



# Stanford Bio-X Fellows Symposium Poster Session

October 18, 2022

Posters are alphabetized by the last name of the presenter.

Presenters' names are listed in bold.

POSTER #	TITLE	AUTHORS
1	Circular RNA Uptake Programs Systemic Immunity	<b>Laura Amaya</b> <sup>*1,2</sup> , Lilit Grigoryan <sup>*3</sup> , Brian Abe <sup>2,4</sup> , Jie Liu <sup>1,5</sup> , Feifei Zhao <sup>1,5</sup> , Audrey Lee <sup>3</sup> , Robert Chen <sup>2</sup> , Rui Li <sup>2</sup> , Zhijian Li <sup>6</sup> , Paul A. Wender <sup>6</sup> , Ravindra Majeti <sup>1,5</sup> , Bali Pulendran <sup>3</sup> , Howard Chang <sup>2,7</sup> (*equal contribution) Institute for Stem Cell Biology & Regenerative Medicine <sup>1</sup> , Center for Personal Dynamic Regulomes <sup>2</sup> , Institute for Immunity, Transplantation & Infection <sup>3</sup> , Division of Hematology <sup>4</sup> , Division of Immunology & Rheumatology <sup>5</sup> , Department of Chemistry <sup>6</sup> , and Howard Hughes Medical Institute <sup>7</sup> , Stanford University
2	Characterization of a Novel Helix Docking Interaction Between Cell-Cycle Proteins Cyclin D and Retinoblastoma	<b>Cecelia Brown-Fleming</b> <sup>1</sup> , Benjamin Reyes Topacio <sup>1,2</sup> , Mardo Kõivomägi <sup>1,3</sup> , Joshua J. Konschnik <sup>1</sup> , Michael Lanz <sup>1</sup> , Christian J. Gutierrez <sup>1</sup> , Jan M. Skotheim <sup>1</sup> Department of Biology <sup>1</sup> , Stanford University; Department of Biomolecular Engineering <sup>2</sup> , University of California, Santa Cruz; Laboratory of Biochemistry & Molecular Biology <sup>3</sup> , CCR, National Cancer Institute
3	Molecular Theory for Rationally Designing Dynamically Associating Polymers	<b>Pamela Cai</b> <sup>1</sup> , Bo Su <sup>2</sup> , Lei Zou <sup>2</sup> , Matthew Webber <sup>2</sup> , Sarah Heilshorn <sup>3</sup> , Andrew Spakowitz <sup>1,3</sup> Departments of Chemical Engineering <sup>1</sup> and Materials Science & Engineering <sup>3</sup> , Stanford University; Department of Chemical & Biomolecular Engineering <sup>2</sup> , University of Notre Dame
4	Biophysical Dissection of the Microsporidian Polar Tube Invasion Machinery	<b>Ray Chang</b> <sup>1</sup> , Ari Davydov <sup>4,6</sup> , Pattana Jaroenlak <sup>4,6</sup> , Breane Budaitis <sup>4,6</sup> , Damian Ekiert <sup>4,5,6</sup> , Gira Bhabha <sup>4,6</sup> , Manu Prakash <sup>1,2,3</sup> Department of Bioengineering <sup>1</sup> and Woods Institute for the Environment <sup>2</sup> , Stanford University; Chan Zuckerberg Biohub <sup>3</sup> ; Skirball Institute of Biomolecular Medicine <sup>4</sup> and Departments of Cell Biology <sup>6</sup> and Microbiology <sup>5</sup> , New York University School of Medicine
5	Non-Invasive, Point-of-Care Genotyping Using Recombinase Polymerase Amplification and Giant Magnetoresistive Biosensors	<b>Ana Sofia de Olazarra</b> <sup>1</sup> , Dana Cortade <sup>2</sup> , Shan X. Wang <sup>1,2</sup> , Jessie Markovitz <sup>3</sup> , David Spiegel <sup>3</sup> Departments of Electrical Engineering <sup>1</sup> , Materials Science & Engineering <sup>2</sup> , and Psychiatry & Behavioral Sciences <sup>3</sup> , Stanford University
6	Visualize Neural Activity Using Nanophotonics	<b>Yi-Shiou Duh</b> <sup>1,2</sup> , Hongquan Li <sup>3</sup> , Ching-Ting Tsai <sup>4</sup> , Martin Hrton <sup>5</sup> , Siddharth Doshi <sup>6</sup> , Yuecheng Zhou <sup>4</sup> , Viktoryia Shautsova <sup>4</sup> , Erica Liu <sup>4</sup> , Nicholas Melosh <sup>6</sup> , Manu Prakash <sup>7</sup> , Bianxiao Cui <sup>4</sup> , Mark L. Brongersma <sup>1,6</sup> Geballe Laboratory for Advanced Materials <sup>1</sup> and Departments of Physics <sup>2</sup> , Electrical Engineering <sup>3</sup> , Chemistry <sup>4</sup> , Materials Science & Engineering <sup>6</sup> , and Bioengineering <sup>7</sup> , Stanford University; Department of Physics <sup>5</sup> , Bruno University of Technology
7	<i>In vivo</i> Voltage Imaging of Fast Voltage Transients with an Ultrasensitive Fluorescent Protein	<b>Yukun A. Hao</b> <sup>1,2</sup> , Sungmoo Lee <sup>2</sup> , Guofeng Zhang <sup>2</sup> , Dongyun Jiang <sup>2</sup> , Thomas R. Clandinin <sup>2</sup> , Michael Z. Lin <sup>1,2</sup> Departments of Bioengineering <sup>1</sup> and Neurobiology <sup>2</sup> , Stanford University
8	Cell-Type-Specific Line Attractor Dynamics Integrating Reward History	<b>YoungJu Jo</b> <sup>1,2</sup> , Emily Sylwestrak <sup>1,3</sup> , Sam Vesuna <sup>1</sup> , Xiao Wang <sup>1</sup> , Blake Holcomb <sup>3</sup> , Rebecca Tien <sup>1</sup> , Doo Kyung Kim <sup>1</sup> , Lief Fenno <sup>1</sup> , Charu Ramakrishnan <sup>1</sup> , William Allen <sup>1</sup> , Ritchie Chen <sup>1</sup> , Krishna Shenoy <sup>4</sup> , David Sussillo <sup>4</sup> , Karl Deisseroth <sup>1,5</sup>

