

PhD Program News

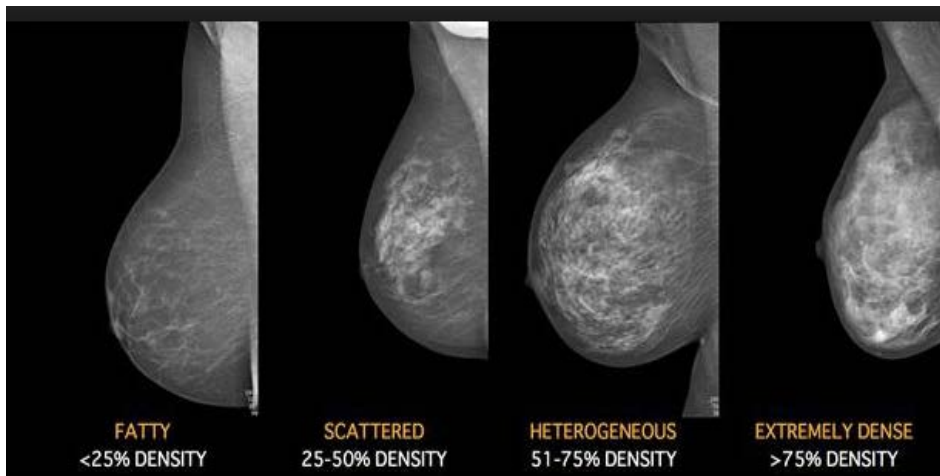
SPRING 2017

FROM THE DIRECTOR

This was a tremendous year of accomplishments for our students and alumni. We recently finalized the 2nd Annual Vittinghoff Award for Methodologic Innovation and Excellence in Epidemiologic, Clinical or Translational Research. Megha Mehrotra's paper "Precision Medicine and the Transportability of Subgroup Analyses of Randomized Controlled Trials" was selected for the prize by an external panel of epidemiologists and biostatisticians. Please join me in congratulating Megha and feel free to ask her more about her terrific research.

Last week, I attended the 2017 UCSF Graduate Division graduation ceremony, where Chancellor Hawgood officially conferred the PhD on several of our new graduates. Bob Hiatt, Liz Fair, Nat Gleason and I each had the opportunity to "hood" some of our graduates (see the picture of the graduates on pg 5). It was extremely gratifying to recognize our students for their work, determination, and achievement. As we celebrate what they have accomplished, I am even more excited to see what they will each do next. They are choosing diverse paths, but they all have a common goal of improving health and reducing needless human suffering.

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Breast density has highest population attributable risk of routinely collected clinical breast cancer risk factors

Natalie Engmann, a third-year PhD Student, published her first dissertation paper in *JAMA Oncology* in February, entitled "Population Attributable Risk Proportion of Clinical Risk Factors for Breast Cancer." With her Dissertation Chair Dr. Karla Kerlikowske and Breast Cancer Surveillance Consortium (BCSC) collaborators, Natalie estimated the population attributable risk of the 5 breast cancer risk factors most commonly collected in clinical practice using a cohort of >200,000 women in the BCSC: (1) dense breasts measured by the American College of Radiology BI-RADS scale (heterogeneously or extremely dense vs. scattered fibroglandular densities or almost entirely fat); (2) body mass index (BMI); (3) history of benign breast biopsy; (4) first-degree family history of breast cancer; and (5) age at first full-term pregnancy greater than 30 years.

The study found that dense breast tissue was the most common clinical risk factor and that 39% of premenopausal and 26% of postmenopausal breast cancers could potentially be averted if women with heterogeneously and extremely dense breasts were reduced to scattered fibroglandular densities. However, if all women reduced their breast density by only a single BI-RADS category, a change more relevant to existing interventions, this could

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still eliminate 13% of premenopausal and postmenopausal cancers. This would eliminate a larger proportion of cancers than if we could intervene on history of benign breast biopsy, first-degree family history of breast cancer, or late age at first birth (all with population-attributable risk proportions <10%).

Additionally, roughly 23% of postmenopausal breast cancers could be averted if all women could achieve a normal BMI ($BMI \leq 25 \text{ kg/m}^2$).

While it is well-established that high breast density increases a woman's risk of breast cancer, this is the first study to show that reductions in breast density on a population level could avert a substantial proportion of breast cancer cases.

