

Lauren E. Karbach, MD

Orthopaedic Surgery: Hand Surgery

EMPLOYMENT

The San Antonio Orthopedic Group (TSAOG), San Antonio, TX August 2020 - Present
Orthopedic Surgeon, Hand Surgeon Subspecialist

EDUCATION

Indiana Hand to Shoulder Center, Indianapolis, IN July 2019 – July 2020
Hand Surgery Fellowship

University of Rochester, Rochester, NY July 2014 – June 2019
Orthopaedic Surgery Residency

Vanderbilt University, Nashville, TN July 2013 – June 2014
General Surgery Internship

Baylor College of Medicine, Houston, TX August 2009 – May 2013
Doctor of Medicine with High Honor, Junior AOA.

Washington University in St. Louis, St. Louis, MO August 2005 – May 2009
Bachelor of Arts, Chemistry (Concentration in Biochemistry), *Summa cum laude*

LICENSE & CERTIFICATIONS

ABOS Board Eligible July 2019

Texas State Medical License

Indiana State Medical License

DEA License

BLS Certification

ATLS Certification

PROFESSIONAL ORGANIZATIONS

American Society for Surgery of the Hand, Candidate Member.

American Association for Hand Surgery, Candidate Member.

American Academy of Orthopaedic Surgeons, Resident/Fellow Member.

Indiana State Medical Association.

COURSES

Axogen, Advances in Microsurgery, November 2019, Indianapolis, IN.

ASSH Fellows Flap Course, September 2019, Las Vegas, NV.

ASSH Annual Meeting Resident Course, September 2018, Boston, MA.

ASSH Annual Meeting Resident Course, September 2017, San Francisco, CA.

AO Basic Principles of Fracture Management, April 2017, San Diego, CA.

AAHKS Resident Arthroplasty Course, November 2016, Dallas, TX.

PROFESSIONAL AND VOLUNTEER MEDICAL EXPERIENCE

Health Volunteers Overseas – Orthopaedic Surgery Volunteer in Kumasi, Ghana, February 2019.

HONORS AND AWARDS

AAOS Orthopaedic Video Theatre Outstanding Video in Hand Surgery, AAOS 2019.

Daniel C. Riordan Award, ASSH 2017.

Behrooz A. Akbarnia, MD Award for Best Paper – International Congress on Early Onset Scoliosis (ICEOS) - Normal Human Spine Growth During Childhood And Adolescence To Maturity With Prediction Of Final Spine Height Developed From A Longitudinal Cohort Of Children Followed Through Growth Completion – Co-Author, November 2015.

Russell Hibbs Award – Basic Science – Scoliosis Research Society - Normal Human Spine Growth and Prediction of Final Spine Height Developed from a Longitudinal Cohort of Children Followed Through their Growth Until Completion – Co-Author, October 2015.

University of Rochester Medical Center Bronze Star, 2015-2016.

Doctor of Medicine with High Honor, May 2013.

American Medical Women's Association Glasgow-Rubin Certificate of Commendation for Academic Achievement, May 2013.

Outstanding Students in Orthopaedic Surgery, May 2013.

Texas Orthopedic Association, Resident Research Presentation, Second Place, April 2013

Gold Humanism Honor Society, Baylor College of Medicine, September 2012.

DeBakey Scholar Award for Medical Student Excellence and Scholarship, Baylor College of Medicine, July 2012. *One student selected from class of 2013, for most outstanding pre-clinical and clinical care.*

Eppright Award for Research in Orthopedic Surgery Honorable Mention, Baylor College of Medicine, June 2012.

Alpha Omega Alpha, Junior Inductee. Baylor College of Medicine, March 2012.

Basic Science Honors, Baylor College of Medicine, January 2011.

RESEARCH EXPERIENCE

University of Rochester, Rochester, NY

Growth Research using Longitudinal Cohort of Subjects, Dr. Sanders, 2014-2019

- Longitudinal spine and extremity growth based upon age, percentage of future height, peak height velocity
- Skeletal maturity measures and application towards adolescent growth spurt
- Growth in cohort of adolescent idiopathic scoliosis patients

Obesity and Lower Extremity Metaphyseal Fractures. Dr. Ketz, Oct 2015 -2018

- IRB Approved study for evaluation of lower extremity fractures and alignment with relation to patient obesity. Including PROMIS scores and radiographic review

Baylor College of Medicine Dept. of Orthopedics, Houston, TX

Developmental dysplasia of the hip (DDH), radiographic screening. Drs. Kan and Rosenfeld, Oct 2011 – May 2013.

