Xiaoyue(Serafina) Mei

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RESEARCH INTERESTS

Aging, Computational Biology, Precision Health, Tissue Engineering

EDUCATION

Ongoing:

University of California, San Francisco, and University of California, Berkeley — **Berkeley, CA**

Ph.D. Bioengineering from UCSF-UCB Joint Program — ***August 2023 - Present***

- GPA: 4.00/4.00
- Advisor: Prof. Irina Conboy
- Designated Emphasis in Computational Precision Health, advised by Prof. Atul Butte
- Relevant Courses:
    - Machine Learning in CompBio(A), Biophotonics(A+), Organic Chemistry (A+), Comparative Virology (A), Cellular Engineering (TA for), Genetics, Genomics, & Cell Biology (A), Concepts of Probability (A)

Completed:

University of California, Berkeley — **Berkeley, CA**

B.A. Molecular & Cellular Biology, minor in Data Science — ***September 2019 – May 2023***

- GPA: 3.76/4.00
- Honors & Fellowship:
    - Summer Undergraduate Research Fellowship(SURF)Fellow (summer 2022, Berkeley)
    - Dean's List (2021)

PUBLICATION AND PREPRINTS

[1] **Fail-tests of DNA methylation clocks, and development of a noise barometer for measuring epigenetic pressure of aging and disease**
Xiaoyue Mei, Joshua Blanchard, Connor Luellen, Michael J Conboy, Irina M Conboy
Aging, 2023

[2] **The dominance of old blood, and age-related increase in protein production and noise**
Alexandra Sviercovich, **Xiaoyue Mei,** Grace Xie, Michael J Conboy, Irina M Conboy
Ageing Research Reviews, 2024

[3] **Old plasma dilution reduces human biological age: a clinical study.**
Daehwan Kim, Dobri D Kiprov, Connor Luellen , Michael Lieb, Chao Liu, Etsuko Watanabe, **Xiaoyue Mei**, Kaitlin Cassaleto, Joel Kramer, Michael J Conboy, Irina M Conboy.
Geroscience, 2022.

[4] **Aging in human microphysiological systems closely recreates the in vivo process with insights on rejuvenation**
Lin Qi , Yuchen He , **Xiaoyue Mei ,** Alexandra Sviercovich , Erzhen Chen , Yihan Xia , Michael Conboy , Irina Conboy, Andreas Stahl
Peer Reviewed at *Nature Biomedical Engineering*, 2025

[5] **Cancer secretome alters protein synthesis of healthy cells, in days, reducing anti-tumor defenses and systemically perturbing tissue homeostasis**
Alexandra Sviercovich, Etsuko Watanabe, Hannaneh Kabir, **Xiaoyue Mei**, Eva Utke, Chao Liu, Zhixin Zhang, Dario Coletti, Michael J. Conboy, Irina M Conboy
Peer Reviewed at *Metabolism*, 2025

RESEARCH EXPERIENCE

[1] Evaluation of Epigenetic Clock and Review on Biological Aging

- Developed a program to script over 40 published epigenetic clocks(with manual validation) and created an interactive website to organize and categorize all associated information.
- Led a team of 5 researchers to validate and analyze over 10,000 epigenetic clock features, assessing multicollinearity, biological relevance, and other key metrics that determines the model's interpretability in clinical field.
- Identified a trend of increasing stochasticity with age and implemented a program to quantify and summarize this phenomenon.
- Featured in a one-hour interview with *Aging (Albany NY)* for a documentary exploring classic epigenetic clocks and introduce the

pattern of rising stochasticity with aging.

- Led the writing of two review/perspective papers on the evaluation metrics of biological age models.

[2] Therapeutic Plasma Dilution

- Normalized and analyzed RayBiotech antibody array data from 18 donors, including 8 treated patients, across up to 8 rounds of plasma dilution.
- Applied PCA and UMAP for dimensionality reduction to visualize treatment effects and highlight differences across dilution rounds.

[3] Cancer Proteomics

- Performed PCR to confirm whether or not mice and their offspring are expected mutant type, Click Western blot to identify the specific-chemical-labeled proteins, Conventional Western blot to measure the concentration of S100A10 proteins in mice model, and separate proteins with SDS-PAGE.
- Managed 21 mice in behavioral testing including hanging test and treadmill test to evaluate mice muscle strength.

Research Coordinator in Early Detection of Cancer **Cross-strait Tsinghua Research Institute, Xiamen, China**
Advisor: Dr. Shanqing Lan ***Aug 2020 – Dec 2020***

- Helped with data presentation and plots replication of 4 research report, and draft questions to discuss in the ongoing research.
- Summarized and drafted a systemic review of 14 major biotech businesses in China and their services/products for early diagnosis of cancers available on market, serving as a reference for financial sponsorship to relevant research laboratories.

TEACHING EXPERIENCE

Stanford Summer School Pre-college Biomedical Engineering Course

- Developed a bioengineering course and taught 60+ high schoolers for two months. Was rated overall 4.8/5 in the final evaluation. **Stanford, CA,** ***May 2024 – Present***
- Led all students DIY prosthetic arms and learn the engineering principle behind.

TA for Tissue Engineering (BioE114)

- Led occasional office hours answering students' questions on lecture contents and relevant publications. Counted attendance. Helped grade 80 students' assignments and projects and managed students' email inquiries. **Berkeley, CA,** ***Aug 2022 – 2023***

ACTIVITIES

Bristol Hospice Volunteer Coordinator **Berkeley, CA,** ***Jan 2022 – Present***

- Visited 2 elderly with dementia in retirement house on a weekly basis, giving accompany to them and report their health conditions, mood, etc, to their family members.
- Helped organizing events including orientation for new volunteers and sending cards to patients on holidays.

Step Down Unit Volunteer **Oakland, CA**, ***Dec 2021 – Present***

- Dedicated 150+ hours to aid nurses and support patients including (assisting patient transfer, responding to patient calls, communicating patients' needs to nurses, ensuring organized storage of medical supplies, passing on patient reports to relevant medical professionals, etc) at the step-down unit of at Alameda Highland hospital.
- Directed patients, enhancing navigation within the hospital. Initiated hospital map software idea for improved accessibility.
- Assisted security in patient check-in, enhancing admission procedures.
- Provided translation for 30+ patients, improving communication and care.

Commercial designer **Remotely , CA**, ***Oct 2019 – Present***

- Edited video and designed project website to promote and organize sale and other data about products from a Sonoma farm.
- Gained 11k total views for the product promotion videos, positive feedbacks about high responsibility when working remotely.

SKILLS

- **Medical Skill:** Certified EMT by Shenzhen Center For Prehospital Care, Proficient in using Automated External Defibrillator (AED) and skilled in conducting Basic Life Support (BLS) procedures.
- **Programming Languages (with descending proficiency):** Python, MATLAB, R, Java.
- **Software:** LaTeX, BioRender, Excel, Prism.
- **Skills:** PCR, Fluorescence Microscopy, 3D Printing, Western Blots, BioMEMS fabrication.