

2021 POSNA
ANNUAL MEETING
LIVE FROM DALLAS, TX
May 12-15, 2021



PROGRAM CHAIR
WUDBHAV SANKAR, MD

SUBSPECIALTY DAY CHAIR
MATTHEW OETGEN, MD, MBA

PRE-COURSE CHAIR
LINDSAY ANDRAS, MD

LOCAL HOSTS
AMY MCINTOSH, MD
DANIEL SUCATO, MD, MS

**PRELIMINARY
VIRTUAL PROGRAM**



POSNA
PEDIATRIC ORTHOPAEDIC SOCIETY
OF NORTH AMERICA

THANK YOU

The Pediatric Orthopaedic Society of North America gratefully acknowledges the following for their generous financial support during 2020. We sincerely appreciate each of these companies for helping POSNA fulfill its goals of providing education and fostering research.

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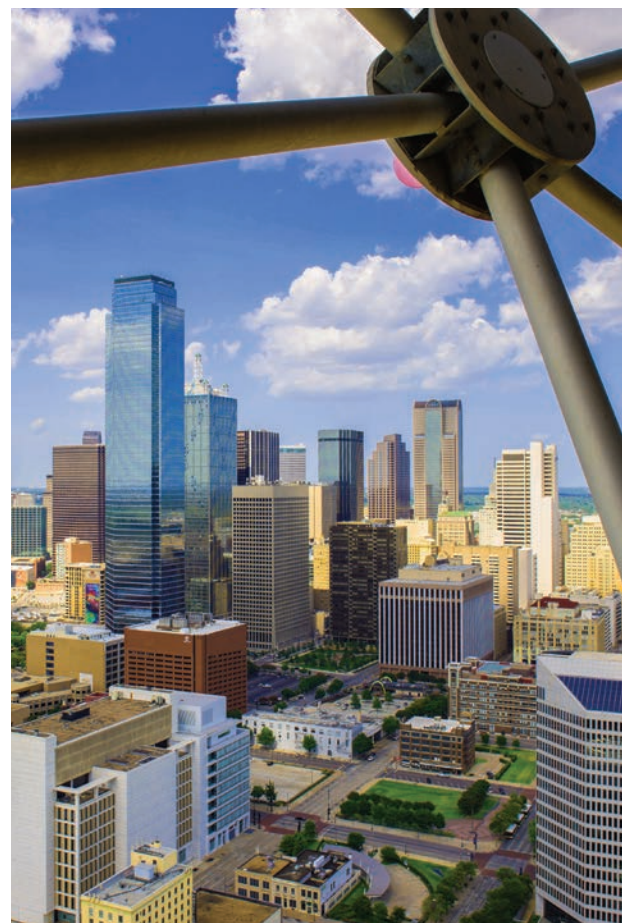
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DATES TO REMEMBER

2021 VIRTUAL ANNUAL MEETING

Registration closes on May 10, 2021.

FUTURE ANNUAL MEETINGS

May 11–14, 2022
Vancouver, BC, Canada

April 26–29, 2023
Nashville, Tennessee

EPOSNA
May 7–11, 2024
Washington, D.C.

FUTURE IPOS MEETINGS

December 7 - 11, 2021
Orlando, FL

December 6 - 10, 2022
Orlando, FL

December 5 - 9, 2023
Orlando, FL



YOU'RE INVITED

Dear Colleagues,

On behalf of POSNA President Michael Vitale, MD, MPH and the 2021 Program Committee (Jeff Martus, MD, Matthew Oetgen MD, MBA, Nick Fletcher, MD and I) it is a great honor to invite you to attend the 2021 Annual Meeting of the Pediatric Orthopaedic Society of North America in Dallas, TX on May 12-15, 2021. It has obviously been a long time since we have been able to meet in person, and a lot has changed in the world. What has not changed is the commitment of our members to our patients, each other, and the scientific advancement of our field.

For those who still cannot attend in-person due to institutional restrictions or personal reservations, we will be offering live streaming accessible through both the in-person and virtual registration options. The entire scientific program as well as the pre-course and Saturday session on diversity, equity, and inclusion will be streamed live, however, not everything will be recorded for later viewing. Therefore, we encourage attendees who cannot be in-person to join live online to get the full meeting experience. The meeting agenda follows:

- The Pre-Course begins Wednesday morning: Optimizing performance throughout your orthopaedic career: How to take your practice to the next level in the clinic, operating room, and your institution chaired by Lindsay Andras, MD.
- The 7th Annual Arabella Leet, MD Young Member Forum will be virtual this year. It is organized by Dan Miller, MD and Margaret Siobhan Murphy-Zane, MD
- The first scientific session begins at 1:30 PM on Wednesday afternoon and will be followed by the Opening Ceremony Wednesday evening at 6:30 PM.
- **New for this year:** Subspecialty Day, chaired by Matt Oetgen, will be on Thursday morning. This half-day event is divided into eight sessions covering advanced topics in Spine, Hip, Sports, Upper Extremity, Foot, Trauma, Neuromuscular, and Lower Extremity. Each session will have 6-12 podium presentations that are staggered throughout the morning so attendees can move to different sessions to hear either the paper session or the programs put together by the Subspecialty Day program chairs.
- The awards presentations, presidential guest speaker, and the presidential transfer will be held on Friday morning.
- The Business Meeting will take place at lunchtime on Friday from 12:15 PM-1:45 PM.
- Friday afternoon will include concurrent sessions covering spine, sports, and lower extremity topics.
- Saturday morning, prior to the final scientific session on QSVI we will be holding a POSNA critical issues symposium from 7:35-8:43 AM entitled, "Advancing justice, equality, diversity, and inclusion in pediatric orthopaedics" chaired by Corinna Franklin and Coleen Sabatini"

It's been a trying year, and many of us are eagerly looking forward to hearing the latest advances in our field and catching up with old friends. Our program committee has been hard at work planning an exciting, rewarding, and safe annual meeting. So please join us in-person if you can, and if not, we'll see you virtually in Dallas in May!

Sincerely,

Wudbhav (Woody) N. Sankar, MD

GENERAL MEETING INFORMATION

LEARNING OBJECTIVES

- Objective 1:** Learn about the latest advances in pediatric orthopaedic surgery
- Objective 2:** Interact and learn with world-renowned thought leaders in the field
- Objective 3:** Use the information obtained to make improvements in your own practices

ACCREDITATION

This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of AAOS and Pediatric Orthopaedic Society of North America (POSNA). AAOS is accredited by the ACCME to provide continuing medical education for physicians.

CONTINUING MEDICAL EDUCATION

The American Academy of Orthopaedic Surgeons designates this live activity for a maximum of **20 AMA PRA Category 1 Credits™**. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

LANGUAGE

English is the official language of POSNA.

DISCLAIMER

The material presented at the Annual Meeting has been made available by the Pediatric Orthopaedic Society of North America for educational purposes only. The material is not intended to represent the only, nor necessarily best, method or procedure appropriate for the medical situations discussed, but rather is intended to present an approach, view, statement or opinion of the faculty which may be helpful to others who face similar situations. POSNA disclaims any and all liability for injury or other damages resulting to any individual attending the Annual Meeting and for all claims which may arise out of the use of the techniques demonstrated therein by such individuals, whether these claims shall be asserted by physician or any other person.

DISCLOSURE

Each presenter in this meeting has been asked to disclose if he or she has received something of value from a commercial company or institution, which relates directly or indirectly to the subject of their presentation. An indication of the participant's disclosure appears after his or her name as well as the commercial company or institution that provided the support. POSNA 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 meeting.

EVENT CANCELCATION

Due to circumstances beyond our control, POSNA may elect to cancel Annual Meeting 2021. These circumstances may include but are not limited to disaster, severe weather, civil commotion or government laws or regulations. In the event of such cancellation, all Annual Meeting registrants will be notified by email at the address noted in the POSNA database; and registration fees will be refunded in full. Other costs incurred by the registrant, such as airline or hotel penalties, are the responsibility of the registrant.

REPRODUCTION POLICY

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PHOTOGRAPHY

Registration and attendance at, or participation in, POSNA activities constitutes an agreement by the registrant to allow POSNA to capture, retain, and utilize (both now and in the future) the attendees' image, likeness, voice, and actions, whether captured live or recorded and in any format, during the Annual Meeting, for display, exhibition, publication, or reproduction in any medium or context for any purpose, including but not limited to, POSNA member communications, commercial or promotional purposes.



MEMBERSHIP INFORMATION

Mission: To advance pediatric orthopaedics by promoting education, research, and quality care.

Vision: A world with optimal musculoskeletal health for all children.

POSNA MEMBERSHIP BENEFITS

With a culture that is committed to embracing diversity, inclusion, and equity for POSNA members, we offer unparalleled access for all to the following range of benefits:

- Reduced registration fees for POSNA Annual Meeting and International Pediatric Orthopaedic Symposia (IPOS)
- Opportunity to serve as faculty and present at POSNA Annual Meeting, Pre-Course, and IPOS
- Access to the POSNA Job Board
- Ability to participate in the POSNA Traveling Fellowship in conjunction with the European Paediatric Orthopaedic Society (EPOS), the Asia Pacific Pediatric Orthopaedic Society (APPOS), and the Sociedad Latin America Ortopedia y Traumatologia Infantil (SLAOTI). For more information, please visit posna.org/Resources/Traveling-Fellowship
- Access to the POSNA member directory
- Leadership opportunities: Have a voice in over 40 POSNA committees including Education, Advocacy, Quality, Safety and Value Initiative, Mentorship and more. Additionally, members are eligible to be elected to serve on the POSNA Board of Directors
- Complimentary online access to all current and past issues of the Journal of Pediatric Orthopaedics (JPO), the source for the best research and up-to-date treatments of musculoskeletal problems in children. As well as access to JPOSNA (the Journal of the Pediatric Orthopedic Society of North America): an open access online journal focusing on pediatric orthopedic conditions, treatment, and technology
- Resources on issues such as health equity, culturally competent care, mentorship, and unconscious bias to equip our members with skills and knowledge needed to deliver the highest quality care to our diverse patient populations

POSNA EDUCATION & RESOURCES

- POSNA Annual Meeting
- IPOS (International Pediatric Orthopaedic Symposium)
- JPOSNA (Journal of the Pediatric Orthopaedic Society of North America)
- POSNA Mentorship Program
- POSNAcademy - Peer Reviewed Pediatric Orthopaedic Video Learning
 - Webinars/Tutorials
 - Industry Education Channel
 - Podcasts
- OrthoKids – A website dedicated to kids and parents to learn about pediatric orthopaedic conditions
- Opportunity for Global Outreach

POSNA RESEARCH

- POSNA funded Research Grants
- Industry funded Research Grants
- Foundation funded Awards

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MEETING AT A GLANCE

WEDNESDAY, MAY 12

Pre-Course	8:00 AM–12:00 PM
Scientific Program	1:30 PM–5:30 PM
Opening Ceremony	6:30 PM–8:00 PM

THURSDAY, MAY 13

Subspecialty Day

Hand/Foot	7:50 AM–12:00 PM
Hip	7:50 AM–12:00 PM
LE/Neuromuscular	7:50 AM–12:00 PM
Spine	7:50 AM–12:00 PM
Sports	7:50 AM–12:00 PM
Trauma	7:50 AM–12:00 PM

FRIDAY, MAY 14

Scientific Program Papers	7:30 AM–11:00 AM
Distinguished Achievement Award 2020	11:00 AM–11:08 AM
Distinguished Achievement Award 2021	11:09 AM–11:17 AM
2022 Meeting Highlights	11:18 AM–11:23 AM
Presidential Speaker 2020	11:24 AM–11:35 AM
Presidential Speaker 2021	11:36 AM–11:49 AM
Presidential Transfer	11:50 AM–12:00 PM
Business Meeting	12:15 PM–1:45 PM
Concurrent Session Spine	2:00 PM–4:00 PM
Concurrent Session Sports	2:00 PM–4:00 PM

SATURDAY, MAY 15

Diversity	7:30 AM–8:43 AM
Scientific Program	8:44 AM–11:36 AM

**Program subject to change*



- Symposia
- ePosters
- Videos
- Young Members Forum

Available
online



MEETING REGISTRATION

Full meeting registration includes sessions starting Wednesday afternoon, May 12, 2021 through Saturday morning, May 15, 2021.

DISCLOSURE OF PERSONAL INFORMATION

When registering for the Annual Meeting, your personal identifying information is retained by POSNA. You understand and agree that POSNA may disclose your name, address, and contact information to your hotel and other service providers to confirm hotel room reservations and meeting attendance numbers.

PRIVACY POLICY–USE OF PERSONAL INFORMATION

Annual Meeting registration lists, including the registrant’s name and postal mailing address are provided to POSNA’s sponsors as a sponsor benefit. No financial or other personal identifying information is disclosed. POSNA takes reasonable steps to ensure that our sponsors protect your information on POSNA’s behalf.

CANCELATION POLICY

A full refund will be granted if notification is received, in writing to posna@posna.org through April 22, 2021. A 20% administrative fee will be charged after April 22, 2021. No refunds will be given after May 10, 2021.

REGISTRATION FEES (US Dollars)

POSNA Member.....	\$ 400
Non-Member.....	\$ 500
Resident/Fellow*	\$ 400
RN/PA/Allied Health	\$ 400
Delegates from Reduced Rate Countries:	
Low Income	\$ 400
Accompanying Person.....	\$ 350
Senior Members	\$ 400

Registration closes on May 10, 2021.

If you need to pay with check, email posna@posna.org for a registration form. All checks must be in US dollars drawn on a US Bank. If paying by check, please mail your registration to:
POSNA, 1 Tower Lane, Suite 2410
Oakbrook Terrace, IL 60181



PRE-COURSE

DESCRIPTION AND AGENDA

Optimizing performance throughout your orthopaedic career: How to take your practice to the next level in the clinic, operating room, and your institution

Chair: Lindsay Andras, MD

WEDNESDAY, MAY 12

8:00 AM–12:00 PM

DESCRIPTION

Practical advice for advancing your practice in clinical, operative, and administrative settings with words of wisdom from leaders in the field for junior, middle, and senior level faculty.

LEARNING OBJECTIVES

Upon completion of this program, participants should be able to:

- Objective 1:** Describe at least 3 new techniques for improving workflow in the clinic setting.
- Objective 2:** Identify ways to build team cohesiveness and improve patient safety in the operating room.
- Objective 3:** Develop techniques and terminology to tackle administrative tasks and negotiations.

ACCREDITATION

This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of the American Academy of Orthopaedic Surgeons and the Pediatric Orthopaedic Society of North America. The American Academy of Orthopaedic Surgeons is accredited by the ACCME to provide continuing medical education for physicians.

CONTINUING MEDICAL EDUCATION

The American Academy of Orthopaedic Surgeons designates this live activity for a maximum of **3.5 AMA PRA Category 1 Credits™**. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

PROGRAM

SESSION I: CLINIC: FROM CHAOS TO COHESIVE CARE

8:00 AM–9:15 AM

Moderators: Vishwas Talwalkar MD & Ying Li, MD

8:00 AM–8:05 AM

Introduction: Welcome & Overview
Lindsay Andras, MD and
Wudbhav Sankar, MD

8:05 AM–8:10 AM

Building volume: how to build a referral base with patients and pediatricians
Dan Miller, MD

8:10 AM–8:15 AM

Wow them with your website: Improving your online presence
Jonathan Schoenecker, MD, PhD

8:15 AM–8:20 AM

Surviving in the electronic era: my top EMR hacks
Jason Anari, MD

8:20 AM–8:25 AM

Leveraging Telehealth: how you and your patients can get the most out of the virtual experience
Alfred Atanda, MD

8:25 AM–8:30 AM

Discussion

8:30 AM–8:35 AM

Secrets of successful coding & collecting: how to legally avoid leaving money on the table
Michael Jofe, MD

8:35 AM–8:40 AM

Shining on Satisfaction Surveys: how to avoid being a Press Ganey victim
Suken Shah, MD



PRE-COURSE CONTINUED

DESCRIPTION AND AGENDA

WEDNESDAY, MAY 12 CONTINUED

8:40 AM–8:45 AM Discussion

8:45 AM–9:05 AM **Better patient care through physician extender debate: What your clinic needs is a...**
Scribe-Jack Flynn, MD
RN- Benjamin Shore, MD, MPH, FRCSC
Nurse Practitioner-Meghan Imrie, MD
Physician's Assistant-Ernest Sink, MD
Athletic Trainer- Matt Milewski, MD

9:05 AM–9:10 AM Panel Discussion

SESSION II: OPERATING ROOM: BUILDING YOUR SKILLS AND YOUR TEAM

9:10 AM–10:05 AM
Moderator: Paul Sponseller, MD & Rachel Goldstein, MD

9:10 AM - 9:15 AM **Transforming the B team into the A team: a survival guide for junior attendings in the OR**
Lindsay Andras, MD

9:15 AM – 9:25 AM **Coaching and surgeon performance**
Brandon Ramo, MD, Laura Bellaire, MD, and Vernon Tolo, MD

9:25 AM–9:30 AM **Building self-confidence and other skills: what surgeons can learn from other professions**
Laurel Blakemore, MD

9:30 AM–9:40 AM Discussion

9:40 AM–9:45 AM **Keep Calm and Be the Captain: How not to lose your cool when things get out of control**
Peter Newton, MD

9:45 AM–9:50 AM **Safety doesn't happen by accident**
Michael Vitale, MD, MPH

9:50 AM–9:55 AM **Innovation with Ethics: How do we responsibly push the envelope in patient care**
Noelle Larson, MD

9:55AM–10:00 AM Discussion

10:05 AM–10:25 AM Break

SESSION III: MASTERING BUSINESS ADMINISTRATION IN ORTHOPAEDICS

10:30 AM–11:55 AM
Moderator: Lori Karol, MD & Jaysson Brooks, MD

10:30 AM–10:35 AM **Saving yourself and others from bad meetings**
Nicholas Fletcher, MD

10:35 AM–10:45 AM **The art of negotiation: avoiding positional bargaining and getting to yes**
Pablo Castaneda, MD