		Departments of Bioengineering <sup>1</sup> , Applied Physics <sup>2</sup> , Electrical Engineering <sup>4</sup> , and Psychiatry & Behavioral Sciences <sup>5</sup> , Stanford University; Department of Biology <sup>3</sup> , University of Oregon
9	Modular and Programmable RNA Sensing Using ADAR Editing in Living Cells	<b>K. Eerik Kaseniit</b> <sup>1</sup> , Noa Katz <sup>2</sup> , Natalie S. Kolber <sup>1,3</sup> , Connor C. Call <sup>2</sup> , Diego L. Wengier <sup>2</sup> , Will B. Cody <sup>2</sup> , Elizabeth S. Sattely <sup>2,4</sup> , Xiaojing J. Gao <sup>2,3</sup> Departments of Bioengineering <sup>1</sup> and Chemical Engineering <sup>2</sup> Sarafan ChEM-H Chemistry/Biology Interface Training Program <sup>3</sup> , and Howard Hughes Medical Institute <sup>4</sup> , Stanford University
10	Bacterial Responses to Temperature Fluctuation Are Tuned by Metabolites and Temperature Destination	<b>Benjamin D. Knapp</b> <sup>1</sup> , Kerwyn Casey Huang <sup>1,2,3,4</sup> Biophysics Program <sup>1</sup> and Departments of Microbiology & Immunology <sup>2</sup> and Bioengineering <sup>3</sup> , Stanford University; Chan Zuckerberg Biohub <sup>4</sup>
11	Electrostatics of RNA: Investigating Electron Scattering of RNA Using CryoEM Data	<b>Rachael Kretsch</b> <sup>1</sup> , Rhiju Das <sup>1,2</sup> , Wah Chiu <sup>1,3,4</sup> Biophysics Program <sup>1</sup> , Departments of Biochemistry <sup>2</sup> and Bioengineering <sup>3</sup> , and SLAC SSRL <sup>4</sup> , Stanford University
12	N-Lactoyl Phenylalanine as a Molecular Transducer of Physical Activity	<b>Veronica L. Li</b> <sup>1</sup> , Yang He <sup>2</sup> , Kevin Contrepois <sup>3</sup> , Erik A. Richter <sup>4</sup> , Michael P. Snyder <sup>3</sup> , Yong Xu <sup>2*</sup> , Jonathan Z. Long <sup>1</sup> Departments of Pathology <sup>1</sup> and Genetics <sup>3</sup> , Stanford University; Children's Nutrition Research Center, Department of Pediatrics <sup>2</sup> , Baylor College of Medicine; Section of Molecular Physiology, Department of Nutrition, Exercise & Sports, Faculty of Science <sup>4</sup> , University of Copenhagen
13	Reducing Muscle Contributions to Knee Joint Loading with Powered Exoskeleton Assistance	<b>Delaney Miller</b> <sup>1</sup> , Julie Kolesar <sup>2</sup> , Scott Delp <sup>1,2,3</sup> , Steve Collins <sup>1</sup> Departments of Mechanical Engineering <sup>1</sup> , Bioengineering <sup>2</sup> , and Orthopaedic Surgery <sup>3</sup> , Stanford University
