, MSc; Ronik Kanani, BS, FRCP; MD; Natalie Weiser, MA; David Nicholas, PhD; Katherine Boydell, PhD; Eyal Cohen, FRCP, MD, MSc

SP 2: CORRECTION OF TIBIAL TORSION IN CHILDREN WITH CEREBRAL PALSY BY ISOLATED DISTAL TIBIA OSTEOTOMY: AN ANATOMIC STUDY
Emily Andrisevic, MD; Jon R. Davids, MD; David Westberry, MD; Linda Pugh, BS; Anita Bagley, PhD, MPH

SP 3: ACTIVITY AND PARTICIPATION OUTCOMES IN CHILDREN WITH HEMIPLEGIA FOLLOWING FUNCTIONAL ELECTRICAL STIMULATION NEUROPROSTHESIS USE
Amy F. Bailes, PhD, PT; Cailee Caldwell, MS; Michael D. Clay, DPT, PT; Melissa Tremper, MPT; Kari Dunning, PhD, PT; Erin Haynes, MS, PhD; Jason Long, Son, MD

SP 4: INTRATHECAL BACLOFEN PUMP INJECTIONS IN A PEDIATRIC POPULATION FROM 1998 – 2014
Marcie Baldwin, MS, RN, CPNP; Mary Ann Reed, MSN; Warren A. Marks, MD

SP 5: VALIDITY OF ACCELEROMETER TO MEASURE PHYSICAL ACTIVITY IN CHILDREN AND ADOLESCENTS WITH AN ACQUIRED BRAIN INJURY
Emmam Baque, PT; Lee A. Barber, PhD, MPT; Leanne Sakzewski, PhD, OT; Roslyn N. Boyd, PhD, PT

SP 6: EXERTION DURING CAREGIVING FOR CHILDREN WITH CEREBRAL PALSY FOLLOWING INTRATHECAL BACLOFEN
Ruth E. Benedict, DrPH, OTR/L; Marcella Andrews, MPT, PCS

SP 7: LONGITUDINAL STUDY OF OROPHARYNGEAL DYSPHAGIA IN PRESCHOOL CHILDREN WITH CEREBRAL PALSY
Katherine A. Benfer, MPH; Kelly Weir, MSc; Kristie L. Bell, BS, PhD; Robert Ware, PhD; Peter Davies, BS, MS, PhD; Roslyn N. Boyd, PhD, PT

SP 8: ACTIVLIM-CP, A NEW MEASURE OF GLOBAL ACTIVITY FOR CHILDREN WITH CEREBRAL PALSY DESIGNED WITH RASCH ANALYSIS
Yannick Blevenhout, PhD; Julie Paradis, OT; Anne Renders, MD; Jean-Louis Thonnard, PhD, PT; Carlyne Arnould, PhD, PT

SP 9: THE IMPACT OF PROLONGED HOSPITALIZATION ON INFANT MOTOR DEVELOPMENT COMPARED WITH HEALTHY CONTROLS
Lynn Boswell, MS, PT; Mary Weck, PT; Annamarie Hayner, MS; Toril Fjørtoft, MSc, PT; Ragnhild Steen, PhD, MD; Lars Adde, PhD, PT; Raye-Ann O. delRegnier, MD

SP 10: INDIVIDUAL PATIENT DATA META-ANALYSIS OF INTENSIVE UPPER LIMB THERAPY APPROACHES ON UPPER LIMB FUNCTIONAL OUTCOMES FOR CHILDREN WITH UNILATERAL CEREBRAL PALSY
Nataya Branjerdporn, OT; Leanne Sakzewski, PhD, OT; Roslyn N. Boyd, PhD, PT

SP 11: NATIONAL SURVEILLANCE OF CEREBRAL PALSY IN PORTUGAL. OVERVIEW OF THE FIRST NINE SURVEYED YEARS (BIRTH-COHORTS 2001-2008)
Ana Cadete, MD; Daniel Virella, MD; Teresa Folha, MSc; Graça Andrade, PhD; Rosa Gouveia, MD; Joaquim Alvarelhão, PhD; Eulália Calado, MD

SP 12: EFFECT OF ACTIVITY TRAINING IN CHILDREN WITH CEREBRAL PALSY: A SYSTEMATIC REVIEW WITH META-ANALYSIS
Hsiu-Ching Chiu, PhD; Theofani Bania, PhD

SP 13: IDENTIFICATION OF PRETERM INFANTS AT-RISK FOR DELAY: CORRELATION OF KINEMATIC MEASURES OF HEAD CONTROL TO EARLY NEUROIMAGING AND 12-MONTH DEVELOPMENTAL ASSESSMENT
Patty Coker-Bolt, PhD, OTR/L, FAOTA; Noelle G. Moreau, PhD, PT; Jessica P. Bentzley, MS; Kathryn Hope, MS; Dorothea Jenkins, MD

SP 14: LONG TERM OUTCOMES OF SELECTIVE DORSAL RHIZOTOMY: A CASE-CONTROL STUDY
Alecia K. Daunter, MD; Anna Kratz, PhD; Edward A. Hurvitz, MD

SP 15: SKELETAL MUSCLE FIBER TYPE-SPECIFIC SUCCEINATE DEHYDROGENASE ACTIVITY IS NOT REDUCED IN CHILDREN WITH CEREBRAL PALSY
Sudarshan Davanidhi, PhD; Andrew M. Zogby, BS; Hank G. Chambers, MD; Simon Schenck, PhD; Richard L. Lieber, PhD

SP 16: THE EFFECT OF STANDARDIZATION AND TRAINING ON INTER- AND INTRA-RATER RELIABILITY OF THE MODIFIED ASHWORTH SCALE IN CHILDREN WITH CEREBRAL PALSY
Mauricio R. Delgado, MD, FRCP, FAAN; Carol Chambers, BS, MS, PCS, PT; Charter Rushing, PhD, PT; Hun Epps, PT; Angela Shierk, PhD, OTR/L; Margie Goggans, BS; Nancy J. Cleggs, BS, MS, PhD; Sara Baldwin, BS; Deborah A. Baldwin, BS; ChanHee Jo, PhD

SP 17: ACCURACY OF NEEDLE PLACEMENT BY ELECTRICAL STIMULATION GUIDANCE IN BOTULINUM TOXIN TYPE A INJECTIONS IN THE LOWER LIMBS OF CHILDREN WITH HYPERTONIA
Mauricio R. Delgado, MD, FRCP, FAAN; Yassine Kanaan, BS, MD; David Wilkes, BA, MD; Deborah A. Baldwin, BS; Nancy J. Cleggs, BS, MS, PhD