10:45 AM–10:50 AM **Problem Partners: how to deal with a colleague that causes problems**
James McCarthy, MD

10:50 AM–10:55 AM Discussion

10:55 AM–11:00 AM **Think and speak like you went to business school: the 10 min mini MMM**
David Skaggs, MD, MMM

11:00 AM–11:10 AM **The Missing 33%: how to talk to the C-suite**
Michelle Caird, MD

11:10 AM–11:15 AM **Crisis leadership: Lessons learned from the COVID pandemic**
Michael Glotzbecker, MD

11:15 AM –11:25 AM Discussion

11:25 AM–11:55 AM **Panel Discussion: How and when to transition to the next phase: reflections from surgeons in or approaching retirement**
Vernon Tolo, MD, Tony Herring, MD, Stuart Weinstein, MD, Dennis Wenger, MD, and Stephen Ondra, MD

2021 ANNUAL MEETING SCIENTIFIC PROGRAM

WEDNESDAY, MAY 12 CONTINUED

1:30 PM–1:35 PM Introduction and Opening Remarks

GENERAL SESSION: HIP/INFECTION

Moderator: Alexandre Arkader, MD

Co-Moderator: Ira Zaltz, MD

1
1:36 PM–1:40 PM Long-term Patient Reported Outcomes and Satisfaction with Surgery Deteriorate Significantly with Time After In Situ Epiphysiodesis for Slipped Capital Femoral Epiphysis
Patrick Whitlock, MD; Nicholas Auteri; Molly Uchtman
Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio

2
1:41 PM–1:45 PM Proximal Femoral Changes Related to Obesity: An analysis of SCFE Pathoanatomy
Travis Winston, MD; Andrew Landau; Pooya Hosseinzadeh, MD
Washington University School of Medicine, Saint Louis, Missouri

3
1:46 PM–1:50 PM Femoral Neck Growth and Remodeling with Free-Gliding Screw Fixation of Slipped Capital Femoral Epiphysis
Kevin Morash; Benjamin Orlik; Ron El-Hawary, MD; Luke Gauthier, MD; Karl Logan, MBChB
IWK Health Centre, Halifax, N.S., Canada

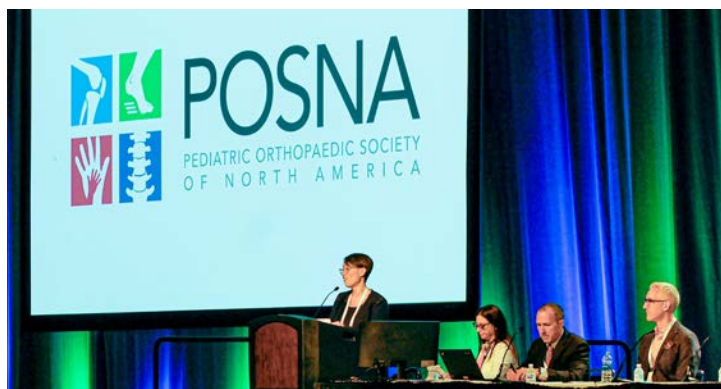
1:51 PM–1:59 PM Discussion

4
2:00 PM–2:04 PM Is there a benefit to weaning Pavlik Harness treatment in infantile DDH?
Wudbhav Sankar, MD; Joshua Bram; Shivani Gohel; Pablo Castaneda, MD
Children's Hospital of Philadelphia, Philadelphia, PA

5
2:05 PM–2:09 PM Comparison of Acetabular Morphology Changes in Pediatric Pelvic Osteotomies using Patient-Specific 3-D Models
Vidyadhar Upasani, MD; Samuel Baird; Jason Caffrey; Harsha Bandaralage; James Bomar, MPH; Christine Farnsworth, MS
Rady Children's Hospital-San Diego, San Diego, CA

6
2:10 PM–2:14 PM Outpatient Bryant's Overhead Traction Does Not Affect the Rate of Open Reduction or Avascular Necrosis in Developmental Dislocation of the Hip
John Birch, MD; Emily Elerson; William Pierce; Sean Hinds; Benjamin Martin, MD; Ryan Muchow, MD
Texas Scottish Rite Hospital for Children, Dallas, Texas

2:15 PM–2:23 PM Discussion



2021 ANNUAL MEETING SCIENTIFIC PROGRAM

WEDNESDAY, MAY 12 CONTINUED

7

2:24 PM–2:28 PM

Rate of Concomitant Cellulitis and Osteoarticular Infections in a Pediatric Population

*Claire Ryan; Christopher Souder, MD; Matthew Ellington, MD
University of Texas at Austin Dell Medical School, Austin, Texas*

8

2:29 PM–2:33 PM

Practice Variation in the Surgical Management of Children with Non-Abscess Forming Acute Osteomyelitis: Policy or Clinical Judgement

*Vidyadhar Upasani, MD; Jessica Burns, MD; Tracey Bastrom, MA; Keith Baldwin, MD; Jonathan Schoenecker MD, PhD; Benjamin Shore, MD, MPH, FRCSC; CORTICES Study Group
Rady Children's Hospital, San Diego, San Diego, California*

9

2:34 PM–2:38 PM

The Utility of Routine Radiographic Monitoring in Pediatric Osteoarticular Infections

*Christopher Gajewski; Nicholas Gajewski; Alexander Upfill-Brown; Rachel Thompson, MD; Mauricio Silva, MD
University of California, Los Angeles, Los Angeles, CA*

2:39 PM–2:47 PM

Discussion

10

2:48 PM–2:52 PM

The Use of Biomarkers in Early Diagnosis of Septic Arthritis and Osteomyelitis

*Michelle Mo, MD; Farshid Guilak; Alexis Elward; Kim Quayle; Dominic Thompson; Kirsten Brouillet;
Scott Luhmann, MD
St. Louis Children's Hospital, Saint Louis, MO*

11

2:53 PM–2:57 PM

Outcome of Surgical Excision in Patients with Fibro-Adipose Vascular Anomaly

*Samantha Spencer, MD; Jirawat Saengsin; Kemble Wang, MD; Patricia Miller, MS; Nicholas Sullivan; Blair Stewig; Megan Anderson, MD
Department of Orthopaedic Surgery, Boston Children's Hospital, Harvard Medical School, Boston, MA*

12

2:58 PM–3:02 PM

Spinal Involvement and Vertebral Deformity in patients with Chronic Recurrent Multifocal Osteomyelitis

*Nathan Donaldson, DO; Nathan Rogers, MPH; Jennifer Soep
Children's Hospital Colorado, Aurora, CO*

3:03 PM–3:11 PM

Discussion

3:20 PM–3:40 PM

Break



2021 ANNUAL MEETING SCIENTIFIC PROGRAM

WEDNESDAY, MAY 12 CONTINUED

GENERAL SESSION: TRAUMA

Moderator: Charles Mehlman, DO, MPH

Co-Moderator: Christine Ho, MD

13

3:48 PM–3:52 PM

Surgical Technique: Medial Pinning in Pediatric Supracondylar Humerus Fractures via the Mini-Open Technique—Safer Than We Thought?

Andrew Rees; Jacob Schultz;
Lucas Wollenman; Stephanie
Moore-Lotridge, PhD; Jonathan
Schoenecker MD, PhD;
Gregory Mencio, MD
Vanderbilt University Medical Center,
Nashville, Tennessee

14

3:53 PM–3:57 PM

Intraoperative Internal Rotation Stress Test in Displaced Pediatric Supracondylar Humerus Fractures Improves Outcomes

Andrew Rees; Jacob Schultz;
Lucas Wollenman; Stephanie
Moore-Lotridge PhD; Jeffrey Martus,
MD; Gregory Mencio, MD;
Jonathan Schoenecker MD, PhD
Monroe Carell Jr. Children's Hospital
at Vanderbilt University Medical
Center, Nashville, Tennessee

15

3:58 PM–4:02 PM

Functional Outcomes of Operative vs Non-operative Treatment of Displaced Proximal Humerus Fractures in Adolescents: Early Results from a Multicenter Prospective Study

Pooya Hosseinzadeh, MD; Andrew
Landau; Rachel Goldstein, MD; Julia
Sanders, MD; Jaime Denning, MD;
Vidyadhar Upasani, MD;
Keith Baldwin, MD
Washington University School of
Medicine, Saint Louis, Missouri

4:03 PM–4:11 PM

Discussion

16

4:12 PM–4:16 PM

Operative Versus Non-operative Treatment of Z-Type Comminuted Clavicle Fractures in Adolescents: A Sub-stratified Cohort Analysis
Coleen Sabatini, MD, MPH; Eric Edmonds, MD; Elizabeth Liotta; Katelyn Hergott; Donald Bae, MD; Michael Busch, MD; Henry Ellis, MD; Mininder Kocher, MD, MPH; G Li, MD; Jeffrey Nepple, MD; Nirav Pandya, MD; Andrew Pennock, MD; Crystal Perkins, MD; David Spence, MD; David Williams PhD; Samuel Willimon, MD; Philip Wilson, MD; Benton Heyworth, MD
Children's Hospital Boston, Boston, MA

17

4:17 PM–4:21 PM

Comparative Effectiveness of Non-operative Versus Operative Treatment for Completely Displaced Clavicle Shaft Fractures in Children
Charles Mehlman, DO; Shital Parikh, MD
Cincinnati Children's Hospital Medical Center, Cincinnati, OH

2021 ANNUAL MEETING SCIENTIFIC PROGRAM

WEDNESDAY, MAY 12 CONTINUED

18

4:22 PM–4:26 PM

Changes in Superior Displacement, Angulation, and Shortening in the Early Phase of Healing for Completely Displaced Midshaft Clavicle Fractures in Adolescents: Results from a Prospective, Multicenter Study

Jeffrey Nepple, MD; Andrew Pennock, MD; Benton Heyworth, MD; Tracey Bastrom MA; Donald Bae, MD; Michael Busch, MD; Eric Edmonds, MD; Henry Ellis, MD; Mininder Kocher, MD, MPH; G Li, MD; Elizabeth Liotta; Nirav Pandya, MD; Crystal Perkins, MD; Coleen Sabatini, MD, MPH; David Spence, MD; Samuel Willimon, MD; David Williams, PhD; Philip Wilson, MD
Rady Children's Hospital, San Diego, CA

4:27 PM–4:35 PM

Discussion

19

4:36 PM–4:40 PM

Management of Syndesmotic Injuries in Children and Adolescents: Results of a Cross-Sectional Survey

Caroline Williams; Benjamin Shore, MD, MPH, FRCSC; Nicholas Sullivan; Blair Stewig; Dennis Kramer, MD; Yi-Meng Yen, MD; Collin May, MD; CORTICES Study Group
Boston Children's Hospital, Boston, MA

20

4:41 PM–4:45 PM

Suture-button versus Screw Fixation of the Tibiofibular Syndesmosis in Adolescent Ankle Injuries

Benjamin Lurie; Conner Paez; Shayna Howitt; Andrew Pennock, MD
Rady Children's Hospital, San Diego, San Diego, California

21

4:46 PM–4:50 PM

Incidence and Risk Factors for Acute Compartment Syndrome in Pediatric Tibia Fractures

Mitchel Obey; Maksim Shlykov; Margaret Smythe; Katelin Nickel; Matt Keller; Pooya Hosseinzadeh, MD
Washington University School of Medicine, Saint Louis, Missouri

4:51 PM–4:59 PM

Discussion

22

5:00 PM–5:04 PM

Clinical Scaphoid Fractures in Children: A prospective radiological study

Sasha Carsen, MD; Kevin Smit, MD; Holly Livock; Zoe Rubin; Ken Tang; Kerri Highmore; Khaldoun Koujok; Kevin Cheung
CHEO, Ottawa, Ontario, Canada

23

5:05 PM–5:09 PM

Use of well-leg traction in the treatment of displaced femoral neck fractures in the pediatric population provides a practical alternative to the peroneal post

Courtney Selberg, MD; Nathan Donaldson, DO; Rachael Martino, BA; Nathan Rogers MPH
Children's Hospital Colorado, Aurora, Colorado

24

5:10 PM–5:14 PM

Evaluation and Treatment of Pediatric Pelvic Ring Injuries

Elizabeth Davis; Shiraz Younas, MD
McGovern Medical School, Houston, Texas

5:15 PM–5:23 PM

Discussion

2021 ANNUAL MEETING

SUBSPECIALTY DAY PROGRAMS

THURSDAY, MAY 13

HAND SUBSPECIALTY DAY

Period 1: 7:50 AM–9:40 AM

Chair: Joshua Abzug, MD

Co-Chair: Mary Claire Manske, MD

Pediatric upper extremity surgeons manage a wide variety of conditions, including congenital, neuromuscular, and traumatic disorders. Clinical and diagnostic work-up, surgical indications, and treatment approach are often controversial. This session will include six high-quality abstract presentations, a panel discussion of challenging cases, and presentation on pediatric upper extremity surgery in low-resource countries.

7:45 AM–7:49 AM Welcome and Remarks

25

7:50 AM–7:54 AM

Long-Term Results for Surgically Treated Radial Polydactyly

Takehiko Takagi, MD

National Center for Child Health and Development, Tokyo, Tokyo, Japan

26

7:55 AM–7:59 AM

A practical algorithm for radial polydactyly

Chia-Hsieh Chang, MD

Chang Gung Memorial Hospital, Taoyuan city, Taiwan

27

8:00 AM–8:04 AM

Reliability Masada Classification for forearm involvement in patients with Hereditary Multiple Osteochondromas (HMO)

Carley Vuillermin, FRACS;

Maria Canizares; Lindley Wall, MD;

Suzanne Steinman, MD;

Ann Van Heest

Boston Children's Hospital, Boston, MA

8:05 AM–8:14 AM

Discussion

28

8:15 AM–8:19 AM

Outcomes of Biceps Rerouting for Forearm Supination Contractures in Brachial Plexus Birth Injury

Mary Claire Manske, MD;

Cory Pham; Michelle James, MD

Shriners Hospital for Children

Northern California, Sacramento, California

29

8:20 AM–8:24 AM

Why the Knife? Reasons Children and their Families Choose Surgery for Ganglion Cysts

Jennifer Ty, MD; Joshua Bram;

David Falk; Benjamin Chang; Ines Lin;

Faris Fazal; Apurva Shah, MD

Children's Hospital of Philadelphia, Philadelphia, Pennsylvania

30

8:25 AM–8:29 AM

The Radiocoronoid line - a novel technique for diagnosing radiocapitellar dislocation

Kenneth Pak Leung Wong; Daniel JiaDong;

Ling Hui Tay; Nicole Lee;

Arjandas Mahadev, FRCS

KK Women's and Children's Hospital, Singapore, Singapore

8:30 AM–8:38 AM

Discussion

8:38 AM–8:43 AM

Introduction

Joshua Abzug, MD and

Mary Claire Manske, MD

8:44 AM–8:54 AM

Case Discussion 1

Joshua Abzug, MD and

Mary Claire Manske, MD

Panel: Sebastian Farr, MD,

Carly Vuillermin, MD, Chris Stutz



2021 ANNUAL MEETING

SUBSPECIALTY DAY PROGRAMS

THURSDAY, MAY 13 CONTINUED

- 8:55 AM–9:05 AM **Case Discussion 2**
Joshua Abzug, MD and
Mary Claire Manske, MD
Panel: Sebastian Farr, MD,
Carly Vuillermin, MD, Chris Stutz
- 9:06 AM–9:16 AM **Case Discussion 3**
Joshua Abzug, MD and
Mary Claire Manske, MD
Panel: Sebastian Farr, MD,
Carly Vuillermin, MD, Chris Stutz
- 9:17 AM–9:27 AM **Case Discussion 4**
Joshua Abzug, MD and
Mary Claire Manske, MD
Panel: Sebastian Farr, MD,
Carly Vuillermin, MD, Chris Stutz
- 9:28 AM–9:40 AM **International Outreach Missions in
Pediatric Hand Surgery**
Scott Kozin, MD
- 9:45 AM–10:10 AM Break

FOOT SUBSPECIALTY DAY

Period 2: 10:18 AM – 11:52 AM

Chair: Derek M. Kelly, MD

Co-Chair: Maryse Bouchard, MD

The Pediatric and Adolescent Foot Imaging discussion and case presentations will focus on new MRI techniques for foot disease and deformity, weight bearing CT indications and benefits, and ultrasound uses. Then we will discuss minimally invasive techniques for pediatric and adolescent forefoot and hindfoot reconstruction including bunion repair and calcaneal osteotomy.

31

- 10:18 AM–10:22 AM **Pediatric Posterior Ankle
Impingement- Arthroscopic
Management and Outcomes: A
Prospective Study**
Indranil Kushare, MD; Ramesh
Ghanta; Jorge Gomez; Kristen
Kastan; Tracie Stone; Sachin
Allahabadi, BA; Scott McKay, MD
Texas Children's Hospital,
Houston, Texas

32

- 10:23 AM–10:27 AM **Does the Stabilization of the
Calcaneocuboid Joint With a
Steinman Pin in Evans Osteotomy
Procedures Affect Its Incidence
of Arthritis?**
Brett Heldt; Isaiah Roepe;
Elsayed Attia; Vinitha Shenava, MD;
Jaclyn Hill, MD
Texas Children's Hospital,
Houston, TX

33

- 10:28 AM–10:32 AM **A Retrospective Analysis of
Nonoperative Treatment of
Idiopathic Toe Walking: Outcomes
and Predictors of Success**
Maryse Bouchard, MD;
John Bartoletta; Elaine Tsao, MD
Seattle Children's Hospital,
Seattle, WA

- 10:33 AM–10:41 AM Discussion

34

- 10:42 AM–10:46 AM **Talectomy for the Treatment of
Rigid Non-idiopathic Clubfoot
Deformity: Long-Term Follow-Up**
Jill Larson, MD
Ann & Robert H. Lurie Children's
Hospital of Chicago, Chicago, IL

35

- 10:47 AM–10:51 AM **Clubfoot Activity, Recurrence &
Exercise (CARES): A Pilot Study This
study investigates whether patient/
parent reported outcomes (PROs)
and activity levels for children with
clubfoot are different in patients
treated for relapse. It also proposes
a method to assess outcomes
remotely.**
Steven Frick, MD; Ghida El-Banna;
Nicole Segovia
Stanford University, Stanford, CA

2021 ANNUAL MEETING

SUBSPECIALTY DAY PROGRAMS

THURSDAY, MAY 13 CONTINUED

36

10:52 AM–10:56 AM **The Atypical Clubfoot: Is it doomed from the start?**
Katherine Rosenwasser; Nickolas Nahm, MD; John Herzenberg, MD
Sinai Hospital of Baltimore/
Lifebridge Health, Baltimore,
Maryland

10:57 AM–11:05 AM Discussion

11:05 AM–11:18 AM **Pediatric and Adolescent Foot Imaging: Beyond the X-ray**
L. Reid Nichols, MD

11:18 AM–11:28 AM **Q&A / Cases**
Derek Kelly, MD

11:29 AM–11:41 AM **Minimally Invasive Techniques in Pediatric Foot Surgery**
Alastair Younger, MD

11:42 AM–11:52 AM **Q&A / Cases**
Maryse Bouchard, MD

HIP SUBSPECIALTY DAY

Period 1: 7:50 AM–9:40 AM

Management of Uncommon Hip Conditions

Chair: Rachel Goldstein, MD

Co-Chair: Scott Rosenfeld, MD

This session will focus on how to approach less common hip conditions. Expert hip surgeons will discuss their approach to managing complex, uncommon hip problems.

