

UCSF

Department of Epidemiology & Biostatistics

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Research

Epidemiology and biostatistics provide the tools to understand the causes of health and disease.

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## Welcome

In an era of extraordinary advances in scientific knowledge and methods, epidemiology and biostatistics provide essential tools for understanding the causes of disease and for identifying effective and efficient approaches to prevention and treatment at the population level. The Department of Epidemiology & Biostatistics is committed to advancing health for all through rigorous, innovative, multidisciplinary research.

## Apply Now

Ready to advance your expertise in population health?



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Education & Training

Health Data Science

Health Data Science



Data science is helping shape much of contemporary health science research. It is an evolving discipline in response to the explosion of complex data in biomedicine and other health-related fields. Data scientists drive advances in genetics, genomics, biomedical imaging and computational biology. Data scientists also play a key role across biomedical specialties and public health by helping design and analyze clinical trials and observational studies, set regulatory policies, and conceive and execute laboratory experiments. New experts in health data science can maximize the benefit of future health-related research and clinical application.

The San Francisco Bay Area is a powerhouse location for biotechnology and academia, with a high demand for health data scientists. The UCSF Department of Epidemiology and Biostatistics offers two in-person health data science programs on our Mission Bay campus.

### Master's Degree in Health Data Science

The Master of Science in Health Data Science (MiHDaS) is a two-year program focused on biostatistics, data science and epidemiological thinking in the first year and the application of clinical research methods in the second year.


### Certificate in Health Data Science

The Certificate in Health Data Science (CiHDaS) is a one-year program focused on biostatistics, data science and epidemiological methods in biomedical research.

### Learn more

REGISTER FOR A INFO SESSION!  
[Wed, Nov 6th, 2024 10:00-11am](#)

[Thurs, Feb 6th, 2025 11:00am-12pm](#)



[To be notified of future info sessions, please sign up.](#)

### Contact Us

Health Data Science Program Coordinator

University of California San Francisco

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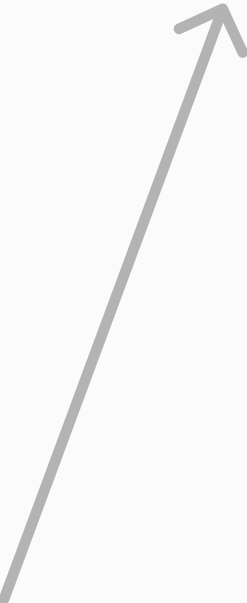
Collaboration

Our faculty work with transdisciplinary teams across UCSF to translate knowledge and improve health.

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Workforce Training

Training in Reproducible Research on Aging for Social Science and Epidemiology (UCSF-TRASE)

Training in Reproducible Research on Aging for Social Science and Epidemiology (TRASE) TRASE aims to improve the reproducibility of research on health disparities and aging using causal inference methods.

Responsible Conduct of Research Online Course

Responsible Conduct of Research (RCR) helps people starting their research careers learn how to address the ethical issues that inevitably arise in research. The course addresses requirements and regulations for human-subjects research, including IRB approval and consent.

For Post-Baccalaureate Students

CIRCLE

The Clinical Research Coordinators: Learners for Equity (CIRCLE) program aims to increase the diversity of the biomedical workforce and to advance inclusive research and health equity. The program, which is funded by the NIH, helps prepare eligible individuals to be agents of change in clinical research and health equity.

Summer Clinical Research Workshop

The workshop provides an introduction to the field of clinical research through instruction in designing clinical research studies, collecting and managing clinical research data, and exploring big data.

Individual Courses

Training in Clinical Research Program [online and in-person courses](#), online courses in implementation science, as well as an implementation science [mini-course](#) are available to individuals within the UCSF community and from other institutions

For Undergraduate Students

Pre-Health Undergraduate Program

PUP is a summer training program for undergraduate students who plan to attend medical, nursing, pharmacy or physical therapy professional school and are interested in a career in clinical research.

SF BRIDGE

The SF BRIDGE program grants a unique opportunity for San Francisco State University (SFSU) students interested in becoming insider researchers to learn about health research, policy and advocacy from UCSF and SFSU faculty.