Currently the only established intervention to effectively reduce breast density is tamoxifen, and it is only recommended for women at high risk of breast cancer due to serious potential side effects. This study highlights the need for further research to identify better interventions to reduce breast density for women at average risk. Breast density is increasingly used in the clinical setting to stratify breast cancer risk, and legislation has been enacted in 27 states mandating that clinicians inform women if they have dense breasts, therefore it is critical to provide women with effective interventions to reduce their breast density.

From the Director, cont'd from p 1

I am extremely proud of all of our graduates and I hope everyone who has helped build this PhD program takes a moment to reflect on our collective contributions. Two people who have played especially important roles in the PhD program merit special mention here because they are retiring this year: Peter Armour, who has been absolutely dedicated to smoothly running the financial aspects of the program since its inception, and Mary Haan, who has brought her wisdom and determination to the program as a mentor, teacher, and leader. Thank you both for your contributions to launching this program.

This spring, we held our first PhD alumni gathering this spring, organized by the alumni president Dr. Hannah Thompson. It was wonderful to see everyone and get to catch up a little bit. That may have been the last alumni event we hold in which everyone can fit into my living room.

Congratulations also to Luis Rodriguez, whose excellence in teaching in our TIGR program was recognized this year. He is the recipient of the *Award for Excellence in Teaching in the Methods of Clinical Research*. One student described Luis "as great in teaching ... the difficult and complex content He understood how to explain the problems in a concise way, was very knowledgeable, and created an inspiring learning atmosphere."

This spring we also had lots of activities in both the methods and the social justice epi journal clubs, and our first movie night (13th by Ava DuVernay) organized by Ekland Abdiwahab with discussion led by Dr. Monica McLemore, an Assistant Professor in the

nursing school whose research and work addresses reproductive justice. We also had a terrific series of EpiTools workshops this spring, organized by Amanda Irish. Dr. Betz Halloran from the University of Washington led a workshop on how counterfactual frameworks for causal effects can be applied to describe the effects of vaccines or other interventions with likely spillover effects, i.e., receipt of a vaccine influences the health of not only the person being vaccinated but also those who come into contact with that person. In this workshop she also introduced some of the challenges and innovative design approaches to trials evaluating vaccination programs for Zika and Ebola. Dr. Sam Harper from McGill led a workshop on Consequentialist Epidemiology, arguing for novel approaches and applied research by epidemiologists focused on reducing health inequalities. Dr. Tchetgen Tchetgen's workshop on Instrumental Variable methods introduced several recent advances in this area, including applications for survival analyses and IV methods to account for survey non-response, using characteristics of the interviewer as the IV.

This is just a smattering of everything that's happened this spring, and fall is already looking like it will be even busier! I hope everyone has a productive and rejuvenating summer.



Maria Glymour, S.D.
Associate Professor
Director, PhD Program in Epidemiology and
Translational Sciences

Hannah Thompson



Dr. Thompson is working as a research scientist at the UC Berkeley School of Public Health, focusing on the evaluation of programs related to youth physical activity and obesity. Her work focuses on identifying best practices to improve health outcomes for children and families in communities at highest risk for inactivity and poor health. She continues to partner with schools, community-based organizations, and health departments to identify interventions and policies to most effectively increase youth access to physical activity and reduce health disparities. Her most recent work includes: (1) evaluating the impact of litigation on school physical education provision in California; (2) examining the impact of cross-sector collaboration between health departments, health care organizations, and school districts on physical education class quantity and quality across Sonoma County; and (3) studying changes in public park use in four low-income Bay Area communities after funded improvements.

Milos Santos



Dr. Glenn-Milo Santos is a Senior Research Scientist in the Center for Public Health Research in the San Francisco Department of Public Health and an Assistant Professor in the Departments of Community Health Systems and Global Health Sciences at UCSF.

Dr. Santos' research focii involve the development of pharmacologic and behavioral interventions to reduce substance use and HIV-related sexual risk behaviors among key populations at risk for HIV, including men who have sex with men (MSM), transgender individuals, and people who use drugs. He has published 60 peer-reviewed articles and has presented at national and international conferences on these topics.