SP 18: SELF-GENERATED FEEDBACK TO INCREASE MUSCLE ACTIVATION IN CHILDREN
Susan V. Duff, EdD; Barbara A. Sargent, PhD, PT, PCS; Jason J. Kutch, PhD; Jamie Berggren, OT; Linda Fetters, PhD, PT

SP 19: JOB MATCHING PRACTICES OF PROFESSIONALS SUPPORTING INDIVIDUALS WITH DISABILITIES IN TRANSITION TO EMPLOYMENT
Andrew Persch, PhD, OTR/L; Amy Darragh, PhD, OTR/L; Dennis Cleary, MS, OTR/L; Kelly J. Tanner, PhD, OTR/L

SP 20: BLADE PLATE STRENGTH IN VARUS DEROTATIONAL OSTEOTOMIES: A BIOMECHANICAL STUDY
Folorunsho Edobor-Osula, MD; Matthew Garner, BS, MD; Kathleen Meyers, MD; Roger F. Widmann, BS, MD; David Scher, MD

SP 21: THE EFFECTS OF NEUROMUSCULAR ELECTRICAL STIMULATION AND KINESIOTAPING ON SITTING BALANCE IN CHILDREN WITH CEREBRAL PALSY
Bulent Elbasan, PhD; Kamile Uzun Akkaya, BS
SCIENTIFIC POSTERS

SP 22: MINI-MACS; DEVELOPMENT OF THE MANUAL ABILITY CLASSIFICATION SYSTEM FOR CHILDREN WITH CP BELOW 4 YEARS
Ann-Christin Eliasson, PhD, OT; Anna Ullenham, PhD, PT; Ulla Wahlström, MSc, OT; Lena Krumlinde-Sundholm, PhD, OT

SP 23: ASSESSING STRUCTURAL CONNECTIVITY IN PATIENTS WITH CEREBRAL PALSY WITH AND WITHOUT DYSPHAGIA
Kathleen M. Friel, PhD; Andrew M. Gordon, PhD; Lucia F. Mourao, PhD; Georgia A. Malandraki, PhD, CCC-SLP, BCS-S

SP 24: RELATIONSHIP BETWEEN WHITE MATTER INTACTNESS AND NEUROLOGICAL FUNCTION IN PRETERM INFANTS AT 30 WEEKS POSTMENSTRUAL AGE
Joanne M. George, PT; Jurgen Fripp, PhD; Kaikai Shen, PhD; Kerstin Pannek, PhD; Amy Chan, BS; Robert Ware, PhD; Stephen Rose, PhD; Paul Colditz, FRACP, MBBS; Roslyn N. Boyd, PhD, PT

SP 25: COMPARISON OF BURKE-FAHN-MARSDEN DYSTONIA SEVERITY, GROSS MOTOR, MANUAL ABILITY S AND COMMUNICATION FUNCTION CLASSIFICATION SCALES IN CHILDHOOD HYPERKINETIC MOVEMENT DISORDERS INCLUDING CEREBRAL PALSY: A ROSETTA STONE STUDY
Hortensia Gimeno, MSc, OT; Markus C. Elze, BS, MS; Kylee Tustin, Bachelor of Physiotherapy; Lesley Baker, BS, MA; Daniel E. Lumsden, MA, MSc; Jean Pierre Sao-Ming Lin, BS, PhD, MBBS

SP 26: LEG LENGTH DISCREPANCY IN CHILDREN WITH HEMIPLEGIC CEREBRAL PALSY
Mark Gormley, MD; Supreet Deshpande, MD; Aakash Deshpande, BS

SP 27: A RETROSPECTIVE CHART REVIEW OF ACUTE INTRATHecal BACLOFEN (ITB) WITHDRAWAL AND A DESCRIPTION OF ITS OUTCOMES
Stacey L. Hall, DO

SP 28: CLINICAL CHARACTERISTICS OF CHILDREN WITH SPASTIC CEREBRAL PALSY BORN PREMATURELY AND AT TERM
Kristin Høgetveit, MD; Torstein Vik, PhD, MD; Guro L. Andersen, PhD, MD

SP 29: WHAT IS THE PREVALENCE OF CEREBRAL PALSY IN NORWAY?
Sandra Julsen Hollung, MS; Guro L. Andersen, PhD, MD; Robert Wiik, MA; Inger Johanne Bakken, PhD; Torstein Vik, PhD, MD

SP 30: CHANGES IN KINEMATIC PERFORMANCE BETWEEN STRUCTURED AND UNSTRUCTURED PRACTICE DURING INTENSIVE BIMANUAL TRAINING FOR CHILDREN WITH UNILATERAL CEREBRAL PALSY
Ya Ching Hung, EdD; Andrew M. Gordon, PhD

SP 31: VALIDATION OF COMMON QUESTIONNAIRES ASSESSING PHYSICAL ACTIVITY USING ACCELEROMETER IN CHILDREN AND ADOLESCENTS WITH CEREBRAL PALSY
Byung Chae Jo, MD; Sang Young Moon, MD; Chin Youb Chung, MD; Ki-Jeong Kim, MD; Ju Seok Ryu, MD; Kyoung Min Lee, PhD, MD; Soon-Sun Kwon, MD; Myoung Ki Chung, MD; Gye Wang Lee, MD; Moon Seok Park, MD

SP 32: UNDERCORRECTION OF PLANOVALGUS DEFORMITY AFTER CALCANEAL LENGTHENING IN PATIENTS WITH CEREBRAL PALSY
Byung Chae Jo, MD; In Hyeok Lee, MD; Chin Youb Chung, MD; Ki-Jeong Kim, MD; Ju Seok Ryu, MD; Kyoung Min Lee, PhD, MD; Soon-Sun Kwon, MD; Gye Wang Lee, MD; Myoung Ki Chung, MD; Moon Seok Park, MD

SP 33: GROSS MOTOR FUNCTION IN PRESCHOOL CHILDREN WITH CEREBRAL PALSY: COMPARISON BETWEEN A HIGH-AND LOW-RESOURCE COUNTRY. IS A GMFCS LEVEL III A III?
Rachel Jordan, BS; Katherine A. Benfer, MPH; Christine Finn, PT; Saska Bandaranayake, MBBS; Robert Ware, PhD; Roslyn N. Boyd, PhD, PT

SP 34: RELIABILITY OF THE TEST OF ARM SELECTIVE CONTROL (TASC)
Kristin J. Krosschell, PT, DPT, MA, PCS; Theresa Moulon, PhD, DPT; Jessica Barnum, BS; Katherine Block, DPT; Alexandra Nichols, BS; Erin Salzman, BS; Deborah Gaebler-Spira, MD

