

Division Data Summary

Research and Training Details

Number of Faculty	14
Number of Research Fellows	1
Number of Research Students	13
Direct Annual Grant Support	\$86,625
Peer Reviewed Publications	25

Clinical Activities and Training

Number of Clinical Staff	8
Number of Clinical Fellows	3

Division Photo



Row 1: J Sorger, A Nikolaou
 Row 2: V Jain, K Little, R Cornwall, P Sturm
 Row 3: A Crawford, S Parikh, J McCarthy, J Tamai, S Agabegi

Significant Publications

Division Highlights

James J. McCarthy, MD, FAAP

While FY11 brought significant progress toward the development of the CCHMC Cerebral Palsy interdisciplinary programs, Dr. McCarthy also began laying the foundation for the formal development of a Limb Lengthening and Reconstruction Program here at Cincinnati Children's. In addition to presenting several significant talks on the subject this year, Dr. McCarthy serves as President and Program Chair of the Limb Lengthening and Reconstruction Society (LLRS) and plans to bring their international annual conference to Cincinnati in FY2012.

Donita Bylski-Austrow, PhD Alvin H. Crawford, MD, FACS Eric Wall, MD

Pediatric spinal deformity research in biomechanics and mechanobiology was advanced by graduate students in Mechanical Engineering, and undergraduate students in Biology, as mentored by Orthopaedic faculty. Funding for students was provided by the University of Cincinnati's Institutional Clinical and Translational Science Award (NIH/NCRR 5UL1RR026314-03), and the UC College of Medicine's National Institute of Occupational Safety and Health Training Fellowship (NIOSH-T42). Other sources of student support were provided by UC Graduate Student Undergraduate Mentoring Program, along with the University of Cincinnati Orthopaedic Research and Education Foundation.

Alvin H. Crawford, MD, FACS

Alvin Crawford, MD, FACS, recognized expert in the treatment of Neurofibromatosis (NF) in children continued to expand our understanding of this complex condition. In addition to being a collaborating investigator with Dr. David Polly of the University of Minnesota, on a U.S. Department of Defense funded study on genetic links to neurofibromatosis and scoliosis, Dr. Crawford with Betty Shorry, MD of CHMC Genetics Neurofibromatosis Clinic presented an update on directions for clinical trials on spinal deformities of Neurofibromatosis to the Children's Tumor Foundation (formerly, the National Neurofibromatosis Foundation).

Dr. Crawford's presentations continue to bring international attention to the CCHMC Neurofibromatosis Clinic and this year was he was honored as the M. Natarajan eponymous lecturer on Neurofibromatosis in Children at the IAOCN National Meeting in Jaipur, India, and as Visiting Professor and Surgeon at the University of Pierre and Marie Curie Hospital Armand Trousseau, Paris, France.

Faculty Members

James McCarthy, MD, Professor

Director, Pediatric Orthopaedic Surgery

Research Interests

Steven Agabegi, MD, Assistant Professor

Assistant Professor

Research Interests Scoliosis natural history

Donita Bylski-Austrow, PhD, Associate Professor

Director of Biomechanics Research

Research Interests Spine Biomechanics

Roger Cornwall, MD, Assistant Professor

Clinical Director

Co-Director, The Hand and Upper Extremity Center

Research Interests Hand and Upper Extremity

Alvin Crawford, MD, Professor

Co-Director, Spine Center and Fellowship Program

Research Interests Scoliosis and Neurofibromatosis

Chitra Dahia, PhD, Instructor

Research Interests

Mohab Foad, MD, Associate Professor

Co-Director, The Hand and Upper Extremity Center

Research Interests

Viral Jain, MD, Assistant Professor

Assistant Professor

Research Interests Scoliosis

Kevin Little, MD, Assistant Professor

Assistant Professor

Research Interests Hand and Upper Extremity

Charles Mehlman, DO, MPH, Associate Professor

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

Assistant Professor

Research Interests Sports Medicine

Joel Sorger, MD, Assistant Professor

Assistant Professor

Research Interests Musculoskeletal Oncology

Peter Sturm, MD, Professor

Co-Director, The Crawford Spine Center

Director, Spine Fellowship Program

Research Interests

Junichi Tamai, MD, Assistant Professor

Director, Physician Assistant Program

Research Interests Process Improvement

Eric Wall, MD, Professor

Director, Orthopaedic Research Program

Director, Sports Medicine Program

Director, Pediatric Orthopaedic Fellowship Program

Research Interests

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 Pfister, PA-C
- Stephanie Pinkstock, PA-C
- Adriana Reinersman, PA-C

