

UCSF Initiative for Digital Transformation in Computational Biology and Health Data Science

2021 Computational Innovator Awardees

The **UCSF Initiative for Digital Transformation in Computational Biology and Health Data Science**, a donor-supported initiative that seeks to foster computational excellence at UCSF at multiple levels, is pleased to announce the awardees of the 2021 Computational Innovator Faculty Research Grants and Fellowships.

- **Four Computational Innovator Research Grants**, were funded at approximately \$100,000 total costs, each supporting research projects that utilize computational methods that leverage digital technology, such as machine learning and artificial intelligence (ML & AI), promise a transformation in how we identify the fundamental scientific underpinnings of human health and the root causes of disease, how we predict and prevent disease, how we diagnose diseases, and/or how we treat patients.
- In support of the digital innovation pipeline, **three pre-doctoral Fellowships** and **three Post-doctoral Fellowships** were funded, covering such expenses as stipend/salary, academic fees, or research expenses.

A committee of researchers, led by program Faculty Director, Dr. Ryan Hernandez, and representing basic, clinical, and computational health reviewed, discussed, and selected the Computational Innovator awardees, distributing over \$730,000.

2021 Computational Innovator Research Grants

Faculty	Proposal Title
Julien Cobert, MD (School of Medicine, Anesthesiology)	Development and Validation of a Deep Learning-Based Classifier for Provider Pessimism and Optimism from Unstructured Clinical Documentation in the Intensive Care Unit
Sasha Binford, PhD, MS, RN, PHN, (School of Nursing, Physiological Nursing) Stephanie Rogers, MD (School of Medicine, Geriatrics)	Machine Learning Delirium Risk Model Prediction Integration and Validation within the UCSF Electronic Health Record
Jing Meghan Shan, MD (School of Medicine, Ophthalmology)	Development of machine learning tools with novel multi-modal functionalities essential for the diagnostics and management of glaucoma

<p>Yoshimi Fukuoka, RN, PhD, FAAN (School of Nursing, Physiological Nursing) Jingwen Zhang, PhD (UC Davis) Kenji Sagae, PhD (UC Davis) Holli Devon, PhD, RN, FAHA, FAAN (UCLA)</p>	<p>Increasing Awareness of Heart Disease in Women with an AI-Driven Conversational Agent</p>
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2021 Computational Innovator Post-Doctoral Fellows

Post-Doctoral Fellow	Proposal Title
<p>Fahim Anjum, PhD Mentor: Dr. Simon Little (School of Medicine, Neurology)</p>	<p>Automatic classification and regulation of sleep dysfunction in Parkinson's disease, using adaptive deep brain stimulation</p>
<p>Byron Smith, PhD Mentor: Dr. Katherine S. Pollard (School of Medicine, Epidemiology & Biostatistics)</p>	<p>Strain-resolved microbiome-wide association studies for the discovery of hidden, microbial drivers of disease</p>
<p>Jane (Jaeyun) Wang, PhD Mentor: Dr. Adnan Alseidi (School of Medicine, Surgery)</p>	<p>Development and Validation of an Artificial Intelligence Platform to Predict Negative Margin (R0) Resectability of Pancreatic Ductal Adenocarcinoma Based on Preoperative CT Scans</p>

2021 Computational Innovator Pre-Doctoral Fellowships

Pre-Doctoral Fellows	Proposal Title
<p>Hersh Bhargava Mentor(s): Dr. Wendell Lim and Dr. Hana El-Samad Training Program: Biophysics Graduate Program (BP)</p>	<p>Human-computer synergy for rational design of T cell circuits that drive programmable spatial targeting in the body</p>
<p>Matthew Hancock Mentor: Dr. Andrej Šali Training Program: Biophysics Graduate Program (BP)</p>	<p>Bayesian modeling of an ensemble of protein structures and thermodynamics from temperature-dependent X-ray diffraction data</p>

Nate (Nhat) Tran
Mentor: Dr. Janine Lupo
Training Program: UCSF-UC Berkeley
Joint PhD Program in Bioengineering
(BioE)

Integrating Metabolic and Physiologic MRI with
Deep Learning to Predict Regions of Progression in
Patients with Glioblastoma