SP 35: RANDOMISED CONTROLLED TRIAL OF PREMM: EARLY SOMATOSENSORY STIMULATION (MASSAGE) IN PRETERM INFANTS
Melissa Lai, MBBS; Giulia DAcunto, PhD; Andrea Guzzetta, PhD, MD; Jurgen Fripp, PhD; Stephen Rose, PhD; Naoni Ngenda, BS; Koa Whittingham, PhD; Amy Chan, BS; Kaikai Shen, PhD; Roslyn N. Boyd, PhD, PT

SP 36: THE GAIT PATTERN OF CHILDREN WITH HIV ENCEPHALOPATHY AND SPASTIC DIPLEGIA – A TWO YEAR FOLLOW-UP STUDY
Nelleke Gertrude Langerak, PhD; Marlette Burger, MSc; Jacques du Toit, MD; Robert P. Lamberts, PhD; Priscilla E. Springer, MD; Mark Cotton, PhD; Barbara Laughton, MD, MSc

SP 37: RELIABILITY AND VALIDITY OF THE DUNCAN-ELY TEST FOR ASSESSING RECTUS FEMORIS SPASTICITY IN PATIENTS WITH CEREBRAL PALSY
Gye Wang Lee, MD; Seung Yeol Lee, MD; Chin Youb Chung, MD; Ki-Jeong Kim, MD; Ju Seok Ryu, MD; Kyoung Min Lee, PhD, MD; Soon-Sun Kwon, MD; Ki Hyuk Sung, MD; Myoung Ki Chung, MD; Byung Chae Jo, MD; Moon Seok Park, MD

SP 38: SURGICAL BURDEN AND RECOVERY OF WALKING PERFORMANCE IN YOUTH WITH CEREBRAL PALSY
Nancy Lennon, MS, PT; Robert Hulbert, MS; Chris Church, MPT; Freeman Miller, MD

SP 39: GASTROCNEMIUS RECESSION COMPARED TO TENDO-ACHILLES LENGTHENING FOR SURGICAL CORRECTION OF EQUINUS DEFORMITY IN CHILDREN WITH CEREBRAL PALSY: ARE WE UNDER OR OVER CORRECTING BASED ON GAIT ANALYSIS?
Lisa A. Leveille, MD; Sara Richardson, BA5c, MSc; Kishore Mulpuri, MS; Alec Black, MS; Richard Beauchamp, MD

SP 40: RANDOMIZED CONTROLLED CLINICAL TRIAL OF THE EFFECT OF GAIT TRAINING IN ADULTS WITH CEREBRAL PALSY ON ANKLE JOINT STIFFNESS AND KINEMATICS
Jakob Lorentzen, PhD, PT; Henrik Kirk, PT; Helena Fernández Lago, PT; Rasmus Frisk, PT; Peter Jensen, MSc; Jens Nielsen, PhD, MD
SP 41: THE RELATIONSHIP OF ACTIVITY CHARACTERISTICS (CAPACITY AND PERFORMANCE) IN COMMUNITY AND NON-COMMUNITY AMBULATORS WITH SPINA BIFIDA
William O. Walker, MD; Kristine Bjornson, MS, PhD, PT; Thomas McNalley, MD

SP 42: FUNCTIONAL AND RADIOGRAPHIC OUTCOMES OF ADDUCTOR MYOTOMY IN PATIENTS WITH SPASTIC CEREBRAL PALSY
Alejandro Marquez-Lara, MD; Vineeta T. Swaroop, MD; Luciano Dias, MD

SP 43: PRELIMINARY OUTCOMES OF A NOVEL TREATMENT FOR SOMATOSENSORY DISCRIMINATION FOR CHILDREN WITH HEMIPLEGIC CEREBRAL PALSY
Belinda McLean, BS, OT; Susan L. Taylor, BS, OT; Jane Valentine, MD; Richard Parsons, PhD; Leeanne Carey, PhD; Catherine Elliott, PhD

SP 44: RECURRENCE OF KNEE FLEXION DEFORMITY AFTER HAMSTRINGS SURGICAL LENGTHENING – CAN SEMITENDINOSUS TRANSFER IMPROVE THE RESULTS?
Mauro C. Morais Filho, MD, MSc; Marcelo H. Fujino, MD; Daniella Neves, MD; Francesco C. Blumetti, MD, MSc; Catia M. Kawamura, PT; Jose Augusto Lopes, MSc; Carlos A. Santos, PhD, MD

SP 45: REAL WORLD WALKING ACTIVITY IN CHILDREN WITH MYELOMENINGOCELE
Nicole Mueske, MS; Pauline Yasmeh, BA; Deirdre D. Ryan, MD; Tishya Wren, PhD

SP 46: IMPACT OF CHILDHOOD DISABILITY: AS PERCEIVED BY PARENTS AND BY PEDIATRICIANS
Vivek Mundada, MBBS, DCH, DCH, MRCPCH; Anastasia Bem, MBBS; Deepak Parashar, PhD

SP 47: THE EFFECTIVENESS OF AN INTENSIVE CAMP-BASED INTERVENTION USING HYBRID MODEL OF MCIMT WITH BIMANUAL THERAPY TO IMPROVE BIMANUAL FUNCTION IN CHILDREN WITH NEUROLOGIC HEMIPLEGIA AND PERINATAL BRACHIAL PLEXUS INJURY
Marielle Pascaul, BS, OTR/L; Gina Kim, MA, OTR/L

SP 48: IMPLEMENTING AND EVALUATING A SUSTAINABLE EARLY CHILD DEVELOPMENT PROGRAM IN LIMPOPO, SOUTH AFRICA: A PILOT STUDY
James Plews-Ogan, MD

SP 49: THE CONTINUED EFFICACY OF REPEATED SINGLE-EVENT MULTI-LEVEL CHEMONEUROLYSIS IN CHILDREN WITH CEREBRAL PALSY
Teerada Ploypetch, MD; Heakyung Kim, MD; Hilary F. Armstrong, MA

SP 50: COMPUTERIZED AXIAL TOMOGRAPHY FINDINGS IN CHILDREN WITH AFEBRILE SEIZURES: A HOSPITAL BASED STUDY AT EASTERN NEPAL
Prakash Poudel, MD; Mohit Chitlangia, MD; Mukesh Kumar Gupta, MD

SP 51: LONG-TERM SAFETY FOLLOW-UP OF CHILDREN AND ADOLESCENTS WITH STROKE FOLLOWING PARTICIPATION IN A REPETITIVE TRANSCRANIAL MAGNETIC STIMULATION AND CONSTRAINT INDUCED MOVEMENT THERAPY CLINICAL TRIAL
Tonya Rich, MA, OTR/L; Jeremiah Menk, MS; Linda Krach, MD; Timothy Feyma, MD; Bernadette Gillick, PhD

