

Stanford



Kristin Sainani (n e Cobb)

Associate Professor (Teaching) of Health Research and Policy (Epidemiology)
Health Research & Policy

Bio

ACADEMIC APPOINTMENTS

- Associate Professor (Teaching), Health Research & Policy

HONORS AND AWARDS

- Howard Hughes Predoctoral Fellow in the Biological Sciences, Howard Hughes Medical Institute (1997-2002)
- Rennie Taylor/Alton Blakeslee Fellowship for Science Writing, Council for the Advancement of Science Writing (2001-2002)
- Teaching Award, Div of Epidemiology (HRP) (2005, 2007, 2009)

PROFESSIONAL EDUCATION

- Certificate, UC-Santa Cruz , Science Writing (2002)
- PhD, Stanford , Epidemiology (2002)
- MS, Stanford , Statistics (1999)

LINKS

- My home page: <http://www.stanford.edu/~kcobb/>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Science writing, science communication, biostatistics. Research areas: osteoporosis, stress fractures, sports injuries, female athlete triad.

Teaching

COURSES

2018-19

- Intensive Course in Clinical Research: HRP 245 (Aut)
- Intermediate Biostatistics: Analysis of Discrete Data: BIOMEDIN 233, HRP 261, STATS 261 (Win)
- Intermediate Biostatistics: Regression, Prediction, Survival Analysis: HRP 262, STATS 262 (Spr)
- Introduction to Health Sciences Statistics: HUMBIO 89 (Aut)
- Introduction to Probability and Statistics for Clinical Research: HRP 258 (Spr)
- Introduction to Probability and Statistics for Epidemiology: HRP 259 (Aut)
- Preparation and Practice: Scientific Communication and Media: HRP 271 (Sum)

- Scientific Writing: HRP 214 (Win)

2017-18

- Intermediate Biostatistics: Analysis of Discrete Data: BIOMEDIN 233, HRP 261, STATS 261 (Win)
- Intermediate Biostatistics: Regression, Prediction, Survival Analysis: HRP 262, STATS 262 (Spr)
- Introduction to Probability and Statistics for Clinical Research: HRP 258 (Spr)
- Introduction to Probability and Statistics for Epidemiology: HRP 259 (Aut)
- Preparation and Practice: Scientific Communication and Media: HRP 271 (Sum)
- Scientific Writing: HRP 214 (Win)
- Statistics in the Health Sciences: HUMBIO 89 (Aut)

2016-17

- Intermediate Biostatistics: Analysis of Discrete Data: BIOMEDIN 233, HRP 261, STATS 261 (Win)
- Intermediate Biostatistics: Regression, Prediction, Survival Analysis: HRP 262, STATS 262 (Spr)
- Introduction to Probability and Statistics for Clinical Research: HRP 258 (Spr)
- Introduction to Probability and Statistics for Epidemiology: HRP 259 (Aut)
- Preparation and Practice: Scientific Communication and Media: HRP 271 (Sum)
- Statistics in the Health Sciences: HUMBIO 89 (Win)

2015-16

- Intermediate Biostatistics: Analysis of Discrete Data: BIOMEDIN 233, HRP 261, STATS 261 (Win)
- Intermediate Biostatistics: Regression, Prediction, Survival Analysis: HRP 262, STATS 262 (Spr)
- Introduction to Probability and Statistics for Clinical Research: HRP 258 (Spr)
- Introduction to Probability and Statistics for Epidemiology: HRP 259 (Aut)
- Preparation and Practice: Scientific Communication and Media: HRP 271 (Sum)
- Scientific Writing: HRP 214 (Win)
- Statistics in the Health Sciences: HUMBIO 89 (Aut)

STANFORD ADVISEES

Doctoral (Program)

Eileen Leary, Stelios Serghiou, Christophe Toukam Tchakoute, Biyao Zou

Publications

PUBLICATIONS

- **Response.** *Medicine and science in sports and exercise*
Sainani, K. L.
2018
- **Breastfeeding mitigates the effects of maternal HIV on infant infectious morbidity in the Option B+ era: A multicenter prospective cohort study.** *AIDS (London, England)*
Tchakoute, C. T., Sainani, K. L., Osawe, S., Datong, P., Kiravu, A., Rosenthal, K. L., Gray, C. M., Cameron, D. W., Abimiku, A., Jaspan, H. B., INFANT study team*
2018
- **The Problem with "Magnitude-Based Inference".** *Medicine and science in sports and exercise*
Sainani, K. L.

