

COMPUTATIONAL PRECISION HEALTH (PHD)

Visit program website. (<https://computationalhealth.ucsf.edu/>)

Degree Offered: PhD

Program Leadership:

Ida Sim, MD, PhD, Program Director, UCSF

Maya Petersen, MD, PhD, Program Director, UCB

Daniel Wolfe, Executive Director

Admissions Inquiries:

Bianca Victorica, Graduate Student Affairs Officer

Program Description

The UCSF UC Berkeley Joint Program in Computational Precision Health (CPH) is building a new discipline at the intersection of artificial intelligence and machine learning, new statistical method, clinical and public health practice, and equity. The program leverages the expertise in computer science and statistics at UC Berkeley, the health data, excellence in clinical practice and bioinformatics at UCSF, and the commitment to population health at both institutions to create a first-in-kind interdisciplinary PhD training program.

Students in the PhD in Computational Precision Health develop skills and expertise in both the **computational sciences** (machine learning and AI, natural language processing, statistical inference and modeling, data standards, parallel computing and data at scale, etc.) and **health sciences** (clinical decision sciences and cognitive informatics, clinical delivery, clinical research, implementation science, health information policy, etc.)

Students develop the ability to work in interdisciplinary teams from ideation to development, testing, and validation in the real world. Coursework is complemented by extensive and early interaction with world-class faculty – through research rotations, seminar series, and practicums – at the intersection of computation and health, and will develop proficiency in cross-disciplinary research and communication. A focus on diversity, equity and inclusion, human-centered design accommodating diverse users, and the ethical implications and societal impacts of the work are embedded throughout the program.

Faculty

CPH faculty are members of the Joint Augmented Graduate Group in Computational Precision Health. There are currently more than 60 faculty members: four with primary appointment in CPH, with others from multiple departments across UCSF and UC Berkeley. UCSF faculty hail from all UCSF clinical sites, reflecting the diversity of populations and care settings across San Francisco.

Learning Outcomes

Students in the PhD in Computational Precision Health develop skills and expertise in both the **computational sciences** (machine learning and AI, natural language processing, statistical inference and modeling, data standards, parallel computing and data at scale, etc.) and **health sciences** (clinical decision sciences and cognitive informatics, clinical delivery, clinical research, implementation science, health information policy, etc.)

Additional Information

Program Core Faculty

- Find a program faculty list (<https://computationalhealth.ucsf.edu/faculty/>) on the program website.

Degree Requirements

- Minimum GPA of 3.0
- All core courses and required activities taken and passed
- Six quarters in residence including a minimum of three quarters (enrolled in 8 units of Research in each quarter) after advancement to candidacy.
- Pass qualifying examination
- Completion and submission of the Dissertation
- For additional details, please see: <https://graduate.ucsf.edu/phd-degree> (<https://graduate.ucsf.edu/phd-degree/>)

Core Courses

Code	Title	Units
COMP HLTH 200A	Computational Precision Health Cornerstone	3
COMP HLTH 200B	Computational Precision Health Cornerstone	3
COMP HLTH 200C	Computational Precision Health Cornerstone	3
COMP HLTH 215	Lab Rotation	2-8
COMP HLTH 270	Computational Precision Health Seminar	3
GRAD 202	Racism in Science	3
GRAD 214	Responsible Conduct of Research and Rigor & Reproducibility	1.5
CPH Practicum Series (TBD)	3 units, 2 terms (Second Year)	3
Foundational Courses (TBD)	Minimum of four classes, selected in close consultation with their Academic Adviser (First Year) or Research Adviser(s) (Second Year)	
Advanced Electives (TBD)	Minimum of two advanced electives, based on intended dissertation work.	