



# Stanford Bio-X Fellows Symposium

OCTOBER 29, 2024 - 10:00AM

JAMES H. CLARK CENTER AUDITORIUM

10:00AM

*Introduction by Ellen Kuhl*

Catherine Holman Johnson Director of Stanford Bio-X  
Walter B. Reinhold Professor in the School of Engineering



ELLEN KUHL

*Viviana Gradinaru*

*Colella Family Fellow, Stanford Bio-X SIGF 2008-2010*

currently the Troendle Professor of Neuroscience and Biological Engineering at Caltech  
Director and Davis Leadership Chair of the Merkin Institute for Translational Research  
Howard Hughes Medical Institute Investigator (selected 2024)  
“Blood-Brain-Barrier Friend and Foe”

Mentors: Karl Deisseroth (Bioengineering, Psychiatry & Behavioral Sciences) and  
Jaimie Henderson (Neurosurgery)



VIVIANA GRADINARU

*Trevor Martin*

*Stanford Bio-X Bowes Fellow 2012-2015*

currently CEO and a co-founder of Mammoth Biosciences  
“From Pipettes to Pitch Decks: Lessons Learned on a Mammoth Journey”

Mentors: Hunter Fraser (Biology) and Susan Holmes (Statistics)



TREVOR MARTIN

*One-Minute Introductions and Talks by 21 New Stanford Bio-X Fellows*

11:00AM

Lunch



# Introducing the 2024 Stanford Bio-X Fellows

## **NAYLA ABNEY**

Stanford Bio-X Bowes Fellow, *Bioengineering*  
Mentors: Jennifer Cochran (Bioengineering) and Mark Pegram (Medicine - Oncology)  
“Engineering Bispecific Therapeutics for Cytokine Sequestration in TNBC”

## **ISABELLA ARCHIBALD**

Stanford Bio-X Bowes Fellow, *Bioengineering*  
Mentors: Jennifer Brophy (Bioengineering) and Xiaojing Gao (Chemical Engineering)  
“Engineering Inducible Synthetic Genetic Systems to Control Plant Development”

## **BETTY CAI**

Stanford Bio-X Bowes Fellow, *Materials Science & Engineering*  
Mentors: Sarah Heilshorn (Materials Science & Engineering) and Jon-Paul Pepper (Otolaryngology)  
“3D Printing of Bi-Layer Nerve Conduits for the Controlled Delivery of a Hedgehog Pathway Modulator”

## **JENNIFER CO**

Stanford Bio-X Bowes Fellow, *Chemistry*  
Mentors: Steven Banik (Chemistry) and Michael Bassik (Genetics)  
“Silent Programming: Discovery and Characterization of the Onco-Interactome with Cell-Based Interaction Sensors and CRISPR Genetic Screening”

## **MATTHEW DEJONG**

Stanford Bio-X Bowes Fellow, *Chemical Engineering*  
Mentors: Polly Fordyce (Bioengineering, Genetics) and Alexander Dunn (Chemical Engineering)  
“High-Throughput Microfluidic Force Spectroscopy for Engineering Protein Mechanosensors”

## **SIPEI FU**

Affymetrix Bio-X Fellow, Stanford Bio-X SIGF, *Biology*  
Mentors: Jonathan Long (Pathology), Christopher Barnes (Biology), and Michael Fischbach (Bioengineering)  
“Uncovering Microbial Biosynthesis of N-acetyltaurine”

## **ALISA LEVIN**

Bruce and Elizabeth Dunlevie Fellow, Stanford Bio-X SIGF, *Computer Science*  
Mentors: Scott Linderman (Statistics) and Jaimie Henderson (Neurosurgery)  
“Cross-Brain Transfer for Intracortical Handwriting and Speech BCIs”

## **KARA LIU**

Morgridge Family SIGF Fellow, Stanford Bio-X SIGF, *Computer Science*  
Mentors: Russ Altman (Bioengineering, Genetics, Medicine - Biomedical Informatics Research, Biomedical Data Science), Serena Yeung (Biomedical Data Science), and Sanmi Koyejo (Computer Science)  
“Integrating Generative Models and Biologically-Enriched Disease Representations for Synthetic EHR Data”

## **AMRITH LOTLIKAR**

Seth A. Ritch Graduate Fellow, Stanford Bio-X SIGF, *Electrical Engineering*  
Mentors: Subhasish Mitra (Electrical Engineering, Computer Science) and E.J. Chichilnisky (Neurosurgery, Ophthalmology)  
“Algorithms for Efficient Calibration of Bidirectional Brain-Computer Interfaces”