37

7:50 AM–7:54 AM **Acetabular Coverage Decreases at the End of Skeletal Growth: a 3D CT Study of Healthy Hips**
Ethan Ruh; April Krivoniak;
Michael McClincy, MD
University of Pittsburgh,
Pittsburgh, PA

38

7:55 AM–7:59 AM **Patients That Undergo Concomitant Hip Arthroscopy and Periacetabular Osteotomy Obtain Minimal Clinically Important Difference More Than Patients That Undergo Isolated Periacetabular Osteotomy: An analysis of 231 hips**
Anthony Essilfie; Stacy Robustelli, BS; Ernest Sink, MD
The Hospital for Special Surgery,
New York, NY

39

8:00 AM–8:04 AM **Intermediate Term Results of Combined Surgical Dislocation and Periacetabular Osteotomy for Complex Perthes Deformities: Can We Save the Hip?**
Serena Freiman; Jeffrey Nepple, MD; Gail Pashos; Perry Schoenecker, MD; John Clohisy, MD
Washington University School of Medicine, St. Louis Missouri

8:05 AM–8:14 AM Discussion

40

8:15 AM–8:19 AM **Analyzing Impingement Patterns and Planning Corrective Osteotomy Using Patient-specific 3-Dimensional CT Models for Collision Detection in Patients with Severe Slipped Capital Femoral Epiphysis**
Till Lerch; Florian Schmaranzer;
Moritz Tannast; Klaus Siebenrock, MD; Simon Steppacher; Daniel Maranhão, MD; Young Kim, MD; Eduardo Novais, MD
Boston Childrens Hospital,
Boston, MA



2021 ANNUAL MEETING

SUBSPECIALTY DAY PROGRAMS

THURSDAY, MAY 13 CONTINUED

41

8:20 AM–8:24 AM

Surgical Hip Dislocation Combined with Femoral Head Osteoplasty and Intertrochanteric Osteotomy as a Delayed Reconstruction of Slipped Capital Femoral Epiphysis (SCFE)-induced femoroacetabular impingement (FAI): a 10-year Experience

Houssam Bouloussa; Sunny Parekh; Muzaffar Ali; Landon Cluts; Michael McClincy, MD; Patrick Bosch, MD
Children's Hospital of Pittsburgh of UPMC, Pittsburgh, PA

42

8:25 AM–8:29 AM

Capital Realignment for High Grade Slips Using Anterior Approach and Subcapital Osteotomy

Sandeep Patwardhan, MD; Dr. Ashok Shyam; Parag Sancheti
Sancheti Institute for Orthopaedics & Rehabilitation, Pune, India

8:30 AM–8:38 AM

Discussion

8:38 AM–8:41 AM

Introduction

Scott Rosenfeld, MD

8:42 AM–8:49 AM

Downs Syndrome Hip Instability

Ira Zaltz, MD

8:50 AM–8:57 AM

Non-Perthes Avascular Necrosis of the Femoral Head

Harry Kim, MD

8:58 AM–9:05 AM

Bladder Exstrophy

Paul Sponseller, MD

9:06 AM–9:15 AM

Hip Deformity in Skeletal Dysplasia

Vernon Tolo, MD

9:16 AM–9:23 AM

Femoral Head Osteochondral Defects

Andrea Spiker, MD

9:24 AM–9:40 AM

Questions

Scott Rosenfeld, MD

9:45 AM–10:10 AM

Break

HIP SUBSPECIALTY DAY (CONTINUED)

Period 2: 10:18 AM – 11:58 AM

The Natural History of Common Hip Conditions

This section will focus on the natural history of common pediatric hip conditions.

43

10:18 AM–10:22 AM

The Role of the Artery of Ligamentum Teres in Revascularization in Legg-Calve-Perthes Disease

William Morris, MD; Angel Valencia; Molly McGuire; Harry Kim, MD
Texas Scottish Rite Hospital for Children, Dallas, TX

44

10:23 AM–10:27 AM

Hip morphology in early-stage LCPD: Is there an argument for anatomic-specific containment?

Wudbhav Sankar, MD; Courtney Selberg, MD; Joshua Bram; Patrick Carry; Rachel Goldstein, MD; Tim Schrader, MD; Jennifer Laine, MD; Harry Kim, MD
Children's Hospital of Philadelphia, Philadelphia, PA

45

10:28 AM–10:32 AM

Reliability and Validity of Assessment of Legg-Calve-Perthes Disease Hypoperfusion with Perfusion MRI

David Chong, MD; Tim Schrader, MD; Jennifer Laine, MD; Scott Yang, MD; Shawn Gilbert, MD; Harry Kim, MD
International Perthes Study Group, Dallas, TX

10:33 AM–10:41 AM

Discussion

2021 ANNUAL MEETING

SUBSPECIALTY DAY PROGRAMS

THURSDAY, MAY 13 CONTINUED

46

10:42 AM–10:46 AM **Self-Reported Physical Function Doesn't Correlate with Pain or Functional Limitations in Adolescents Undergoing Hip Preservation Surgery**
Wilshaw Stevens; Kirsten Tulchin-Francis, PhD; David Podeszwa, MD
Scottish Rite for Children, Dallas, TX

47

10:47 AM–10:51 AM **Acetabular development following treatment of developmental hip dysplasia: Does the addition of bony surgery at index procedure decrease risk of secondary surgery?**
Ernest Sink, MD; Rachael Martino, BA; Aaron Brandt; Patrick Carry; Courtney Selberg, MD
Children's Hospital Colorado, Aurora, Colorado

48

10:52 AM–10:56 AM **Quasi-static MRI Motion Analysis to Study Hip Translation and Its Association with Hip Rotation and Morphology**
Young Jo Kim, MD; Alireza Emami; Shayan Hosseinzadeh; Eduardo Novais, MD; Ata Kiapour
Boston Children's Hospital, Boston, MA

10:57 AM–11:05 AM Discussion

11:05 AM–11:08 AM **Introduction**
Rachel Goldstein, MD

11:09 AM–11:15 AM **Adolescent/Young Adult Hip Dysplasia**
Stuart Weinstein, MD

11:16 AM–11:22 AM **Legg-Calvé-Perthes Disease**
Jennifer Laine

11:23 AM–11:28 AM **Slipped Capital Femoral Epiphysis**
Michael Millis, MD

11:29 AM–11:35

Femoracetabular Impingement
Cara Beth Lee, MD

11:36 AM–11:58

Questions
Rachel Goldstein, MD

NEUROMUSCULAR SUBSPECIALTY DAY

Period 1: 7:50 AM – 9:40 AM

Chair: Andrew Georgiadis, MD
Co-Chair: Benjamin Shore, MD, MPH, FRCSC

This session will be a mixture of scientific presentations and discussion on the orthopaedic care of patients with neuromuscular disorders. A variety of topics will be presented, including the optimization of patients for surgical intervention, approaches to ambulatory patients with gait impairment, orthopaedic care in patients with Spina Muscular Atrophy, and a journal club of influential publications from the preceding year.

49

7:50 AM–7:54 AM

Severe Hip Subluxation in Non-Ambulatory Cerebral Palsy (CP): What Factors Lead to Lasting Success Of Reduction?

Kristen Carroll, MD; Alyssa Thorman; Whitney Moss; Bruce MacWilliams; Matthew Talmage; Mark McMulkin; Glen Baird, MD; Alan Stotts, MD
Shriners Hospital for Children- Salt Lake City, Salt Lake City, UT

50

7:55 AM–7:59 AM

3-D Acetabular Morphology of the Neuromuscular Hip: Implications for Pre-operative Planning

Megan Severson, MD; Harsha Bandaralage; James Bomar, MPH; Christine Farnsworth, MS; Vidyadhar Upasani, MD
Rady Children's Hospital-San Diego, San Diego, CA



2021 ANNUAL MEETING

SUBSPECIALTY DAY PROGRAMS

THURSDAY, MAY 13 CONTINUED

51

8:00 AM–8:04 AM

Hip Pain and Scoliosis in Non-Ambulatory Children with SMA
Nickolas Nahm, MD; Rewais Hanna; Melissa Bent, MD; Karen Patterson; Sarah Sund, BS; Mary Schroth; Matthew Halanski, MD
University of Wisconsin, Madison, WI

8:05 AM–8:14 AM

Discussion

52

8:15 AM–8:19 AM

Bone Deficits in Spina Bifida Accelerate During Puberty
Robert Kay, MD; Nicole Mueske; Susan Rethlefsen, PT; Alexander Van Speybroeck; Wendy Mack; Tishya Wren, PhD
Children's Hospital Los Angeles, Los Angeles, CA

53

8:20 AM–8:24 AM

Long and Short Term Kinematic Outcomes of Rectus Femoris Transfers in Ambulatory Children with Cerebral Palsy
Rubini Pathy, MD; Mary Gannotti; Brianna Liquori; George Gorton
Shriners Hospitals for Children, Springfield, MA

54

8:25 AM–8:29 AM

Outcomes of Patellar Tendon Imbrication for Crouch Gait
Lauren Hyer, MD; David Westberry, MD; Prabhav Saraswat; Ashley Carpenter; Jon Davids, MD
Shriners Hospitals for Children, Greenville, SC

8:30 AM–8:38 AM

Discussion

8:38 AM–8:42 AM

Introduction
Andrew Georgiadis, MD and Benjamin Shore, MD, MPH, FRCSC

8:43 AM–8:57 AM

Preoperative Optimization of Patients with Complex Medical Conditions
Laurie Glader, MD

8:58 AM–9:08 AM

Reliable Information and Social Media for Neuromuscular Conditions
Hank Chambers, MD

9:09 AM–9:19 AM

Publications This Year That Could Change Your Practice
Amanda Whitaker, MD

9:20 AM–9:30 AM

Master's Techniques – Anterior Guided Growth, Distal Femur
Bob Kay, MD

9:31 AM–9:40 AM

Orthopaedic Care of SMA in the Era of Pharmacotherapy
Brian Synder, MD, PhD

LOWER EXTREMITY SUBSPECIALTY DAY

Period 2: 10:18 AM – 11:58 AM

Chair: Phil McClure, MD

Co-Chair: Megan Young, MD

Lower extremity topic is limb length discrepancy with presentations to highlight case examples, prediction methods, and a debate centered on opposing treatment methods. Presenters will review the options for epiphyseodesis versus limb lengthening including counseling of families, various techniques, results/complications and pearls and pitfalls. The didactic concludes with a discussion on the "cutoff" for limb lengthening considering evolving technology.

55

10:18 AM–10:22 AM

The Effects of Lower Extremity Rotational Malalignment on Pediatric Patient-Reported Outcomes Measurement and Information System (PROMIS) Scores

Janan Chandrananth; Richard Hannan; Daniel Bouton, MD; Ellen Raney, MD; Jeremy Bauer, MD
Shriners Hospital for Children, Portland, OR

2021 ANNUAL MEETING

SUBSPECIALTY DAY PROGRAMS

THURSDAY, MAY 13 CONTINUED

56

10:23 AM–10:27 AM **Patient reported PROMIS assessment in pediatric patients with tibial deficiency, fibular deficiency, and proximal focal femoral deficiency - A multicenter study**
Vanna Rocchi; Nina Cung; Jeffrey Fine; Jeffrey Ackman, MD; Sarah Nossov, MD; Janet Walker, MD; David Westberry, MD; Joel Lerman, MD
Shriners Hospitals for Children Northern California, Sacramento, CA

57

10:28 AM–10:32 AM **Treatment of Congenital Pseudarthrosis of the Tibia: 2-year Minimum Followup**
Dror Paley, MD, FRCSC; David Feldman, MD; Aaron Huser DO; Claire Shannon, MD; Michelle Coleman; Anna Hell
Paley Institute, West Palm Beach, FL

10:33 AM–10:41 AM Discussion

58

10:42 AM–10:46 AM **Complications Requiring Readmission Following Lower Limb Lengthening: A 10 Year U.S. Database Study**
Sanjeev Sabharwal, MD; Ashish Mittal; Sachin Allahabadi, MD; Rishab Jayaram; Matt Callahan
University of California, San Francisco, San Francisco, CA

59

10:47 AM–10:51 AM **Angular Deformity before and after Temporary Epiphysiodesis for Leg Length Discrepancy**
Katherine Antoniak; Curtis VandenBerg, MD; Oussama Abousamra, MD
Children's Hospital Los Angeles, Los Angeles, CA

60

10:52 AM–10:56 AM **Novel Treatment for Improving Knee Range of Motion in Patients with Arthrogyposis and Severe Knee Flexion Deformity**
David Feldman, MD; Aaron Huser, DO; Dror Paley, MD, FRCSC; Troy Rand; Michael Beck
Paley Institute, West Palm Beach, FL

10:57 AM–11:05 AM Discussion

11:05 AM–11:10 AM **Case Presentation: What to do with a 4cm leg length discrepancy?**
Megan Young, MD

11:10 AM–11:25 AM **Epiphysiodesis**
John Birch, MD

11:30 AM–11:40 AM **Limb Lengthening**
John Herzenberg, MD

11:41 AM–11:58 AM **Cutoff for limb lengthening...is there a right answer?**
Phillip McClure, MD



2021 ANNUAL MEETING

SUBSPECIALTY DAY PROGRAMS

THURSDAY, MAY 13 CONTINUED

SPINE SUBSPECIALTY DAY

Period 1: 7:50 AM – 9:40 AM

Chair: Sumeet Garg, MD

Co-Chair: Craig Eberson, MD

In 2020 we faced new challenges in clinical care and education. Our session will focus on contemporary issues of 2021 facing pediatric spine surgeons including the COVID pandemic, increasing use of telehealth, and racial disparities in pediatric spine care.

In addition, we will have a session on indications and techniques to optimize care for patients with neuromuscular scoliosis. Many options exist for treatment, and it is not always clear which patients benefit from operative intervention. This session will highlight the controversies that frequently arise during the treatment of these patients and highlight the benefits of having multiple tools in your toolbox when approaching these cases.

Finally, we also will have a duel on the current state of growth modulation in the treatment of scoliosis. Do we really know if this is better than a fusion? Our experts will slug it out!

61

7:50 AM–7:54 AM

How low can you go? Evaluation of Implant Density in Growing Construct Conversion to Posterior Spinal Fusion for Early Onset Scoliosis

Edward Compton; Purnendu Gupta, MD; Jaime Gomez, MD; Kenneth Illingworth, MD; David Skaggs, MD, MMM; Paul Sponseller, MD; Amer Samdani, MD; Steven Hwang; Matthew Oetgen MD, MBA; Jennifer Schottler; George Thompson, MD; Michael Vitale, MD, MPH; John Smith, MD; Lindsay Andras, MD; Pediatric Spine Study Group Children's Hospital Los Angeles, Los Angeles, CA

62

7:55 AM–7:59 AM

Superiority of convex first differential rod technique in three-dimensional correction of Lenke 1&2 Adolescent Idiopathic Scoliosis

Lorena Floccari, MD; Trey Moberly; Todd Ritzman, MD
Akron Children's Hospital, Akron, OH

63

8:00 AM–8:04 AM

Predictors of Optimal Outcomes of Selective Thoracic Fusion at Five Years

Amelia Lindgren, MD; Tracey Bastrom MA; Amer Samdani, MD; Suken Shah, MD; Firoz Miyanji, MD; Patrick Cahill, MD; Vidyadhar Upasani, MD; Peter Newton, MD; Burt Yaszay, MD
Rady Children's Hospital, San Diego, CA

8:05 AM–8:14 AM

Discussion

64

8:15 AM–8:19 AM

Scoliosis Surgery Normalizes Cardiac Function in AIS Patients

Terry Amaral, MD; Vishal Sarwahi, MBBS; Aaron Atlas; Jesse Galina; Sayyida Hasan; Sarika Kalantre
Cohen Children's Medical Center, New Hyde Park, NY

65

8:20 AM–8:24 AM

Spinal Fusion Effects on Pulmonary Function and Breathing Mechanics in Adolescent Idiopathic Scoliosis

Vincent Prusick, MD; Joel Eastman; Hank White; Sam Augsburg; Vishwas Talwalkar, MD; Ryan Muchow, MD; Henry Iwinski, MD
Shriners Hospitals for Children-Medical Center, Lexington, KY

2021 ANNUAL MEETING

SUBSPECIALTY DAY PROGRAMS

THURSDAY, MAY 13 CONTINUED

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8:25 AM–8:29 AM

Airway Management of Pediatric Cervical Fusions

*Daniel Hedequist, MD; Nora O'Neill; Danielle Cook; Sabeena Chacko
Boston Children's Hospital,
Boston, MA*

8:30 AM–8:38 AM

Discussion

8:38 AM–8:48 AM

Indications for surgery in Neuromuscular Scoliosis - When to say no

Brian Smith, MD

8:48 AM–8:53 AM

Mortality in Neuromuscular scoliosis

Jill Larson, MD

8:53 AM–8:58 AM

Neuromuscular Scoliosis -Indications for posterior only surgery

Brian Snyder, MD

8:58 AM–9:03 AM

Neuromuscular Scoliosis -Indications for anterior surgery

Mike Glotzbecker, MD

9:03 AM–9:08 AM

Neuromuscular scoliosis - Indications for growth friendly instrumentation

Burt Yaszay, MD

9:08 AM–9:18 AM

Discussion

9:18 AM–9:23 AM

60-degree curve in a Sanders 3 patient: In 2021, tethering is the way to go

Noelle Larson, MD

9:23AM–9:28 AM

60-degree curve in a Sanders 3 patient: In 2021, fusion is still the way to go

Dominick Tuason, MD

9:28AM–9:40 AM

Discussion

9:40 AM–10:10 AM

Break

SPINE SUBSPECIALTY DAY (CONTINUED)

Period 2: 10:18 AM – 11:58 AM

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10:18 AM–10:22 AM

Transcranial Motor Evoked Potential Monitoring During Scoliosis Surgery in Children with Cerebral Palsy: Is it Feasible?