SP 52: RELATION BETWEEN QUALITY OF UPPER EXTREMITY SKILLS, POSTURAL CONTROL AND GROSS MOTOR FUNCTION IN CHILDREN WITH SPASTIC QUADRIPLEGIC CEREBRAL PALSY
WITHDRAWN

SP 53: IMPLEMENTING A TRANSITIONAL CARE MODEL FOR CHILDREN WITH COMPLEX MEDICAL NEEDS: IMPROVING FAMILY PREPAREDNESS FOR DISCHARGE AND LINKING TO COMMUNITY RESOURCES
Sarah A. Sobotka, MS, FAAP, MD; Michael E. Msall, FAAP, MD

SP 54: DOES SURGICAL INTERVENTION ALTER THE NATURAL HISTORY OF PATELLA ALTA IN AMBULATORY CHILDREN WITH CEREBRAL PALSY?
Lindsay P. Stephenson, MD; Judith Linton, MS, PT; Elroy Sullivan, BS, MA, PhD; Allison Scott, MD

SP 55: SELECTIVE CONTROL OF THE UPPER EXTREMITY SCALE (SCUES): VALIDATION OF A CLINICAL ASSESSMENT TOOL FOR CHILDREN WITH HEMIPLEGIC CEREBRAL PALSY
Lisa V. Wagner, DHS, OTR/L; Jon R. Davids, MD

SP 56: C-REACTIVE PROTEIN LEVELS AFTER HIP SURGERY FOR CEREBRAL PALSY
Thomas C H White, MBBS; Afsmanshahzad Shah, MBBS; Fabian Norman-Taylor, FRCS(C), MBBS

SP 57: EFFECTS OF NUTRITIONAL CARE COORDINATION ON CHILDREN WITH MEDICAL COMPLEXITY
Jodi D. Wolff, MS, RD, CNSC, FAND; Jenna Wiltzer Karim, MS, RD; Sarah Ronis, MA, MPH; Richard Grossberg, MD

SP 58: EFFECT OF VARUS ROTATIONAL OSTEOTOMY (VRO) ON UPPER EXTREMITY MOTION DURING GAIT IN CEREBRAL PALSY
Aviva Wolff, MA, OTR/L; Aaron Dalessi, MD; David Scher, MD; Kevin Lindsay, BS; Jeremy Laverdure, BS; Jessica Sigal, BS; Joanna Nobbe, BS

SP 59: POLYGENIC RISK SCORE OF HYPOTHALAMIC-PITUITARY-ADRENAL REACTIVITY AND NEURODEVELOPMENTAL OUTCOMES OF EXTREMELY LOW BIRTH WEIGHT (< 1000 GRAMS) INFANTS
Gordon Worley, MD; Grier Page, PhD; Ricki Goldstein, MD; Michael Cotten, MD
**DEMONSTRATION POSTERS**

**DP 1: CARE PLANS AND CARE MAPS: INNOVATIVE TOOLS TO IMPROVE THE CARE OF CHILDREN WITH SPECIAL HEALTH CARE NEEDS**
Sherri Adams, MSN, CPNP, NP-Paed; Joanna Socia, MN, MEd, NP-Paed

**DP 2: CONFIGURATION OF AN ELECTRONIC HEALTH RECORD TO DOCUMENT CARE OF CHILDREN WITH MEDICAL COMPLEXITY**
Rishi Agrawal, MD, MPH

**DP 3: IMPROVING PATIENT OUTCOMES: AN INNOVATIVE INTERDISCIPLINARY APPROACH FOR TREATING DYSPHAGIA IN CHILDREN WITH CEREBRAL PALSY**
Kristin L. Brockmeyer-Stubbs, MS, OTR/L; Patricia Miller, MS, RD

**DP 4: BACLOFEN PUMP PROGRAM AT BOSTON CHILDREN’S HOSPITAL: ESTABLISHING A NURSE PRACTITIONER DIRECTED PROGRAM TO MANAGE BACLOFEN PUMPS IN A LARGE PEDIATRIC MEDICAL CENTER**
Kristin Buxton, MS

**DP 5: A HEALTH AND WELLNESS EDUCATION PROGRAM FOR ADULTS WITH DEVELOPMENTAL DISABILITIES**
Helen J. Carey, PCS, PT, DHSc; Marcia Nahikian-Nelms, PhD, RD

**DP 6: INTRATHecal BACLOfen PUMP DOSING FOR DYSTONIA**
Carolyn Chowne, RN, MSN

**DP 7: FIT AND HEALTHY KIDS GROUP: A MULTIDISCIPLINARY FITNESS AND NUTRITION EDUCATION PROGRAM FOR OBESE CHILDREN WITH NEURODEVELOPMENTAL DIAGNOSES**
Tarra Dendinger, MSPT; Andrea Heyman, MS, RD, LDN

**DP 8: OUTCOMES FROM TEN YEARS OF AN INTEGRATED TRANSITION MODEL**
Irene Cihon Dietz, FAAP, MD

**DP 9: SHOW ME! A VIDEO SERIES FOR TEACHING TEXTURE MANIPULATION OF FOODS**
Catharine A. Francis, RD; Karen J. Campbell, RD; Carolyn Chowne, RN, MSN

**DP 10: PARENT NAVIGATORS AS MEDICAL HOME PARTNERS FOR CHILDREN AND YOUTH WITH SPECIAL HEALTH CARE NEEDS**
Karen R. Fratantoni, MD, MPH; Cara L. Biddle, MD, MPH; Michelle D. Jiggetts, MD

**DP 11: WORKING TOWARDS STANDARDIZING THE ASSESSMENT AND TREATMENT OF CHILDREN WITH FEEDING DISORDERS: A PILOT STUDY AT THE UNIVERSITY OF VIRGINIA ENCOURAGEMENT FEEDING PROGRAM**
Katheryn F. Frazier, MD; Megan Yu, BA; Valentina Intagliata, MD; Mary C. Bickley, EdD; Jen Kraus, MA, OTR/L; Richard Stevenson, MD

**DP 12: MODIFIED CONSTRAINT INDUCED MOVEMENT THERAPY FOR CHILDREN UNDER 16 MONTHS**
Teressa Garcia Reidy, MS, OTR/L; Erin C. Naber, BS, DPT; Joan Carney, EdD; Frank S. Pidcock, MD

**DP 13: DURABLE MEDICAL EQUIPMENT BLUEPRINT FOR CHILDREN WITH CEREBRAL PALSY**
Jonathan M. Greenwood, PT, MS, PCS, c/NDT, DPT

**DP 14: BRIDGE TO WORK: A WORK-TRIAL PROGRAM FOR YOUNG ADULTS WITH PEDIATRIC ONSET DISABILITIES**
Ned Kirsch, PhD; Edward A. Hurvitz, MD; W. Jean Tennyson, BS; Steve Girardin, MA; Anita Gibson, BS; Jennifer Scott-Burton, EdD; Jenny Piatt, BA, MA

