Orthopaedics

Cincinnati Children's

Division Details

Division Data Summary

Research and Training Details

Number of Faculty	**16**
Direct Annual Grant Support	**$159,810**
Peer Reviewed Publications	**27**

Clinical Activities and Training

Number of Clinical Staff	**8**
Number of Clinical Fellows	**3**

Division Photo

Row 1: S Agabegi, J Sorger, S Chandran, V Jain, C Dahia, C Mehlman
Row 2: J McCarthy, K Little, J Denning, R Cornwall
Row 3: D Bylski-Austrow, S Parikh, A Crawford, E Wall, J Tamai, P Sturm

Significant Accomplishments

National Recognition and Continued Growth

U.S. News and World Report ranked our Division of Pediatric Orthopaedic Surgery among the top four in the country. The division's research efforts and presence at annual meetings helped contribute to the stellar ranking. Faculty members strengthened the division's national reputation by continuing to present findings and techniques at annual meetings of the Pediatric Orthopedic Society of North America (POSNA) and the American Academy of Orthopaedic Surgeons (AAOS). In addition, faculty enhanced its global reputation by participating in collaborations and conferences in Greece, Brazil, India and Saudi Arabia.

We welcomed new hires Sheila Chandran, MD, and Jaime Rice-Denning, MD, this year. They will certainly contribute to the continued research and clinical accomplishments of the division. Chandran specializes in all aspects of non-surgical pediatric orthopaedics, with a special interest in pediatric gait and the Ponseti technique for managing clubfoot. Rice-Denning specializes in orthopaedic trauma cases.

Motion Analysis Gait Lab Commences Operation

This past year marked the opening of the much-anticipated Motion Analysis Gait Lab. The lab is part of the Center for Advanced Technology at Cincinnati Children's, and it offers cutting-edge technology to better evaluate and treat orthopaedic and mobility issues. The lab uses high-tech diagnostic instruments that allow doctors to determine exactly how a patient walks, how their joints move and how their muscles function. The research goal of the lab is to use outcomes data to characterize the effectiveness of current treatments while focusing on the development and implementation of innovative techniques. Over the last year, the Gait Lab had 113 patient visits, more than projected for the first year of operations.

HemiBridge Spine Clip Clinical Trial Progresses

During the past year, we enrolled five patients in the HemiBridge™ System US FDA Investigational Device Exemption clinical safety trial. The first patient completed the six-month follow-up visit, with early indications of positive results. Methods to assess implant performance are currently under study.

Preliminary results of device's effects on spine biomechanics in an *in vivo* model have been published. Biomechanical effects of the device on spine motion were determined in an *in vitro* and a computational model. Growth inhibition predictions of the computational model were shown to correlate with previously reported histomorphometric growth plate structural patterns.