Edge loading and failure in hip resurfacing arthroplasty, Dr. Noble, January 2011 – Jan 2013.

Radiographic analysis of spinal Trauma and CT analysis of pseudoarthrosis formation, Dr. Hipp. November 2009 – August 2010.

Washington University Dept. of Biology, St. Louis, MO

Metabolic Pathway Analysis, Dr. Blankenship, Summer 2007 – May 2009.

- Analyzed the novel metabolic and photosynthetic pathways within *Chloroflexus aurantiacus* from a genomics and bioinformatics perspective.
- Genome Annotation Project Research Assistant on HHMI/SURF grant on annotation and metabolic pathway analysis of *Acaryochloris marina* and *Heliobacterium modesticaldum*.

Washington University Dept. of Psychiatry, St. Louis, MO

Wet Lab Research Assistant, Drs. Dong and Csernansky, Fall 2006–Spring 2007.

- Performed Alzheimer's disease research with a transgenic mouse model to understand the effect of stress on disease progression.

PUBLICATIONS AND PRESENTATIONS

Publications

- Lucas Nikkel, Bilal Mahmood, Sarah Lander, Michael Maceroli, Edward Fox, Wakenda Tyler, **Lauren Karbach**, John Elfar. "Hospitalizations for fracture in patients with metastatic disease: Primary source lesions in the United States." *J Community and Supportive Oncology* 2018;16:1.
- **Lauren E. Karbach**, John Elfar. "Elbow Instability: Anatomy, Biomechanics, Diagnostic Maneuvers, and Testing." *J Hand Surg Am* 2017;42:118-126.

- Jessica M. Ho, Peleg J. Ben-Galim, Bradley K. Weiner, **Lauren E. Karbach**, Charles A. Reitman, Michael H. Heggeness, John A. Hipp. "Toward the establishment of optimal computed tomographic parameters for the assessment of lumbar spinal fusion." *The Spine Journal* 2011;11:636-40
- Kuo-Hsiang Tang et al. Complete Genome Sequence of the Filamentous Anoxygenic Phototrophic Bacterium *Chloroflexus aurantiacus*. *BMC Genomics* 2011, 12:334
- Wesley D. Swingley et al. Niche adaptation and genome expansion in the chlorophyll *d*-producing cyanobacterium *Acaryochloris marina*. *Proc Natl Acad Sci U S A*. 2008; 105(6): 2005–2010.
- W. Matthew Sattley, et al. The Genome of *Heliobacterium modesticaldum*, a Phototrophic Representative of the *Firmicutes* Containing the Simplest Photosynthetic Apparatus. *Journal of Bacteriology*, 2008; 190(13): 4687-96.