2018

- **Instrumental Variables: Uses and Limitations** *PM&R*
Sainani, K. L.
2018; 10 (3): 303–8
- **Type of Sports Participation Modulates Risk For Low BMD in Athletes With Female Athlete Triad**
Tenforde, A., Sainani, K., Carlson, J., Golden, N., Fredericson, M.
WILEY.2017: S102
- **Case Studies in Statistics.** *PM & R : the journal of injury, function, and rehabilitation*
Sainani, K. L.
2019
- **Magnitude-Based Inference is Not Bayesian and is Not a Valid Method of Inference.** *Scandinavian journal of medicine & science in sports*
Sainani, K. L., Lohse, K. R., Jones, P. R., Vickers, A.
2019
- **Lack of Diagnostic Utility of "Amino Acid Dysregulation Metabotypes".** *Biological psychiatry*
Sainani, K. L., Goodman, S. N.
2018
- **Bone stress injuries in male distance runners: higher modified Female Athlete Triad Cumulative Risk Assessment scores predict increased rates of injury.** *British journal of sports medicine*
Kraus, E., Tenforde, A. S., Nattiv, A., Sainani, K. L., Kussman, A., Deakins-Roche, M., Singh, S., Kim, B. Y., Barrack, M. T., Fredericson, M.
2018
- **The Burden of Caring for a Child or Adolescent With Pediatric Acute-Onset Neuropsychiatric Syndrome (PANS): An Observational Longitudinal Study.** *The Journal of clinical psychiatry*
Frankovich, J., Leibold, C. M., Farmer, C., Sainani, K., Kamalani, G., Farhadian, B., Willett, T., Park, J. M., Sidell, D., Ahmed, S., Thienemann, M.
2018; 80 (1)
- **Response.** *Medicine and science in sports and exercise*
Sainani, K. L.
2018; 50 (12): 2611
- **Dealing With Binary Repeated Measures Data** *PM&R*
Tchakoute, C., Sainani, K. L.
2018; 10 (12): 1412–16
- **A Checklist for Analyzing Data.** *PM & R : the journal of injury, function, and rehabilitation*
Sainani, K. L.
2018; 10 (9): 963–65
- **Sport and Triad Risk Factors Influence Bone Mineral Density in Collegiate Athletes.** *Medicine and science in sports and exercise*
Tenforde, A. S., Carlson, J. L., Sainani, K. L., Chang, A. O., Kim, J. H., Golden, N. H., Fredericson, M.
2018
- **Re: Sainani K. Interpreting "null" results Reply** *PM&R*
Sainani, K. L.
2018; 10 (5): 563
- **Youth Multi-sport Participation Is Associated With Higher Bone Mineral Density In Female Collegiate Distance Runners**
Miller, E., Fredericson, M., Kussman, A., Krauss, E., Singh, S., Deakins-Roche, M., Kim, B., Tenforde, A., Sainani, K., Nattiv, A.
LIPPINCOTT WILLIAMS & WILKINS.2018: 490
- **Semantic Memory in the Clinical Progression of Alzheimer Disease** *COGNITIVE AND BEHAVIORAL NEUROLOGY*
Tchakoute, C. T., Sainani, K. L., Henderson, V. W.
2017; 30 (3): 81–89
- **Evaluation of Evidence of Statistical Support and Corroboration of Subgroup Claims in Randomized Clinical Trials.** *JAMA internal medicine*

