

William Connell

PHARMACEUTICAL SCIENCES · GRADUATE RESEARCHER

📞 (+1) 707-529-8516 | ✉️ wconnell93@gmail.com | 🏠 wconnell.com | 📷 wconnell | 📺 will-connell-26412352 | 🐦 @wilstc

Summary

I am a graduate student at UCSF applying my computational science expertise to understand, at a systems level, how gene network changes impact phenotype. To advance the state of precision medicine and answer questions regarding individual disease heterogeneity, I use statistical analyses and machine learning methods to bridge molecular genomics and cheminformatics. My technical knowledge and programming skills ultimately serve as tools to address complex questions in science and business.

Education

University of California, San Francisco

PHD IN PHARMACEUTICAL SCIENCES AND PHARMACOGENOMICS

San Francisco, CA

2018 - Expected 2022

University of California, Los Angeles

BS IN MICROBIOLOGY, IMMUNOLOGY AND MOLECULAR GENETICS

Los Angeles, CA

2012 - 2016

Experience

Department of Pharmaceutical Chemistry, UCSF

GRADUATE RESEARCHER, DR. MICHAEL KEISER, PH.D.

San Francisco, CA

March 2019 - Present

- Developing machine learning methods for precision medicine and drug discovery
- Pioneering application of natural language processing (NLP) methods to transcriptomics data for biomarker discovery
- Predicted individual tumor sensitivity to small molecules to guide clinical chemotherapeutic prescription (+5.5% SOTA)
- Discovered a genomic biomarker for stratification of (non-)responders to mAb ustekinumab in psoriasis patients (2.5% global population)

UCSF Innovation Ventures

CATALYST AWARDS INTERNSHIP PROGRAM

San Francisco, CA

September 2018 - September 2019

- Evaluated the potential of scientific translation from academic discovery pitches alongside corporate strategy professionals
- Lead a team of 4 to develop a diagnostic discovery Target Product Profile (TPP) for a gene expression biomarker panel
- Collaborated with primary scientists to define minimal/optimal metrics of laboratory and clinical success
- Evaluated feasibility of product development in consideration of commercialization routes and competitive landscape
- Compiled financial projections and market value estimations in consideration of IP challenges

Datacamp

SOFTWARE DEVELOPER & PROJECT DESIGNER

Remote

November 2019 - January 2019

- Designed and created a data science project for a leading online education platform
- Developed software for a data analysis course in R: *Data Science for Social Good: Crime Study*
- Engaged with >1000 learners resulting in an overall course rating of 4.7/5

Publications

JOURNAL ARTICLES

Nurturing diversity and inclusion in AI in Biomedicine through a virtual summer program for high school students

Tomiko Oskotsky, Ruchika Bajaj, Jillian Burchard, Taylor Cavazos, Ina Chen, Will Connell, Stephanie Eaneff, Tianna Grant, Ishan Kanungo, Karla Lindquist, Douglas Myers-Turnbull, Zun Zar Chi Naing, Alice Tang, Bianca Vora, Jon Wang, Isha Karim, Claire Swadling, Janice Yang, AI4ALL Student Cohort, Marina Sirota

bioRxiv Preprint (Mar. 2021). 2021. doi: 10.1101/2021.03.06.434213

Predicting Cellular Drug Sensitivity using Conditional Modulation of Gene Expression

Will Connell, Michael Keiser

Learning Meaningful Representations of Life Workshop, NeurIPS 2020 (Dec. 2020). 2020. doi: 10.1101/2021.03.15.435529

Helical antimicrobial peptides assemble into protofibril scaffolds that present ordered dsDNA to TLR9

Ernest Y Lee, Changsheng Zhang, Jeremy Di Domizio, Fan Jin, Will Connell, Mandy Hung, Nicolas Malkoff, Veronica Veksler, Michel Gilliet, Pengyu Ren, Gerard C L Wong

Nat. Commun. 10.1 (Mar. 2019) p. 1012. 2019. doi: 10.1038/s41467-019-08868-w

A Single-Cell Transcriptomic Atlas of Human Neocortical Development during Mid-gestation

Damon Polioudakis, Luis Torre-Ubieta, Justin Langerman, Andrew G Elkins, Xu Shi, Jason L Stein, Celine K Vuong, Susanne Nichterwitz, Melinda Gevorgian, Carli K Opland, Daning Lu, William Connell, Elizabeth K Ruzzo, Jennifer K Lowe, Tarik Hadzic, Flora I Hinz, Shan Sabri, William E Lowry, Mark B Gerstein, Kathrin Plath, Daniel H Geschwind

Neuron 103.5 (Sept. 2019) 785-801.e8. 2019. doi: 10.1016/j.neuron.2019.06.011

PRESENTATIONS

Quantifying the Similarity of Transcriptomic States in Cancer

William Connell, Michael J Keiser

CZI Neurodegeneration Challenge Network 2020 Annual Meeting. Poster. 2020. Virtual.

Target Deconvolution Across Phenotypic Space

William Connell, Garrett Gaskins, Michael J Keiser

Quantitative Biology Consortium Retreat 2019. Poster. 2019. Santa Cruz, CA.

Target Deconvolution Across Phenotypic Space

William Connell, Garrett Gaskins, Michael J Keiser

Northern California Computational Biology Symposium. Oral. 2019. Davis, CA.

Program Committees

2020- **Outreach**, PSPG Diveristy, Equity and Inclusion Committee

San Francisco, CA

Skills

programming python [numpy, pandas, pytorch, sklearn], R, SQL, bash, git, plink
OS contributions pytorch-metric-learning, scikit-learn sprint (WiMLDS)
featured blog posts Blockchain: Tumber Network Analysis; Kanye West: Lyric Analysis