Trainees

- Rob Altenau, MD, PGY2, Bethesda North Family Practice, Cincinnati, OH
- Sudhir Belagaje, MD, PGY4, University of Cincinnati, Cincinnati, OH
- Jeff Biehn, DO, PGY4, Millcreek Community Hospital, Erie, PA
- Joe Blythe, DO, PGY3, Henry Ford Hospital Systems, Warren, MI
- Brian Camilleri, DO, PGY1, Grandview Medical Center, Dayton, OH
- Charles Chan, MD, Fellow, University of Santo Tomas, Espana, Manila, Republic of the Philippines
- Lauren Cruse, MD, PGY2, Bethesda North Family Practice, Cincinnati, OH
- Azad Dadgar, DO, PGY4, Peninsula Hospital Center, Far Rockaway, NY
- Jimmy Dang, DO, PGY4, Oklahoma State University, Tulsa, OK
- Brad Dunkin, MD, PGY4, University of Cincinnati, Cincinnati, OH
- Todd Galdes, DO, PGY3, Henry Ford Hospital Systems, Warren, MI
- James Heltsley, DO, PGY1, Grandview Medical Center, Dayton, OH
- Maram Khabbaz, MD, PGY3, Bethesda North Family Practice, Cincinnati, OH
- Carissa Kirk, DO, PGY4, Peninsula Hospital Center, Far Rockaway, NY
- Megan Kramerer, MD, PGY2, Bethesda North Family Practice, Cincinnati, OH
- Sarat Kunapuli, DO, PGY4, Ingham Regional Medical Center, Lansing, MI
- Kevin Little, MD, Fellow, University of Cincinnati, Cincinnati, OH
- Hongbo Liu, MD, Fellow, Peking Union Medical College Hospital, Beijing, China
- John Mangelson, MD, PGY2, University of Cincinnati, Cincinnati, OH
- Megan May, MD, Fellow, Northwestern University Feinberg School of Medicine, Chicago, IL
- Farzad Mazloomi, MD, PGY2, Bethesda North Family Practice, Cincinnati, OH
- Adam Metzler, MD, PGY4, University of Cincinnati, Cincinnati, OH
- David Myer, MD, PGY2, University of Cincinnati, Cincinnati, OH
- Nicole Nemeth, MD, PGY4, University of Cincinnati, Cincinnati, OH
- Ryan Pettit, MD, PGY2, Bethesda North Family Practice, Cincinnati, OH
- Paul Pipitone, DO, PGY4, Peninsula Hospital Center, Far Rockaway, NY
- Chris Pomeroy, MD, PGY2, University of Cincinnati, Cincinnati, OH
- Michael Priola, DO, Fellow, Riverside County Regional Med Center, Moreno Valley, CA
- Abhishek Ray, MBBS, MS, Fellow, Jipmer, Pondicherry, India and MGM Medical College & MYH, Indore/Madaya Pradesh, India

- Josh Roehrich, MD, PGY2, University of Cincinnati, Cincinnati, OH
- Chris Rott, DO, PGY3, Metro Health Hospital, Wyoming, MI
- Steven Schiebert, DO, PGY3, Peninsula Hospital Center, Far Rockaway, NY
- Paul Schuppner, DO, PGY4, Ingham Regional Medical Center, Lansing, MI
- Michael Sobolewski, DO, PGY3, Millcreek Community Hospital, Erie, PA
- Rafal Stachowicz, MD, PGY4, University of Cincinnati, Cincinnati, OH
- Jared Stefanko, DO, PGY4, Millcreek Community Hospital, Erie, PA
- Tyson Trimble, DO, PGY4, Oklahoma State University, Tulsa, OK
- Dharmapal Vansadia, DO, PGY1, Grandview Medical Center, Dayton, OH
- Sean Waldron, MD, Fellow, Case Western Reserve University, Cleveland, OH
- Luke Wilcox, DO, PGY4, Ingham Regional Medical Center, Lansing, MI
- Jonathon Wolf, MD, PGY2, University of Cincinnati, Cincinnati, OH

Significant Accomplishments

New Centers for Cerebral Palsy, Spine Treatment

The Division of Pediatric Orthopaedic Surgery celebrated the successful recruitment of our division director and professor of pediatric orthopaedic surgery, James McCarthy, MD, from the University of Wisconsin School of Medicine and Rehabilitation in Madison. McCarthy was awarded the Alvin H. Crawford Chair in Pediatric Orthopaedics and has made significant progress toward development of the Cerebral Palsy Center, in collaboration with Jilda Vargus-Adams, MD, and the Division of Physical Medicine and Rehabilitation. Our much anticipated, state-of-the-art motion analysis laboratory will significantly improve the impact we can make in the study of and treatment for those struggling with the challenges of cerebral palsy and other conditions that can affect musculoskeletal function.