Division Publications

1. Agabegi SS, Majid K, Fischgrund JS, Vaccaro AR, Patel T. **Can preoperative radiographic parameters be used to predict fusion in non-instrumented posterolateral fusion for degenerative spondylolisthesis?**. *Spine (Phila Pa 1976)*. 2011; 36:E1709-14.
2. Cornwall R. **Pediatric finger fractures: which ones turn ugly?**. *J Pediatr Orthop*. 2012; 32 Suppl 1:S25-31.
3. Crawford AH. **Triplane and Tillaux fractures: is a 2 mm residual gap acceptable?**. *J Pediatr Orthop*. 2012; 32 Suppl 1:S69-73.
4. Durrani A, Jain V, Desai R, Bucklen B, Ingalhalikar A, Muzumdar A, Moldavsky M, Khalil S. **Could junctional problems at the end of a long construct be addressed by providing a graduated reduction in stiffness? A biomechanical investigation**. *Spine (Phila Pa 1976)*. 2012; 37:E16-22.
5. Flannery W, Balts J, McCarthy JJ, Swick J, Noonan KJ, Olson J. **Are terminally threaded guide pins from cannulated screw systems dangerous?**. *Orthopedics*. 2011; 34:e374-7.
6. Frawley KJ, Anton CG, Zbojniewicz AM, Cornwall R. **CT evaluation of extensor tendon entrapment as a complication of a distal radial fracture in a child**. *Pediatr Radiol*. 2011; 41:1472-5.
7. Grawe B, Parikh S, Crawford A, Tamai J. **Hallux valgus interphalangeus deformity: A case series in the pediatric population**. *Foot Ankle Surg*. 2012; 18:e4-8.
8. Howard A, Mulpuri K, Abel MF, Braun S, Bueche M, Epps H, Hosalkar H, Mehlman CT, Scherl S, Goldberg M, Turkelson CM, Wies JL, Boyer K. **The treatment of pediatric supracondylar humerus fractures**. *J Am Acad Orthop Surg*. 2012; 20:320-7.
9. Kazemi N, Foad M, Archdeacon MT. **Fellow's corner: grand rounds from the university of cincinnati medical center - chronic osteomyelitis of the tibia**. *J Orthop Trauma*. 2011; 25:691-4.
10. Kunkel S, Cornwall R, Little K, Jain V, Mehlman C, Tamai J. **Limitations of the radiocapitellar line for assessment of pediatric elbow radiographs**. *J Pediatr Orthop*. 2011; 31:628-32.
11. Kunkel S, Eismann E, Cornwall R. **Utility of the pediatric outcomes data collection instrument for assessing acute hand and wrist injuries in children**. *J Pediatr Orthop*. 2011; 31:767-72.
12. Lippert WC, Mehlman CT, Cornwall R, Foad MB, Laor T, Anton CG, Welge JA. **The intrarater and interrater reliability of glenoid version and glenohumeral subluxation measurements in neonatal brachial plexus palsy**. *J Pediatr Orthop*. 2012; 32:378-84.
13. Lippert WC, Miller MA, Lippert AM, Mehlman CT. **Documentation of postoperative pain in the neonatal brachial plexus palsy population**. *J Clin Nurs*. 2012; 21:1263-73.
14. McCarthy JJ, Davidson RS, Ast MP, Cavorsi GM, Swick J. **Sagittal plane deformity during femoral lengthening**. *Orthopedics*. 2011; 34:e602-4.
15. Nathan ST, Parikh SN. **Osteoarticular allograft reconstruction for hill-sachs lesion in an adolescent**.

Orthopedics. 2012; 35:e744-7.
16. O'Leary P T, Sturm PF, Hammerberg KW, Lubicky JP, Mardjetko SM. **Convex hemiepiphysiodesis: the limits of vertebral stapling**. *Spine (Phila Pa 1976)*. 2011; 36:1579-83.
17. Parikh SN, Bonnaig N, Zbojniewicz A. **Intracapsular origin of the long head of the biceps tendon with glenoid avulsion of the glenohumeral ligaments**. *Orthopedics*. 2011; 34:e781-4.
18. Parikh SN, Wall EJ. **Patellar fracture after medial patellofemoral ligament surgery: a report of five cases**. *J Bone Joint Surg Am*. 2011; 93:e97(1-8).
19. Parikh SN, Weesner M, Welge J. **Postnatal growth of the calcaneus does not simulate growth of the foot**. *J Pediatr Orthop*. 2012; 32:93-9.
20. Patel NK, Bucknill A, Ahearne D, Denning J, Desai K, Watson M. **Early magnetic resonance imaging in acute knee injury: a cost analysis**. *Knee Surg Sports Traumatol Arthrosc*. 2012; 20:1152-8.
21. Pierce TR, Mehlman CT, Tamai J, Skaggs DL. **Access to care for the adolescent anterior cruciate ligament patient with medicaid versus private insurance**. *J Pediatr Orthop*. 2012; 32:245-8.
22. Pugely AJ, Nemeth BA, McCarthy JJ, Bennett DL, Noonan KJ. **Osteonecrosis of the distal tibia metaphysis after a Salter-Harris I injury: a case report**. *J Orthop Trauma*. 2012; 26:e11-5.
23. Stitgen A, Garrels K, Kobayashi H, Vanderby R, McCarthy JJ, Noonan KJ. **Biomechanical comparison between 2 guided-growth constructs**. *J Pediatr Orthop*. 2012; 32:206-9.
24. Stitgen A, McCarthy JJ, Nemeth BA, Garrels K, Noonan KJ. **Ulnar fracture with late radial head dislocation: delayed Monteggia fracture**. *Orthopedics*. 2012; 35:e434-7.
25. Tamai J. **Hip ultrasounds: where do we go from here?**. *J Pediatr*. 2012; 160:189-90.
26. Wall EJ, May MM. **Growth plate fractures of the distal femur**. *J Pediatr Orthop*. 2012; 32 Suppl 1:S40-6.
27. Wall EJ, Myer GD, May MM. **Anterior cruciate ligament reconstruction timing in children with open growth plates: new surgical techniques including all-epiphyseal**. *Clin Sports Med*. 2011; 30:789-800.