*Wade M. Shrader, MD; Katherine Kenny; Kenneth Rogers, PhD; Sabina DiCindio; Anthony DiNardo; Alier Franco; Suken Shah, MD
Nemours A.I. duPont Hospital for Children, Wilmington, DE*

68

10:23 AM–10:27 AM

Breaking the Dogma: Does UIV have to be T2 in CP Patients Undergoing Spinal Fusion for their Neuromuscular Scoliosis?

*Jakub Sikora-Klak; Paul Sponseller, MD; Tracey Bastrom, MA; Suken Shah, MD; Patrick Cahill, MD; Mark Abel, MD; Amer Samdani, MD; Peter Newton, MD; Burt Yaszay, MD
Rady Children's Hospital, San Diego, CA*

69

10:28 AM–10:32 AM

Ambulatory Neuromuscular Scoliosis Patients have Similar Rates of Infection, Perioperative Complications, and Revision to Adolescent Idiopathic Scoliosis Patients

*Vishal Sarwahi, MBBS; Sayyida Hasan; Yungtai Lo; Terry Amaral, MD; Jesse Galina; Aaron Atlas
Cohen Children's Medical Center, New Hyde Park, NY*

10:33 AM–10:41 AM

Discussion



2021 ANNUAL MEETING

SUBSPECIALTY DAY PROGRAMS

THURSDAY, MAY 13 CONTINUED

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10:42 AM–10:46 AM **Prophylactic Application of Local Vancomycin onto Surgical Field Shows No Decrease of Acute Surgical Site Infection in Adolescent Idiopathic Scoliosis Patient**
De-An Zhang; Marilan Luong; Robert Cho, MD; Shriners Spine Study Group; Selina Poon, MD
Shriners for Children Medical Center, Pasadena, CA

71

10:47 AM–10:51 AM **Multimodal Treatment for Severe Spinal Deformity in Osteogenesis Imperfecta: Rationale, Outcomes and Complications**
Tyler McDonald; Alexander Kuzma; Yushane Shih, MD; Kenneth Rogers, PhD; Petya Yorgova; Richard Kruse, DO; Jeanne Franzone, MD; Suken Shah, MD
Nemours/Alfred I. duPont Hospital for Children, Wilmington, DE

72

10:52 AM–10:56 AM **Post-Operative Complications Assessment for Patients with Early-Onset Scoliosis and Baclofen Pump Usage Undergoing Growth-Friendly Spinal Instrumentation Surgeries**
Amy Xu; Majd Marrache; Christina Hardesty, MD; Mari Groves; Mark Erickson, MD; Robert Murphy, MD; George Thompson, MD; Paul Sponseller, MD
Johns Hopkins School of Medicine, Baltimore, MD

10:57 AM–11:05 AM Discussion

11:05 AM–11:11 AM **COVID-19 Impact on Scoliosis Care**
Roger Widmann, MD

11:12 AM–11:18 AM **Incorporating Telehealth for Pediatric Spine Care**
Suken Shah, MD

11:19 AM–11:24 AM **Building a Social Media Presence for Your Practice**
Robert Cho, MD

11:25 AM–11:30 AM **Using Medical Animation to Enhance Patient Education**
Mark Erickson, MD

11:31 AM–11:40 AM Discussion

11:40 AM–11:48 AM **Racial Care Disparities in Pediatric Scoliosis**
Jaysson Brooks, MD

11:48 AM–11:58 AM Discussion

SPORTS SUBSPECIALTY DAY

Period 1: 7:50 AM – 9:30 AM

Ortho-Biologics in Youth Sports: Waste of Money or Promising Treatment Option

Chair: Peter Fabricant, MD

Co-Chair: Jennifer Beck, MD

This session aims to provide a review of the various trending ortho-biologic options in sports medicine including PRP, BMAC, stem cells, etc and current evidence on their applicability to youth sports medicine pathologies. A controversial, yet highly lucrative part of adult sports medicine practices, utilization of biologics in youth sports medicine has been limited. Understanding of the basic science behind their development and analysis of high level evidence in adult populations will improve application algorithms in youth sports medicine.

73

7:50 AM–7:54 AM **Descriptive Epidemiology from the Research in OsteoChondritis Dissecans of the Knee (ROCK) Prospective Cohort**
Carl Nissen, MD
University of Pennsylvania, Philadelphia, PA

2021 ANNUAL MEETING

SUBSPECIALTY DAY PROGRAMS

THURSDAY, MAY 13 CONTINUED

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7:55 AM–7:59 AM

Osteochondral Allografting for Unsalvageable Osteochondritis Dissecans in the Skeletally Immature Knee: A Comparative Analysis of Radiographic Healing and Early Clinical Outcomes Between Skeletally Mature and Immature Patients

Breann Tisano; Henry Ellis, MD; Charles Wyatt, NP; Philip Wilson, MD
Scottish Rite for Children, Dallas, Texas

75

8:00 AM–8:04 AM

Predicting Outcomes of Talar Osteochondritis Dissecans Lesions in Children

Kathleen Maguire, MD; Mitchell Johnson; Kunbo Park, MD; Divya Talwar; J Todd Lawrence, MD
Children's Hospital of Philadelphia, Philadelphia, PA

8:05 AM–8:14 AM

Discussion

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8:15 AM–8:19 AM

Activity Specific Differences in Patients Returning to Sports Following Primary Hip Arthroscopy

Whitney Hovater; David Howell; Stephanie Mayer, MD
Children's Hospital Colorado, Aurora, CO

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8:20 AM–8:24 AM

Clinical Outcomes, Survivorship, and Return to Sports After Arthroscopic Capsular Repair with Suture Anchors for Adolescent Multidirectional Shoulder Instability at Mean Follow-Up of 6 Years

Brendon Mitchell; Matthew Siow; Alyssa Carroll; Andrew Pennock, MD; Eric Edmonds, MD
Rady Children's Hospital, San Diego, San Diego, California

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8:25 AM–8:29 AM

Utility of MRI Assessment of Healing following Marrow Stimulation of Capitellar OCD

Charles Goldfarb, MD; Matthew Smith; James Broughton; Mitchel Obey; Travis Hillen
Washington University, Saint Louis, Missouri

8:30 AM–8:38 AM

Discussion

8:40 AM–8:54 AM

Basic Science Review of Ortho-Biologics

Rachel Frank

8:55 AM–9:00 AM

Clinical Scientific Review and Case Based Discussion of Ortho-biologics in Youth Sports Elbow Injuries

Stephanie Mayer, MD

9:01 AM –9:06AM

Clinical Scientific Review and Case Based Discussion of Ortho-biologics in Youth Sports Foot and Ankle Injuries

Brian Haus, MD

9:07 AM–9:10 AM

Q&A

All Speaker

9:10 AM–9:15 AM

Clinical Scientific Review and Case Based Discussion of Ortho-biologics in Youth Shoulder Injuries

Rachel Frank, MD

9:16 AM–9:21 AM

Clinical Scientific Review and Case Based Discussion of Ortho-biologics in Youth Knee Injuries

Melissa Christino, MD

9:22 AM–9:25 AM

BEAR Trial Update

Beng Yen, MD

9:26 AM–9:30 AM

Q&A, Cases

All Speakers

9:40 AM–10:18 AM

Break

2021 ANNUAL MEETING

SUBSPECIALTY DAY PROGRAMS

THURSDAY, MAY 13 CONTINUED

SPORTS SUBSPECIALTY DAY (CONTINUED)

Period 2: 10:18 AM – 12:00 PM

Osteochondritis Dissecans: Its More Than Drilling and Fixation in the Knee!

Osteochondritis dissecans (OCD) is an uncommon clinical condition but seen with increasing frequency among the pediatric sports medicine community. It most frequently presents in the knee, and the most common treatment strategy is drilling with or without internal fixation. However, with larger and deeper lesions, during revision surgery, or when encountering lesions in the capitellum or talus, alternative treatment strategies may be required. This session aims to provide an overview of those alternative treatment strategies for several osteochondritis dissecans lesion clinical dilemmas as well as those less commonly seen lesions in the talus and elbow.

79

10:18 AM–10:22 AM **Do Continuous Peripheral Nerve Blocks Decrease Home Opioid Use Following Anterior Cruciate Ligament Reconstruction in Children and Adolescents? The Envelope Please.**
John Schlechter, DO; Bryn Gornick; Benjamin Sherman, DO; Tanner Harrah
Children's Hospital of Orange County, Orange, CA

80

10:23 AM–10:27 AM **Descriptive Epidemiology of Complete Anterior Cruciate Ligament Tears in the Skeletally Immature Population: A Multicenter Investigation of the PLUTO Study Group**
Lauren Hutchinson, MPH; Melissa Christino, MD; Andrew Pennock, MD; PLUTO Study Group; Mininder Kocher, MD, MPH
Boston Children's Hospital, Boston, MA

81

10:28 AM–10:32 AM **Anatomic versus Non-anatomic Anterolateral Tenodesis in Combination with Anterior Cruciate Ligament Reconstruction – Sometimes Cheaper is Better**
Samuel Van De Velde; Gregory Schmale, MD; Scott Telfer
University of Washington, Seattle, WA

10:33 AM–10:41 AM Discussion

82

10:42 AM–10:46 AM **Iliotibial Band Autograft Provides The Fastest Recovery Of Knee Extensor Mechanism Function In Pediatric Anterior Cruciate Ligament Reconstruction**
Curtis VandenBerg, MD; Mia Katzel; Veronica Beltran; Adriana Conrad-Forrest; Tishya Wren, PhD
Children's Hospital Los Angeles, Los Angeles, CA

83

10:47 AM–10:51 AM **Functional Recovery After Revision ACL Reconstruction In Adolescents and Young Adults**
Benjamin Wilson, MD; Benton Heyworth, MD; Ryan Coene; Dai Sugimoto; Lyle Micheli, MD; Mininder Kocher, MD, MPH; Melissa Christino, MD
Boston Children's Hospital, Boston, MA

84

10:52 AM–10:56 AM **Risk Factors for Revision Following Anterior Cruciate Ligament Reconstruction in a Pediatric Population: A Prediction Algorithm**
Aristides Cruz, MD; Nicholas Lemme; Daniel Yang; Brooke Barrow; Ryan O'Donnell; Alan Daniels, MD
Brown University Department of Orthopaedics, Providence, RI

10:57 AM–11:05 AM Discussion

2021 ANNUAL MEETING

SUBSPECIALTY DAY PROGRAMS

THURSDAY, MAY 13 CONTINUED

- 11:05 AM–11:10 AM **Studying OCDs: ROCK Group**
Jennifer Weiss, MD
- 11:11 AM–11:20 AM **Revision OCD surgery – When to fix, when to resurface, and when to address coronal plane alignment**
Benton Heyworth, MD
- 11:21 AM–11:30 AM **Unsalvageable Hefti Stage 4 & 5 Lesions – Deciding between bone grafting and fixation, OATS, OC Allograft, or ACI**
Kris Jones, MD
- 11:31 AM–11:37 AM **Q&A, Cases**
All Speakers
- 11:38 AM–11:46 AM **OCD of the capitellum – Treatment strategies, surgical indications, and outcomes**
Don Bae, MD
- 11:47 AM–11:55 AM **OCD of the talus – Treatment strategies, surgical indications, and outcomes**
Mark Drakos, MD
- 11:56 AM–12:00 PM **Q&A, Cases**
All Speakers

TRAUMA SUBSPECIALTY DAY

Period 1: 7:50 AM – 9:40 AM

Chair: Mauricio Silva, MD

Co-Chair: Amy McIntosh, MD

This session will be a mixture of scientific papers, debate, and discussion of topics of interest in the area of pediatric orthopaedic trauma. The debates and discussions will focus on controversial aspects of the treatment of common injuries in children. During the first session, we will discuss the management of femur fractures in pre-school age children, the management of type 1 open fractures, and the trend towards the use of rigid fixation for adolescent tibial shaft fractures. In the second session, our panelists will review current concepts on the management of pelvic, forearm, and clavicle fractures.

85

7:50 AM–7:54 AM

Acute Cast Immobilization of Pediatric and Adolescent Forearm Fractures – Is It Safe?

Casey Codd; Danielle Hogarth; Chloe Grzyb; Joshua Abzug, MD
University of Maryland School of Medicine, Baltimore, Maryland

86

7:55 AM–7:59 AM

Long-leg versus Short-leg Cast Immobilization for Displaced Distal Tibial Physeal Fractures

Christopher Souder, MD;
James Spearman; Lori Thornton, NP;
Jessica Treiber; Ainsley Bloomer;
Brian Scannell, MD;
Christine Ho, MD
Dell Medical School at the University of Texas at Austin, Austin, Texas

87

8:00 AM–8:04 AM

Conservative Management of Transitional Ankle Fractures in Adolescents: Does Immobilization Type Affect Outcome?

Kevin Neal, MD; Gary Kiebzak, PhD;
Jane Benson
Nemours, Jacksonville, FL

8:05 AM–8:14 AM

Discussion

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8:15 AM–8:19 AM

Titanium Elastic Nails System (TENS) in Adolescent Forearm Fractures: Using Bone Age as an Objective guide to its Limits.

Chin Chuen Tan; Kenneth Pak Leung Wong; John Allen; Arjandas Mahadev, FRCS
KK Women's and Children's Hospital, Singapore, Singapore



2021 ANNUAL MEETING

SUBSPECIALTY DAY PROGRAMS

THURSDAY, MAY 13 CONTINUED

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8:20 AM–8:24 AM

Canal Fill of the Forearm Bones When Placing Intramedullary Nails
Max Hamaker; Casey Codd; Nathan O'Hara; Joshua Abzug, MD
University of Maryland School of Medicine, Baltimore, Maryland

90

8:25 AM–8:29 AM

Re-fractures of the Radius and Ulna in Adolescents: Tumbling and Contact Sports may be at Risk in the First Year
Corey Gill, MD; Ami Kapadia; Charles Wyatt, NP; Gerard Montgomery, MS; Philip Wilson, MD; Henry Ellis, MD
Scottish Rite For Children, Dallas, Texas

8:30 AM–8:38 AM

Discussion

8:38 AM–8:43 AM

Introduction
Mauricio Silva, MD and Amy McIntosh, MD

8:44 AM–8:58 AM

Femur fractures in pre-school age children: We should be using more intramedullary nailing
Jeffrey Martus, MD

8:59 AM–9:08 AM

Femur fractures in pre-school age children: A good spica cast is all you need
Brandon Ramo, MD

9:09 AM–9:13 AM

Type I open fractures: The case for management in the Emergency Department
Jay Janicki, MD

9:14 AM–9:24 AM

Type I open fractures: The case for formal operative treatment
Christine Ho, MD

9:25 AM–9:34 AM

Tibial shaft fractures in adolescence: It is time to consider rigid fixation
Jonathan Schoenecker, MD, PhD

9:35 AM–9:40 AM

Tibial shaft fractures in adolescence: Casting is still a good option.
Anthony Riccio, MD

9:40 AM–10:10 AM

Break

TRAUMA SUBSPECIALTY DAY (CONTINUED)

Period 2: 10:18 AM – 11:54 AM

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10:18 AM–10:22 AM

Vitamin D Insufficiency and Metaphyseal Fractures in Children
John Bryan; Rachel Thompson, MD; Benjamin Yu; Carly Strohbach, BA; Lubna Ziauddin; Jamie Burgess, PhD; Joseph Janicki, MD
Lurie Children's Hospital of Chicago, Chicago, IL

92

10:23 AM–10:27 AM

Pediatric Orthopedic All-Terrain Vehicle (ATV) Injury Patterns, Surgeries, and Complications – Appreciating the True Morbidity and Impact
Brien Rabenhorst, MD; Chad Willis; David Bumpass
University of Arkansas-Medical Sciences, Little Rock, AR

93

10:28 AM–10:32 AM

"You're O.K. anesthesia": Closed Reduction of Displaced Pediatric Forearm and Wrist Fractures in the Office Without Anesthesia
Byron Izuka, MD; Joshua Radi PhD; John Livingstone
Kapiolani Medical Center for Women and Children, Honolulu, HI

10:33 AM–10:41 AM

Discussion

2021 ANNUAL MEETING

SUBSPECIALTY DAY PROGRAMS

THURSDAY, MAY 13 CONTINUED

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10:42 AM–10:46 AM **Non-Operative versus Operative Pediatric and Adolescent Medial Epicondyle Fractures: A Comparison of Outcomes Between Pediatric and Non-Pediatric Fellowship Trained Orthopedic Surgeons**
Jessica Traver, MD; Layla Haidar; David McClendon; Kailash Panchapakesan; Timothy Borden, MD; Surya Mundluru, MD; Lindsay Crawford, MD; Shiraz Younas, MD; Alfred Mansour, MD
UT-Health at McGovern Medical School, Houston, TX

