



Stanford Bio-X Interdisciplinary Initiatives
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Poster Session
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1	Investigating Possible Super Enhancer Sequences for Cardiac Development	Gunes Ates Akgun ¹ , Jaecheol Lee ² , Ningyi Shao ² , Joseph Wu ^{2,3} , Zhen Cheng ³ Departments of Biology ¹ , Cardiology ² , and Radiology ³ , Stanford University
2	Visualizing the Role of Cell Cycle in Epithelial Differentiation	Daniel Alber ¹ , Samantha Piekos ¹ , Sandra Melo ¹ , Jessica Torkelson ¹ , Lingjie Li ¹ , Gautam Shankar ¹ , Anthony Oro ¹ Department of Dermatology ¹ , Stanford University
3	Bounds on the Number of Loci Required for All Splits of a Species Tree to Appear in a Set of Gene Trees	Alan J. Aw ¹ , Rohan S. Mehta ² , Lawrence H. Uricchio ² , David Bryant ³ , Noah A. Rosenberg ² Departments of Mathematical & Computational Science ¹ and Biology ² , Stanford University; Department of Mathematics & Statistics ³ , University of Otago, New Zealand
4	Inferring Orientation Tuning from fMRI Data with the Forward Encoding Model Suffers from Biased Estimation	Dylan Cable ¹ , Taosheng Liu ² , Justin L. Gardner ¹ Department of Psychology ¹ , Stanford University; Department of Psychology ² , Michigan State University
5	Fluorescent Biosensors for Sugar Transport	Taylor M. Chavez ¹ , Lily S. Cheung ² , Wolf B. Frommer ^{1,2} Department of Biology ¹ , Stanford University; Department of Plant Biology ² , Carnegie Institution for Science
6	Regulation of TRPV1 and TRPV4 Membrane Trafficking	Annabel Chen ¹ , Carl Hurt ¹ , Eric Gross ¹ Department of Anesthesia ¹ , Stanford University
7	Effects of Kainic Acid and NSPC-Derived VEGF on Immature Neuron Activation	Kelly Chen ¹ , Elizabeth Kirby ¹ , Tony Wyss-Coray ¹ Department of Neurology ¹ , Stanford University
8	Mapping Connectivity and Function of the Neural Circuits Underlying Thirst	Michael Z. Chen ¹ , William E. Allen ² , Liqun Luo ³ , Karl Deisseroth ^{1,4} Departments of Bioengineering ¹ , Biology ³ , and Psychiatry & Behavioral Sciences ⁴ and Neurosciences Interdepartmental Program ² , Stanford University
9	The Role of SPARC and Its Binding Partners in Diffuse Intrinsic Pontine Glioma Invasion to the SVZ	Dominique Cooper ³ , Elizabeth Qin ^{1,2} , Michelle Monje ² Departments of Neuroscience ¹ , Neurology ² , and Biology ³ , Stanford University
10	Synergistic Effects of Maternal Immune Activation and cMet Deletion on Embryonic Neuronal Subtype Distribution	Kristina Correa ^{1,2} , Alex Lopez ^{1,2} , Aditi Narayan ^{1,2} , Brooke Babineau ^{1,2} , Theo Palmer ^{1,2} Department of Neurosurgery ¹ and Institute for Stem Cell Biology & Regenerative Medicine ² , Stanford University
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13	Biochemical Purification of Protein Complexes Associated with Mutant Nucleophosmin (NPM1)	Julia Eberhard ² , Marisa Juntilla ^{1,2} , Caitlin Roake ² , Natalie Ortiz ² , Steven Artandi ² Departments of Pathology ¹ and Hematology ² , Stanford University

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19	Sterol-Dependent Membrane Dynamics Regulate Influenza Virus Binding	Isabel Goronzy ¹ , Robert Rawle ² , Peter Kasson ² , Steven Boxer ¹ Department of Chemistry ¹ , Stanford University; Department of Molecular Physiology & Biological Physics ² , University of Virginia