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- Wallach, J. D., Sullivan, P. G., Trepanowski, J. F., Sainani, K. L., Steyerberg, E. W., Ioannidis, J. P.
2017
- **Association of the Female Athlete Triad Risk Assessment Stratification to the Development of Bone Stress Injuries in Collegiate Athletes.** *American journal of sports medicine*
Tenforde, A. S., Carlson, J. L., Chang, A., Sainani, K. L., Shultz, R., Kim, J. H., Cutti, P., Golden, N. H., Fredericson, M.
2017; 45 (2): 302-310
 - **Getting the Right Answer: Four Statistical Principles.** *PM & R : the journal of injury, function, and rehabilitation*
Sainani, K. L.
2017; 9 (9): 933–37
 - **Reliability Statistics.** *PM & R : the journal of injury, function, and rehabilitation*
Sainani, K. L.
2017; 9 (6): 622–28
 - **The Value of Scatter Plots** *PM&R*
Sainani, K. L.
2016; 8 (12): 1213-1217
 - **Supply and Perceived Demand for Teleophthalmology in Triage and Consultations in California Emergency Departments** *JAMA OPHTHALMOLOGY*
Wedekind, L., Sainani, K., Pershing, S.
2016; 134 (5): 537-543
 - **Introduction to Survival Analysis.** *PM & R : the journal of injury, function, and rehabilitation*
Sainani, K. L.
2016; 8 (6): 580–85
 - **Supply and Perceived Demand for Teleophthalmology in Triage and Consultations in California Emergency Departments.** *JAMA ophthalmology*
Wedekind, L., Sainani, K., Pershing, S.
2016
 - **Raloxifene for women with Alzheimer disease: A randomized controlled pilot trial.** *Neurology*
Henderson, V. W., Ala, T., Sainani, K. L., Bernstein, A. L., Stephenson, B. S., Rosen, A. C., Farlow, M. R.
2015; 85 (22): 1937-1944
 - **Obstructive Sleep Apnea Is an Independent Predictor of Postoperative Atrial Fibrillation in Cardiac Surgery** *JOURNAL OF CARDIOTHORACIC AND VASCULAR ANESTHESIA*
Wong, J. K., Maxwell, B. G., Kushida, C. A., Sainani, K. L., Lobato, R. L., Woo, J., Pearl, R. G.
2015; 29 (5): 1140-1147
 - **Identifying Sex-Specific Risk Factors for Low Bone Mineral Density in Adolescent Runners** *AMERICAN JOURNAL OF SPORTS MEDICINE*
Tenforde, A. S., Fredericson, M., Sayres, L. C., Cutti, P., Sainani, K. L.
2015; 43 (6): 1494-1504
 - **Running habits of competitive runners during pregnancy and breastfeeding.** *Sports health*
Tenforde, A. S., Toth, K. E., Langen, E., Fredericson, M., Sainani, K. L.
2015; 7 (2): 172-176
 - **Participation in Ball Sports May Represent a Prehabilitation Strategy to Prevent Future Stress Fractures and Promote Bone Health in Young Athletes** *PM&R*
Tenforde, A. S., Sainani, K. L., Sayres, L. C., Milgrom, C., Fredericson, M.
2015; 7 (2): 222-225
 - **What is Computer Simulation?** *PM & R : the journal of injury, function, and rehabilitation*
Sainani, K. L.
2015; 7 (12): 1290–93
 - **Dealing With Longitudinal Data.** *PM & R : the journal of injury, function, and rehabilitation*
Sainani, K. L.
2015; 7 (6): 649–53