Orthopaedics was also strengthened by the addition of Peter Sturm, MD, who joined us from the Shriners Hospital for Children in Chicago, to direct the Alvin H. Crawford Spine Center at Cincinnati Children's. Sturm, professor of pediatric orthopaedic surgery, was awarded the Alvin H. Crawford Chair of Spine Surgery and along with codirector Alvin Crawford, MD, is developing a global center of basic science and clinical investigation directed at improving outcomes for those impacted by a wide variety of conditions affecting the spine.

Clinical Trial of HemiBridge Spine Clip

The division of Pediatric Orthopaedic Surgery was excited to conclude negotiations and execute a clinical trial agreement with SpineForm, LLC, in addition to receiving IRB approval, thereby authorizing Cincinnati Children's to begin patient enrollment in the FDA-approved study of the HemiBridge Spine Clip. The clip, developed by Eric Wall, MD, and our orthopaedic biomechanics research team, is the first vertebral stapling device to receive an investigational device exemption (IDE) from the US Food and Drug Administration. The study will utilize a minimally invasive, nonfusion surgical technique and the HemiBridge Clip to redirect spine growth, which could potentially revolutionize the treatment of scoliosis.

Orthopaedic Surgery Efforts Recognized

The Division of Pediatric Orthopaedic Surgery continues to lead the field in podium and poster presentations at annual meetings of the Pediatric Orthopedic Society of North America (POSNA) and the American Academy of Orthopaedic Surgeons (AAOS), and for the second consecutive year, the division was ranked among the top five pediatric orthopaedic programs in the country by *U.S. News & World Report* magazine.

Division Publications

1. Agabegi SS, Asghar FA, Herkowitz HN. **Spinal orthoses**. *J Am Acad Orthop Surg*. 2010; 18:657-67.
2. Agabegi SS, Iorio TE, Wilson JD, Fischgrund JS. **Juvenile xanthogranuloma in an adult lumbar spine: a**