95

10:47 AM–10:51 AM **AP, Axial, and External Oblique Views Reliably Measure Medial Epicondyle Displacement Using Corresponding Point Methodology but the Measurements Only Moderate Correlate with True Displacement as Measured by CT Scan**
J Todd Lawrence, MD; Ryan Guzek; Kathleen Harwood; Divya Talwar; David Isaacs; Donna Pacicca, MD; Michael Saper; Peter Fabricant, MD; Scott McKay, MD; Eric Edmonds, MD; Stephanie Mayer, MD; Matthew Ellington, MD; V Joughin, MD
Children's Hospital of Philadelphia, Philadelphia, PA

96

10:52 AM–10:56 AM **All Epiphyseal vs Trans-epiphyseal screw fixation for Tillaux fractures—Does it matter?**
Brett Heldt; Elsayed Attia; Isaiah Roepe; Raymond Guo; Vinitha Shenava, MD; Indranil Kushare, MD
Texas Children's Hospital, Houston, Texas

10:57 AM–11:05 AM Discussion

11:05 AM–11:23 AM **Management of unstable pelvic fractures: Tips and Tricks**
Adam Star, MD

11:24 AM–11:33 AM **Distal forearm fractures in late adolescence: when to cast, pin and plate?**
Chris Stutz, MD

11:34 AM–11:46 AM **SCFE in 2021. What is new?**
Rachel Thompson, MD

11:47 AM–11:54 AM **2021 perspective on clavicle shaft fractures in adolescents: Do they need surgery?**
Benton Heyworth, MD



2021 ANNUAL MEETING SCIENTIFIC PROGRAM

FRIDAY, MAY 14

7:30 AM–7:34AM Welcome and Remarks

AWARDS PART 1

Moderator: Todd Milbrandt, MD
Co-Moderator: Michelle Caird, MD

97

7:35 AM–7:40 AM **Effectiveness of Various Cast Covers in the Pediatric Population**
Amit Parekh; John Moon; David Roberts, MD; Verena Schreiber, MD
NorthShore University HealthSystem, Evanston, IL

98

7:41 AM–7:46 AM **Pediatric Back Pain: A Scoring System to Guide Use of Magnetic Resonance Imaging**
Michael Nolte; Garrett Harada; Ryan LeDuc; Arash Sayari; Bryce Basques; Philip Louie; Ethan Gordon; Dino Samartzis; Howard An; Monica Kogan
Rush University Medical Center, Chicago, IL

7:47 AM–7:56 AM Discussion

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7:57 AM–8:01 AM **MSC exosomes enhance physal regeneration and reduce limb length discrepancy in a rat model of growth plate injury**
Si Heng Sharon Tan; Keng Lin Wong; Shipin Zhang; Shang Jiunn Chuah; Ruenn Chai Lai; Sai Kiang Lim; James Hui; Wei Seong Toh
National University of Singapore, Singapore, Singapore

100

8:02 AM–8:06 AM **Sirt6 overexpression improves bone properties in the mouse model of osteogenesis imperfecta**
Jung-Ryul Kim, MD; Young Jae Moon
Jeonbuk National University Hospital, Jeonju, Korea, Republic of

8:07 AM–8:15 AM Discussion

101

8:16 AM–8:21 AM **Impact of Spinal Deformity and Surgery on Health-Related Quality of Life in Cerebral Palsy: A Multicenter Prospective Controlled Trial**
Patrick Cahill, MD; Unni Narayanan, MBBS, MSc, FRCS(C); Firoz Miyanji, MD; Burt Yaszay, MD; Stefan Parent, MD; Joshua Pahys, MD; Mark Abel, MD; Suken Shah, MD; Peter Gabos, MD; John (Jack) Flynn, MD; Amer Samdani, MD; Peter Newton, MD; Harms Study Group; Paul Sponseller, MD
Children's Hospital of Philadelphia, Philadelphia, PA

102

8:22 AM–8:27 AM **Anterior Vertebral Body Tethering in Idiopathic Scoliosis: a Prospective, Multicenter Analysis**
Firoz Miyanji, MD; Paul Rushton; Isabelle Turgeon; Luigi Aurelio Nasto; Sultan Aldebeyan; Stefan Parent, MD
British Columbia Children's Hospital, Vancouver, BC, Canada

8:28 AM–8:37 AM Discussion

103

8:38 AM–8:43 AM **Who Will Need a Second Surgery? A Study of Cases of Isolated Septic Arthritis from the CORTICES**
Keith Baldwin, MD; Benjamin Shore, MD, MPH, FRCSC; Danielle Cook; David Spence, MD; Jennifer Laine, MD; Jaclyn Hill, MD; Anthony Riccio, MD; Joshua Murphy, MD
Children's Hospital of Philadelphia, Philadelphia, PA

2021 ANNUAL MEETING SCIENTIFIC PROGRAM

FRIDAY, MAY 14 CONTINUED

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8:44 AM–8:49 AM

Intramedullary Kirschner-wires are equivalent to titanium elastic nails for pediatric femur fractures: Results from a randomized clinical trial in Dar es Salaam, Tanzania
Msami Ngowi; Edmund Eliezer; Revocatus Luziba; Bryson Ikoshi, MD; John Ibrahim; Emmanuel Lema; David Shearer; Saam Morshed; Patrick Curran
Muhimbili Orthopaedic Institute, Dar es Salaam, Tanzania

8:50 AM–8:59 AM

Discussion

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9:00 AM–9:04 AM

Molecules in Necrotic Femoral Head Inhibit Osteogenesis and Promote Fibrogenesis and Adipogenesis of Mesenchymal Stem Cells
ZHUO DENG; Yinshi Ren; Harry Kim, MD
Texas Scottish Rite Hospital for Children, Dallas, TX

106

9:05 AM–9:09 AM

Does NRG/ErbB Signaling Modulate Contractures after Neonatal Brachial Plexus Injuries?
Brendan Ho; QINGNIAN GOH; Sia Nikolaou; Liangjun Hu; Kritton Shay-winkler; Roger Cornwall, MD
Cincinnati Children's Hospital, Cincinnati, OH

9:10 AM–9:18 AM

Discussion

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9:19 AM–9:24 AM

Trans-articular versus Retro-articular Drilling of Stable Osteochondritis Dissecans of the Knee: A Prospective Randomized Controlled Trial by the ROCK Multicenter Study Group
Benton Heyworth, MD; Kevin Shea, MD; Elizabeth Liotta; Katelyn Hergott; Eric Wall, MD; Gregory Myer; Carl Nissen, MD; Eric Edmonds, MD; Roger Lyon, MD; Henry Chambers, MD; Matthew Milewski, MD; Daniel Green, MD; Jennifer Weiss, MD; Rick Wright; James Carey; John Polousky, MD; Jeffrey Nepple, MD; Mininder Kocher, MD, MPH; Theodore Ganley, MD
Boston Children's Hospital, Boston, MA

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9:25 AM–9:30 AM

Operative Versus Non-Operative Treatment of Severely Shortened or Comminuted Clavicle Fractures in Older Adolescent Athletes: Results from A Prospective, Multicenter, Level 2 Cohort Study
David Spence, MD; Philip Wilson, MD; Donald Bae, MD; Michael Busch, MD; Eric Edmonds, MD; Henry Ellis, MD; Katelyn Hergott; Mininder Kocher, MD, MPH; G Li, MD; Elizabeth Liotta; Jeffrey Nepple, MD; Nirav Pandya, MD; Andrew Pennock, MD; Crystal Perkins, MD; Coleen Sabatini, MD, MPH; David Williams PhD; Samuel Willimon, MD; Benton Heyworth, MD
Campbell Clinic/University of Tennessee, Germantown, TN

9:31 AM–9:40 AM

Discussion

9:48 AM–10:10 AM

Break

2021 ANNUAL MEETING

SCIENTIFIC PROGRAM

FRIDAY, MAY 14 CONTINUED

AWARDS PART 2

Moderator: Todd Milbrandt, MD
Co-Moderator: Michelle Caird, MD

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10:18 AM–10:23 AM **Nonoperative Management of Femoroacetabular Impingement: Clinical Outcomes at 5-years – A Prospective Study**
Andrew Zogby; James Bomar, MPH; Kristina Johnson; Vidyadhar Upasani, MD; Andrew Pennock, MD
Rady Children's Hospital, San Diego, San Diego, California

110

10:24 AM–10:29 AM **Acetabular remodeling after closed and open reduction for the treatment of developmental dysplasia of the hip**
Pedro Justo; William Morris, MD; Patricia Miller, MS; Eduardo Novais, MD
Boston Children's Hospital, Boston, MA

10:30 AM–10:39 AM Discussion

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10:40 AM–10:44 AM **Activation of A Central Immunosuppressive Cascade Prevents Ischemia Reperfusion Injury after Acute Compartment Syndrome in a Murine Model**
Austin Hester; Nazanin Omid; Daniel Casella; Matthew Oetgen MD, MBA
Children's National Hospital, Washington, DC

112

10:45 AM–10:49 AM **Hematopoietic Cells Regulate Fracture Healing in Neurofibromatosis**
Benjamin Alman, MD; Puvindran Nadesan
Duke, Durham, NC

10:50 AM–10:58 AM Discussion

11:00 AM–11:08 AM **Distinguished Achievement Award 2020**
Behrooz Akbarnia, MD

11:09 AM–11:17 AM **Distinguished Achievement Award 2021**
Lori Karol, MD

11:18 AM–11:23 AM **2022 Meeting Highlights**

11:24 AM–11:35 AM **Presidential Speaker 2020**
Lori Karol, MD

11:36 AM–11:49 AM **Presidential Speaker 2021**
Peter Newton, MD

11:50 AM–12:00 PM **Presidential Transfer**

12:15 PM–1:45 PM **Business Meeting**

CONCURRENT SESSION 1: SPINE

Moderator: Lindsay Andras, MD
Co-Moderator: Firoz Miyanji, MD

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2:05 PM–2:09 PM **10 year follow up of Lenke V curves in patients with adolescent idiopathic scoliosis**
Nicholas Fletcher, MD; Tracey Bastrom, MA; A Larson, MD; Mark Erickson, MD; Baron Lonner, MD; Stefan Parent, MD; Burt Yaszay, MD
Children's Healthcare of Atlanta, Atlanta, GA

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2:10 PM–2:14 PM **Adolescent Athletes Return To Sports Rapidly After Posterior Spine Fusion (PSF) For Idiopathic Scoliosis (AIS): A Prospective Cohort Study**
Tyler Tetreault; Hannah Darland; Thien Thanh Angela Vu; Patrick Carry; Sumeet Garg, MD
Children's Hospital Colorado, Aurora, CO

2021 ANNUAL MEETING SCIENTIFIC PROGRAM

FRIDAY, MAY 14 CONTINUED

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2:15 PM–2:19 PM

Discordant Lowest Instrumented Vertebra in Adolescent Idiopathic Scoliosis: When Coronal and Sagittal Parameters Conflict
Michael Vitale, MD, MPH ; Dale Segal; Jacob Ball; Nicholas Fletcher, MD; Tracey Bastrom, MA; Eric Yoon
Children's Healthcare of Atlanta, Atlanta, GA

2:20 PM–2:28 PM

Discussion

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2:29 PM–2:33 PM

Unplanned Return to the Operating Room (UPROR) after AIS Surgery
Nishank Mehta; Divya Talwar; Harms Study Group; John (Jack) Flynn, MD
Children's Hospital of Philadelphia, Philadelphia, PA

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2:34 PM–2:38 PM

Complications Following Surgical Treatment of Adolescent Idiopathic Scoliosis: 10- year Prospective Follow-up Study
Arun Hariharan, MD; Suken Shah, MD; Margaret Baldwin; Joseph Petfield; Baron Lonner, MD; Firoz Miyanji, MD; Peter Newton, MD; Amer Samdani, MD; Paul Sponseller, MD; Burt Yaszay, MD
Nemours/A.I. DuPont Hospital for Children, Wilmington, DE

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2:39 PM–2:43 PM

Digital Skeletal Age and Curve Acceleration Phase in Male Adolescent Idiopathic Scoliosis
Alexander Kuzma; Michael Stevens; John King, MD; Kevin Cronin; Olivia Grothaus; Jonathan Grabau; Cale Jacobs; Vishwas Talwalkar, MD; Ryan Muchow, MD
University of Kentucky, Lexington, KY

2:44 PM–2:52 PM

Discussion

CONCURRENT SESSION 1: SPINE PART II

Moderator: Michelle Welborn, MD

Co-Moderator: Pat Cahill, MD

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3:28 PM–3:32 PM

Outcomes of Magnetically Controlled Growing Rods in Severe Early Onset Scoliosis
Ilkka Helenius; Antti Saarinen; Paul Sponseller, MD; Lindsay Andras, MD; David Skaggs, MD, MMM; John Emans, MD; George Thompson, MD; Pediatric Spine Study Group
University of Turku and Turku University Hospital, Turku, Finland

120

3:33 PM–3:37 PM

Early Outcomes of Magnetically Controlled Growing Rods (MCGRs), Posterior Final Fusion (PSF) and Vertebral Body Tethers (VBT) in Older Patients with Early Onset Scoliosis (EOS)
Catherine Mackey; Regina Hanstein; Majella Vaughan; Tricia St Hilaire; Scott Luhmann, MD; Michael Vitale, MD, MPH; Michael Glotzbecker, MD; Amer Samdani, MD; Stefan Parent, MD; Jaime Gomez, MD
Montefiore Medical Center, Bronx, NY

121

3:38 PM–3:42 PM

Half of Magnetic Controlled Growing Rods (MCGR) "stall" 3 years after implantation
Amy McIntosh, MD; Brandon Ramo, MD; Charles Johnston, MD; Anna McClung; David Thornberg
Texas Scottish Rite Hospital, Dallas, TX

3:43 PM–3:51 PM

Discussion



2021 ANNUAL MEETING SCIENTIFIC PROGRAM

FRIDAY, MAY 14 CONTINUED

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3:52 PM–3:56 PM

Matched Comparison of Growing Rods versus Primary Posterior Spinal Fusion in “Tweeners” with Early Onset Scoliosis

*Craig Louer, MD; Lukas Keil; Til Stürmer; Alysa Nash; Yvonne Golightly; FENG-CHANG LIN; Joseph Stone, MD; James Sanders, MD
UNC Orthopaedics, Chapel Hill, NC*

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3:57 PM–4:01 PM

Vertebral Body Tethering Compared to the Spinal Fusion Gold Standard: A Matched Analysis 2 Years Post-Operatively

*Lily Eaker; Jonahtan Markowitz; Baron Lonner, MD
Mount Sinai Hospital, New York, NY*

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4:02 PM–4:06 PM

Does Body Mass Index Affect Outcomes after Vertebral Body Tethering Surgery?

*Amir Mishreky; Stefan Parent, MD; Firoz Miyanji, MD; Joshua Murphy, MD; Ron El-Hawary, MD
IWK Health Centre, Halifax, Nova Scotia, Canada*

4:07 PM–4:15 PM

Discussion

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4:16 PM–4:20 PM

The effect of scoliosis on audio-visual and socio-emotional processing and the use of adaptive communicative equipment in children with severely involved cerebral palsy

*Amanda Whitaker, MD; Stephanie Burkhardt; Kaleigh Hague; Lindsay Pietruszewski; Julia Less; Nathalie Maitre
Nationwide Children’s Hospital, Columbus, Ohio*

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4:21 PM–4:25 PM

Definitive Fusions are Better than Growth Friendly Procedures for Juvenile Patients with Cerebral Palsy and Scoliosis: A Prospective Comparative Cohort Study

*Arun Hariharan, MD; Suken Shah, MD; Joseph Petfield; Margaret Baldwin; Paul Sponseller, MD; Burt Yaszay, MD; Michael Glotzbecker, MD; Patrick Cahill, MD; Tracey Bastrom, MA
Nemours/A.I. DuPont Hospital for Children, Wilmington, DE*

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4:26 PM–4:30 PM

Functional Outcomes of Spinal Orthoses in Spinal Muscular Atrophy

*Mitchell Johnson; Carina Lott; Patrick Cahill, MD; Jason Anari, MD
Children’s Hospital of Philadelphia, Philadelphia, PA*

4:31 PM–4:39 PM

Discussion

CONCURRENT SESSION 2: SPORTS

Moderator: Phil Wilson, MD

Co-Moderator: Melissa Christino, MD

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2:05 PM–2:09 PM

Compared to Repair or No Treatment, Medial patellofemoral Ligament Reconstruction Results in Increased Stability in Adolescents with Acute First-time Patellar Dislocation with an Associated Loose Body

*Eric Edmonds, MD; Preet Gurusamy; Jason Pedowitz; Alyssa Carroll; Kristina Johnson; Henry Chambers, MD; Andrew Pennock, MD
Rady Children’s Hospital, San Diego, CA*

2021 ANNUAL MEETING SCIENTIFIC PROGRAM

FRIDAY, MAY 14 CONTINUED

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2:10 PM–2:14 PM

Isolated MPFL Reconstruction vs. Tibial Tubercle Osteotomy Plus Medial Retinacular Plication for Recurrent Patellar Instability: A Matched, Cohort Analysis
Benton Heyworth, MD; Evan Zheng; Zaamin Hussain; Benjamin Wilson, MD; Kianna Nunally; Mininder Kocher, MD, MPH; Yi-Meng Yen, MD; Dennis Kramer, MD; Lyle Micheli, MD
Boston Children's Hospital, Boston, MA

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2:15 PM–2:19 PM

Predictors of Arthrofibrosis after Pediatric Anterior Cruciate Ligament Reconstruction: What is the Impact of Quadriceps Autograft?
Abraham Ouweleen; Tyler Hall; Craig Finlayson, MD; Neeraj Patel, MD
Ann & Robert H. Lurie Children's Hospital of Chicago, Chicago, IL