**DP 15: IMPLEMENTATION OF A NURSE PRACTITIONER LED TRANSITION CLINIC TO ASSIST PATIENTS AND FAMILIES AS THEY MOVE INTO ADULT SPECIALTY CARE**
Kathryn F. Lindstrom, BA, BS, MSN

**DP 16: A TRANSITION PROCESS TO ADULT HEALTHCARE FOR YOUTH WITH MEDICAL COMPLEXITY**
Nathalie Major-Cook, FRCPC; Chantal Krantz, MSN; Hugo Lemay, BA; Allison Hutchins, BS; Natalie Ward, BA, MA, PhD; Barb Juett, MSW; Natasha Tataracheff-Quesnel, MSW; Gina St. Amour, BA

**DP 17: BALLET MOVES: A COMMUNITY COLLABORATION WITH THE CINCINNATI BALLET COMPANY FOR INDIVIDUALS WITH DOWN SYNDROME**
Michelle McGuire, MPT; Sarah Goodwin, BA, DPT; Amy Bailes, PhD, PT; Jason Long, PhD; Julie Sunderland, BA; Donna Weber, MA; Kathleen Elliott, BS, MA, OTR/L

**DP 18: RECOMMENDATIONS OF CARE IN AQUATIC THERAPY FOR INDIVIDUALS WITH CEREBRAL PALSY GMFCS LEVELS I-V: AN UPDATE ON THE EVIDENCE**
Michelle K. Menner, MPT; Kelly R. Greve, DPT; Patrick R. McSweeney, BS; Randy Duman, SPT

**DP 19: THE EFFECTS OF INTENSIVE LOCOMOTOR TRAINING ON TWO PEDIATRIC PATIENTS WITH SPINAL CORD INJURY AND WITHOUT HISTORY OF AMBULATION**
Courtney M. Mullen, DPT; Marc Bienkowski, DPT

**DP 20: POWER WHEELCHAIR SOCCER: A PROGRAM BUILDING SELF-CONFIDENCE, COMMUNITY AND ATHLETIC IDENTITY**
Diane V. Murrell, MSW; Anne E. O’Donnell, PhD

**DP 21: COMMUNITY-BASED AUTISM IDENTIFICATION TEAMS: MEDICAL–EDUCATIONAL COLLABORATION TO IDENTIFY YOUNG CHILDREN WITH AUTISM SPECTRUM DISORDER**
Robert E. Nickel, MD; Marilyn Berardinelli, BA; Shelley Barnes, BA; Sheryl Gallarde, BA; Amy Doss, BA

**DP 22: ENHANCING SERVICES FOR CHILDREN WITH AUTISM SPECTRUM DISORDER AND OTHER DEVELOPMENTAL DISABILITIES IN THE MEDICAL HOME**
Robert E. Nickel, MD; Marilyn Berardinelli, BA; Shelley Barnes, BA; Sheryl Gallarde, BA; Amy Doss, BA

**DP 23: A TELEHEALTH MODEL OF PEDIATRIC GAME-BASED REHABILITATION: A CASE STUDY**
Andrew Persch, PhD, OTR/L; Kelly J. Tanner, PhD, OTR/L

**DP 24: THE DEVELOPMENT OF A MOTOR-FREE WECHELISER INTELLIGENCE SCALE FOR CHILDREN – FOURTH EDITION - SHORT FORM**
Adina M. Piovesana, BA, PhD; Stephanie Ross, BA, MA; Owen Lloyd, BA, MA; Roslyn N. Boyd, PhD, PT

**DP 25: IMPLEMENTATION OF THE PRECHTL GENERAL MOVEMENTS ASSESSMENT OF INFANTS IN THE UNITED STATES- EARLY IDENTIFICATION OF CEREBRAL PALSY: A PILOT PROJECT**
Eileen Ricci, PT, MS, DPT, PCS; Alexa K. Craig, MD; Christa Einspieler, PhD; Mary Leopold, BS
DP 26: PASSIVE AND ACTIVE MOVEMENT REHABILITATION OF CHILDREN WITH ACUTE TRAUMATIC BRAIN INJURY
Ana-Marie Rojas, MD; Kai Chen, PhD; Assaf Y. Dvorkin, PhD; Deborah Gaebler-Spira, MD; Charles E. Sisung, MD; Li-Qun Zhang, PhD

DP 27: IT TAKES A COLLABORATIVE VILLAGE: THE INTEGRATION OF EARLY MOBILITY EXPERIENCES IN A COMMUNITY-BASED EARLY INTERVENTION CENTER
Ana-Marie Rojas, MD; Arun Jayaraman, PhD, PT; Susan Klinger, BA, MS, PT; Heather A. Feldner, BS, MPT; Deborah Gaebler-Spira, MD

DP 28: USING EYE GAZE TECHNOLOGY TO ASSESS COGNITIVE STATUS IN INDIVIDUALS WITH MOTOR IMPAIRMENTS AND COMPLEX COMMUNICATION NEEDS
Angela L. Smith, PsyD; Laura M. Bohnenkamp, MA, CCC-SLP

DP 29: HEALTH CARE TRANSITION, INTERDISCIPLINARY CLINICS, AND THE ELECTRONIC MEDICAL RECORD
Kimberly T. Solondz, MS; Rhonda M. Eppelsheimer, BS, MSW

DP 30: OUTCOMES OF A CAMP BASED INTENSIVE THERAPY APPROACH TO PROMOTE FUNCTIONAL INDEPENDENCE IN CHILDREN DIAGNOSED WITH DEVELOPMENTAL DISABILITIES
Melissa K. Trovato, MD; Teressa Garcia Reidy, MS, OTR/L; Erin C. Naber, BS; DPT; Patricia Turlington, BSc, PT

DP 31: TRANSLATING EVIDENCE INTO PRACTICE: A PHYSICAL REHABILITATION CLINICAL PRACTICE GUIDELINE FOR ADULTS WITH DEVELOPMENTAL DISABILITIES USING A LIFESPAN APPROACH
Christina M. Withers, PT, DPT, PCS

DP 32: FAMILY-CENTERED CARE TO ASSIST IN DECISION-MAKING TO PROCEED WITH GASTROSTOMY PLACEMENT FOR NONORAL FEEDINGS
Wendy Wittenbrook, MA, RD, CSP, LD; Richard C. Adams, MD

DP 33: THE ASSESSMENT OF SPEECH PRODUCTION IN CHILDREN WITH CEREBRAL PALSY FOLLOWING PHARMACOLOGIC TREATMENT TO IMPROVE MUSCLE TONE AND MOVEMENT
Marilyn S. Workinger, PhD; Raymond Kent, BA, MA, PhD; Jill Meilahn, DO
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Through innovation and collaboration, Medtronic improves the lives and health of millions of people each year. Visit the Medtronic booth to learn more about our targeted drug delivery therapy that may help your patients with severe spasticity due to cerebral palsy. Explore our technology, services and solutions at professional.medtronic.com

OrthoPediatrics
OrthoPediatrics® is the leading medical device company developing anatomically appropriate implants and specialized instruments for children with orthopedic conditions, giving pediatric orthopedic surgeons and caregivers the ability to treat children with innovative technologies specifically designed to meet their needs. OrthoPediatrics is a truly different company... The Worldwide Leader in Pediatric Orthopedics.