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		& Neurological Sciences ³ , and Stanford Neurosciences Institute ⁴ , Stanford University
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101	Intracellular Electrical Recording of Action Potentials Using Carbon Nanotube Electrodes	Gregory Pitner ¹ , Matthew Abramian ² , Sergio Leal ³ , John Huguenard ² , Nicholas Melosh ⁴ , H.-S. Philip Wong ¹ Departments of Electrical Engineering ¹ , Neurology & Neurological Sciences ² , and Materials Science & Engineering ⁴ and Neurofab Incubator ³ , Stanford Neurosciences Institute, Stanford University
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103	Synaptic Vesicles Contain Small Ribonucleic Acids (sRNAs) Including Transfer RNA Fragments (trfRNA) and microRNAs (miRNA)	Huinan Li ^{1,2} , Cheng Wu ¹ , Rodolfo Aramayo ¹ , Matthew S. Sachs ¹ , Mark L. Harlow ¹ Department of Biology ¹ , Texas A&M University; (present address) Department of Neurosurgery ² , Stanford University
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106	Omental Macrophages: Drivers of Ovarian Cancer Colonization	Venkatesh Krishnan ¹ , Bruce Schaar ¹ , Supreeti Tallapragada ¹ , Oliver Dorigo ¹ Department of Obstetrics & Gynecology, (Division of Gynecologic Oncology) ¹ , Stanford University
107	Screening Approach to Identify a Selective NGly1 Inhibitor	Fred Tomlin ¹ , Christian Lentz ² , Matthew Bogyo ² , Carolyn Bertozzi ¹ Departments of Chemistry ¹ and Pathology ² , Stanford University
108	In-Plane Shear Strain Induces Epithelial Reorganization	Miguel A. Garcia ^{1*} , Ehsan Sadeghipour ^{1,2*} , W. James Nelson ^{1,3} , Beth L. Pruitt ^{2,3,4} (*equal contribution) Departments of Biology ¹ , Mechanical Engineering ² , Molecular & Cellular Physiology ³ , and Bioengineering ⁴ , Stanford University
109	Probing the Individual and Temporal Dynamics of the Human Gut Proteome	Ellen Casavant ¹ , Les Dethlefsen ² , David Relman ² , Josh Elias ¹ Departments of Chemical & Systems Biology ¹ and Microbiology & Immunology ² , Stanford University
110	Environmental DNA Metabarcoding to Identify Marine Vertebrates in Monterey Bay	Elizabeth A. Andruszkiewicz ¹ , Hilary A. Starks ² , Lauren M. Sassoubre ³ , Barbara B. Block ⁴ , Alexandria B. Boehm ¹ Department of Civil & Environmental Engineering ¹ and Center for Ocean Solutions ² , Stanford University; Department of Civil, Structural, & Environmental Engineering ³ , University at Buffalo, The State University of New York; Department of Biology ⁴ , Hopkins Marine Station, Stanford University
111	Peripheral Blood Gene Expression Biomarkers of Risk and Progression in Type 1 Diabetes	Becca Fuhlbrigge ^{1*} , Linda Yip ^{1*} , C. Garrison Fathman ¹ (*equal contribution) Department of Medicine (Division of Immunology and Rheumatology) ¹ , Stanford University
112	Using IL-2 Vault Conjugates for Drug Delivery to Regulatory T Cells	Anant Hari ¹ , Juliana Herrera ¹ , Max Pass ¹ , Carol Murguia ¹ , Marco Herrera ¹ , Luis Soares ¹ , Paul Wender ² , C. Garrison Fathman ¹ Departments of Medicine (Division of Immunology & Rheumatology) ¹ and Chemistry ² , Stanford University
113	Novel Theranostic Nanoparticles for Molecular Imaging and Glioblastoma Therapy	Ketan Yerneni ¹ , Suchismita Mohanty ¹ , Zixin Chen ^{1,2} , Kai Li ¹ , Jessica Klockow ¹ , Olga D. Lenkov ¹ , Edwin Chang ¹ , Siddhartha Mitra ^{3,4} , Frederick Chin ¹ , Robert A. Falconer ⁵ , Paul M.

		Loadman ⁵ , Samuel Cheshier ^{3,4} , Sanjiv Gambhir ¹ , Jianghong Rao ^{1,2} , Heike E. Daldrop-Link ¹ Departments of Radiology and Molecular Imaging Program at Stanford (MIPS) ¹ , Chemistry ² , and Neurosurgery ³ and Institute for Stem Cell Biology & Regenerative Medicine ⁴ , Stanford University; Institute of Cancer Therapeutics ⁵ , School of Life Sciences, University of Bradford
114	Conversion of Extracellular Signals to Programmable Genome Manipulation via CRISPRouter	P. C. Dave P. Dingal ^{1,2,3} , Nathan H. Kipniss ¹ , Yuchen Gao ⁴ , Lei S. Qi ^{1,2,3} Departments of Bioengineering ¹ and Chemical & Systems Biology ² , Stanford ChEM-H ³ , and Cancer Biology Graduate Program ⁴ , Stanford University
115	Application of GRIN Probes for <i>in vivo</i> Fluorescence Microscopy of Retinal Ganglion Cells	Alex Kreymerman ¹ , David Buickians ² , Howard Chen ² , Ya Gong ² , Emily Huynh ² , Jeffrey Goldberg ¹ Department of Ophthalmology ¹ , Stanford University; Department of Bioengineering ² ; University of California, San Diego
116	Cleaved Trop2 as Biomarker and Therapeutic Target for Prostate Cancer	En-Chi Hsu ¹ , Meghan A. Rice ¹ , Sharon Pitteri ¹ , Hongjuan Zhao ² , Rosalie Nolley ² , Donna Peehl ² , James D. Brooks ² , Tanya Stoyanova ¹ Departments of Radiology ¹ and Urology ² , Stanford University
117	Defining Molecular Mechanisms Underlying Notch1 Activity in Metastatic Prostate Cancer	Meghan A. Rice ¹ , En-Chi Hsu ¹ , Tanya Stoyanova ¹ Department of Radiology ¹ , Stanford University
118	On Chip DNA Synthesis Using Plasmonically Activated Dielectrophoretic Trapping and Transport	Punnag Padhy ¹ , Mohammad Asif Zaman ¹ , Lambertus Hesselink ¹ Department of Electrical Engineering ¹ , Stanford University
119	Molecular and Functional Resemblance of Terminally Differentiated Cells Derived from Isogenic Human iPSCs and Somatic Cell Nuclear Transfer Derived ESCs	Ming-Tao Zhao ^{1,2,3} , Haodong Chen ^{1,2,3} , Qing Liu ⁴ , Ning-Yi Shao ^{1,2,3} , Nazish Sayed ^{1,2,3} , Youngkyun Kim ^{1,2,3} , Huaxiao Yang ^{1,2,3} , Tony Chour ^{1,2,3} , Hong Ma ^{5,6} , Rebecca Tippner-Hedges ^{5,6} , Shoukhrat Mitalipov ^{5,6} , Michael P. Snyder ^{4*} , Joseph C. Wu ^{1,2,3*} (*corresponding authors) Stanford Cardiovascular Institute ¹ , Departments of Medicine (Division of Cardiology) ² and Genetics ⁴ , and Institute of Stem Cell Biology & Regenerative Medicine ³ , Stanford University; Center for Embryonic Cell & Gene Therapy ⁵ , Oregon Health & Science University, Portland, Oregon; Division of Reproductive & Developmental Sciences ⁶ , Oregon National Primate Research Center, Oregon Health & Science University
120	Anchovies to Whales: Tracking Vertebrate Biodiversity in Monterey Bay by Metabarcoding Environmental DNA (eDNA)	Collin J. Closek ^{1,2} , Hilary A. Starks ¹ , Kristine R. Walz ³ , Elizabeth A. Andruszkiewicz ² , Kevan M. Yamahara ³ , Francisco P. Chavez ^{1,3} , Alexandria A. Boehm ^{1,2} Center for Ocean Solutions ¹ and Department of Civil & Environmental Engineering ² , Stanford University; Monterey Bay Aquarium Research Institute ³
121	Contrasting Evolutionary and Ecological Signals in Bat-Viral Interactions	Hannah Frank ¹ , David Enard ¹ , Scott Boyd ² , Elizabeth Hadly ^{1,3,4} Departments of Biology ¹ and Pathology ² , Woods Institute for the Environment ³ , and Center for Innovation in Global Health ⁴ , Stanford University
122	Restoring Tactile Sensing with Electronic Skin	Celine Liong ¹ , Alex Chortos ² , Zhenan Bao ³

		Departments of Bioengineering ¹ , Materials Science & Engineering ² , and Chemical Engineering ³ , Stanford University
123	Programmed Cell Fate Changes in Mammalian Cells Using CRISPR-Based Synthetic Transcription Factors	Marie La Russa ^{1,2} , Marcos Torres ^{2,3} , Yanxia Liu ² , Yuchen Gao ⁴ , Lei Stanley Qi ^{2,5} Biomedical Sciences Program ¹ , University of California, San Francisco; Departments of Bioengineering ² and Chemical & Systems Biology ⁵ , Summer Undergraduate Research Fellows Program ³ , and Cancer Biology Program ⁴ , Stanford University
124	Abnormal Reading in Neuro-Ophthalmic Diseases Affecting Eye Movement	Jennifer Li ^{1,2} , Carmel Mercado ^{1,2} , M. Ali Shariati ^{1,2} , Caroline Y. Yu ^{1,2} , Y. Joyce Liao ^{1,2} Department of Ophthalmology ¹ and Byers Eye Institute ² , Stanford University
125	Algorithms for Identifying and Avoiding Axon-Bundle Activation in Epiretinal Prostheses	Karthik Ganesan ¹ , Nandita Bhaskhar ¹ , Lauren Grosberg ^{2,4} , E.J. Chichilnisky ^{2,4} , Subhasish Mitra ^{1,3} Departments of Electrical Engineering ¹ , Neurosurgery ² , and Computer Science ³ and Hansen Experimental Physics Laboratory ⁴ , Stanford University
126	Capsule Ultrasound (CUS) Device	Farah Memon ¹ , Gerard Touma ² , Junyi Wang ² , Spyridon Baltsavias ² , Morten Fischer Rasmussen ² , Chienliu Chang ² , Eric Olcott ^{3,4} , R. Brooke Jeffrey ⁴ , Amin Arbabian ² , Butrus (Pierre) T. Khuri-Yakub ² Departments of Bioengineering ¹ , Electrical Engineering ² , and Radiology ⁴ , Stanford University; Department of Radiology ³ , VA Palo Alto Health Care System
127	Morphometric Analysis of Cells on Various Substrate Materials and Stiffnesses	Hera Nalbandian ¹ , Alice Stanton ² , Beth Pruitt ¹ Departments of Mechanical Engineering ¹ and Bioengineering ² , Stanford University
128	Inertial Microfluidic Devices for Separation of Induced Pluripotent Stem-Cell Derived Cardiomyocytes (iPS-CMs)	Karina Luna ¹ , Mahdokht Masaeli ^{1,2} , Alexandre Ribeiro ¹ , Beth L. Pruitt ^{1,3} Departments of Mechanical Engineering ¹ , Cardiovascular Medicine ² , and Molecular & Cellular Physiology ³ , Stanford University
129	Proteins and Polysaccharides: the Forms and Functions of the Bacterial Extracellular Matrix	Alex S. Antonopolis ¹ , Joseph A. H. Romaniuk ¹ , Wiriya Thongsomboon ¹ , Lynette Cegelski ¹ Department of Chemistry ¹ , Stanford University
130	Investigating the Propagation of the Mechanical Stimuli to the Touch Receptor Neurons of <i>C. elegans</i>	Sheetal Ramsurrun ¹ , Adam Lee Nekimken ² , Miriam Goodman ^{3,4} , Beth Pruitt ² Vice Provost for Undergraduate Education ¹ , Departments of Mechanical Engineering ² and Molecular & Cellular Physiology ³ , and Stanford Neurosciences Institute ⁴ , Stanford University
131	Integrating Public Data Towards Ecological Insight: Magnesium Transport as a Key Trait in Plant-Fungal Symbiosis	Joe Wan ¹ , Kabir Peay ¹ Department of Biology ¹ , Stanford University