SF BUILD

A joint program with San Francisco State, SF BUILD offers one-on-one mentoring and training in biomedical research.

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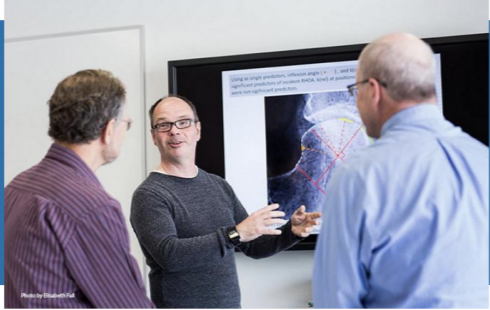
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Research



Department faculty are engaged in a broad variety of clinical research, epidemiological studies and methodologic activities across 15 areas of concentration. In addition to the many projects that are led by departmental faculty, a unique feature of our department is the emphasis given to interdisciplinary collaboration, carrying our expertise in research methods and analysis to other departments and institutions.

Bioinformatics

Biostatistics

Cancer Epidemiology

Clinical Epidemiology and Methods

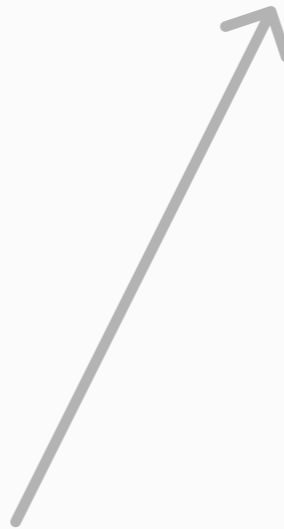
Environmental and Occupational Epidemiology

Epidemiology of Aging

Epidemiology of Cardiovascular and Neurological Disorders

Genetic Epidemiology

epibiostat.ucsf.edu/research



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Cancer Epidemiology

Faculty conduct research on the causes of a wide variety of diseases, including cancers of the breast, prostate, brain, colon, pancreas and blood. The faculty study methods to enhance early detection of disease, conduct prevention and treatment clinical trials, and evaluate quality of life and survival. The faculty also undertake methodological research into the design and analysis of modern epidemiologic studies.

Current faculty research includes:

Many faculty hold appointments with the [Helen Diller Family Comprehensive Cancer Center](#), conducting or supporting a wide range of research.

The [San Francisco Cancer Initiative \(SF CAN\)](#), focused on five of the city's most common cancers likely to be affected by interventions and better screening: breast, colorectal, liver, prostate and tobacco-caused cancers.

[DREAM Lab](#), which uses population-based and other large and representative data sources to document cancer health disparities and identify their underlying drivers.

Read more about some of our [cancer research here](#).

[Cancer Epidemiology faculty](#)

Clinical Epidemiology and Methods

Clinical Epidemiology is the application of principles of epidemiology to clinical medicine. While classical epidemiology is the study of the distribution and determinants of diseases in populations, clinical epidemiology is the application of the principles and methods of epidemiology to conduct, appraise or apply clinical research studies focusing on prevention, diagnosis, prognosis and treatment of disease. Clinical epidemiology is the basic science of evidence-based medicine.

Faculty research interests include:

- Application of clinical epidemiology to emergency medicine
- Cost effectiveness , health care financing, HIV and reproductive health
- Evidence-based pediatrics, particularly newborn care
- Infectious diseases and international health
- Prediction and prevention of cardiovascular disease

In addition, more than 40 affiliated faculty from diverse departments at UCSF, the [Kaiser Permanente Division of Research](#) and other neighboring institutions carry out a wide variety of clinical research projects using clinical epidemiology methods.

[Clinical Epidemiology faculty](#)

Environmental and Occupational Epidemiology

Epidemiology of Aging

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Collaboration

Work with

interdisciplinary teams across UCSF

to advance knowledge and improve

health.

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## Welcome

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Epidemiology and biostatistics serve as key disciplines in team science and, as a result, the faculty in the Department of Epidemiology & Biostatistics [collaborate on more research in basic, clinical and population sciences across UCSF than any other department](#). We are the largest department of epidemiology in the University of California system in terms of full-time primary faculty and affiliated faculty, and our dedicated researchers, many of whom are leaders in their fields, provide a [wide range of expertise](#) to research teams while also leading their own studies. Their research interests range from aging and global health to biostatistics, cancer and cardiovascular disease.