Cook Children’s Medical Center
With one of the largest, most technologically advanced pediatric neurosciences programs in the southwestern United States, Cook Children’s Health Care System is redefining the future of children with neurological conditions. Our leading edge programs and services include pediatric deep brain stimulation, Level 4 EMU, MEG and iMRI for epilepsy treatment.

Mallinckrodt Pharmaceuticals
Mallinckrodt Pharmaceuticals is dedicated to providing and advancing quality intrathecal medications. With a focus on meeting customer needs by providing quality products at competitive prices with convenient distribution, Mallinckrodt also has a robust research and development program dedicated to future intrathecal medications.

Children’s Hospital Foundation
Children’s Hospital Foundation is dedicated to funding and advocating for pediatric initiatives that improve the status of health care and the quality of life for children in our region. The Foundation provides support for the programs and initiatives of Children’s Hospital of Richmond at VCU and the children it serves each year, as well as other pediatric health care programs in the community.

Mac Keith Press
Mac Keith Press provides information to advance treatment and care of children with disability. Primarily for a health-oriented audience of therapists, doctors, nurses and health workers, MKP’s publications are also of interest to psychologists, special teachers and others involved in the care of children with disabilities.

Cerebral Palsy Foundation
The Cerebral Palsy Foundation (formerly Cerebral Palsy International Research Foundation) works to transform the lives of people with cerebral palsy today through research, innovation and collaboration. We achieve this by identifying key moments of impact and the defining appropriate areas of study and research which can have an effect on them. By collaborating with academic and industry researchers alike, we develop innovative strategies and protocols to accelerate the delivery of new diagnostics, treatments, interventions and practices to individuals, clinicians, and families. Founded in 1955, CPF has contributed more than $40 million in research grants.

Dell Children’s Medical Center of Central Texas
Dell Children’s Medical Center of Central Texas is a dedicated freestanding pediatric facility and Level 1 Trauma Center. Serving 46-counties and beyond, Dell Children’s is the premier health care provider for children and adolescents. Dell Children’s is a truly one-of-a-kind place that gives Central Texas families access to a wide range of healthcare services – extra time, extra monitoring, equipment, medications and doses according to body size, specialized pediatric medical skills and compassion and access to family throughout the entire hospital stay. And our dedicated multidisciplinary team of pediatric specialists and nurses are all committed to a single purpose: making your child feel like a kid again.

Hanger Clinic
Founded in 1861 by the first amputee of the Civil War, Hanger Clinic operates over 750 patient care clinics nationwide. Hanger Clinic’s certified clinicians provide patients with the latest in orthotic and prosthetic solutions, including innovative bracing options for those with cerebral palsy. Learn more at www.HangerClinic.com.

Holland Bloorview Kids Rehabilitation Hospital
Holland Bloorview Kids Rehabilitation Hospital is Canada’s largest children’s rehabilitation hospital. We pioneer treatments, technologies, therapies and programs that give children with disabilities the tools to participate fully in life. Holland Bloorview is a global leader that serves about 7,000 children yearly. Holland Bloorview is a global world-class teaching hospital affiliated with the University of Toronto, training future health-care specialists in the field of childhood disability. We are also home to the Bloorview Research Institute, allowing us to integrate leading research and teaching with front-line care to improve quality of life. We see children with cerebral palsy, acquired brain injury, muscular dystrophy, amputation, epilepsy, spina bifida, arthritis, cleft-lip and palate, autism, and other developmental disabilities. A small number of our clients have complex chronic diseases that require round-the-clock medical care.
Bronze, continued

**Ipsen Biopharmaceuticals, Inc.**
Our strategy has been thought out with a specific goal in mind: to allow the Group to establish commercial models and means of operating which differ between the entities in order to best meet the challenges we face. Our ethos: innovation for patient care.

**Merz North American**
Merz North America is a specialty healthcare company that develops and commercializes innovative treatment solutions in aesthetics, dermatology and neurology in the U.S. and Canada. Our ambition is to become a recognized leader in the treatment of movement disorders, and in aesthetics and dermatology.

**Orthopedic Institute for Children**
Orthopedic Institute for Children (OIC) improves the quality of life for children with musculoskeletal disorders, through the advancement of outstanding clinical care, medical education, and scientific research worldwide. In alliance with UCLA Health, OIC is the only healthcare organization in Los Angeles dedicated solely to pediatric orthopaedics.

Word-renowned physicians and an integrated clinical model ensure timely, coordinated care. The organization’s charitable mission extends this level of excellence to children whose families cannot afford to pay.

Leveraging the expertise at all of its locations, OIC remains committed to its century-long mission of delivering innovative and compassionate care to children with musculoskeletal injuries and disorders.

**Essential**

**Chambers Family**
**Oppenheimer Family**
**Pathways.org**
**Weinberg Family Cerebral Palsy Center at Columbia University**
Booth 15
AACPDM Membership
Please stop by the booth to pick up information on membership benefits of the American Academy for Cerebral Palsy and Developmental Medicine. We accept membership applications onsite at the Registration Desk.
www.aacpdm.org

Booth 8
Adaptive Switch Labs
ASL designs products specifically for those who cannot access their environment through conventional means. Our products and designs are a direct result of the needs of those we serve. Our goal has always been independence and equal rights for those we work with.
www.asl-inc.com

Booth 35
Allard USA, Inc.
Bracing solutions for footdrop (ToeOFF®), genu-recurvatum (COMBO & CHECK™) as well as innovative splinting systems, and contracture management (MultiMotion), & new pediatric bracing (KiddleGAIT/ROCKER & SWASH).
www.allardusa.com

Booth 26
Aretech
Aretech’s ZeroG Gait and Balance System is used for improving functional outcomes in children and adults with neurological disabilities. Dynamic body-weight support compensates for weakness and poor coordination, while balance programs and games are fun yet cognitively challenging. With no fear of falling, patients have confidence to stretch their limits.
www.aretchllc.com

Booth 39
Bioness
Bioness is the leading provider of innovative technologies helping people regain mobility and independence. Bioness solutions include external and implantable functional electrical stimulation (FES) systems, robotic systems and software based therapy programs providing functional and therapeutic benefits for individuals affected by pain, central nervous system disorders and orthopedic injuries.
www.bioness.com