14	Using <i>C. elegans</i> to Identify GPCRs Involved in Detecting Valproic Acid, an Anticonvulsant and Mood-Stabilizing Drug	<b>Lucero E. Rogel-Hernandez</b> <sup>1</sup> , Emily Fryer <sup>2</sup> , Sujay Guha <sup>1</sup> , Sue Rhee <sup>2</sup> , Miriam B. Goodman <sup>1</sup> Department of Molecular & Cellular Physiology <sup>1</sup> , Stanford University; Department of Plant Biology <sup>2</sup> , Carnegie Institution for Science
15	Optical Coagulation for 3D Bioprinting	<b>Joshua Sampson</b> <sup>1</sup> , Elisa Marani <sup>1</sup> , Zhe Ji <sup>2</sup> , Arnold Langat <sup>1</sup> , Abi Archer <sup>1</sup> , Steve Boxer <sup>2</sup> , Mark Skylar-Scott <sup>1</sup> Departments of Bioengineering <sup>1</sup> and Chemistry <sup>2</sup> , Stanford University
16	High-Throughput Characterization of Direct Human Transcription Factor Activation Domain–Co-activator Interactions	<b>Peter Suzuki</b> <sup>*1</sup> , Nicole DelRosso <sup>*2</sup> , Daniel Griffith <sup>3,4,5</sup> , Alex Holehouse <sup>3,4,5</sup> , Lacramioara Bintu <sup>1,2</sup> , Polly Fordyce <sup>1,2</sup> (*equal contribution) Department of Bioengineering <sup>1</sup> and Biophysics Program <sup>2</sup> , Stanford University; Computational & Systems Biology Program <sup>3</sup> , Department of Biochemistry & Molecular Biophysics <sup>4</sup> , and Center for Science & Engineering of Living Systems <sup>5</sup> , Washington University in St. Louis
17	Miniaturized Wireless Potentiostat for Intraoral Sensing of Glucose and Lactate	<b>Ella Thomson</b> <sup>1</sup> , Cheng Chen <sup>1</sup> , Joonseok Yang <sup>1</sup> , Siavash Kananian <sup>1</sup> , Rayhan Lal <sup>2</sup> , Justin P. Annes <sup>2</sup> , Ada Poon <sup>1</sup> Departments of Electrical Engineering <sup>1</sup> and Medicine (Division of Endocrinology) <sup>2</sup> , Stanford University
18	A Versatile CRISPR/Cas13d-Based Platform for Multiplexed Transcriptomic Regulation in Primary Human T Cells	<b>Victor Tieu</b> <sup>1,2</sup> , Elena Sotillo <sup>2</sup> , Jeremy R. Bjelajac <sup>2</sup> , Crystal L. Mackall <sup>2,3,4</sup> , Lei S. Qi <sup>1,5,6</sup> Departments of Bioengineering <sup>1</sup> , Pediatrics <sup>3</sup> , and Medicine <sup>4</sup> , Center for Cancer Cell Therapy <sup>2</sup> , and Sarafan ChEM-H <sup>5</sup> , Stanford University; Chan Zuckerberg Biohub <sup>6</sup>
19	Large-Scale Biophysical Simulations Guiding Calibration of Next-Generation Bi-Directional Neural Interfaces	<b>Ramandeep Vilku</b> <sup>1</sup> , Sasidhar S. Madugula <sup>2</sup> , Praful Vasireddy <sup>1</sup> , A.J. Phillips <sup>1</sup> , Pawel Hottowy <sup>3</sup> , Alexander Sher <sup>4</sup> , Alan M. Litke <sup>4</sup> , Subhasish Mitra <sup>1</sup> , E.J. Chichilnisky <sup>5</sup> Departments of Electrical Engineering <sup>1</sup> , Neuroscience <sup>2</sup> , and Neurosurgery <sup>3</sup> , Stanford University; Faculty of

