



Stanford Bio-X Interdisciplinary Initiatives Seed Grants Poster Session

August 29, 2024

*Posters are alphabetized by the last name of the presenter.
Presenters' names are listed in bold.*

POSTER #	TITLE	AUTHORS
1	The Effects of Cholesterol on Bacterial Nanoparticle Size	Uchenna Abba ¹ , Kofi Amankwah ¹ , Francesca Starvaggi ¹ , Claire Stewart ¹ , Naima G. Sharaf ¹ Department of Biology ¹ , Stanford University
2	Decoding Antibody Repertoires: Large-Scale Profiling Enabled by Highly Multiplexed Metasurfaces and Digitized Acoustic Bioprinting	Sajjad Abdollahramezani ¹ , Darrell Omo-Lamai ¹ , Sahil Dagli ¹ , