

Emily Kraus, MD



Professional Education

Fellowship: **Stanford Hospital and Clinics**, Redwood City, CA (2017) Primary Care Sports Medicine Fellow
Residency: **Stanford Hospital and Clinics**, Redwood City, CA. (2016) Resident in Physical Medicine & Rehabilitation (PM&R)
Internship: **University of Nebraska Medical Center**, Omaha, NE. (2013) Intern resident in Internal Medicine
BS: **University of Nebraska-Lincoln**, Lincoln, NE. (2008) Major: Nutrition Science; Professional Field: Pre-Medicine
MD: **University of Nebraska Medical Center**, Omaha, NE. (2012)

Sports Pediatric Experiences

Healthy Runner Project: Research Coordinator. Stanford Hospital and Clinics. (Nov 2013 – present). A multicenter prospective interventional study focused on bone stress injury prevention. Involved in study design and implementation including athlete recruitment, consenting, and scheduling of subjects then performed data entry and analysis. Took a large role in counseling athletes on female athlete triad and optimizing bone health.

Bridge Athletic: Sports Editor. San Francisco, CA. (Sept 2013 – Present). Provide sports science articles on injury prevention, optimizing sports performance, and the promotion of health and wellness for athletes of all levels, including adolescent sports injury prevention.

New Balance Bay Area Running Camp: Guest Speaker. Portola Valley, CA. (Jul 2014). Spoke at a local running camp on bone health, definition of female athlete triad, injury prevention. Audience consisted of a session of 80 kids aged 12-18 and a second adult session.

Teaching

ORTHO 210 - Practical Sports Medicine and Orthopaedic Exam: Clinical Instructor (Sept 2016 - current); Teaching Assistant (Sept 2013- Dec 2015). Led lectures to undergraduate and graduate students with hands-on teaching and practice on how to perform an efficient orthopaedic physical exam.

Orthopaedic Surgery Ultrasound Workshop: Teaching Assistant (Sept 2017). Provided hands-on instruction on ultrasound scanning of the shoulder to Stanford orthopaedic surgery residents.

Stanford Arbor Free Musculoskeletal Clinic: Resident Clinic Director (Apr 2013- Apr 2016). Guided medical students in the evaluation and treatment of real patients with musculoskeletal complaints with hands-on teaching.

HHD 223 Musculoskeletal Clinical Correlations Lab: Small Group Facilitator (Apr 2016). Guided first year medical students through clinical cases in which they could apply newly acquired knowledge of musculoskeletal system pathophysiology.

PM&R Cadaver Lab Workshop: Resident Coordinator (May 2016). Organized the first interactive MSK cadaver lab for PM&R residents in over 10 years.

PM&R Ultrasound Lectures: Resident Lecturer (Aug 2015). Lectured to PM&R residents on ultrasound fundamentals and led an interactive demonstration of ultrasound-guided injections.

PM&R Resident Lecture Series: Resident Lecture Topics: Ultrasound Fundamentals and Ultrasound-guided Injections (Aug 2015), Exercise Prescription in Neuromuscular Disorders (Jan 2016), Peripheral Nerve Injuries in the Sports Setting (May 2016), Sports Medicine Evaluation of the Hand and Wrist (July 2016), Pelvic Stress Fractures: The other cause of low back pain (Aug 2016).

Stanford Medical School Lectures: Lecture Topic: Optimizing Bone Health in Young Athletes (Oct 2016)

Stanford Physical Education Lecture Series: Lecture Topic: Sports Injury Update (Nov 2016)

Leadership Roles

RunSafe, Stanford Human Performance Lab: Gait Analysis Expert (Aug 2013 – present). Work alongside trained medical professionals to help provide personalized, comprehensive advice on injury prevention and performance enhancement by performing interactive gait assessments.

Notre Dame de Namur: Team Physician (Aug 2016 – present). Serve as the team physician for Division II athletes, which includes weekly evening clinics with the athletes and athletic trainers.