		Physics & Applied Computer Science <sup>3</sup> , AGH University of Science & Technology; Santa Cruz Institute for Particle Physics <sup>4</sup> , University of Santa Cruz
20	Embryonically Active Neurons in the Development of a Recurrent Olfactory Cortical Circuit	<b>David Cheng-Hao Wang</b> <sup>1</sup> , Fernando Santos Valencia <sup>2</sup> , Jun Ding <sup>3</sup> , Kevin Franks <sup>2</sup> , Liqun Luo <sup>1</sup> Departments of Biology <sup>1</sup> and Neurosurgery <sup>3</sup> , Stanford University; Department of Neurobiology <sup>2</sup> , Duke University
21	Engineering Pluripotent Stem Cells to Enable Growth Factor-Free Cell Culture	<b>Jonathan D. Weiss</b> <sup>1</sup> , Mark A. Skylar-Scott <sup>1,2</sup> Department of Bioengineering <sup>1</sup> and BASE Initiative, Betty Irene Moore Children's Heart Center, Lucile Packard Children's Hospital <sup>2</sup> , Stanford University
22	Virtual Biopsy for Non-Contact Pathology – Using Optical Coherence Tomography and Machine Learning to Diagnose Cancer Non-Invasively	<b>Yonatan Winetraub</b> <sup>1,2,3,4</sup> , Edwin Yuan <sup>2,3,4</sup> , Itamar Terem <sup>2,3,4</sup> , Aidan Van Vleck <sup>2</sup> , Jingjing Zao <sup>2</sup> , Warren H. Chan <sup>5</sup> , Sumaira Aasi <sup>5</sup> , Kavita Y. Sarin <sup>5</sup> , Adam de la Zerda <sup>1,2,3,4,6</sup> Biophysics Program <sup>1</sup> , Departments of Structural Biology <sup>2</sup> and Dermatology <sup>5</sup> , Molecular Imaging Program at Stanford <sup>3</sup> , and the Bio-X Program <sup>4</sup> , Stanford University; Chan Zuckerberg Biohub <sup>6</sup>
23	Data Compression versus Signal Fidelity Tradeoff in Wired-OR ADC Arrays for Neural Recording	<b>Pumiao Yan</b> <sup>1</sup> , Nishal P. Shah <sup>1,2</sup> , E.J. Chichilnisky <sup>3</sup> , Boris Murmann <sup>1</sup> Departments of Electrical Engineering <sup>1</sup> , Neurosurgery <sup>2</sup> , and Ophthalmology <sup>3</sup> , Stanford University
24	Decoding and Modulation of Spiking Activity of the Sciatic Nerve in Moving Mice	<b>Eric T. Zhao</b> <sup>1</sup> , Katharina S. Fischer <sup>2</sup> , Zeshaan N. Maan <sup>3</sup> , Janos Barrera <sup>3</sup> , Nofar Hemed <sup>1</sup> , Geoffrey Gurtner <sup>2</sup> , Nicholas A. Melosh <sup>1</sup> Departments of Materials Science & Engineering <sup>1</sup> and Surgery <sup>3</sup> , Stanford University; Department of Surgery <sup>2</sup> , University of Arizona