Dr. Santos has received the National Institute on Drug Abuse (NIDA) Dissertation Research Award and the University of California President's Dissertation-Year Fellowship Program Award for his research study, Project iN, which evaluated a medication to treat non-dependent dual-methamphetamine and alcohol using MSM. He was also awarded the NIH Director's Early Independence Award (EIA) to support a five-year study (2014-2019), entitled "Say When" (www.saywhensf.org), evaluating a medication to reduce heavy episodic drinking, "binge drinking", and alcohol-related sexual risk behaviors among MSM at risk for HIV. The EIA is part of the NIH's "High Risk-High Reward" initiative that funds scientists with exceptional creativity and highly innovative research projects addressing major contemporary challenges in biomedical and health research.

Recently, Dr. Santos received funding from the HIV Prevention Trials Network (HPTN) to conduct a systematic review and meta-analysis of the psychometric properties of substance use measures to screen for use disorders, as an HPTN Scholar. In addition, Dr. Santos was recently awarded an R34 grant from NIDA to evaluate the feasibility, acceptability and preliminary efficacy of a novel selective serotonin agonist in reducing cocaine use among MSM with cocaine use disorders.

Accomplishments: Selected Publications

Aiemjoy, Kristen

Aiemjoy K, Stoller NE, Gebresillasie S, Shiferaw A, Tadesse Z, Sewnet T, Ayele B, Chanyalew M, Callahan K, Stewart A, Emerson PM. 'If an Eye Is Washed Properly, It Means It Would See Clearly': A Mixed Methods Study of Face Washing Knowledge, Attitudes, and Behaviors in Rural Ethiopia. *PLoS Negl Trop Dis*. 2016 Oct.

Aiemjoy K, Gebresillasie S, Stoller NE, Shiferaw A, Tadesse Z, Chanyalew M, Aragie S, Callahan K, Keenan JD. Epidemiology of Soil-Transmitted Helminth and Intestinal Protozoan Infections in Preschool-Aged Children in the Amhara Region of Ethiopia. *The American Journal of Tropical Medicine and Hygiene*. 2017 Feb.

Demb, Joshua

Demb J, Chu P, Nelson T, Hall D, Seibert A, Lamba R, Boone J, Krishnam M, Cagnon C, Bostani M, Gould R, Migliorett D, Smith-Bindman R. Optimizing Radiation Doses for Computer Tomography Across Institutions. *JAMA Intern Med*. Published online April 2017

Engmann, Natalie

Engmann NJ, Golmakani MK, Miglioretti DL, Sprague BL, Kerlikowske K, for the Breast Cancer Surveillance Consortium. Population-Attributable Risk Proportion of Clinical Risk Factors for Breast Cancer. *JAMA Oncol*. Published online February 02, 2017.

Engmann NJ, Scott CG, Jensen MR, Ma L, Brandt K, Mahmoudzadeh A, Malkov S, Whaley DH, Hruska C, Wu F, Winham S, Miglioretti D, Norman AD, Heine J, Shepherd J, Pankratz VS, Vachon CM, Kerlikowske K. Longitudinal changes in volumetric breast density with tamoxifen and aromatase inhibitors. *Cancer Epidemiol Biomarkers Prev*, February 2017

Abdiwahab, Eklad

Hamilton J G, **Abdiwahab E.**, Edwards HM, Fang ML., Jdayani,A., Breslau E S (2016). Primary care providers' cancer genetic testing-related knowledge, attitudes, and communication behaviors: A systematic review and research agenda. *Journal of General Internal Medicine*, 1-10.

Chollette V, Beasley DD, **Abdiwahab E**, & Taplin S. Health Information Systems Approach to Managing Task Interdependence in Cancer Care Teams. 2017

Hoefl, Kristin

Hoefl KS, Barker JC, Shiboski S, Pantoja-Guzman E, Hiatt RA. Effectiveness evaluation of Contra Caries Oral Health Education Program for improving Spanish-speaking parents' preventive oral health knowledge and behaviors for their young children. *Community Dent Oral Epidemiol* 2016. August.

Barker JC, Guerra C, Gonzalez-Vargas MJ, **Hoefl KS**. An Ethnographic Study of Salt Use and Humoral Concepts in a Latino Farm Worker Community in California's Central Valley. *Journal of Ethnobiology and Ethnomedicine*. 2017. February.

To, Tu My

Sudhinaraset M, **To TM**, Ling I, Melo J, Chavarin J. The Influence of Deferred Action for Childhood Arrivals on Undocumented Asians and Pacific Islander Youth: Through a Social Determinants of Health Lens. *J Adolesc Health*. 2017. In press.