2:20 PM–2:28 PM

Discussion

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2:29 PM–2:33 PM

Functional recovery in Adolescent Athletes following ACL Reconstruction: A Matched Cohort Analysis of Patellar Tendon vs. Hamstring Autograft
Nikolaos Paschos; Dai Sugimoto; Elizabeth Liotta; Patricia Miller, MS; Lyle Micheli, MD; Mininder Kocher, MD, MPH; Benton Heyworth, MD
Boston Children's Hospital, Boston, MA

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2:34 PM–2:38 PM

Anterior Cruciate Ligament Tear Following Operative Treatment of Pediatric Tibial Eminence Fractures in a Multicenter Cohort
Ryan O'Donnell; Steven Bokshan; Kelsey Brown; Julien Aoyama, BA; Theodore Ganley, MD; Peter Fabricant, MD; Neeraj Patel, MD; Henry Ellis, MD; Daniel Green, MD; Indranil Kushare, MD; R Lee, MD; Scott McKay, MD; Jason Rhodes, MD; Brant Sachleben, MD; Mary Sargent, MD; Gregory Schmale, MD; Yi-Meng Yen, MD; R Mistovich, MD; Aristides Cruz, MD
Brown University/Rhode Island Hospital, Providence, RI

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2:39 PM–2:43 PM

A Multicenter Comparison of Open versus Arthroscopic Reduction and Internal Fixation for Tibial Spine Fractures
R. Justin Mistovich, MD; Jilan Shimberg; Tomasina Leska; Julien Aoyama, BA; Aristides Cruz, MD; Henry Ellis, MD; Peter Fabricant, MD; Theodore Ganley, MD; Daniel Green, MD; Jason Jagodzinski, MD; Indranil Kushare, MD; R Lee, MD; Scott McKay, MD; Neeraj Patel, MD; Jason Rhodes, MD; Brant Sachleben, MD; Mary Sargent, MD; Gregory Schmale, MD; Yi-Meng Yen, MD
Rainbow Babies and Children's Hospital, Cleveland, OH

2:44 PM–2:52 PM

Discussion



2021 ANNUAL MEETING

SCIENTIFIC PROGRAM

FRIDAY, MAY 14 CONTINUED

CONCURRENT SESSION 2: FOOT/NM/LE

Moderator: Vishwas Talwalkar, MD
Co-Moderator: L. Reid Nichols, MD

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3:28 PM–3:32 PM

Comparison of Rigid and Dynamic Foot Abduction Orthoses in Children with Clubfoot: A Randomized Trial

Vincent Prusick, MD; Michael Stevens; Cale Jacobs; Vishwas Talwalkar, MD; Janet Walker, MD; Ryan Muchow, MD; Henry Iwinski, MD; Elizabeth Hubbard, MD
Shriners Hospital for Children, Lexington, KY

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3:33 PM–3:37 PM

Radiographic and Histologic Evaluation of Three Common Tendon Transfer Techniques in an Un-ossified Bone Porcine Model: Implications for Early Anterior Tibialis Tendon Transfers in Children with Clubfeet

Maegen Wallace, MD; Matthew Halanski, MD; Kyle Korth; Scott Bolam; Ellen Leiferman; Tom Crenshaw; Michael Dray; Haemish Crawford, MD
University of Wisconsin, Madison, WI

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3:38 PM–3:42 PM

Ponseti versus surgery, the 15 year outcomes of prospectively enrolled cohorts.

James Recordon; Matthew Halanski, MD; N Susan Stott, MD; Mark Boocock; Peter McNair; Haemish Crawford, MD
Starship Children's Hospital, Auckland, New Zealand

3:43 PM–3:51 PM

Discussion

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3:52 PM–3:56 PM

Calcaneal Sliding Osteotomy is Superior to Calcaneal Lengthening Osteotomy in Children with Cerebral Palsy

Robert Kay, MD; Susan Rethlefsen, PT; Alison Hanson; Tishya Wren, PhD
Children's Hospital Los Angeles, Los Angeles, CA

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3:57 PM–4:01 PM

The Impact of Preoperative Factors and Surgical Burden on Postoperative Recovery of Walking Activity in Children with Cerebral Palsy

M Shrader, MD; Chris Church; Isabel Biermann; Nancy Lennon MS; John Henley; Stephanie Butler; Timothy Niiler; Freeman Miller, MD; Jason Howard, MD
Nemours duPont Hospital for Children, Wilmington, DE

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4:02 PM–4:06 PM

Fassier-Duval Telescoping Rodding in Osteogenesis Imperfecta: Rod Revision and Survivorship

Jirawat Saengsin; Patricia Miller, MS; Nicholas Sullivan; Blair Stewig; Collin May, MD; Carley Vuillermier FRACS; Susan Mahan, MD; James Kasser, MD; Samantha Spencer, MD
Department of Orthopaedic Surgery, Boston Children's Hospital, Harvard Medical School, Boston, MA

4:07 PM–4:15 PM

Discussion

2021 ANNUAL MEETING SCIENTIFIC PROGRAM

FRIDAY, MAY 14 CONTINUED

140

4:16 PM–4:20 PM

Prediction of Varus Deformity
Correction by Lateral Tension
Band Plating at the Knee in
Late-Onset Blount Disease-
A Multi-Center Study

Janet Walker, MD; David Dueber;
Kenneth Powell, MD; Lindsay
Stephenson, MD; Allison Scott, MD;
Joel Lerman, MD; Sarah Nossov,
MD; Corinna Franklin, MD;
David Westberry, MD
Shriners Hospitals for Children,
Multiple Centers- Lead Site,
Lexington, KY

141

4:21 PM–4:25 PM

Correction of Leg Length
Discrepancy (LLD): Tension-Band
Plating versus Percutaneous
Trans-epiphyseal Screws

Manaf Younis, MD; Regina Hanstein;
Yungtai Lo; Kainaat Javed;
Eric Fornari, MD; Jaime Gomez, MD;
Melinda Sharkey, MD;
Jacob Schulz, MD
Montefiore Medical Center,
Bronx, NY

142

4:26 PM–4:30 PM

Total Joint Arthroplasties before 25:
Functional Outcomes and Quality
of Life

Nathan Donaldson, DO;
John Colleran; Nathan Rogers MPH
Children's Hospital Colorado,
Aurora, CO

4:31 PM–4:39 PM

Discussion



2021 ANNUAL MEETING SCIENTIFIC PROGRAM

SATURDAY, MAY 15

7:30 AM–7:34 AM

Welcome and Remarks
QSVI Award Paper presented
by Peter Armstrong, MD
**Trauma Paper & Best Paper
Awards**

DIVERSITY PROGRAM ADVANCING JUSTICE, EQUALITY, DIVERSITY, & INCLUSION IN PEDIATRIC ORTHOPAEDICS

7:35 AM–8:43 AM

Chair: Corinna Franklin, MD
Co-chair: Coleen Sabatini, MD, MPH

Sponsored by the POSNA Diversity Task Force, this session will focus on:

1. Understanding issues of inequity in access and quality of care and how these negatively affect our patients and particular communities
2. Understanding how discrimination and unconscious bias disproportionately affect particular trainees and what can be done to ameliorate this
3. Beginning to develop tools to identify and address our own biases in order to improve the care we provide our patients and the mentorship and training we provide to our trainees

Moderator: Coleen Sabatini, MD, MPH
eModerator: Corinna Franklin, MD

7:35 AM–7:40 AM

**Introduction: The Importance of
Diversity and Being a Good Ally**
Michael Vitale, MD, MPH

7:40 AM–8:00 AM

TBD
TBD

8:00 AM – 8:10 AM

Questions and Answers
TBD

8:10 AM – 8:30 AM

Panel discussion
Jaysson T. Brooks, MD
Qusai Hammouri, MD
Monica Payares-Lizano, MD
Selina Poon MD, MPH, MS
David Royce, MD

8:30 A –8:43 AM

Questions and Answers
All speakers

GENERAL SESSION: QSVI

Moderator: Kevin Shea, MD
Co-Moderator: Andrea Bauer, MD

143

8:44 AM–8:48 AM

**Looking Under the Hood: Factors
that Drive Successful Study Group
Participation and Publications in
Pediatric Spine Programs**
Sonya Levine; Bradley Hammoor;
Abby Morris; Sushrut Arora; Afrain
Boby; Hiroko Matsumoto, PhD;
Michael Fields; Matthew Oetgen
MD, MBA; Tricia St Hilaire; Brandon
Ramo, MD; Richard Anderson; John
Smith, MD; Michael Vitale, MD,
MPH; David Skaggs, MD; Pediatric
Spine Study Group
Columbia University Medical Center,
New York, NY

144

8:49 AM–8:53 AM

**Improving Hip Surveillance across a
Tertiary Children's Hospital: A Multi-
Disciplinary Quality Improvement
Initiative**
Kathryn Milks; Jessica Holstine;
Lynne Ruess; Alec McGinnis;
Courtney Bishop, PA-C; Erin Mesi;
Amanda Whitaker, MD
Nationwide Children's Hospital,
Columbus, Ohio

145

8:54 AM–8:58 AM

**How Much Will My Child's ACL
Reconstruction Cost? Availability
and Variability of Price Estimates
for Anterior Cruciate Ligament
Reconstruction in the United States**
Julianna Lee; Ryan Guzek; Neal
Shah; J Todd Lawrence, MD;
Theodore Ganley, MD;
Apurva Shah, MD
Children's Hospital of Philadelphia,
Philadelphia, Pennsylvania

8:59 AM–9:07 AM

Discussion

2021 ANNUAL MEETING SCIENTIFIC PROGRAM

SATURDAY, MAY 15 CONTINUED

QSVI SESSION I

Moderator: Julie Samora, MD
Co-Moderator: Brian Brighton, MD

146

9:08 AM–9:12 AM

Disposal of Unused Opioids Using an At-home Disposal Method

De-An Zhang; Marilan Luong; Emmanuel Barragan; Robert Cho, MD; Selina Poon, MD
Shriners for Children Medical Center, Pasadena, CA

147

9:13 AM–9:17 AM

Opioid Use in Children and Adolescents Following Common Orthopaedic Surgeries

Samuel Willimon, MD; Asahi Murata; Crystal Perkins, MD
Children's Healthcare of Atlanta, Atlanta, GA

148

9:18 AM–9:22 AM

Perioperative steroid use in patients undergoing posterior spinal fusion for adolescent idiopathic scoliosis

Robert Bruce, MD; Nicholas Fletcher, MD; Tracy Ruska NP; Ndeye Guisse; Thomas Austin; Joshua Murphy, MD
Children's Healthcare of Atlanta, Atlanta, GA

9:23 AM–9:31 AM

Discussion

149

9:32 AM–9:36 AM

Reducing Intraoperative Radiation Exposure During Periacetabular Osteotomy: The Use of Flat Panel Detector Fluoroscopy

Rachael Martino, BA; Omar Samara; Sterling Lee; Courtney Selberg, MD
Children's Hospital Colorado, Aurora, Colorado

150

9:37 AM–9:41 AM

Lowering radiation dose to children with hip dysplasia through a change in radiograph technique

Cheryl Lawing, MD; Rebecca Gorbe; Maureen Maciel, MD; Joseph Khoury, MD
Shriners Hospitals for Children, Tampa, FL

151

9:42 AM–9:46 AM

Does Surgical Experience Decrease Radiation Exposure in the Operating Room?

Lacey Magee, BA; Alexa Karkenny, MD; Jie Nguyen; Faris Fazal, BS; Divya Talwar; Xiaowei Zhu; Apurva Shah, MD
Children's Hospital of Philadelphia, Philadelphia, Pennsylvania

9:47 AM–9:55 AM

Discussion

10:00 AM–10:20 AM

Break

QSVI SESSION II

Moderator: Julie Samora, MD
Co-Moderator: Brian Brighton, MD

152

10:25 AM–10:29 AM

Methods for Reducing Intra-Operative Breast Radiation Exposure in Orthopaedic Surgeons

Sara Van Nortwick, MD
Medical University of South Carolina, Charleston, SC



2021 ANNUAL MEETING

SCIENTIFIC PROGRAM

SATURDAY, MAY 15 CONTINUED

153

10:30 AM–10:34 AM **Healthcare disparities after implementation of standardized care pathway for adolescent idiopathic scoliosis patients undergoing spinal fusion**
Philip Dela Merced; Carroll Vazquez Colon; Jenhao Cheng; Matthew Oetgen MD, MBA; Sophie Pestieau; Benjamin Martin, MD; Shannon Kelly, MD; Ariana Mirzada; Zsombor Gal; Jessica Cronin
Children's National Hospital, Washington, DC

154

10:35 AM–10:39 AM **Perceived physician empathy in pediatric orthopedics: a cross-sectional study**
Ian Singleton; Rachel Garfinkel; Jason Malone, DO; M'hamed Temkit; Mohan Belthur, MD
Phoenix Children's Hospital, Phoenix, Arizona

10:40 AM–10:48 AM Discussion

155

10:49 AM–10:53 AM **Efficacy of Virtual Reality in Pain Reduction in Orthopedic Pediatric Patients Measured by Patient Feedback and Heart Rate Monitoring**
Sean Waldron, MD; Bhumit Desai; Michael Nammour; Michael Warren; Jeffrey Reese; Lawrence Haber, MD; Brielle Plost, MD; Korak Sarkar
Ochsner Clinic Foundation, New Orleans, LA

156

10:54 AM–10:58 AM **Cast Saw Alarm System Reduces Blade to Skin Contact**
Susan Scherl, MD; Max Twedt; Jeffrey Garvey; Joshua Cameron; Matthew Halanski, MD
University of Nebraska Medical Center, Omaha, Nebraska

157

10:59 AM–11:03 AM **Comparison of Commercially Available Cast Protectors**
Stephanie Goldstein, MD; Scott Hetzel; Pamela Lang, MD; Matthew Halanski, MD
University of Wisconsin-Madison, Madison, WI

11:04 AM–11:12 AM Discussion

158

11:13 AM–11:17 AM **Post Operative Scoliosis X-Rays - Before Discharge or First Follow Up**
J Wattenbarger, MD; Ashley Carpenter; Franklin Gettys, MD
SHC-Greenville, Greenville, SC

159

11:18 AM–11:22 AM **Zero Patient-Controlled Analgesia is an achievable target for postoperative rapid recovery management of Adolescent Idiopathic Scoliosis patients**
Vishal Sarwahi, MBBS; Sayyida Hasan; Benita Liao; Aaron Atlas; Jesse Galina; Yungtai Lo; Terry Amaral, MD; Michelle Kars
Cohen Children's Medical Center, New Hyde Park, NY

160

11:23 AM–11:27 AM **Establishing a Gold Standard for Estimation of Blood Loss During Spine Surgery**
Nicholas Fletcher, MD; Laura Gilbertson; Robert Bruce, MD; Humphrey Lam; Kathy Spitzer; Matthew Lewis; Marney Moore; Thomas Austin
Children's Healthcare of Atlanta, Atlanta, GA

11:28 AM–11:36 AM Discussion

YOUNG MEMBER FORUM

2021 ARABELLA LEET MEMORIAL YOUNG MEMBER FORUM

*Chairs: Dan Miller, MD and
Margaret Siobhan Murphy-Zane, MD*

The POSNA Young Member Forum is held in honor of Dr. Arabella Leet. Dr. Leet was a highly accomplished Pediatric Orthopaedic Surgeon with a special interest in children with Cerebral Palsy. At the end of her career, she served as Chief of the Shriner's Hospital in Honolulu, Hawaii. She passed away in 2013 after a sudden illness.

This year the Young Member Forum will focus on the pediatric orthopaedic family. This session will be beneficial to all pediatric orthopaedic providers but will be particularly relevant to those in the first five years of their practice, as well as residents and fellows. Members of POSNA and their families will share their own personal experience and wisdom on the topics selected with time for discussion at the end of the symposium.

Introduction

Dan Miller, MD

Margaret Siobhan Murphy-Zane, MD

The Importance of Parental Leave for Surgeons, their Families, and the Orthopaedic Community

Jennifer Weiss, MD

What I Learned About Work-Life Balance Growing Up as the Child of a Pediatric Orthopaedic Surgeon

Craig Birch, MD

The Spouse's Perspective on Work-Life Balance in Pediatric Orthopaedics

Richard McIntosh

Panel Discussion

Jennifer Weiss, MD

Craig Birch, MD

Richard McIntosh

Amy McIntosh, MD

Benjamin Royce, MD

Jonathan Schoenecker, MD, PhD

Concluding Remarks

Dan Miller, MD

Margaret Siobhan Murphy-Zane, MD



SYMPOSIA

POGO PEDIATRIC ORTHOPAEDIC GLOBAL OUTREACH SYMPOSIUM

75 Minutes

Chair: Michael J. Heffernan, MD

Co-chair: Jaysson Brooks, MD

This year's POGO Symposium is focused on the impact that implants have in global outreach efforts. We have several experts discussing the topic from their unique perspective. A panel discussion will follow addressing the role that orthopaedic surgeons can play in increasing implant availability. There will also be an invited paper session to review recent global outreach research.

Introduction

Michael J. Heffernan, MD

Implants in Global Outreach: Sign Nail Experience

Lewis Zirkle, MD

Implants in Global Outreach: Orthopaedic Link Perspective

Dheera Ananthkrishnan, MD

Implants in Global Outreach: Industry Perspective

Peter Armstrong, MD

Implants in Global Outreach: POGO Scholar Perspective

Godwin Yaw Fosu Opuni, MBChB

Implants in Global Outreach: Panel Discussion

Moderators: Jaysson T. Brooks, MD & Michael J. Heffernan, MD

POGO Research: Invited Paper Presentations

Moderator: Karen Bovid, MD

POPS PEDIATRIC MUSCULOSKELETAL TUMORS AND INFECTIONS: CHALLENGES AND UPDATES

90 Minutes

Chair: Raymond Kleposki, MSN, CPNP

Co-Chair: Jessica Staschak, MSN, CPNP

Musculoskeletal infections and tumors present unique challenges for the pediatric orthopaedic provider. This symposium, presented by experts in treatment of pediatric musculoskeletal tumors and infections, will provide a useful review for principles of treatment of musculoskeletal infections and tumors, as well as an update on current best practices.