Stanford PM&R Chief Resident: (Apr 2015 – Apr 2016). Provided leadership and support to uphold the key missions of the residency program and functioned as a mentor and advocate for residents. Organized the MSK curriculum series and an interactive Anatomy Cadaver Lab didactic experience for residents.

College Athletics Pre-participation Physicals: Perform pre-participation physicals for incoming and returning athletes.

- o Stanford University – Aug 2013, Aug 2014, Aug 2015, Aug 2016
- o Notre Dame de Namur – Sept 2014, Sept 2015, Aug 2016

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American Orthopaedic Association Own the Bone Program: Research Intern. University of Nebraska Medical Center, Department of Orthopaedic Surgery. (Dec 2010 – May 2012). Research focus on closing the treatment gap between the repair of a fragility fracture and the prevention of future fractures. Performed data analysis and patient follow-up.

Sports Coverage

Stanford Football: Sideline Physician
vs. Oregon State, Nov 2016
Stanford Field Hockey: Sideline Physician
vs. Connecticut, Aug 2016; Michigan, Sept 2016; Pacific, Oct 2016; Cal, Oct 2016
Stanford Swimming and Diving: Sideline Physician
vs. Texas, Nov 2016
Stanford Golf: On Call Coverage
Stanford Softball: Sideline Physician
NCAA D1 Women's Basketball Tournament: Sideline Physician
vs. USF, Mar 2016
Stanford Cross Country Invitational: Stanford Medical Team
Sept 2013, Sept 2014, Sept 2015
Stanford Track Invitational: Stanford Medical Team
March 2015
Santa Cruz Pro Am Beach Soccer Tournament: Avantifit Medical Team
Jun 2015
San Jose Rock'n'Roll Half Marathon: UCSF Medical Team
Sept 2013
San Francisco U.S. Half Marathon: UCSF Medical Team
Oct 2013
USAT&F National Track and Field Championships: USAT&F Medical Team
Jun 2014

Community and International Work

Bridge Athletic: Sports Editor. San Francisco, CA. (Sept 2013 – Present). Provide sports science articles on injury prevention, optimizing sports performance, and the promotion of health and wellness for athletes of all levels.
Stanford Cisco Family Day: Gait Analysis Expert. Milpitas, CA. (Aug 2016). Performed abbreviated gait assessments at an event showcasing health and wellness to approximately 7,100 Cisco employees and their families.
Musculoskeletal Medicine Applications Across Specialties Panel: Panel Participant (Jan 2016). Sat on a discussion panel promoting musculoskeletal medicine to medical students interested in orthopaedics and sports medicine.
New England Journal of Medicine (NEJM) "Ask the Authors and Experts" Forum: Lead Moderator. (Oct 2015). Led an online discussion regarding an article published in the NEJM, entitled "A Randomized Controlled Trial of Total Knee Replacement" with the authors, experts in the field, and interested medical faculty.