Kalapatapu, Raj

Striebel JM, Nelson EE, **Kalapatapu RK**. Being with a Buddha: A Case Report of Methoxetamine Use in a United States Veteran with PTSD. *Case Reports in Psychiatry*. Accepted 1/10/2017.

Kalapatapu RK, Dannenbaum TP, Harbison JD, Cohen BE. Does Trauma Exposure Predict Prescription Drug Problems Beyond the Contribution of PTSD & Depression? An Analysis of the Mind Your Heart Cohort Study. *Journal of Addictive Diseases*. Accepted 3/30/2017

Ray, Kathryn

Ray KJ, Lalitha P, Prajna NV, Rajaraman R, Krishnan Srinivasan TM, Ryg P, McLeod S, Acharya NR, Lietman TM, Rose-Nussbaumer J. (2017). The Utility of Repeat Culture in Fungal Corneal Ulcer Management: A Secondary Analysis of the MUTT I Randomized Clinical Trial. *Am J Ophthalmol*.

Doan T, Arzika AM, **Ray KJ**, Cotter SY, Kim J, Maliki R, Zhong L, Zhou Z, Porco TC, Vanderschelden B, Keenan JD and Lietman TM (2017). Gut Microbial Diversity in Antibiotic-Naive Children After Systemic Antibiotic Exposure: A Randomized Controlled Trial. *Clin Infect Dis*.

Hammond J H, Hebert WP, Naimie A, **Ray KJ**, Van Gelder RD, DiGiandomenico A, Lalitha P, Srinivasan M, Acharya NR, Lietman T, Hogan DA and Zegans ME (2016). Environmentally Endemic *Pseudomonas aeruginosa* Strains with Mutations in *lasR* Are Associated with Increased Disease Severity in Corneal Ulcers. *mSphere* 1(5).

Prajna, N V, Krishnan T, Rajaraman R, Patel S, Srinivasan M, Das M, **Ray KJ**, O'Brien KS, Oldenburg CE, McLeod SD, Zegans ME, Porco TC, Acharya NR, T. Lietman M, Rose-Nussbaumer J. (2016). Effect of Oral Voriconazole on Fungal Keratitis in the Mycotic Ulcer Treatment Trial II (MUTT II): A Randomized Clinical Trial. *JAMA Ophthalmol* 134(12): 1365-1372.

Accomplishments: Conference Presentations

Aiemjoy, Kristen

Evaluating the validity of caregiver-reported diarrhea: A large, population-based study in the Amhara region of Ethiopia. Society for Epidemiologic Research 50th Annual Meeting. Seattle, WA. June, 2017.

Demb, Josh

The impact of mental health illnesses on timeliness of care in veterans with lung cancer. Society for Epidemiologic Research 50th Annual Meeting. Seattle, WA. June, 2017.

Eng, Chloe

Husband's Evidence for a Spousal Spillover? Society for Epidemiologic Research 50th Annual Meeting. Seattle, WA. June, 2017.

Hoeft, Kristin

Hoeft KS, Shiboski S, Hiatt RA, Barker JC. Social Cognitive Theory and Spanish-speaking Parents' preventive oral hygiene behaviors for their young children. Oral Presentation. American Public Health Association Annual Meeting. October 31, 2016, Denver, CO

To, Tu My

To TM, Neuhaus JM, Sudhinaraset M, Albert MA, Haan MN. Changes in Systolic Blood Pressure Differs by Immigration History in a Cohort of Older Mexican Americans. American Heart Association Epi/Lifestyle 2017. Portland, Oregon. March, 2017. Moderated poster presentation.

To TM, Zeki Al Hazzouri A, Aiello AE, Ward JB, Lee A, Haan MN. Type 2 Diabetes in Mexican-Origin Adults: The Effects of Education and Neighborhood Socioeconomic Environment. Society for Epidemiologic Research 50th Annual Meeting. Seattle, WA. June, 2017.

Mehrotra, Megha

Transporting subgroup analyses of RCTs to target populations: public health implications for implementation of HIV pre-exposure prophylaxis. Society for Epidemiologic Research 50th Annual Meeting. Seattle, WA. June, 2017.

Roh, Michelle

Effect of indoor residual spraying of insecticide on birth outcomes among HIV-infected pregnant women in Uganda. Society for Epidemiologic Research 50th Annual Meeting. Seattle, WA. June, 2017.

Ray, Kathryn

Measuring the microbiome diversity for a Cluster Randomized Control Trial. Society for Epidemiologic Research 50th Annual Meeting, Seattle, WA. June 2017.