Principles and Challenges of Treating Pediatric Musculoskeletal Infections

Megan Johnson, MD

Principles and Challenges of Treating Pediatric Musculoskeletal Tumors

Alexandre Arkader, MD

PRACTICE MANAGEMENT

80 Minutes

Chair: Kevin M. Neal, MD, MBA

Co-Chair: M. Wade Shrader, MD

The POSNA Practice Management Symposium is designed to discuss topics relevant to pediatric orthopaedic clinicians in a broad range of practice settings. This year's symposium focuses on coding, telemedicine, social media, and compensation plans. In addition, we will present the results of the latest POSNA practice management survey.

Introduction

Kevin Neal, MD

Coding Update 2021

Dale Blasier, MD

Telemedicine Best Practices

Daniel Grant, MD

Social Media Marketing

McKay E. Hendershot, MD

Compensation Plans

Michael Jofe, MD

Practice Survey Results

Wade Shrader, MD

SYMPOSIA

RESEARCH REGISTRIES & STUDY GROUPS

60 Minutes

Chairs: Matthew Oetgen, MD, MBA

Co-Chair: Unni Narayanan, MBBS, MSc, FRCS(C)

Medical registries have gained increased importance in recent years to further ongoing research and medical knowledge. Despite this promise, registries are also expensive and require significant resources to maintain. This symposium will explore the true nature and possibilities of healthcare registries, how POSNA may benefit from the investment in registries and insights into lessons learned from POSNA associated study groups.

Introduction

Matthew Oetgen, MD, MBA

What are True Health Care Registries and What Can They Achieve?

David S. Jevsevar, MD, MBA, FAAOS

POSNA's Registry Investment - History, Current Landscape

Steve Frick, MD

International Hip Dysplasia Registry (IHDR)

Kishore Mulpuri, MD

International Legg Calve Perthes Registry

Harry Kim, MD

Harms Study Group; or Pediatric Spine Study Group

Peter Newton, MD and Paul Sponseller, MD

International Cerebral Palsy Hip Outcomes Project (CHOP) Study

Unni Narayanan, MBBS, MSc, FRCS(C)

Panel Discussion on the Future of Registries in Pediatric Orthopaedic Surgery

All Speakers

TRAUMA TIPS AND TRICKS IN THE ADOLESCENTS TRAUMA PATIENT

95 Minutes

Chair: Chris Souder, MD

Co-Chair: Brian Scannell, MD

The Trauma Symposium is focused on aspects for treatment of adolescent orthopaedic trauma patients. These cases can present complex injury patterns that are not commonly encountered in the routine care of pediatric orthopaedic trauma. This session will provide insight in treatment of these more adult like patterns of injury with tips and tricks provided by adult orthopaedic traumatologists. The topics covered will be of value to any orthopaedic surgeon involved in the management of pediatric orthopaedic trauma. We will discuss complex elbow fractures, pediatric pelvic fractures, as well as complex femur, tibia and ankle fractures.

Introduction

Chris Souder, MD

Management of Complex Distal Humerus Fractures: When Do You Need more Than Pins?

Michael Brennan, MD

Pelvis Fractures: Which Really Need Fixation?

Jason Stoneback, MD

Complex Femur Fractures: How to Fix the Challenging Femur Fracture?

Caroline Tougas, MD

Peri-Articular Knee Fractures: What to do With Short Segments and Intra-Articular Fractures?

David Rothberg, MD

High Energy tTibia Fractures: When and How Can We Best Use Rigid Nails?

John Munz, MD

Ankle Fractures: When Does it Need More Than Just Screws?

Drew Sanders, MD

Support Opportunities

Brian Scannell, MD

ePOSTERS

ePoster 1

Biomarkers for Prediction of Skeletal Disease Progression in Mucopolysaccharidosis Type I

Klane White, MD; Troy Lund; Terence Doherty; Julie Eisengart; Rebecca Freese; Kyle Rudser; Ellen Fung; Bradley Miller; Paul Orchard; Chester Whitley; Lynda Polgreen
Seattle Children's Hospital, Seattle, WA

ePoster 2

Single Cell Expression Analysis of Pediatric Cartilage Demonstrates Unique Signatures for Articular and Physeal Chondrocytes

Donna Pacicca, MD; Tammy Brown; Jeffrey Johnston; Emily Farrow
Children's Mercy Hospital, Kansas City, MO

ePoster 3

Primary cilia disturbances in the physes of immature hypothyroid mini-swine

Ashley Mohrman, PhD; Erica Reber; Fayez Safadi; Mark Adamczyk, MD
Akron Children's Hospital, Akron, OH

ePoster 4

Is the Lateral Cuneiform Large Enough to Support Interference Screw Fixation for Tibialis Anterior Tendon Transfer in Children Aged 3 to 6 Years?

Jordan Polk; Jacob Zide, MD; Yassine Kanaan; Zachary Meyer; Anthony Riccio, MD
Scottish Rite for Children, Dallas, TX

ePoster 5

Prenatal Counselling for a Suspected Clubfoot Diagnosis Reduces Parental Anxiety During the Corrective Phase of Ponseti Treatment

Maryse Bouchard, MD; Leah Hatcher
The Hospital for Sick Children, Toronto, ON, Canada

ePoster 6

Predictive Ability of Clinical and Radiographic Findings For Detecting Tarsal Coalition

Kianna Nunally; Collin May MD; Patricia Miller MS; Jodie Shea; Benjamin Shore, MD, MPH, FRCSC
Boston Children's Hospital, Boston, MA

ePoster 7

The Scapholunate Interval in the Pediatric Population Decreases in Size as Age Increases

Timothy Shaver; Alexandria Case; Danielle Hogarth; Joshua Abzug, MD
University of Maryland School of Medicine, Baltimore, Maryland

ePoster 8

A Novel 'Starfish' Flap for Syndactyly Release: Technique and Early Results

Rameez Qudsi, MD; Kevin Little, MD
Cincinnati Children's Hospital Medical Center, Cincinnati, OH

ePoster 9

Hip Arthroscopy Following Slipped Capital Femoral Epiphysis Fixation: Early and Progressive Chondrolabral Damage

Javier Besomi, MD; Valeria Escobar; Santiago Alvarez; Juan Jose Valderrama; Jaime Lopez; Claudio Mella; Carlos Tobar; Joaquin Lara; Claudio Meneses, MD
Clinica Alemana de Santiago, Santiago, Chile

ePoster 10

Subjectively Reported Hip Function and Activity Levels Weakly Correlate with Objective Temporospatial Parameters in Adolescent Patients Before and After Hip Preservation Surgery

Wilshaw Stevens; Lauren Luginsland; David Podeszwa, MD; Kirsten Tulchin-Francis, PhD
Scottish Rite for Children, Dallas, Texas

ePoster 11

Validation and initial results of international web-based survey of adults who had childhood Legg-Calvé-Perthes disease (LCPD)

Harry Kim, MD; Bella Vakulenko-Lagun; Molly McGuire; Earl Cole; Roi Almakias; Michael Millis, MD
International Perthes Study Group, Dallas, TX

ePOSTERS

ePoster 12

A Biomechanical Analysis of The Surface Contact Pressure After An Innominate Osteotomy For The Correction Of Acetabular Dysplasia

Emmanuel Gibon, MD; Mackenzie Roof; Pablo Castaneda, MD
NYU Langone Pediatric Orthopaedic Department, New York, NY

ePoster 13

The Importance of Globalization in Prospective Study Groups: Increasing the Relevance of Research on Developmental Dysplasia of the Hip to a Global Patient Population

Emily Schaeffer, PhD; Alaric Aroojis; Hitesh Shah, MD; Venkatadass Krishnamoorthy; Sandeep Patwardhan, MD; CHITTA SAHU; Kishore Mulpuri, MD
BC Children's Hospital, Vancouver, BC, Canada

ePoster 14

Patients With Ehlers-Danlos Syndrome Who Undergo Periacetabular Osteotomy for Symptomatic Hip Instability Report Sustained Improvements At Two Years Comparable To Those Observed in Patients Without Ehlers-Danlos Syndrome

Patrick Whitlock, MD; Nicholas Auteri; Sydney Herold; Rachel Breitenstein; Molly Uchtman; James McCarthy, MD
Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio

ePoster 15

Femoral Head Coverage should be included in treatment protocols for Graf Ila Developmental Dysplasia of the Hip

Margaret Siobhan Murphy-Zane, MD; Patrick Carry; Kaley Holmes; Brian Kohuth, PA-C; Debbie Burke PA; Tyler Freeman; Matthew Belton; Nancy Miller, MD; Gaia Georgopoulos, MD
Children's Hospital Colorado, Aurora, CO

ePoster 16

Mountain or Mole Hill: The Clinical Significance of Infolded Labrum on Post-Reduction Arthrogram in Developmental Dysplasia of the Hip

William Morris, MD; Sai Susheel Chilakapati; Sean Hinds; John Herring, MD; Harry Kim, MD
Texas Scottish Rite Hospital for Children, Dallas, TX

ePoster 17

Oncological and Functional Outcomes in Joint Sparing Resections of the Proximal Femur for Malignant Primary Bone Tumors

Dipak Ramkumar; Sean Kelly; Santiago Lozano Calderon; Mark Gebhardt, MD; Megan Anderson, MD
Boston Children's Hospital, Boston, MA

ePoster 18

Are "Quick" MRI scans reliable for diagnosis of pediatric peri-pelvic musculoskeletal infections?

Jarrett Warden; Ian Kuckelman; Scott Hetzel; Pamela Lang, MD; Laura Bellaire, MD; Kenneth Noonan, MD
University of Wisconsin, Madison, WI

ePoster 19

Pre-Operative MRSA Swab Results do not Predict Surgical Site Infections in Children undergoing a Varus Derotational Osteotomy

Alexander Nazareth; Sukhraj Bains; Rachel Goldstein, MD; Lindsay Andras, MD; Robert Kay, MD
Children's Hospital Los Angeles, Los Angeles, California

ePoster 20

Diffuse Tenosynovial Giant Cell Tumors: Case Series From a Large Pediatric Orthopaedic Hospital

Ryan Guzek; Max Cornell; Jie Nguyen; Alexandre Arkader, MD
Children's Hospital of Philadelphia, Philadelphia, PA

ePoster 21

Guided Growth Treatment can improve Depression of the Medial Tibial Plateau in Infantile Blount Disease – An update

Regina Hanstein; Chris Schneble; Jacob Schulz, MD; Adrienne Socci, MD; Melinda Sharkey, MD
Montefiore Medical Center, Bronx, NY

ePoster 22

Infantile Blount Disease: Radiographic Predictors of Spontaneous Resolution

Regina Hanstein; Chris Schneble; Jacob Schulz, MD; Adrienne Socci, MD; Melinda Sharkey, MD
Montefiore Medical Center, Bronx, NY

ePoster 23

Creation and Validation of a "Shorthand" Knee MRI Bone Age Assessment Tool as an Alternative for Skeletal Maturity Assessment

Carey Politzer; James Bomar, MPH; Hakan Pehlivan, MD; Preet Gurusamy; Eric Edmonds, MD; Andrew Pennock, MD
Rady Children's Hospital, San Diego, San Diego, California



ePOSTERS

ePoster 24

Novel application of the internal, magnetically-controlled, telescopic nail to the extramedullary femur in the skeletally immature patient: Early results.

Katherine Rosenwasser; Nickolas Nahm, MD; Philip McClure, MD; John Herzenberg, MD; Shawn Standard, MD
Sinai Hospital of Baltimore/Lifebridge Health, Baltimore, Maryland

ePoster 25

Predictions of the Amount of Growth Remaining in the Lower-Limb

Kyung Rae Ko; Jong Shim, MD; Jaesung Park
Samsung Medical Center, Seoul, Korea, Republic of

ePoster 26

Multicenter Series of Deformity Correction using Guided Growth in the Setting of Osteogenesis Imperfecta

Jeanne Franzone, MD; Maegen Wallace, MD; Kenneth Rogers, PhD; Elizabeth Strudthoff; Richard Kruse, DO; Darko Anticevic
Nemours Alfred I. duPont Hospital for Children, Wilmington, DE

ePoster 27

Contractures in Cerebral Palsy and Brachial Plexus Birth Injury Are Similarly Caused by Short, Weak Muscles

Roger Cornwall, MD; Sia Nikolaou; Jason Long; Kendra Eckstein
Cincinnati Children's Hospital, Cincinnati, OH

ePoster 28

Better Understanding the Orthopaedic Burden of Neurosurgical Hemispherectomy in Pediatric Patients
William Belshe; Nicholas Gajewski; Rachel Thompson, MD
University of California, Los Angeles, Los Angeles, CA

ePoster 29

Nutrition Consult in the Year Leading up to Neuromuscular Scoliosis Surgery: Helpful Tool or Self-Inflicted Wound?

Ariana Meltzer-Bruhn; Matthew Landrum, MD; David Spiegel, MD; Patrick Cahill, MD; Jason Anari, MD; Keith Baldwin, MD
Children's Hospital of Philadelphia, Philadelphia, PA

ePoster 30

Reliability and Utility of a Novel Classification Scheme for Gait Deviations in Children with Persistent Idiopathic Toe Walking

Jon Davids, MD; Sancy Childers, BA; Sean Brown, BS; Anita Bagley, PhD; Vedant Kulkarni, MD
Shriners Hospital Northern California, Sacramento, CA

ePoster 31

The Stability of Sagittal Plane Gait Patterns from Early Childhood to Maturity in Cerebral Palsy

Bidzina Kanashvili, MD; Freeman Miller, MD; Jason Howard, MD; Julieanne Sees, DO; Kenneth Rogers, PhD; Chris Church; Nancy Lennon, MS; John Henley; Timothy Niiler; M Shrader, MD
Nemours - Alfred I duPont Hospital for Children, Wilmington, DE

ePoster 32

Effect of Positioning Error on the Hilgenreiner Epiphyseal Angle and Head-shaft Angle Compared to the Femoral Neck-shaft Angle in Children with Cerebral Palsy

Emily Sullivan; Carly Jones; Stacey Miller; Kyoung-Min Lee; David Wilson; Kishore Mulpuri, MD; Agnes D'Entremont
BC Children's Hospital, Vancouver, BC, Canada

ePoster 33

Factors Associated with Gross Motor Recovery during Rehabilitation Following Single-Event Multilevel Surgery (SEMLS) for Youth with Cerebral Palsy

M Shrader, MD; Nancy Lennon MS; Isabel Biermann; Grace Gerry; Jason Beaman; Nicole Mamula; Abigail Gilmore; Timothy Niiler; Laura Owens
Nemours duPont Hospital for Children, Wilmington, DE

ePoster 34

Baseline Patient Reported Outcomes Measurement Information System (PROMIS) Scores in Children with Adolescent Idiopathic Scoliosis (AIS) and Their Relation to the SRS-22

Daniel Bouton, MD; Graham Fedorak, MD; Donna Oeffinger; Purnendu Gupta, MD; Scott Luhmann, MD; Peter Stasikelis, MD; Michal Szczodry; Vishwas Talwalkar, MD; Man Hung
Shriners Hospitals for Children, Tampa, FL

ePoster 35

Proof of Concept for Artificial Intelligence Based Estimation of Skeletal Maturity from Biplanar Slot Scan Scoliosis Imaging

Audrey Ha; Bao Do; Joanna Langner; Andrew Campion; Charles Fang; Michael Fadell; Steve Dou; Safwan Halabi; Emily Wang; YongJin Lee; Japsimran Kaur; John Vorhies, MD
Stanford University, Stanford, CA

ePOSTERS

ePoster 36

Surgical Site Infection Following Neuromuscular Posterior Spinal Fusion: Comparing Incidence Before and After the 2013 Best Practice Guideline

Stephen Stephan; **Kenneth Illingworth, MD**; Kavish Gupta; Lindsay Andras, MD; David Skaggs, MD, MMM
Children's Hospital Los Angeles, Los Angeles, CA

ePoster 37

National Trends in Performing Osteotomies for AIS in North America: Greater Incidence Is Associated with Significant Complications and Greater Cost

Kiley Poppino; Chan-Hee Jo; **Daniel Sucato, MD, MS**
Texas Scottish Rite Hospital for Children, Dallas, TX

ePoster 38

Evaluation of the AOSpine Injury Classification in the Pediatric Population: Results of a Multi-Center POSNA Grant

Daniel Hedequist, MD; Nora O'Neill; Andrew Mo; Patricia Miller, MS; Craig Birch, MD; Vidyadhar Upasani, MD; G Li, MD; Nicholas Fletcher, MD; Walter Krengel, MD; Sumeet Garg, MD; Anthony Riccio, MD; David Spence, MD; Jennifer Bauer, MD; Michael Glotzbecker, MD
Boston Children's Hospital, Boston, MA

ePoster 39

Cervical Degenerative Disc Disease is Associated with Increased Cervical Kyphosis in Adolescent Idiopathic Scoliosis

Kenneth Illingworth, MD; Adrian Lin; David Skaggs, MD, MMM; Lindsay Andras, MD; Vernon Tolo, MD
Children's Hospital Los Angeles, Los Angeles, CA

ePoster 40

Characterizing Mortality in Patients with Early Onset Scoliosis

Ryan Guzek; Robert Murphy, MD; Christina Hardesty, MD; John Emans, MD; Sumeet Garg, MD; John Smith, MD; George Thompson, MD; Benjamin Royce, MD; Michael Glotzbecker, MD; Peter Sturm, MD; Brian Snyder, MD; Selina Poon, MD; Connie Poe-Kochert; Pediatric Spine Study Group; **Jason Anari, MD**
Children's Hospital of Philadelphia, Philadelphia PA

ePoster 41

A Wireless Intraoperative Neuromonitoring System is as Reliable and Accurate as the Traditional Wired Systems for Spinal Deformity Surgery