Faculty, Staff, and Trainees

Faculty Members

James McCarthy, MD, Professor

Leadership Director, Pediatric Orthopaedic Surgery

Steven Agabegi, MD, Assistant Professor

Research Interests Scoliosis natural history

Donita Bylski-Austrow, PhD, Associate Professor

Leadership Director of Biomechanics Research

Research Interests Spine Biomechanics

Sheila Chandran, MD, Assistant Professor

Roger Cornwall, MD, Assistant Professor

Leadership Clinical Director; Co-Director, The Hand and Upper Extremity Center

Research Interests Hand and Upper Extremity

Alvin Crawford, MD, Professor

Leadership Co-Director, Spine Center and Fellowship Program

Research Interests Scoliosis and Neurofibromatosis

Chitra Dahia, PhD, Instructor

Viral Jain, MD, Assistant Professor

Research Interests Scoliosis

Kevin Little, MD, Assistant Professor

Research Interests Hand and Upper Extremity

Charles Mehlman, DO, MPH, Associate Professor

Leadership Director, Musculoskeletal Outcomes Research, Pediatric Orthopaedic Resident Education, Brachial Plexus and Co-Director of the Limb Reconstruction Center

Research Interests Spine Bracing and Evidence-Based Medicine

Shital Parikh, MD, Assistant Professor

Research Interests Sports Medicine

Jaime Rice-Denning, MD, Assistant Professor

Joel Sorger, MD, Assistant Professor

Research Interests Musculoskeletal Oncology

Peter Sturm, MD, Professor

Leadership Co-Director, The Crawford Spine Center; Director, Spine Fellowship Program

Junichi Tamai, MD, Assistant Professor

Leadership Director, Physician Assistant Program

Research Interests Process Improvement

Eric Wall, MD, Professor

Leadership Director, Orthopaedic Research Program; Director, Sports Medicine Program; Director, Pediatric Orthopaedic Fellowship Program

Clinical Staff Members

- **Lance Bolin, PA-C**,
  Lead Physician Assistant
- **Michael Hood, PA-C**
- **Hillary McClung, PA-C**
- **Hilliary McCourt, PA-C**
- **Sarah Ogle, PA-C**
- **Mary Pam Pfiester, PA-C**
- **Stephanie Pinkstock, PA-C**
- **Adriana Reinersman, PA-C**

Trainees

- **David Abbasi, MD**, PGY4, University of Cincinnati, Cincinnati, OH
- **Antulio Aroche, DO**, PGY4, Ingham Regional Medical Center, Lansing, MI
- **Darren Barton, DO**, PGY1, Wellmont Holsten Valley Medical Center, TN
- **Nicolas Bonnaig, MD**, PGY4, University of Cincinnati, Cincinnati, OH
- **Kyle Boren, DO**, PGY1, Wellmont Holsten Valley Medical Center, TN
- **Joseph Borruso, DO**, PGY3, Millcreek Community Hospital, Erie, PA
- **William Browning, DO**, PGY3, Millcreek Community Hospital, Erie, PA
- **Leroy Butler, DO**, PGY1, Wellmont Holsten Valley Medical Center, TN
- **Imran Choudry, MD**, PGY4, University of Cincinnati, Cincinnati, OH
- **Andrew Cordaile, DO**, PGY4, Peninsula Hospital Center, Far Rockaway, NY