Publications/Presentations

Kraus E, Fredericson M. (2017). Prevention of Bone Stress Injuries. In: Krabak BJ, Lipman GS, Waite BL, editors, *The Long Distance Runner's Guide To Injury Prevention and Treatment*. New York City: Skyhorse Publishing. (In press).
Kraus E. Beat the Heat: Cooling Methods and Exertional Heat-Related Illness. In: Bridge Athletic Sports Science Blog. Aug 29, 2016. Available at: <http://blog.bridgeathletic.com/beat-the-heat-cooling-methods-and-ehri>.
Kraus E. How to Beat the Heat in Training and Competition: Part 2 - Hydration. In: Bridge Athletic Sports Science Blog. Aug 8, 2016. Available at: <http://blog.bridgeathletic.com/how-to-beat-the-heat-hydration>.
Kraus E. How to Beat the Heat in Training and Competition: Part 1 – Acclimatization. In: Bridge Athletic Sports Science Blog. Jul 14, 2016. Available at: <http://blog.bridgeathletic.com/heat-acclimatization>.
Kraus E, Fredericson MF. Sacral Stress Fractures. In: AthleteBiz Village Blog. Jul 1, 2016. Available at: <https://www.athletebiz.us/blog/sacral-stress-fractures/>.
Barrack M T, Fredericson M, Tenforde A S, Kim B, **Kraus E**, Singh S, Ratanapratum J, Nattiv A. 2016. Use Of Dietary Supplements, Energy and Protein Bars, Gels and Drinks Among Elite Collegiate Endurance Runners: 2692 Board #215 June 3, 9: 30 AM - 11: 00 AM. *Medicine and science in sports and exercise* 48 (5 Suppl 1): 753-753.
Kraus E. Preventing & Treating Exercise Associated Muscle Cramps (EAMC). In: Bridge Athletic Sports Science Blog. May 12, 2016. Available at: <http://blog.bridgeathletic.com/preventing-treating-exercise-associated-muscle-cramps>.
Kraus EA, Kim B, Nattiv A, Tenforde A, Barrack M, Deakins Roche M, Kussman A, Singh S, Morkos J, Fredericson M. 2016. Poster 155 Higher Cumulative Risk Assessment Scores Are Associated with Delayed Return to Play in Division I Collegiate Distance Runners. PM & R 8 (9S): S212-S213. *Podium presentation at American Medical Society of Sports Medicine Annual Conference, Dallas, TX.*
Tenforde A S, **Kraus E**, Fredericson M. 2016. Bone Stress Injuries in Runners. *Physical medicine and rehabilitation clinics of North America* 27 (1): 139-149.
McQuillan TJ, Wilcox-Fogel N, Liu MB, **Kraus EA**, Ladd AL, Hunt K. Integrating Musculoskeletal Education and Patient Care at Medical Student-Run Free Clinics. Poster Presentation at the American Academy of Orthopaedic Surgeons Annual Meeting, Orlando, FL March 2-4, 2016.

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Tenforde A, **Kraus E**, Fredericson M. (2015). Bone. E Casey, M Rho, & J Press (Editors), Sex Differences in Sports Medicine. New York City: Demos Publishing. (In press)

Kraus E, Nattiv A, Tenforde A, Kim B, Kussman A, Fredericson M. Patterns of Bone Stress Injuries in Division I Collegiate Distance Runners: A Retrospective Cohort Study. *PM&R*. 2015, 7(9):S89.

Kraus EA, Beaulieu C, Ratliff J, Tenforde A, Fredericson M Piriformis Syndrome with Variant Sciatic Nerve Anatomy. *PMR*. 2015 Sep 14.

Wilcox-Fogel N, Trikha R, Tenforde AS, **Kraus EA**, Fredericson MF, Hunt K. Greater Forces in the forefoot during running and cutting suggest biomechanical risk factors for bone stress injuries in running athletes. Poster Presentation at American Orthopaedic Foot and Ankle Society Annual Meeting, Long Beach, California July 16, 2015.

Kraus E. Swimmer's Shoulder-Prevention and Training Strategies. In: Bridge Athletic Sports Science Blog. Jan 16, 2015. Available at: <http://blog.bridgeathletic.com/shoulder-series-part-i-swimmers-shoulder-prevention-and-training-strategies>.

Kraus E. How to Avoid Athlete Burnout & Overtraining Syndrome. In: Bridge Athletic Sports Science Blog. Jan 7, 2015. Available at: <http://blog.bridgeathletic.com/how-to-avoid-athlete-burnout-and-overtraining-syndrome-bridgeathletic>.

Kraus E. Jump Start Your Workout with the Dynamic Warm-Up. Dec 10, 2014. Available at: <http://blog.bridgeathletic.com/jump-start-your-workout-with-the-dynamic-warm-up>.

Kraus EA, Martin E, Doan R, Paulus S, Kennedy D, Smuck M. Zygapophyseal Joint Tropism Leading to Pars Stress Reaction in an Adolescent Athlete: A Case Report. Presented at the American Academy of Physical Medicine and Rehabilitation Conference, November 15, 2014.

