Stanford Bio-X Fellows Symposium

OCTOBER 5, 2021
10:00AM-11:30AM

10:00AM
Introduction by Carla Shatz
Sapp Family Provostial Professor, Professor of Biology and Neurobiology, and Catherine Holman Johnson Director of Stanford Bio-X

CARLA SHATZ

10:10AM
Paola Moreno-Roman
Stanford Bio-X Bowes Fellow, 2014-2017
currently Director of Strategic Partnerships at Foldscope Instruments, Inc.
"Journey to the Microcosmos: A Tale of Fruit Flies and Frugal Science"
Mentors: Lucy O'Brien (Molecular & Cellular Physiology) and Matthew Scott (Developmental Biology)

PAOLA MORENO-ROMAN

10:40AM
Two-Minute Introductions and Talks by New Stanford Bio-X Fellows

Click the link below to join us on Zoom:

HTTPS://BIOX.STANFORD.EDU/2021STANFORDBIOXFELLOWSSYMPOSIUM

STANFORD BIO-X

Introducing the 2021 Stanford Bio-X Fellows

CARLOS ALVARADO ACOSTA
William and Lynda Steere Fellow, Stanford Bio-X SIGF, *Structural Biology*
Mentors: Joseph Puglisi (Structural Biology) and Zev Bryant (Bioengineering)
"Uncovering the Kinetic and Mechanochemical Regulation of Scanning"

MANISH AYUSHMAN
Stanford Interdisciplinary Graduate Fellow (Anonymous Donor), Stanford Bio-X SIGF, *Bioengineering*
Mentors: Fan Yang (Bioengineering, Orthopaedic Surgery), Ashby Morrison (Biology), Ovijit Chaudhuri (Mechanical Engineering), Yan Xia (Chemistry), and Constance Chu (Orthopedic Surgery)
"Enabling Stem Cells to "Zipline" in 3D: Enhancing Cartilage Regeneration using Sliding Hydrogels with Tunable Molecular Mobility"

CECELIA BROWN
Stanford Bio-X Bowes Fellow, *Biology*
Mentors: Jan Skotheim (Biology), Julien Sage (Pediatrics – Hematology & Oncology and Genetics), and Polly Fordyce (Bioengineering and Genetics)
"Controlling Cell Division by Disrupting the Cyclin D-Rb Interaction"

JE-RUI (RAY) CHANG
Morgridge Family SIGF Fellow, Stanford Bio-X SIGF, *Bioengineering*
Mentors: Manu Prakash (Bioengineering) and Sanjiva Lele (Aeronatics & Astronautics and Mechanical Engineering)
"Extreme Biophysics: How Ultrafast Contractility Shapes Organelle Geometry (Topology) and Mechanics in Giant Cells"

ANA SOFIA DE OLAZARRA
Affymetrix Bio-X Fellow, Stanford Bio-X SIGF, *Electrical Engineering*
Mentors: Shan Wang (Materials Science & Engineering, Electrical Engineering) and Paul (PJ) Utz (Medicine—Immunology & Rheumatology)
"Point-of-Care Giant MagnetoResistive Biosensors for Automated Nucleic Acid Amplification and Detection"

MICHELLE DREWS
Stanford Bio-X Fellow, *Neurosciences and Medicine*
Mentors: Carla Shatz (Biology and Neurobiology), Anca Pasca (Pediatrics – Neonatal and Developmental Medicine), and Catherine Blish (Medicine – Infectious Diseases)
"Interferon Exposure, Major Histocompatibility Class I, and Human Brain Development"

HAOTIAN DU
Stanford Interdisciplinary Graduate Fellow (Anonymous Donor), Stanford Bio-X SIGF, *Chemistry*
Mentors: Possu Huang (Bioengineering), Edgar Engleman (Pathology and Medicine—Immunology & Rheumatology), and Danny Chou (Pediatrics—Endocrinology & Diabetes)
"Molecular Engineering of T Cell Receptor Functional Mimetics for Intracellular Oncogenic Marker Targeting"

YI SHIOU DUH
Stanford Bio-X Bowes Fellow, *Physics*
Mentors: Mark Brongersma (Materials Science & Engineering), Xiaoke Chen (Biology), and Guosong Hong (Materials Science & Engineering)
"Multi-Depth Brain-Wide Imaging with Metasurfaces"

YUAN JIA
Morgridge Family SIGF Fellow, Stanford Bio-X SIGF, *Chemistry*
Mentors: Robert Waymouth (Chemistry) and Ronald Levy (Medicine—Oncology)
"New Synthetic Transporters for Delivery and Release of mRNA"

KRISTJAN EERIK KASENIIT
Stanford Interdisciplinary Graduate Fellow (Anonymous Donor), Stanford Bio-X SIGF, *Bioengineering*
Mentors: Xiaojing Gao (Chemical Engineering) and Possu Huang (Bioengineering)
"Humanized Molecular Sensors for the Extra- and Intra-Cellular Environments"

FIKUNWA KOLAWOLE
Felix and Heather Baker Interdisciplinary Graduate Fellow, Stanford Bio-X SIGF, *Mechanical Engineering*
Mentors: Daniel Ennis (Radiology), Ellen Kuhl (Mechanical Engineering), Marc Levenston (Mechanical Engineering), Joe DeSimone (Radiology and Chemical Engineering), and Sachin Malik (Radiology)
"Measuring Myocardial Stiffness of the Failing Heart"

