



**Orthotic & Prosthetic Innovative Technologies (OPTech) Conference**  
May 19-20, 2023 at Windows on Minnesota Conference Center (50<sup>th</sup> Floor IDS)  
Marquette Hotel, Minneapolis, Minnesota

**Friday May 19<sup>th</sup>**

7:00am	<b>Registration, Exhibitors, &amp; Continental Breakfast</b>	Room: Stars & Planets
7:45am	<b>Welcome &amp; Opening Remarks</b> Chair: Michelle Hall, MS, CPO, FAAOP(D)	Room: Galaxy
8:00am	<b>Keynote Address</b> <i>"Drivers of Future Innovation in O&amp;P Technology"</i> Josh McHugh <i>Keynote Q&amp;A</i>	Room: Galaxy
9:00am	<b>Smart Fabrics</b> <i>"Textile-Integrated Technologies and Their Potential for Orthotics and Prosthetics"</i> Brad Holschuh, PhD <i>"Kirigami On-body Sensor Platform for Biomechanical Assessment and Rehabilitation"</i> Max Shtein, PhD <i>"Wireless Electronic Skins for Assessing Health and Performance"</i> Eric Markvicka, PhD <i>Panel Q&amp;A</i>	Room: Galaxy
10:15am	<b>Break in Exhibit Hall</b>	Room: Planets
10:45am	<b>Brain-controlled Interfaces</b> <i>"Brain-Computer Interfaces: Opportunities and Challenges"</i> Jane Huggins, PhD <i>"A Biomimetic Brain-controlled Prosthetic Arm"</i> John Downey, PhD <i>"Brain Machine Interfaces for the Control of Hand and Finger Movements"</i> Cindy Chestek, PhD <i>"Neurostimulation of the Nerves and Brain to Restore Sensation After Injury"</i> Emily Graczyk, PhD <i>Panel Q&amp;A</i>	Room: Galaxy
12:00pm	<b>Lunch &amp; Exhibit Hall</b>	Room: Stars & Planets
1:00pm	<b>Adaptive Prostheses</b> <i>"Variable-stiffness Approaches to the Development of Assistive Technologies"</i> Elliot Rouse, PhD <i>"Prosthetic Ankle Designs that Address the Needs of Lower-Mobility Users"</i> Sara Koehler-McNicholas, PhD <i>"Perspectives and Lessons Learned on the Use and Value of Power in Lower Limb Prostheses"</i> Michael Goldfarb, PhD <i>"Utah Bionic Leg: A Lightweight Robotic Leg Prosthesis Replicating the Biomechanics of the Knee, Ankle, and Toe Joint"</i> Tommaso Lenzi, PhD <i>Panel Q&amp;A</i>	Room: Galaxy



## Friday May 19<sup>th</sup>

- 2:15pm **Innovations in Carbon Fiber Orthoses** Room: Galaxy  
“Current Evidence for Carbon Fiber Containing Orthoses”  
Megan Grunst, BSE  
“Recent Advances and Opportunities in Composite Materials”  
Shridhar Yarlaga, PhD  
“Clinical Advances in Custom Carbon and Hybrid AFOs”  
David Hughes, CPO  
“Designing and Personalizing Carbon Fiber AFOs and FOs”  
Elisa Arch, PhD  
Panel Q&A
- 3:30pm **Break in Exhibit Hall** Room: Planets
- 4:00pm **Gillette Children’s Research Showcase** Room: Galaxy  
“Limb Lengthening and Deformity Correction in the Pediatric Amputee”  
Mark Dahl, MD  
“Functional Changes in Children Using the AbiliTech Upper Extremity Assistive Orthosis”  
Mark Gormley, MD  
“Implication of Balance Impairments and Management in Cerebral Palsy”  
Elizabeth Boyer, PhD  
“Evaluating Adaptation to Multimodal Gait Biofeedback in Individuals with Cerebral Palsy”  
Alyssa Spomer, PhD  
“Virtual Reality to Support Better Patient Experiences in the Healthcare Setting”  
Chantel Burkitt, PhD  
Panel Q&A
- 5:30pm **Closing Remarks** Room: Galaxy  
Chair: Michelle Hall, MS, CPO, FAAOP(D)
- 5:40-8pm **Reception** Room: Universe & Planets