- **Dealing With Missing Data.** *PM & R : the journal of injury, function, and rehabilitation*
Sainani, K. L.
2015; 7 (9): 990–94
- **Logistic Regression** *PM&R*
Sainani, K. L.
2014; 6 (12): 1157-1162
- **Explanatory Versus Predictive Modeling** *PM&R*
Sainani, K. L.
2014; 6 (9): 841-844
- **Bonferroni, Holm, and Hochberg Corrections: Fun Names, Serious Changes to P Values** *PM&R*
McLaughlin, M. J., Sainani, K. L.
2014; 6 (6): 544-546
- **Bonferroni, Holm, and Hochberg corrections: fun names, serious changes to p values.** *PM & R : the journal of injury, function, and rehabilitation*
McLaughlin, M. J., Sainani, K. L.
2014; 6 (6): 544-546
- **Introduction to Principal Components Analysis** *PM&R*
Sainani, K. L.
2014; 6 (3): 275-278
- **Eczema and sensitization to common allergens in the United States: a multiethnic, population-based study.** *Pediatric dermatology*
Fu, T., Keiser, E., Linos, E., Rotatori, R. M., Sainani, K., Lingala, B., Lane, A. T., Schneider, L., Tang, J. Y.
2014; 31 (1): 21-26
- **Explanatory versus predictive modeling.** *PM & R : the journal of injury, function, and rehabilitation*
Sainani, K. L.
2014; 6 (9): 841–44
- **Understanding Linear Regression** *PM&R*
Sainani, K. L.
2013; 5 (12): 1063-1068
- **Higher Caloric Intake in Hospitalized Adolescents With Anorexia Nervosa Is Associated With Reduced Length of Stay and No Increased Rate of Refeeding Syndrome** *JOURNAL OF ADOLESCENT HEALTH*
Golden, N. H., Keane-Miller, C., Sainani, K. L., Kapphahn, C. J.
2013; 53 (5): 573-578
- **Identifying sex-specific risk factors for stress fractures in adolescent runners.** *Medicine and science in sports and exercise*
Tenforde, A. S., Sayres, L. C., McCurdy, M. L., Sainani, K. L., Fredericson, M.
2013; 45 (10): 1843-1851
- **Multivariate Regression: The Pitfalls of Automated Variable Selection** *PM&R*
Sainani, K. L.
2013; 5 (9): 791-794
- **Interpreting "Null" Results** *PM&R*
Sainani, K.
2013; 5 (6): 520-523
- **Avoiding Careless Errors: Know Your Data** *PM&R*
Sainani, K. L.
2013; 5 (3): 228-229
- **Dealing With Non-normal Data** *PM&R*
Sainani, K. L.
2012; 4 (12): 1001-1005

- **Propensity Scores: Uses and Limitations** *PM&R*
Sainani, K. L.
2012; 4 (9): 693-697
- **Obesity and the relationship between pre-hypertension and chronic kidney disease: can we really isolate the effect of pre-hypertension?** *KIDNEY INTERNATIONAL*
Anand, S., Arce, C. M., Sainani, K. L.
2012; 82 (4): 489-489
- **How statistics can mislead.** *American journal of public health*
Sainani, K. L.
2012; 102 (8): e3-4
- **Clinical Versus Statistical Significance** *PM&R*
Sainani, K. L.
2012; 4 (6): 442-445
- **Communicating Risks Clearly: Absolute Risk and Number Needed to Treat** *PM&R*
Sainani, K. L.
2012; 4 (3): 220-222
- **Sun protective behaviors and vitamin D levels in the US population: NHANES 2003-2006** *CANCER CAUSES & CONTROL*
Linos, E., Keiser, E., Kanzler, M., Sainani, K. L., Lee, W., Vittinghoff, E., Chren, M., Tang, J. Y.
2012; 23 (1): 133-140
- **Reliability and prevalence of digital image skin types in the United States: Results from National Health and Nutrition Examination Survey 2003-2004** *JOURNAL OF THE AMERICAN ACADEMY OF DERMATOLOGY*
Keiser, E., Linos, E., Kanzler, M., Lee, W., Sainani, K. L., Tang, J. Y.
2012; 66 (1): 163-165
- **A Closer Look at Confidence Intervals** *PM&R*
Sainani, K. L.
2011; 3 (12): 1134-1141
- **The Limitations of Statistical Adjustment** *PM&R*
Sainani, K.
2011; 3 (9): 868-872
- **Understanding Study Design** *PM&R*
Sainani, K. L., Popat, R. A.
2011; 3 (6): 573-577
- **Understanding Odds Ratios** *PM&R*
Sainani, K. L.
2011; 3 (3): 263-267
- **Comparative Profiling of Primary Colorectal Carcinomas and Liver Metastases Identifies LEF1 as a Prognostic Biomarker** *PLOS ONE*
Lin, A. Y., Chua, M., Choi, Y., Yeh, W., Kim, Y. H., Azzi, R., Adams, G. A., Sainani, K., van de Rijn, M., So, S. K., Pollack, J. R.
2011; 6 (2)
- **Overuse Injuries in High School Runners: Lifetime Prevalence and Prevention Strategies** *PM&R*
Tenforde, A. S., Sayres, L. C., McCurdy, M. L., Collado, H., Sainani, K. L., Fredericson, M.
2011; 3 (2): 125-131
- **Evaluating the relationship of calcium and vitamin D in the prevention of stress fracture injuries in the young athlete: a review of the literature.** *PM & R : the journal of injury, function, and rehabilitation*
Tenforde, A. S., Sayres, L. C., Sainani, K. L., Fredericson, M.
2010; 2 (10): 945-949
- **Evaluating the Relationship of Calcium and Vitamin D in the Prevention of Stress Fracture Injuries in the Young Athlete: A Review of the Literature** *PM&R*