In addition, we house [multiple data sets](#), which we use in our teaching and to produce high-quality scholarship. Our faculty are experts in using these data, which are available for population studies.

## Apply Now

**Ready to advance your expertise in population health?**

Apply to our education and training programs today.

- [Epidemiology & Translational Science PhD](#)
- [Health Data Science Master and Certificate](#)
- [Training in Clinical Research Master and Certificate](#)
- [Fall Courses in Epidemiology, Biostatistics and More](#)



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## Digital Health Initiative

The Department of Epidemiology and Biostatistics Digital Health Initiative, created in 2020 by Courtney Lyles, PhD, aims to advance research, scholarship, mentorship, and training in digital health research within the Department and across UCSF by providing strategic direction and external visibility.

**What is digital health?**

Digital health describes the use of flexible, integrated, interoperable digitally-enabled care environments to empower people, populations and healthcare providers to manage health and wellness.

**Vision**

Accelerate the development and application of digital health to advance population health and health equity.

**Mission**

The Digital Health Initiative aligns and advances UCSF's efforts in digital health, using rigorous methodologies, cross-disciplinary approaches and applied learning experiences.

**Objectives**

We aim to enhance scholarship on digital health and informatics topics, particularly those with population-level impact, and to increase implementation and dissemination of effective digital platforms to improve health outcomes. We will engage with high-impact research using and evaluating digital technologies, collaborate on trans-disciplinary teams and provide high-value services to multiply our impact and train the next generation of health researchers and practitioners to make the most of digital platforms and tools.

**Selected projects**

[Eureka](#)

[Patient Counts](#)

[Tools to Be Fit](#)

**Steering Committee**

- [Courtney Lyles, PhD](#)
- [Alexis Beatty, MD, MAS](#)
- Christine Duffy, MPH
- [Madelaine Faulkner Modrow, MPH](#)
- [Jean Feng, PhD, MS](#)
- [Yulin Hswen, ScD, MPH](#)
- [Mark Pletcher, MD, MPH](#)
- [Erin Van Blarigan, ScD](#)
- [Justin White, PhD](#)

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## Speaker Series

[Stakeholder Engagement in Digital Health](#)

April 28, 2023

Speakers: Alexis Beatty, MD, MAS, Anobel Odisho, MD, MPH, Gloria Nyankima, PhD

[Slides](#)

[Digital Health Sampling](#)

September 16, 2022

Speakers: Adrian Aguilera, PhD; Madelaine Faulkner Modrow, MPH; Meghan Morris, PhD, MPH

[Electronic Health Record Data for Research](#)

March 18, 2022

Speakers: Leslie Yuan, MPH; Courtney Lyles, PhD; Mark Pletcher, MD, MPH

[Computational Methods in Digital Health](#)

December 10, 2021

Speakers: Thu Nguyen, ScD, MSPH;

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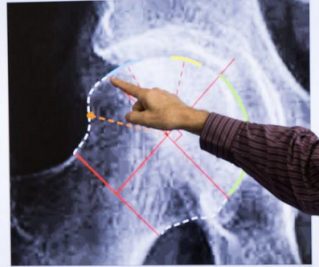
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Using as single predictors, inflexion angle (°), and knee) at (°) and (°) were significant predictors of incident knee OA, knee) at positions inferior to the neck (°) were not significant predictors.



Relative curvatures knee were estimated over 10 degree arcs at angles from -90 degrees to +90 degrees, every 10 degrees, and those that predicted incident knee OA (p<0.001) were

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Work With Us

Ladder Rank Biostatistician – Associate or Full Professor

(posted September 26, 2024)

The Department of Epidemiology and Biostatistics, University of California, San Francisco (UCSF) invites applications for a full-time ladder rank (tenured) faculty position at the Associate or Full rank to help lead the department and its Division of Biostatistics. Applicants should have deep expertise in the methods of contemporary biostatistics, and a track record of leadership, teaching, consultation and collaboration, and independent funding.

Full details

Professional Researcher: Assistant, Associate or Full

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