Accomplishments: Selected Awards

Aiemjoy, Kristen

NIH-NICHD F31 Ruth L Kirschstein Predoctoral Individual National Research Service Award

- ALTA Foundation Research Award

Demb, Josh

- NIH F31 Sorptomist The Role of Structural Factors in Mammography Screening Behavior in the United States.

Engmann, Natalie

- NIH F31 Ruth L. Kirschstein National Research Service Award

Mooney, Alyssa

- Sorptomist Doctoral Fellowship for Scientists Working to Advance Women's Health/Wellbeing/Rights
- UCSF Osher Center for Integrative Medicine Postdoctoral Fellow 2015–2016
- NIH F31 Alternative Sentencing Policy for Drug Possession: Impacts on Substance Use, Drug Treatment, and Racial Disparities

Events

Friday, June 16, 2017, 12:00 –1:30 pm, Mission Hall Room 1407

PhD Student Dissertation, Tu My To: *Does immigration affect blood pressure and CVD risk in older Mexican Americans?*

November 15, 2017, 1–4 pm, Mission Hall

Epi Tools Workshop: Josh Angrist

PHD GRADUATES

2017 PhD students graduating last June 7th.

Shown here: **Maya Mascarenhas, Tu My To, Yea-Hung Chen, Kristin Hoeft, Priya Prasad and Heidi Moseson.**



PHD GRADUATES



Priya Prasad, PhD presented her dissertation last November 2016 on "Evaluating quality improvement (QI) interventions: strengthening causal inference with observational data."

Shown here with her committee members Dr. Stephen Shiboski, Dr. Nathaniel Gleason, and Dr. Lydia Zablotska.

Dr. Prasad is a Computational & Data Science Specialist in the Division of Hospital Medicine at UCSF, where she continues her research on providing the best clinical care in hospital settings.

Yea-Hung Chen, PhD presented his dissertation on "HIV transmission among men who have sex with men: tools, risks, and consequences."

Dr. Chen is now leading work on monitoring HIV risk in San Francisco, working with the SF Department of Public Health.



In December, **Kristin Hoeft, PhD** presented her dissertation on "Parental preventive behaviors and oral health in Latino children."

Shown here with two of her committee members Dr. Judith Barker and Dr. Steve Shiboski.

Dr. Hoeft is now an Assistant Adjunct Professor in the Division of Oral Epidemiology in the Department of Preventive, Restorative and Dental Sciences in the Dental School at UCSF. Congratulations Kristin!





Heidi Moseson, PhD, presented her dissertation on "Contraceptive use, unplanned pregnancy and abortion: methodological innovations in family planning research."

Show here with her committee members: Dr. Christine Dehlendorf, Dr. Robert Hiatt and Dr. Caitlin Gerdts.

Dr. Moseson is now an Epidemiologist at Ibis Reproductive Health and at Evidation Health.

Cecily Miller, PhD, presented her dissertation, "From guidelines to implementation: strategies to improve tuberculosis case detection."

Shown with Dr. George Rutherford and Dr. Elizabeth Fair.



2016 PhD graduate: **Eugenie Poirot, PhD**, presenting at the annual Epidemic Intelligence Service (EIS) conference last April 2017. Dr. Poirot is stationed as an EIS officer with the New York city Department of Health and Mental Hygiene, where she works on diverse research initiatives.

PHD STUDENTS *continued*

Kristen Aiemjoy, 4th year PhD student, during a research visit to Ethiopia in January 2017. Kristen's research is on improving measurement of childhood diarrheal illness and she is leading a training on grading stool consistency. Kristen's work will improve our ability to evaluate interventions to prevent or reduce childhood diarrhea, a leading global killer of children.



Luis Rodriguez, 2nd year PhD student with wife Ceci, with their twin daughters, Samantha and Paula visiting fellow 2nd year PhD students; Vignesh Arasu, Ceci Rodriguez, Michelle Roh, Luis Rodriguez, Rae Wannier, Stephen Asimwe and Eklund Abdiwahab.

3rd year PhD students: **Josh Demb**, **Natalie Engmann**, **Megha Mehrotra** with **Luisse Cedervist**, visiting PhD student from Denmark, enjoying the SF Giants.

Epidemiology is the study of the distribution and determinants of health and disease in populations, and the application of this research to the improvement of population health.