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- Tenforde, A. S., Sayres, L. C., Sainani, K. L., Fredericson, M.
2010; 2 (10): 945-949
- **The importance of accounting for correlated observations.** *PM & R : the journal of injury, function, and rehabilitation*
Sainani, K.
2010; 2 (9): 858-861
 - **The Importance of Accounting for Correlated Observations** *PM&R*
Sainani, K.
2010; 2 (9): 858-861
 - **Nutritional factors that influence change in bone density and stress fracture risk among young female cross-country runners.** *PM & R : the journal of injury, function, and rehabilitation*
Nieves, J. W., Melsop, K., Curtis, M., Kelsey, J. L., Bachrach, L. K., Greendale, G., Sowers, M. F., Sainani, K. L.
2010; 2 (8): 740-750
 - **Nutritional Factors That Influence Change in Bone Density and Stress Fracture Risk Among Young Female Cross-Country Runners** *PM&R*
Nieves, J. W., Melsop, K., Curtis, M., Kelsey, J. L., Bachrach, L. K., Greendale, G., Sowers, M. F., Sainani, K. L.
2010; 2 (8): 740-750
 - **Misleading comparisons: the fallacy of comparing statistical significance.** *PM & R : the journal of injury, function, and rehabilitation*
Sainani, K.
2010; 2 (6): 559-562
 - **Misleading Comparisons: The Fallacy of Comparing Statistical Significance** *PM&R*
Sainani, K.
2010; 2 (6): 559-562
 - **Electronic web-based surveys: an effective and emerging tool in research.** *PM & R : the journal of injury, function, and rehabilitation*
Tenforde, A. S., Sainani, K. L., Fredericson, M.
2010; 2 (4): 307-309
 - **Making sense of intention-to-treat.** *PM & R : the journal of injury, function, and rehabilitation*
Sainani, K. L.
2010; 2 (3): 209-213
 - **Making Sense of Intention-to-Treat** *PM&R*
Sainani, K. L.
2010; 2 (3): 209-213
 - **The problem of multiple testing.** *PM & R : the journal of injury, function, and rehabilitation*
Sainani, K. L.
2009; 1 (12): 1098-1103
 - **The Problem of Multiple Testing** *PM&R*
Sainani, K. L.
2009; 1 (12): 1098-1103
 - **Medulloblastoma Incidence has not Changed Over Time A CBTRUS Study** *JOURNAL OF PEDIATRIC HEMATOLOGY ONCOLOGY*
Partap, S., Curran, E. K., Propp, J. M., Le, G. M., Sainani, K. L., Fisher, P. G.
2009; 31 (12): 970-971
 - **Do children and adults differ in survival from medulloblastoma? A study from the SEER registry** *JOURNAL OF NEURO-ONCOLOGY*
Curran, E. K., Le, G. M., Sainani, K. L., Propp, J. M., Fisher, P. G.
2009; 95 (1): 81-85
 - **Putting P values in perspective.** *PM & R : the journal of injury, function, and rehabilitation*
Sainani, K. L.
2009; 1 (9): 873-877

- **Putting P Values in Perspective** *PM&R*
Sainani, K. L.
2009; 1 (9): 873-877
- **A Caution on Interpreting Odds Ratios** *SLEEP*
Sainani, K. L., Schmajuk, G., Liu, V.
2009; 32 (8): 976-976
- **Incidence Patterns of Central Nervous System Germ Cell Tumors A SEER Study** *JOURNAL OF PEDIATRIC HEMATOLOGY ONCOLOGY*
Goodwin, T. L., Sainani, K., Fisher, P. G.
2009; 31 (8): 541-544
- **Incidence patterns for ependymoma: a Surveillance, Epidemiology, and End Results study** *Clinical article JOURNAL OF NEUROSURGERY*
McGuire, C. S., Sainani, K. L., Fisher, P. G.
2009; 110 (4): 725-729
- **Both Location and Age Predict Survival in Ependymoma: A SEER Study** *PEDIATRIC BLOOD & CANCER*
McGuire, C. S., Sainani, K. L., Fisher, P. G.
2009; 52 (1): 65-69
- **Gender Affects Survival for Medulloblastoma Only in Older Children and Adults: A Study From the Surveillance Epidemiology and End Results Registry** *PEDIATRIC BLOOD & CANCER*
Curran, E. K., Sainani, K. L., Le, G. M., Propp, J. A., Fisher, P. G.
2009; 52 (1): 60-64
- **Effect of oral contraceptives on weight and body composition in young female runners** *MEDICINE AND SCIENCE IN SPORTS AND EXERCISE*
Procter-Gray, E., Cobb, K. L., Crawford, S. L., Bachrach, L. K., Chirra, A., Sowers, M., Greendale, G. A., Nieves, J. W., Kent, K., Kelsey, J. L.
2008; 40 (7): 1205-1212
- **Cancer risk reduction and reproductive concerns in female BRCA1/2 mutation carriers** *FAMILIAL CANCER*
Staton, A. D., Kurian, A. W., Cobb, K., Mills, M. A., Ford, J. M.
2008; 7 (2): 179-186
- **Regional bone mineral density in male athletes: a comparison of soccer players, runners and controls** *BRITISH JOURNAL OF SPORTS MEDICINE*
Fredericson, M., Chew, K., Ngo, J., Cleek, T., Kiratli, J., Cobb, K.
2007; 41 (10): 664-668
- **The effect of oral contraceptives on bone mass and stress fractures in female runners** *MEDICINE AND SCIENCE IN SPORTS AND EXERCISE*
Cobb, K. L., Bachrach, L. K., Sowers, M., Nieves, J., Greendale, G. A., Kent, K. K., Brown, B. W., Pettit, K., Harper, D. M., Kelsey, J. L.
2007; 39 (9): 1464-1473
- **Risk factors for stress fracture among young female cross-country runners** *MEDICINE AND SCIENCE IN SPORTS AND EXERCISE*
Kelsey, J. L., Bachrach, L. K., Procter-Gray, E., Nieves, J., Greendale, G. A., Sowers, M., Brown, B. W., Matheson, K. A., Crawford, S. L., Cobb, K. L.
2007; 39 (9): 1457-1463
- **Effects of ball sports on future risk of stress fracture in runners** *CLINICAL JOURNAL OF SPORT MEDICINE*
Fredericson, M., Ngo, J., Cobb, K.
2005; 15 (3): 136-141
- **Disordered eating, menstrual irregularity, and bone mineral density in female runners** *MEDICINE AND SCIENCE IN SPORTS AND EXERCISE*
Cobb, K. L., Bachrach, L. K., Greendale, G., Marcus, R., Neer, R. M., Nieves, J., Sowers, M. F., Brown, B. W., Gopalakrishnan, G., Luetters, C., Tanner, H. K., Ward, B., Kelsey, et al
2003; 35 (5): 711-719
- **Oral contraceptives and bone mineral density in white and black women in CARDIA** *OSTEOPOROSIS INTERNATIONAL*
Cobb, K. L., Kelsey, J. L., Sidney, S., Ettinger, B., Lewis, C. E.
2002; 13 (11): 893-900