## Saturday May 20<sup>th</sup>

- 7:00am **Registration, Exhibitors, & Continental Breakfast** Room: Stars & Planets
- 7:45am **Welcome & Opening Remarks** Room: Galaxy  
Chair: Michelle Hall, MS, CPO, FAAOP(D)
- 8:00am **Applicability of Amputation Techniques in Pediatrics** Room: Galaxy  
“Optimizing Functional Restoration Following Limb Loss: The Benefits of RPNIs”  
Paul Cederna, MD  
“From the Bench and the Bedside – What Do We Know About Targeted Muscle Reinnervation in the Pediatric Population?”  
Gwendolyn Hoben, MD, PhD  
“Agonist-antagonist Myoneural Interface”  
Matthew Carty, MD  
“Alternative Amputation Techniques in the Pediatric Population”  
Rosanna Wustrack, MD  
“An Overview of US Use of Percutaneous Osseointegration in Adults and Considerations for Future Pediatric Use”  
Sarina Sinclair, PhD



9:30am	<b>Break in Exhibit Hall</b>	Room: Planets
10:00am	<b>Neural Control of Prostheses</b> <i>“Bidirectional Neuroprosthesis to Restore Sensory and Motor Function in People with Lower Limb Amputation”</i> Hamid Charkhkar, PhD <i>“Prosthesis Control by Bidirectional Optogenetic Neural Interface”</i> Richard Weir, PhD <i>“Regenerative Peripheral Interfaces for Prosthetic Hand Control”</i> Alex Vaskov, PhD <i>“Fascicle-Specific Targeting (FAST): A Nerve-only Strategy for Robotic Limb Control”</i> Jonathan Cheng, MD, FACS <i>Panel Q&amp;A</i>	Room: Galaxy
11:30am	<b>Lunch &amp; Exhibit Hall</b>	Room: Stars & Planets
12:30pm	<b>Lower Extremity Prosthetic &amp; Orthotic Emulators</b> <i>“Prosthetic Emulator for Mimicking Biological Foot and Ankle Function During Walking”</i> Kota Takahashi, PhD <i>“Emulator to Aid in the Prescription of a Passive AFO”</i> William Durfee, PhD <i>“A Patient Centered ‘Test-Drive’ Strategy for Prosthetic Foot Prescription”</i> David Morgenroth, MD <i>Panel Q&amp;A</i>	Room: Galaxy
1:45pm	<b>Use of Sensors in Pediatric Orthoses</b> <i>“Clubfoot and Hip Abduction Orthoses”</i> Kevin Felton, CO, LO, FAAOP <i>“Pectus Carinatum Orthoses”</i> Chrysta Irolla, MS, MSPO, CPO <i>“Scoliosis Orthoses”</i> Kristin Smith, CO <i>“Cranial Remolding Orthoses”</i> Tiffany Graham, MSPO, CPO, LPO, FAAOP(D) <i>Panel Q&amp;A</i>	Room: Galaxy
3:00pm	<b>Break in Exhibit Hall</b>	Room: Planets
3:30pm	<b>Cutting vs Bleeding Edge of Technology</b> Michael Goldfarb, PhD Laura Miller, PhD, CP David Morgenroth, MD Jordan Ray, CPO	Room: Galaxy
4:45-5pm	<b>Closing Remarks</b> Chair: Michelle Hall, MS, CPO, FAAOP(D)	Room: Galaxy



## **OPTech Scientific Planning Committee**

*We acknowledge our Scientific Planning Committee's efforts in organizing this conference.*

Michelle Hall, MS, CPO, FAAOP(D) | Conference Chair | Gillette Children's

Mark Gormley, MD | Gillette Children's

Andrew Hansen, PhD | Minneapolis Veteran Affairs

Jennifer Laine, MD | Gillette Children's

Sara Morgan, PhD, CPO | Gillette Children's

Jason Wilken, PhD, PT | University of Iowa

## **OPTech Exhibitor List**

*We extend our many thanks for Gillette Children's and the exhibitors' support of this conference.  
Please visit them in the exhibit hall (Room: Planets) during the conference breaks.*

Advanced Tek

MD Orthopaedics

Aether Biomedical

NETTWork Manufacturing

Amparo Prosthetics

OttoBock

Cascade Orthopedic Supply, LP

Southern Prosthetic Supply (SPS)

COAPT

Tamarak Habilitation Technologies

Integrum, Inc.

Tillges Technologies

Invent Medical USA