Booth 19
Boston Brace
Known for advancements in the treatment of idiopathic scoliosis, Boston Brace is a company that thrives on innovation. A recent innovation is the Dynamic Movement Orthoses (DMO.) A DMO provides deep pressure for proprioception while utilizing tension panels for positioning and posture.
www.bostonbrace.com

Booth 13
BTS Bioengineering
BTS Bioengineering launched its technology for gait analysis more than 25 years ago. Today BTS continuously innovates the way clinical gait analysis is performed, providing completely integrated motion labs where all the components are designed to work seamlessly together. Gait analysis has never been so productive and easy to use.
www.BTSbioengineering.com

Booth 14
Camp Barnabas
Camp Barnabas exists to offer life-changing opportunities to people with disabilities, their siblings and to the people who serve them. Through adaptive camp activities and on-site volunteer medical facilities, campers can safely participate in typical camp activities in an environment of love and encouragement.
www.campbarnabas.org

Booth 21
Cascade Dafo
Cascade Dafo, Inc. is the leader in design, innovation, and manufacturing of dynamic pediatric orthoses. We introduced the first DAFO® (Dynamic Ankle Foot Orthosis) more than 25 years ago. At Cascade, product design, technical support, education, and research and development have a sole focus: helping kids lead healthier, happier lives.
www.cascadedafo.com

Booth 4
CIR Systems/GAITRITE
GAITRite: An array of portable, pressure sensitive walkways. SURFACE, GAITRite-RE and CLASSIC GAITRite allow quick setup, measuring temporal spatial parameters. Available in various lengths. Record and analyze multiple gait cycles in a single walk, allowing quick, accurate testing. Reconfigurable SURFACE allows WIFI, unlimited width and format, turns and elevation changes.
www.gaitrite.com

Booth 43
Cook Childrens Hospital
With one of the largest, most technologically advanced pediatric neurosciences programs in the southwestern United States, Cook Children’s Health Care System is redefining the future of children with neurological conditions. Our leading edge programs and services include pediatric DBS, Motion Lab, Level 4 EMU, MEG and iMRI for epilepsy treatment.
www.cookchildrens.org

Booth 16
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www.dellchildrens.net

Booth 2
Easy Walking
Easy Walking Inc., makers of the Upn‘Go a partial weight bearing body-support, dynamic rehab tool for gait-development, introduces the Upn‘Free the next step in gait trainers.
www.easy-walking.com
EasyStand
EasyStand is the unsurpassed pioneer of sit-to-stand technology. Standing is all we do – and we offer the widest array of sizes and options on the market. Today, tens of thousands of people enjoy a higher quality of life by using an EasyStand.
www.easystand.com

Gillette Children’s Specialty Healthcare
Gillette Children’s Specialty Healthcare, an independent, not-for-profit hospital and clinics, is internationally recognized for its work in the diagnosis and treatment of children, adolescents and young adults with chronic conditions, including cerebral palsy, brain and spinal cord injuries, complex orthopaedic problems, arthritis, neurological conditions, spina bifida and craniofacial anomalies.
www.gillettechildrens.org

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www.hangerclinic.com

Hocoma, Inc.
Hocoma is the global leader for the development, manufacturing and marketing of robotic and sensor-based devices for functional movement therapy. The Swiss-based medical technology company was founded in the year 1996 as a limited liability company. Hocoma develops innovative therapy solutions working closely with leading clinics and research centers.
www.hocoma.com

Innovative Neurotronics
Innovative Neurotronics Inc. is a medical device manufacturer specializing in technologies for the neuro-rehab and orthotic and prosthetic market. Our premier technology is the WalkAide, a stimulation technology for patients with foot drop allowing the patient to walk more normally giving them independence one step at a time.
www.walkaide.com

IOS Press
IOS Press (www.iospress.com), established in 1987, publishes around 100 international journals and approximately 75 book titles a year, ranging from computer science and mathematics to medicine and the natural sciences. IOS Press has a strong rehabilitation cluster, which include the Journal of Pediatric Rehabilitation Medicine (www.iospress.com/journal-of-pediatric-rehabilitation-medicine) and NeuroRehabilitation (www.iospress.com/neurorehabilitation). Visit IOS Press at booth #40
www.iospress.com

Kennedy Krieger Institute
Located in the Baltimore/Washington region, Kennedy Krieger Institute is internationally recognized for improving the lives of 20,000 children and young adults with disorders and injuries of the brain, spinal cord, and musculoskeletal system each year, through inpatient and outpatient clinics; home and community services; and school-based programs.
www.kennedykrieger.org

McKie Splints, LLC
McKie Splints, LLC manufactures neoprene thumb splints, supinator straps and custom wrist-hand orthoses. The designs are stream-lined and biomechanically aligned to assist weaker muscles during grasp and reach. Available in six appealing colors our products are sized for infants, children, and adults. Prices are reasonable and we ship worldwide.
www.mckiesplints.com

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www.merzusa.com

Mobility Research-LiteGait Products
Known for the LiteGait® body weight support system, utilized worldwide to treat children with cerebral palsy. We are happy to introduce the PARiiT Stander—optimizes a neurogaming approach to develop lower extremity motor control while making it FUN! Patient controls video games using unilateral or bilateral knee or ankle joint motions.
www.LiteGait.com

Mallinckrodt Pharmaceuticals
Mallinckrodt also has a robust research and development program dedicated to future intrathecal medications. For more information, visit www.mallinckrodt.com.
www.gablofen.com

EasyStand
EasyStand is the unsurpassed pioneer of sit-to-stand technology. Standing is all we do – and we offer the widest array of sizes and options on the market. Today, tens of thousands of people enjoy a higher quality of life by using an EasyStand.
www.easystand.com

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www.walkaide.com

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www.kennedykrieger.org

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Mallinckrodt also has a robust research and development program dedicated to future intrathecal medications. For more information, visit www.mallinckrodt.com.
www.gablofen.com
Booth 32
Motion Lab Systems, Inc.
Motion Lab Systems produces the world’s largest range of high performance, multi-channel, EMG systems with FDA 510(k) clearance. We offer a range of advanced EMG and C3D software as well as various accessories for use in biomechanics, gait and motion laboratories worldwide. Motion Lab Systems is a user driven company that strives to exceed all expectations.
www.motion-labs.com

Booth 32
Pediatrix Medical Group
Pediatrix Medical Group, a division of MEDNAX Services, Inc., is the nation’s leading provider of neonatal, maternal-fetal, pediatric critical care and other pediatric physician subspecialty services with more than 1,675 physicians and more than 825 advanced practitioners in 35 states and Puerto Rico. Career opportunities available in various locations.
www.pediatrix.com