Presentations

- **Lauren Karbach**, Raymond Liu, Daniel Cooperman, James Sanders. Using Skeletal Age to Better Predict Upper Extremity Growth. American Society for Surgery of the Hand Annual Meeting, Resident and Fellows Section Sept 7-9, 2017 as Top 5 paper for presentation.
- **Lauren Karbach**, Raymond Liu, Daniel Cooperman, James Sanders. Using Skeletal Age to Better Predict Upper Extremity Growth. Accepted to Eastern Orthopedic Association Annual Meeting, Oct 18-21, 2017.
- James Sanders, Dana Duren, Xing Qiu, Raymond Liu, Debbie Dang, Mariano Menendez, Christopher Cook, Xiang Lu, Sarah Hans, **Lauren Karbach**, David Weber, Daniel Cooperman. The Relationship of Age, Skeletal Maturity and Menarch to Spinal Growth During Adolescence. EPOS/POSNA Annual Meeting ePoster May 3-6, 2017.
- **Lauren Karbach**, Thomas Osinski, Xiang Lu, Raymond Liu, Xing Qui, Daniel Cooperman, James Sanders. Limb Length Multipliers in Real Life - Age based versus Growth Spurt Timing, POSNA Annual Meeting ePoster Apr 27-30 2016.
- James Sanders, **Lauren Karbach**, Thomas Osinski, Xiang Lu, Raymond Liu, Xing Qiu, Daniel Cooperman. Normal Human Spine Growth During Childhood And Adolescence To Maturity With Prediction Of Final Spine Height Developed From A Longitudinal Cohort Of Children Followed Through Growth Completion. International Congress on Early Onset Scoliosis Meeting, podium presentation, November 19-20th 2015.
- James Sanders, **Lauren Karbach**, Thomas Osinski, Raymond Liu, Xing Qiu, Daniel Cooperman. Normal human spine growth and prediction of final spine height developed from a longitudinal cohort of children followed through their growth until completion. Scoliosis Research Society, Hibbs Award for Basic Research. Sept 30-Oct 3, 2015.
- **Lauren E. Karbach**, Mitchell D. Eggers, Jędrzej R. Wosik, Rishi Kumar, Mike Donovan, Angela Mitchell, Nilson Salas, Brian J. Dunkin. Creation of a cost-effective per diem medical student work force for a busy American College of Surgeons Accredited Education Institute (AEI) – a model for use by consortium members. Poster Presentation at the American College of Surgeons Accredited Education Institute Meeting March 15-16, 2013.
- **Lauren E. Karbach**, J. Herman Kan, William A. Phillips, Wei Zhang, Scott B. Rosenfeld. Effectiveness of screening DDH with and without acetabular angle measurements. Is gestalt diagnosis adequate? Scientific Exhibit at Society for Pediatric Radiology May 15-18, 2013 in San Antonio, TX.
- **Lauren E. Karbach**, J. Herman Kan, William A. Phillips, Wei Zhang, Scott B. Rosenfeld. Minimal incremental value of frogleg lateral view of the pelvis in children with suspected DDH. Scientific Exhibit at Society for Pediatric Radiology May 15-18, 2013 in San Antonio, TX.
- **Lauren E. Karbach**, Ashley K. Matthies, Sabir K. Ismaily, Jonathan E. Gold, Alister J. Hart, Philip C. Noble. The Role of Patient Activities in Edge Wear of Hip Resurfacing Arthroplasties. Poster Presentation to American Academy of Orthopaedic Surgeons Annual Meeting, March 19 – 23, 2013 and International Society for Technology in Arthroplasty, October 3-6, 2012.
- Ashley K. Matthies, Alex D. Suarez, J Henckel, **Lauren E. Karbach**, Sabir Ismaily, J Skinner, Phillip C. Noble, Alister J. Hart. The 'Contact Patch to Rim Distance' can be used to predict wear in Metal-on-Metal hip resurfacing. Poster Presentation to American Academy of Orthopaedic Surgeons Annual Meeting, March 19 – 23, 2013.
- **Lauren E. Karbach**, J. Herman Kan, William A. Phillips, Wei Zhang, Scott B. Rosenfeld. The Use of Frog-leg Lateral Pelvic Radiographs is Reliable for the Measurement of Acetabular Index in Evaluation of Developmental Dysplasia of the Hip. Presented to AAP section on Orthopedics conference, October 20-21, 2012, presented to Texas Orthopedic Association Annual Meeting, April 19-20, 2013.

- Peleg Ben-Galim, Jessica M. Ho, **Lauren E. Karbach**, Bradley K. Weiner, John Hipp. Optimal CT Parameters for Assessing Lumbar Spinal Fusion. American Academy of Orthopaedic Surgeons Annual Meeting, February 16, 2011.
- **Lauren E. Karbach**, Robert Blankenship. Genome Expansion and Transposases in the *Acaryochloris marina* genome project. Poster presentation at HHMI Summer Undergraduate Research Fellowship Symposium, October 2007.
- **Lauren E. Karbach**, Dong, Csernansky. Hippocampal volume changes due to stress in an Alzheimer's disease mouse model. Poster presentation at Mind-Brain Research Symposium, May 2007.

Pending Publications and Presentations

- **Lauren Karbach** and Warren Hammert. Rheumatoid Wrist Reconstruction. Book Chapter in *Evidence Based Orthopaedics*, accepted, pending publication.
- **Lauren Karbach**, Raymond Liu, Daniel Cooperman and James Sanders. Upper extremity and lower extremity growth in longitudinal cohort. Manuscripts completed and pending submission.
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