Kraus EA, Kim JM, Hargens AR. Gravitational Changes in Hand -Wrist Volume are Smaller in Older Adults as Compared to Younger Adults. *Journal of Cardiology and Vascular Medicine*. 1: 1-6, 2013.

Kraus EA. Influence of Physical Activity and Green Space in Older Adults, Geriatric Research Conference. University of Nebraska Medical Center, January 2010.

Neuschwander TB, Macias BR, Zhang Q, **Kraus EA**, and Hargens AR. Photoplethysmography Measurement of Muscle Microvascular Flow Accurately Reflects Large Artery Inflow. Orthopaedic Research Society, 2007.

Kline CN, Macias BR, **Kraus E**, Neuschwander TB, Angle N, Bergan J, Hargens AR. Inelastic Compression Legging Produces Gradient Compression and Significantly Higher Skin Surface Pressures as Compared to an Elastic Compression Stocking. The manuscript was selected to be presented at the American Venous Forum in February of 2007 and published in *Vascular Journal*, Jan-Feb 2008.

Quoted in the following online articles:

Kraus, E. Fullem B. Abbey D's "Unhappy Triad" In: AthleteBiz Village Blog. August 18, 2016. Available at: <https://www.athletebiz.us/blog/abbey-ds-unhappy-triad/>.

Chaparro L. B Si quieres no adelgazar y comprometer tu fisico, este es tu deporte. In: El Espanol Blog. Sept 26, 2016. Available at: http://www.elespanol.com/ciencia/salud/20160923/157734668_0.html.

Roche D. Does Compression Gear Actually Work? In: Trail Runner Magazine Blog. July 1, 2016. Available at: <http://trailrunnermag.com/training/trail-tips/2190-is-compression-gear-worth-it-for-runners>

Awards

Stanford Society of Physician Scholars Grant Award: (Nov 2016)

Stanford Society of Physician Scholars: (Sept 2015 – present) Brings together residents, fellows, medical students to facilitate faculty and cross-disciplinary collaboration, provide academic support and develop mentoring skills.

Best MSK Poster Presentation: (Oct 2015). Was one of five posters selected as "Best Musculoskeletal Poster at the American Academy of Physical Medicine and Rehabilitation for my research Patterns of Bone Stress Injuries in Division I Collegiate Distance Runners: A Retrospective Cohort Study

Team Player Award: Stanford Dept of PM&R (Jun 2014). Awarded to the "resident who embodied camaraderie and team spirit amongst the residents."

Professional Development

Tahoe Truckee Medical Group Ski Injury Clinic: Squaw Valley Ski Resort (Dec 2016). Diagnosed and managed acute ski and snowboarding injuries fresh off the mountain, this included fracture diagnosis, splinting and casting, shoulder reductions, concussion management.

ED Urgent Care: Stanford Hospital and Clinics (Aug 2016 – present). Rotate through Stanford ED urgent care to become proficient in procedural skills, including suturing of lacerations, splinting, fracture reduction, skin management.

Adaptive Sports Clinic: Palo Alto VA (Aug 2016 – present). Help lead a multidisciplinary clinic for wounded veterans with impairments requiring sports-specific adaptations for a successful return to a physically active lifestyle.

Science of Running Research Symposium: California Physical Therapy Assoc (Nov 9-10, 2013)

Level 2 Running Course: "See it, Now Treat it." University of California – San Francisco. California Physical Therapy Association (Mar, 2014; Nov 2016)

Affiliations/Memberships

American Medical Society of Sports Medicine

American Academy of Physical Medicine and Rehabilitation

Association of Academic Physiatrists

Personal Interests/Achievements

Running

- Sean O'Brien 50km Feb 2016, 1st female, 3rd overall
- Boston Marathon 2016, 56thth female with a time of 2:57.37
- Santa Rosa Half Marathon 2015, 3rdrd female with a time of 1:23.57
- Total marathons: 6
- Total half marathons: over 10

Road biking

Spending time with my adorable niece and nephew