Booth 28
Providence Child Center
Providence Health and Services is a not-for-profit network of hospitals, physicians, clinics, care centers, health plans, home care, affiliated services and educational facilities. Our integrated system has a presence in 5 western states: Oregon, Washington, Alaska, California and Montana. We continue a tradition of care that the sisters of Providence began in the West more than 155 years ago.
www.oregon.providence.org/our-services/p/providence-child-center/

Booth 18
Nemours/Alfred I DuPont Hospital for Children
Nemours/ Alfred I. duPont Hospital for Children Cerebral Palsy Program is consistently ranked among the nation’s best for pediatric orthopedics by U.S. News & World Report, the duPont Hospital for Children Cerebral Palsy Program brings together specialists in orthopedics, neurology, neurosurgery and rehabilitation to help children reach their full potential. One of the Mid-Atlantic’s largest cerebral palsy programs, we are located in Wilmington, DE.
www.nemoursdupont.org

Booth 36
Pega Medical
Pega Medical is a company specializing in the design, development, evaluation and manufacturing of medical devices. Our dedication over the last decade to pediatric orthopedics has led us to be the first medical device manufacturer fully devoted to the development of specialty orthopedic implants for children. Our expertise in deformity correction and growth modulation has resulted in unique products for the treatment of deformities in pediatric patients with CP, OI, SCFE and other bone diseases.
www.pegamedical.com

Booth 5 and 7
OrthoPediatrics
OrthoPediatrics is improving the lives of children with orthopedic conditions as the only global medical device company focused exclusively on pediatric orthopedics. With innovative surgical systems for Trauma, Limb Deformity, Spine, and Sports Medicine, OrthoPediatrics is dedicated to delivering quality products and superior professional education initiatives globally.
www.orthopediatrics.com

Booth 41
Pro-Tech
Pro-Tech Orthopedics is a Massachusetts based custom orthotics manufacturer that also offers the Sensory Dynamic Orthosis, a made to measure product, designed to provide dynamic compression to increase sensory and proprioceptive feedback and provide musculo-skeletal support.
www.protech-intl.com

Booth 34
Pathways.org
Since 1985, Pathways.org has used research and multimedia as tools to promote each child’s fullest inclusion. Pathways.org creates FREE materials under the direction of the Pathways.org Medical Round Table. We strive to empower health professionals and parents with the free educational resources on the benefit of early detection and early intervention for children’s motor, sensory, and communication development.
www.pathways.org

Booth 38
ProtoKinetics
Movement analysis systems for dynamic and standing studies. Export pressure, temporal and spatial parameters over a variety of protocols, alongside EMG data from wireless surface probes. Quantify the phases of gait, pressure transitions, muscle activity and their corresponding symmetries during the evaluation and research of individuals with cerebral palsy.
www.proto kinetics.com

Booth 22
Restorative Therapies, Inc.
Restorative Therapies is the leader in Functional Electrical Stimulation systems for arms, legs and trunk muscles. FES manage tone and enables muscles to work even though muscles may be compromised from neurological impairment. Our cycling, stepping and elliptical systems are available for pediatrics and adults in the clinic or home.
www.restorative-therapies.com

Booth 33
StimDesigns, LLC
StimDesigns distributes the pioneering Galileo “side-alternating” vibration training product line to enhance neuromuscular rehabilitation. Products accelerate early rehabilitation, verticalization, functional muscle recovery, mobilization, and prevents complications of long-term immobility. Galileo’s high-repetition rate of the whole body provides intensive afferent and efferent reflex-based muscle stimulation in a short period of time.
www.stimdesigns.com

Booths 9 and 11
The W.I.N.T.E.R Program, LLC
The W.I.N.T.E.R. Program is an intensive, individualized therapy program that accelerates functional progress for children with neurological conditions. The program is powered by Therasuit® (soft canvas suit with bungee-like cords) and the Universal Exercise Unit to form a new brain map for movement through strengthening and functional skills practice.
www.facebook.com/houstontherasuit
Booths 31 and 29
Ultraflex Systems, Inc.
Ultaflex dynamic stimulus braces address the rehabilitation challenges associated with neurological and congenital presentations, gait dysfunction, and complex orthopedic conditions. Ultraflex therapeutic/at rest orthoses maintain and increase muscle length and improve passive range of motion. Ultraflex functional/gait orthoses provide unrestricted motion and customized stability. 800-220-6670 www.ultraflex.com

Booth 12
UT Health Science Center at Houston – Department of Physical Medicine and Rehabilitation
Our purpose is to promote the recovery, functional restoration, and community re-integration of individuals with limitations in function and activity participation through advances in clinical care and discovery of knowledge.
www.med.uth.edu/pmr/

Booth 10
Wiley
Wiley is the leading society publisher. We publish on behalf of more societies and membership associations than anybody else, and offer libraries and individuals 1250 online journals, thousands of books and e-books, reviews, reference works, databases, and more. For more information, visit www.wiley.com, or our online resource: onlinelibrary.wiley.com.
www.wiley.com
**FLOOR PLAN & HOURS**

**AACPDM**

**October 21-24, 2015**

**JW Marriott Austin**

Thursday, October 22: 6:15 PM – 7:45 PM

Wine & Cheese Poster and Exhibit Review

*Please see page 14 for detailed hours.*
Breakfast Seminar

BRK 1  McPherson, A (L), Gorter, J (E - Mountain West Clinical Translational Research - Infrastructure Network), Jones-Galley, K (L)
BRK 2  Peterson, M (L), Hurvitz, E (E - Mountain West Clinical Translational Research - Infrastructure Network), Jones-Galley, K (L)
BRK 3  Greenwood, J (L)
BRK 4  Pierz, K (L), Ounpuu, S (L)
BRK 5  DeLuca, S (L), Darragh, A (L), Ramey, S (L)
BRK 6  Labhard, S (L)
BRK 7  Lowe, A (L), Harpster, K (L), Schmit, J (B - Hocoma), Wenz, A (A)
BRK 8  Somerville, H (L)
BRK 9  Tirosh, R (L)
BRK 10  Gross, P (L), Wu, Y (L)
BRK 11  Bachrach, S (L), Keckskemethy, H (L)
BRK 12  Mendell, J (L), Lowes, L (L), Alfano, L (L)
BRK 13  Paleg, G (A, F - Prime Engineering), Rodby-Bousquet, E (L)
BRK 14  Long, J (L), Harpster, K (L)
BRK 15  Fratantoni, K (L), Biddle, C (L), Jiggetts, M (L)
BRK 16  Tally, M (L), McCarty, E (L)
BRK 17  Steele, K (L), Aldahondo, N (L), Schwartz, M (L)
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