## **MARIGOLD MALINAO**

Stanford Bio-X Bowes Fellow, *Materials Science & Engineering*  
Mentors: Guosong Hong (Materials Science & Engineering) and Jun Ding (Neurosurgery, Neurology)  
“Non-Invasive and Spatiotemporally Precise Chemogenetic and Pharmacological Neuromodulation with an Ultrasound Interface”

## **SHAILI MATHUR**

Stanford Interdisciplinary Graduate Fellow (Anonymous Donor), Stanford Bio-X SIGF, *Biology*  
Mentors: Dmitri Petrov (Biology) and Jonas Cremer (Biology)  
“Cellular Decision-Making in Dynamically Changing Environments and Population-Level Consequences”

## **SANTIAGO MILLE FRAGOSO**

Morgridge Family SIGF Fellow, Stanford Bio-X SIGF, *Bioengineering*  
Mentors: Xiaojing Gao (Chemical Engineering) and Brian Hie (Chemical Engineering)  
“Machine Learning-Assisted Design of Novel Modular Protein Sensors”

## **SALVADOR MONCAYO VON HASE**

Morgridge Family SIGF Fellow, Stanford Bio-X SIGF, *Chemistry*  
Mentors: Steven Banik (Chemistry), Xiaojing Gao (Chemical Engineering), and Tom Soh (Radiology, Electrical Engineering, Bioengineering)  
“A Platform for Examining Small Molecule-Mediated Manipulation of RNA”

## **SAMANTHA REYES**

Bruce and Elizabeth Dunlevie Fellow, Stanford Bio-X SIGF, *Biomedical Physics*  
Mentors: Michelle James (Radiology - Molecular Imaging Program at Stanford, Neurology) and Marion Buckwalter (Neurology & Neurological Sciences, Neurosurgery)  
“A New Translational Approach for Quantifying Innate Immune Activation in Stroke”

## **AUBREY ROBERTS**

William and Lynda Steere Fellow, Stanford Bio-X SIGF, *Epidemiology & Clinical Research*  
Mentors: Michael Snyder (Genetics), Jonathan Long (Pathology), and Francois Haddad (Medicine - Cardiovascular Medicine)  
“Optimizing Training: Physiological and Molecular Adaptations to High-Intensity Interval Training (HIIT) vs. Moderate-Intensity Continuous Training (MICT)”

## **GUSTAVO SANTIAGO-REYES**

Stanford Bio-X Bowes Fellow, *Bioengineering*  
Mentors: Russell Poldrack (Psychology) and Todd Coleman (Bioengineering)  
“Modulation of Decision-Making Using Non-Invasive Vagus Nerve Stimulation”

## **SIX SKOV**

Stanford Bio-X Bowes Fellow, *Mechanical Engineering*  
Mentors: Scott Delp (Bioengineering, Mechanical Engineering), Karen Liu (Computer Science), and John Day (Neurology & Neurological Sciences, Pediatrics - Medical Genetics)  
“Developing in the Wild Motion Capture to Assess Treatment Effectiveness in Charcot-Marie-Tooth Patients”

## **JIANKAI SUN**

Stanford Interdisciplinary Graduate Fellow (Anonymous Donor), Stanford Bio-X SIGF, *Aeronautics & Astronautics*  
Mentors: Mac Schwager (Aeronautics & Astronautics), Scott Delp (Bioengineering, Mechanical Engineering), and Mykel Kochenderfer (Aeronautics & Astronautics)  
“Wearable Intelligence for Healthcare Robotics: From Brain Activity to Body Movements”

## **KYLE SWANSON**

Paul Berg Interdisciplinary Biomedical Graduate Fellow, Stanford Bio-X SIGF, *Computer Science*  
Mentors: James Zou (Biomedical Data Science) and Joseph Wu (Medicine - Cardiovascular Medicine, Radiology)  
“Generative AI to Design, Synthesize, and Validate Drug Candidates”

## **ETHAN TREPKA**

Stanford Bio-X Bowes Fellow, *Neurosciences*  
Mentors: Tirin Moore (Neurobiology) and Guosong Hong (Materials Science & Engineering)  
“Patterning the Brain with Conductive Polymers”

## **MAIYA YU**

Stanford Bio-X Bowes Fellow, *Structural Biology*  
Mentors: Jeff Axelrod (Pathology), Liang Feng (Molecular & Cellular Physiology), and Alexander Dunn (Chemical Engineering)  
“Parsing Molecular Determinants of Asymmetry in Planar Cell Polarity Signaling”