RACHAEL KRETSCH
Stanford Bio-X Bowes Fellow, *Biophysics*
Mentors: Rhiju Das (Biochemistry) and Wah Chiu (Bioengineering, Microbiology & Immunology, Photon Science Directorate)
"Cryo-EM to Visualize Viral RNA"

VERONICA LI
Bruce and Elizabeth Dunlevie Fellow, Stanford Bio-X SIGF, *Chemistry*
Mentors: Jonathan Long (Pathology) and Justin Du Bois (Chemistry)
"Chemical Interrogation of an Exercise-Induced Metabolite Signaling Pathway"

KANG YONG LOH
Stanford Bio-X Bowes Fellow, *Chemistry*
Mentors: Karl Deisseroth (Bioengineering, Psychiatry & Behavioral Sciences), Carolyn Bertozzi (Chemistry), and Zhenan Bao (Chemical Engineering)
"Genetically Targeted Chemical Assembly and Disassembly of Functional Molecules in Intact Living Systems"

CHRISTOPHER LONG
Stanford Bio-X Honorary Fellow, *Materials Science & Engineering*
Mentors: Sarah Heilshorn (Materials Science & Engineering) and Tony Wyss-Coray (Neurology & Neurological Sciences)
"A Novel Nonlinear Microscopy Platform for Studying Microglial Subtypes in Alzheimer's Disease"

DELANEY MILLER
Stanford Bio-X Bowes Fellow, *Mechanical Engineering*
Mentors: Steve Collins (Mechanical Engineering), Nicholas Giori (Orthopaedic Surgery), and Scott Delp (Bioengineering and Mechanical Engineering)
"Reducing Muscle Contributions to Knee Joint Loading in Individuals with OA Using a Powered Knee Exoskeleton"

AMR MOHAMED
Bruce and Elizabeth Dunlevie Fellow, Stanford Bio-X SIGF, *Computer Science*
Mentors: Anshul Kundaje (Genetics and Computer Science) and Polly Fordyce (Bioengineering and Genetics)
"Extracting Thermodynamic DNA Sequence Affinities from in vivo *Profiles of Transcription Factor Binding Using Deep Learning"*

ADI MUKUND
Tusher Family Stanford Interdisciplinary Graduate Fellow, Stanford Bio-X SIGF, *Biophysics and Medicine*
Mentors: Lacramioara Bintu (Bioengineering), Michael Bassik (Genetics), and Anshul Kundaje (Genetics and Computer Science)
"High-Throughput Characterization and Computational Modeling of Interactions Between Effector Domains in Chromatin-Mediated Gene Regulation"

GABRIELLA MUWANGA
Stanford Bio-X Honorary Fellow, *Neurosciences*
Mentors: Vivianne Tawfik (Anesthesiology) and Raag Airan (Radiology)
"Targeted Delivery of Dexmedetomidine for Pain Relief in a Mouse Model of Complex Regional Pain Syndrome"

NICHOLAS ROMMELFANGER
Stanford Bio-X Honorary Fellow, *Applied Physics*
Mentors: Guosong Hong (Materials Science & Engineering) and Paul Nuyujukian (Bioengineering and Neurosurgery)
"Breaking the Spatial Limitation of Electrical Microstimulation by Electromagnetic Field Focusing"

JOSHUA SAMPSON
Stanford Bio-X Bowes Fellow, *Bioengineering*
Mentors: Mark Skylar-Scott (Bioengineering), Steven Boxer (Chemistry), and Michael Ma (Cardiothoracic Surgery)
"Optical Coagulation for 3D Bioprinting in vitro *and Directed Hemostasis* in vivo*"*

SOPHIA SHI
Stanford Bio-X Bowes Fellow, *Chemistry*
Mentors: Tony Wyss-Coray (Neurology & Neurological Sciences) and Carolyn Bertozzi (Chemistry)
"Decoding the Blood-Brain Barrier Glycocalyx in Aging and Neurodegenerative Disease"

PETER SUZUKI
Stanford Bio-X Bowes Fellow, *Bioengineering*
Mentors: Polly Fordyce (Bioengineering and Genetics) and Lacramioara Bintu (Bioengineering)
"Modeling the Dynamic Function of Human Transcription Factors and Co-Factors by Combined in vivo *and* in vitro *Kinetic Measurements"*

RAMANDEEP VILKHU
Stanford Bio-X Bowes Fellow, *Electrical Engineering*
Mentors: Subhasish Mitra (Electrical Engineering and Computer Science) and E.J. Chichilnisky (Neurosurgery and Ophthalmology)
"Optimization and Biophysical Modeling of Electrical Stimulation Strategies for Brain-Computer Interfaces to Enhance Stimulation at Cellular-Resolution"

JONATHAN WEISS
Stanford Bio-X Honorary Fellow, *Bioengineering*
Mentors: Mark Skylar-Scott (Bioengineering) and Joseph Woo (Cardiothoracic Surgery)
"Organ-Scale Biofabrication: 3D Bioprinting of Engineered Pluripotent Stem Cells to Form a Mature Human Ventricle"