Wenyuan Shi; J-C Chiao; Steven Sparagana; Patricia Rampy; Kiley Poppino; **Daniel Sucato, MD, MS**
Texas Scottish Rite Hospital for Children, Dallas, TX

ePoster 42

Comparative analysis of Post-op Motion between Spinal Fusion and VBT

Firoz Miyanji, MD; Michelle Marks, PT; Amer Samdani, MD; Suken Shah, MD; Tracey Bastrom, MA; Maty Petcharaporn; Peter Newton, MD
British Columbia Children's Hospital, Vancouver, BC, Canada

ePoster 43

Risk of Early Complication Following Anterior Vertebral Body Tethering for Idiopathic Scoliosis

Abdullah Abdullah; Stefan Parent, MD; **Firoz Miyanji, MD**; Kevin Smit, MD; Joshua Murphy, MD; David Skaggs, MD; Purnendu Gupta, MD; Michael Vitale, MD, MPH; Neil Saran, MD; Robert Cho, MD; **Ron El-Hawary, MD**
IWK, Halifax, NS, Canada

ePoster 44

Can Bone Health Improvement from the Initial 2-Year Calcium and Vit-D Supplementation Persist Towards Peak Bone Mass after 4-Year of Supplement Discontinuation in Adolescent Idiopathic Scoliosis – A Randomized Controlled Trial

Ping Lam, MBBS; Guangpu Yang; Henry Pang; Wayne Lee; MAN FUNG TANG; Hung Lik Hang; Jack Cheng, MD
SH Ho Scoliosis Research Lab, Joint Scoliosis Research Center of the Chinese University of Hong Kong, Hong Kong SAR, China, People's Republic of China

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Waterproof Mehta Casting for Early Onset Scoliosis

Lorena Floccari, MD; Keegan Conry; Melanie Morscher, PT; **Todd Ritzman, MD**
Akron Children's Hospital, Akron, Ohio

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Vertebral Column Resection Improves the Sagittal Plane Greater than Other Techniques but Risks Symptomatic Junctional Kyphosis

Daniel Sucato, MD, MS; Munish Gupta; Lawrence Lenke, MD; David Bumpass; Sumeet Garg, MD; Paul Sponseller, MD; Suken Shah, MD; Mark Erickson, MD; Amer Samdani, MD; Burt Yaszay, MD; Joshua Pahys, MD; Peter Newton, MD; Michael Kelly
Texas Scottish Rite Hospital for Children, Dallas, TX



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Changes in the Position of the Trochlear Groove in the Setting of Trochlear Dysplasia

James Pace, MD; Gregory Kanski; Christopher Cheng; David Chiu; Allison Crepeau, MD; Andrew Cohen; Michael Brimacombe
Elite Sports Medicine at Connecticut Children's Medical Center, Farmington, CT

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45° Flexion Anteroposterior Elbow Radiographs Improve Diagnostic Accuracy of Capitellum Osteochondritis Dissecans

Michael Saper; Viviana Bompadre, PhD; Monique Burton; Sarah Menashe; Kyle Nagle; Gregory Schmale, MD; Mahesh Thapa
Seattle Children's, Seattle, WA

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Osteochondral Lesions of the Talus: Factors Predictive of Cartilage Integrity

Crystal Perkins, MD; John Erickson, DO; Kiery Braithwaite; Michael Busch, MD; Samuel Willimon, MD
Children's Healthcare of Atlanta, Atlanta, GA

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Nerve Blocks for Pediatric ACL Reconstruction: Comparing Function, Patient- Reported Outcomes, and Efficiency

Tomasina Leska; Joshua Bram; Nicolas Pascual-Leone; Brendan Williams, MD; Theodore Ganley, MD
Children's Hospital of Philadelphia, Philadelphia, Pennsylvania

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Outcomes of Pediatric Meniscal Surgeries

Stephanie Logterman, MD; Alexia Gagliardi; David Howell; Jay Albright, MD
Children's Hospital Colorado, Aurora, CO

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Post-operative Complications and Early Clinical Outcomes Following ACL Reconstruction with Soft Tissue Quadriceps Tendon Autograft in Adolescent Athletes

Benton Heyworth, MD; Naveen Jasty; Danielle Cook; Elizabeth Liotta
Boston Children's Hospital, Boston, MA

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MAGNETIC RESONANCE IMAGING OF LATERAL MENISCAL ROOT TEARS IN THE ADOLESCENT KNEE: IS THE DIAGNOSIS MISSED, MENTIONED, OR MADE?

John Schlechter, DO; Edward McDonald; Theresa Pak; Bryn Gornick
Children's Hospital of Orange County, Orange, California

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Predicting Arthrofibrosis Following Anterior Cruciate Ligament Reconstruction in the Pediatric Population: A Matched Case-control Study

Soroush Baghdadi, MD; Lawrence Wells, MD; Theodore Ganley, MD; J Todd Lawrence, MD
The Children's Hospital of Philadelphia, Philadelphia, PA

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What are the Causes and Consequences of Delayed Surgery for Pediatric Tibial Spine Fractures?

Neeraj Patel, MD; Tomasina Leska; Theodore Ganley, MD; Julien Aoyama, BA; Aristides Cruz, MD; Henry Ellis, MD; Peter Fabricant, MD; Daniel Green, MD; Jason Jagodzinski, MD; Benjamin Johnson; Indranil Kushare, MD; R Lee, MD; Scott McKay, MD; Jason Rhodes, MD; Brant Sachleben, MD; Mary Sargent, MD; Gregory Schmale, MD; Yi-Meng Yen, MD; R Mistovich, MD
Ann & Robert H. Lurie Children's Hospital of Chicago, Chicago, IL

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Pediatric Compliance of Lower Extremity Weight Bearing Restrictions Following Injury

Alexandria Case; Danielle Hogarth; Joshua Abzug, MD
University of Maryland School of Medicine, Baltimore, Maryland

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Secondary Displacement of Both Bone Diaphyseal Forearm Fractures: Risk Factors and Predictors of Closed Reduction and Cast Immobilization

Joaquín Nuñez De Armas, MD; Vidyadhar Upasani, MD; Luis Moraleda Novo, MD; Alyssa Carroll; Tracey Bastrom, MA; Gaspar González Morán; Eric Edmonds, MD
Rady Children's Hospital, San Diego, San Diego, California

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Outcomes of Operative Treatment of Pediatric Monteggia Fracture-Dislocations: Open Injuries as a Predictor of Poor Outcomes

Alfred Mansour, MD; Brennan Roper; Layla Haidar; Shrina Parikh; Ryan Warth; Lindsay Crawford, MD; Shiraz Younas, MD
The University of Texas at Houston Orthopaedics, Houston, Texas

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Margaret Smythe; Katelin Nickel; Matt Keller; Pooya Hosseinzadeh, MD
Washington University School of Medicine, Saint Louis, Missouri

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Does an Associated Elbow Dislocation Lead to Worse Outcomes in Medial Epicondyle Fractures?

Sarah Toner; Alexandria Case; Danielle Hogarth; Joshua Abzug, MD
University of Maryland School of Medicine, Baltimore, Maryland

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Comparison of Short and Long Leg Casts for the Treatment of Distal Third Tibial Shaft Fractures in Children

Scott Barnett; Bailli Fontenot; Claudia Leonardi; Joseph Gonzales, MD; Dominic Gargiulo, DO; Michael Heffernan, MD
Children's Hospital New Orleans, New Orleans, Louisiana

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Predicting Failure of Closed Reduction in Paediatric Diaphyseal Forearm Fracture Elastic Stable Intramedullary Nailing (ESIN)

Kenneth Pak Leung Wong; Nicole Lee; Darryl Chew; Ling Hui Tay; Arjandas Mahadev, FRCS
KK Women's and Children's Hospital, Singapore, Singapore

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Unicolumnar Pin Fixation of Type III Supracondylar Humeral Fractures is Associated with a Greater than Three Times Higher Odds of Lost Reduction

Jaime Denning, MD; Sarah Jenkins; Charles Mehlman, DO
Cincinnati Children's Hospital Medical Center, Cincinnati, OH

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Pediatric and Adolescent Fractures of the Acetabulum treated with ORIF: What are their Functional Outcomes?

Wendy Ramalingam, BS; Brendan Southam; Adam Schumaier; Jaime Denning, MD; Patrick Whitlock, MD; Michael Archdeacon
Cincinnati Children's Hospital Medical Center, Cincinnati, OH

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Ulnar Epiphysiodesis: Success of the Index Procedure

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Children's Mercy Hospital, Kansas City, MO

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William Hennrikus, MD; Samuel Dressler
Penn State College of Medicine, Hershey, PA

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Analysis of Adolescent Idiopathic Scoliosis Care Path and its Effectiveness

Swetha Sundar; Brittany Hudson; Ernest Young, MD; Ryan Goodwin, MD; David Gurd, MD; Thomas Kuivila, MD; Robert Ballock, MD
Cleveland Clinic, Cleveland, Ohio

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Caregiver literacy in a pediatric orthopedic population: a cross-sectional study

Rachel Garfinkel; Ian Singleton; Jason Malone, DO; M'hamed Temkit; Mohan Belthur, MD
Phoenix Children's Hospital, Phoenix, Arizona

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Liposomal Bupivacaine Decreases Opioid Consumption, Length of Stay and Hospital Costs After Pediatric Spine Surgery: A Retrospective Cohort Study

Robert Ballock, MD; John Seif; Ryan Goodwin, MD
Cleveland Clinic, Cleveland, Ohio



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Evaluation of Calibration Methods for Development of Skeletal Maturity Systems

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Rainbow Babies and Children's Hospital, Case Western Reserve University School of Medicine, Cleveland, Ohio

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Descriptive Epidemiology of Venous Thromboembolism after Pediatric Orthopaedic Surgery – A Multicenter Review

Ryan Sanborn, BA; Danielle Cook; Jaime Denning, MD; Rachel Goldstein, MD; Benjamin Shore, MD, MPH, FRCSC; CORTICES Study Group
Boston Children's Hospital, Boston, MA

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Spine at Risk Program: 9-year Review of Novel Safety Screening Tool

Amanda Galambas; Walter Krengel, MD; Cheryl Parker, PA-C; Ana Maria Kolenko MPH; Klane White, MD; Jennifer Bauer, MD
Seattle Children's Hospital, Seattle, WA

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Reducing Opioid Consumption in a Pediatric Orthopedic Practice

Anthony Stans, MD; Courtney Baker, MD; A Larson, MD; William Shaughnessy, MD; John Rutledge, PA-C; Dan Ubl; Elizabeth Habermann; Todd Milbrandt, MD
Mayo Clinic, Rochester, MN

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Earlier Bowel Movements and Decreased Length of Stay with Oral Methylnaltrexone Following Posterior Spinal Fusion for Adolescent Idiopathic Scoliosis

Adrian Lin; Andrew Costandi; Eugene Kim; David Skaggs, MD; Lindsay Andras, MD; Neha Patel; Carl (Yuan-Feng) Lo; Kenneth Illingworth, MD
Children's Hospital Los Angeles, Los Angeles, CA

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Do Children's Hospitals Present Opportunities for Appropriate Disposal of Opioid Medications?

Joseph Petfield; Anna Ptasinski; Arun Hariharan, MD; Margaret Baldwin
Nemours Al duPont Hospital for Children, Wilmington, DE

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Study Groups and POSNA: A Review of Podium Presentations from 2006-2020

Hillary Mulvey; Mitchell Johnson; Andrew Parambath; Apurva Shah, MD; Jason Anari, MD
Children's Hospital of Philadelphia, Philadelphia, PA

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High Volume Surgeons Have Better Surgical Outcomes and Lower Costs

Vishal Sarwahi, MBBS; Thomas Dowling; Jesse Galina; Yungtai Lo; Terry Amaral, MD; Sayyida Hasan
Cohen Children's Medical Center, New Hyde Park, NY

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Teaching Effective Management of Protective Equipment for Surgical Teams - Managing the COVID-10 Tempest

Craig Birch, MD; Donald Bae, MD; Patricia Miller, MS; Donna Luff; Benjamin Shore, MD, MPH, FRCSC
Boston Children's Hospital, Boston, MA

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Patient Factors and Small Area Variations Impact Opioid Prescription after Surgical Treatment of Supracondylar Humerus Fractures

Nathan Markiewicz; Divya Talwar; Sachin Gupta; Apurva Shah, MD; John (Jack) Flynn, MD
Children's Hospital of Philadelphia, Philadelphia, Pennsylvania

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Three-dimensional predictors of FAI disease progression in the contralateral hip

Lucas Fowler; John Clohisey, MD; Wahid Abu-Amer; Cecilia Pascual-Garrido; Jeffrey Nepple, MD
Washington University School of Medicine, St. Louis, Missouri

Research Grant ePosters

More information to come.

VIDEO ABSTRACTS

Video Abstract 1

Transcapitellar pinning for proximal radius shaft fracture

Barbara Minkowitz, Jennifer Ristic, Eytan Mendelow
Morristown Medical Center, Morristown, NJ

Video Abstract 2

Open Reduction Internal Fixation of Displaced Pediatric Radial Neck Fractures using Intramedullary Nailing

Kamil Amer, Michael Fields, Folorunsho Edobor-Osula
Rutgers New Jersey Medical School, Newark, NJ

Video Abstract 3

Reconstruction of a Congenital Patellar Dislocation

Lauren Hyer, David Westberry, Franklin Gettys
Shriners Hospitals for Children, Greenville, Greenville, SC

Video Abstract 4

Patellar Tendon Imbrication for Correction of Crouch Gait

Lauren Hyer, David Westberry, Jon Davids
Shriners Hospitals for Children, Greenville, Greenville, SC

Video Abstract 5

Lateral Epicondyle Avulsion in a Skeletally Mature Adolescent

Barbara Minkowitz, Jennifer Ristic, Alice Chu, Allie Davanzo, Kelsey Kaplowitz, Eytan Mendelow
Morristown Medical Center, Morristown, NJ

Video Abstract 6

Tibial Spine/Eminence Fracture – Suture Fixation

Indranil Kushare, R Mistovich, John Shilt, Aristides Cruz
Texas Children's Hospital, Houston Texas

Video Abstract 7

Radial Neck Fractures: Metaizeau Intramedullary Technique

Philip Nowicki
Helen DeVos Children's Hospital, Grand Rapids, MI

Video Abstract 8

Waterproof Mehta Casting for Early Onset Scoliosis

Todd Ritzman, Jaysson Brooks, Lorena Floccari, Ryan Fitzgerald
Akron Children's Hospital, Akron, OH

Video Abstract 9

The Metaizeau Technique For Displaced Pediatric Radial Neck Fractures

Jay Patel, Jeremy Hreha, Folorunsho Edobor-Osula
Rutgers-New Jersey Medical School, Newark, New Jersey

Video Abstract 10

Pediatric Trigger Finger Release

Matthew Michel, Dominick Congiusta, Folorunsho Edobor-Osula
Rutgers- New Jersey Medical School, Newark, New Jersey

Video Abstract 11

Posterior Approach to Knee and Contracture Release for Arthrogryposis

Brian Batko, Steven Rivero, Folorunsho Edobor-Osula
Rutgers New Jersey Medical School, Newark, NJ



RESEARCH GRANT WINNERS

2020 Kuo Memorial Research Award

Apurva Shah, MD

"Opioid vs. Non-opioid Analgesia in Pediatric Supracondylar Humerus Fractures"
The Children's Hospital of Philadelphia

2020 Huene Memorial Research Award

Theodore Ganley, MD

"Tibial Spine Fractures Prospective Cohort Study"
The Children's Hospital of Philadelphia

2020 St. Giles Young Investigator Research Award

Neeraj Patel, MD

"Anterolateral Ligament Reconstruction in Children: A Randomized, Controlled Trial"
Lurie Children's Hospital, Chicago

2020 POSNA/Zimmer Biomet Spine Research Grant

John Vorhies, MD

"Erector Spinae Plane Catheters and Clinical Outcomes after Spinal Fusion"
Stanford University

2020 Clinical Trial Planning Research Grant

Firoz Miyanji, MD

"Effect of Mix-Metal Instrumentation on Blood Metal Ion Levels in Scoliosis"
University of British Columbia

2020 POSNA Start Up Research Grants

Stefan Parent, MD

"Lung Development & Congenital Spine Deformities: An In-vivo Ovine Model"
CHU Sainte-Justine, Montreal

Haluk Altiok, MD

"The Effect of Knee Height Asymmetry on Gait Biomechanics"
Shriners Hospital for Children, Chicago

2020 POSNA Directed Research Grants

Peter Newton, MD

"Post-Op Flexibility & Segmental Motion in Idiopathic Scoliosis—Anterior Spinal Growth Tethering vs. Posterior Spinal Fusion"
Rady Children's Hospital, San Diego

Michael Vitale, MD, MPH

"Evaluation of Sagittal and Axial Parameters in Braced Adolescent Idiopathic Scoliosis Patient"
Columbia University Medical Center, New York

2020 POSNA Registry Grant

Andrea Bauer, MD

"GUPI: Growing Up with a Plexus Injury"
Boston Children's Hospital

2020 POSNA Research Grants - Basic Research

Jason Howard, MD

"Muscle Stiffness in Cerebral Palsy: The Effect of Botulinum Toxin"
Nemours/Alfred I duPont Hospital for Children

Yinshi Ren, PhD; Harry Kim, MD, CoPI

"Determining the Effect of Obesity on Necrotic Bone Healing in Legg-Calve-Perthes Disease"
Texas Scottish Rite Hospital for Children, Dallas

Jennifer Laine, MD

"Development of a Minimally Invasive Model of Legg-Calve-Perthes Disease"
Gillette Children's Specialty Healthcare, St. Paul, MN

2020 POSNA Research Grant—Clinical Research

Kristen Tulchin-Francis, PhD

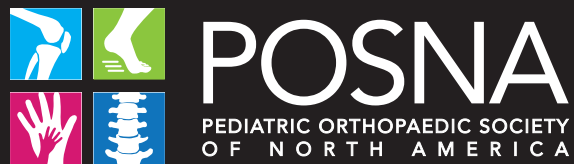
"Outcomes of Amputation or Limb Reconstruction in Severe Fibular Deficiency"
Texas Scottish Rite Hospital for Children, Dallas

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