- case report.** *Spine (Phila Pa 1976)*. 2011; 36:E69-73.
3. Altioek H, Finlayson C, Hassani S, Sturm P. **Kyphectomy in children with myelomeningocele.** *Clin Orthop Relat Res*. 2011; 469:1272-8.
 4. Bowman EN, Mehlman CT, Lindsell CJ, Tamai J. **Nonoperative treatment of both-bone forearm shaft fractures in children: predictors of early radiographic failure.** *J Pediatr Orthop*. 2011; 31:23-32.
 5. Bowman EN, Mehlman CT, Lindsell CJ, Tamai J. **Nonoperative treatment of both-bone forearm shaft fractures in children: predictors of early radiographic failure.** *J Pediatr Orthop*. 2011; 31:23-32.
 6. Carreon LY, Sanders JO, Diab M, Sturm PF, Sucato DJ. **Patient satisfaction after surgical correction of adolescent idiopathic scoliosis.** *Spine (Phila Pa 1976)*. 2011; 36:965-8.
 7. Carreon LY, Sanders JO, Diab M, Sucato DJ, Sturm PF, Glassman SD. **The minimum clinically important difference in Scoliosis Research Society-22 Appearance, Activity, And Pain domains after surgical correction of adolescent idiopathic scoliosis.** *Spine (Phila Pa 1976)*. 2010; 35:2079-83.
 8. Elsebai HB, Yazici M, Thompson GH, Emans JB, Skaggs DL, Crawford AH, Karlin LI, McCarthy RE, Poe-Kochert C, Kostial P, Akbarnia BA. **Safety and efficacy of growing rod technique for pediatric congenital spinal deformities.** *J Pediatr Orthop*. 2011; 31:1-5.
 9. Gammon SR, Mehlman CT, Chan W, Heifetz J, Durrett G, Wall EJ. **A comparison of thoracolumbosacral orthoses and SpineCor treatment of adolescent idiopathic scoliosis patients using the Scoliosis Research Society standardized criteria.** *J Pediatr Orthop*. 2010; 30:531-8.
 10. Glos DL, Sauser FE, Papautsky I, Bylski-Austrow DI. **Implantable MEMS compressive stress sensors: Design, fabrication and calibration with application to the disc annulus.** *J Biomech*. 2010; 43:2244-8.
 11. Lippert WC, Owens RF, Wall EJ. **Salter-Harris type III fractures of the distal femur: plain radiographs can be deceptive.** *J Pediatr Orthop*. 2010; 30:598-605.
 12. McCarthy JJ, Armstrong DG, Davey JP, Epps HR, Gerardi JA, Kanel JS, Mehlman CT, Roach JW, Schwend RM, Smith BG, Ward WT. **The current medical practice of the pediatric orthopaedic surgeon in North America.** *J Pediatr Orthop*. 2011; 31:223-6.
 13. McCarthy JJ, Noonan KJ, Nemke B, Markel M. **Guided growth of the proximal femur: a pilot study in the lamb model.** *J Pediatr Orthop*. 2010; 30:690-4.
 14. Mehlman CT, DeVoe WB, Lippert WC, Michaud LJ, Allgier AJ, Foad SL. **Arthroscopically assisted Sever-L'Episcopo procedure improves clinical and radiographic outcomes in neonatal brachial plexus palsy patients.** *J Pediatr Orthop*. 2011; 31:341-51.
 15. Nikolaou S, Peterson E, Kim A, Wylie C, Cornwall R. **Impaired growth of denervated muscle contributes to contracture formation following neonatal brachial plexus injury.** *J Bone Joint Surg Am*. 2011; 93:461-70.
 16. Okike K, Kocher MS, Torpey JL, Nwachukwu BU, Mehlman CT, Bhandari M. **Level of evidence and conflict of interest disclosure associated with higher citation rates in orthopedics.** *J Clin Epidemiol*. 2011; 64:331-8.
 17. Parikh SN, Grice SS, Schnell BM, Salisbury SR. **Operating room traffic: is there any role of monitoring it?.** *J Pediatr Orthop*. 2010; 30:617-23.
 18. Parikh SN, Wells L, Mehlman CT, Scherl SA. **Management of fractures in adolescents.** *J Bone Joint Surg Am*. 2010; 92:2947-58.
 19. Parikh SN, Wells L, Mehlman CT, Scherl SA. **Management of fractures in adolescents.** *J Bone Joint Surg Am*. 2010; 92:2947-58.
 20. Parikh SN, Wilson L. **Hazardous use of car seats outside the car in the United States, 2003-2007.** *Pediatrics*. 2010; 126:352-7.
 21. Passanise AM, Mehlman CT, Wall EJ, Dieterle JP. **Radiographic evidence of regression of a solitary osteochondroma: a report of 4 cases and a literature review.** *J Pediatr Orthop*. 2011; 31:312-6.
 22. Roach JW, Mehlman CT, Sanders JO. **"Does the outcome of adolescent idiopathic scoliosis surgery justify the rising cost of the procedures?".** *J Pediatr Orthop*. 2011; 31:S77-80.
 23. Serhan H, Hammerberg K, O'Neil M, Sturm P, Mardjetko S, Crawford A. **Intraoperative techniques to reduce the potential of set-screw loosening in long spinal constructs: a static and fatigue**

- biomechanical investigation**. *J Spinal Disord Tech*. 2010; 23:e31-6.
24. Sturm PF, Zaharski K, Riordan M, Hassani S. **Anticipating complications in pediatric deformity surgery: is any preparation necessary in healthy children?**. *Spine (Phila Pa 1976)*. 2010; 35:2211-4.
25. Talbert RJ, Michaud LJ, Mehlman CT, Kinnett DG, Laor T, Foad SL, Schnell B, Salisbury S. **EMG and MRI are independently related to shoulder external rotation function in neonatal brachial plexus palsy**. *J Pediatr Orthop*. 2011; 31:194-204.

Grants, Contracts, and Industry Agreements

Grant and Contract Awards Annual Direct / Project Period Direct

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 \$7,542

RAY, A (CRAWFORD, A)

OREF Fellowship in Spine

Orthopaedic Research and Education Foundation

08/01/10-07/31/11 \$69,500

MEHLMAN, C

Bracing in Adolescent Idiopathic Scoliosis

National Institutes of Health(The University of Iowa)

R01 AR 052113 09/01/01-08/31/11 \$9,583

Current Year Direct \$86,625

Total \$86,625