- **Geoffrey Cornelsen, DO**, PGY3, Millcreek Community Hospital, Erie, PA
- **Matthew Elliott, DO**, PGY3, Henry Ford Hospital Systems, Warren, MI
- **Brian Grawe, MD**, PGY4, University of Cincinnati, Cincinnati, OH
- **Nina Gray, MD**, PGY2, Bethesda North Family Practice, Cincinnati, OH
- **Kanwarpaul Grewal, DO**, PGY4, Peninsula Hospital Center, Far Rockaway, NY
- **Jacob Gunzenhaeuser, MD**, PGY2, University of Cincinnati, Cincinnati, OH
- **Ryan Heuter, MD**, PGY2, Bethesda North Family Practice, Cincinnati, OH
- **Kory Johnson, DO**, PGY3, Metro Health Hospital, Wyoming, MI
- **Namdir Kazemi, MD**, PGY2, University of Cincinnati, Cincinnati, OH
- **Kyle LeGrand, DO**, PGY2, Bethesda North Family Practice, Cincinnati, OH
- **Mark Lembach, MD**, PGY4, University of Cincinnati, Cincinnati, OH
- **Daniel Lukes, DO**, PGY3, Millcreek Community Hospital, Erie, PA
- **Antonio Manocchio, DO**, PGY1, Grandview Medical Center, Dayton, OH
- **Melissa Martinek, MD**, PGY4, University Hospitals, Richmond, OH
- **Molly McGraw, DO**, PGY1, Grandview Medical Center, Dayton, OH
- **Andrew Millis, MD**, PGY2, University of Cincinnati, Cincinnati, OH
- **Natasha Moore, DO**, PGY2, Bethesda North Family Practice, Cincinnati, OH
- **Chris Moros, DO**, PGY4, Peninsula Hospital Center, Far Rockaway, NY
- **Benjamin Newton, DO**, PGY2, Bethesda North Family Practice, Cincinnati, OH
- **Marios Nikolaos-Lykissas, MD**, PGY5, Residency University of Ioannina, Ionnina, Greece
- **Joel Post, DO**, PGY4, Ingham Regional Medical Center, Lansing, MI
- **Chris Rierson, DO**, PGY4, Ingham Regional Medical Center, Lansing, MI
- **Craig Roberto, DO**, PGY4, Peninsula Hospital Center, Far Rockaway, NY
- **Warren Rogers, DO**, PGY4, Millcreek Community Hospital, Erie, PA
- **Senthil Nathan Sambambam, MBBS, MS, MD**, PGY7, Fellowship, Trauma, University of Louisville, Louisville, KY
- **Katherine Schroeder, MD**, PGY2, University of Cincinnati, Cincinnati, OH
- **Sergey Sheleg, MD**, PGY2, Bethesda North Family Practice, Cincinnati, OH
- **Ashley Simela, DO**, PGY4, University Hospitals, Richmond, OH
- **Kyle Stephens, DO**, PGY3, Henry Ford Hospital Systems, Warren, MI
- **Benjamin Szerlip, DO**, PGY3, University Hospitals, Richmond, OH
- **Andrew Terlecky, DO**, PGY1, Grandview Medical Center, Dayton, OH
- **Dinesh Thawrani, MBBS, DMB, MD**, PGY7, MGM Medical College, Indore, India
- **Joseph Weinstein, DO**, PGY4, Peninsula Hospital Center, Far Rockaway, NY
- **Shawn Yang, MD**, PGY2, University of Cincinnati, Cincinnati, OH
- **Steve Zitelli, DO**, PGY2, Bethesda North Family Practice, Cincinnati, OH

Grants, Contracts, and Industry Agreements

Grant and Contract Awards		Annual Direct
CORNWALL,R		
Molecular Mechanisms of Contracture Formation in Neonatal Brachial Plexus Injury American Society for Surgery of the Hand	07/01/11-06/30/12	$20,000

CRAWFORD, A

Genetic Evaluation for the Scoliosis Gene(s) in Patients
Department of Defense Army(University of Minnesota)
W81XWH-10-1-0469 08/01/10-08/31/13 $6,111

Orthopaedic Research & Education Foundation Spine Fellow
Orthopaedic Research and Education Fdn
08/01/11-07/31/12 $54,250

DAHIA, C

Control of Intervertebral Disc Growth and Development
Orthopaedic Research and Education Fdn
07/01/11-06/30/14 $75,000

MEHLMAN, C

Bracing in Adolescent Idiopathic Scoliosis
National Indsitutes of Health(The University of Iowa)
R01 AR 052113 9/1/01-8/31/12 $4,449

Current Year Direct	**$159,810**
Total	**$159,810**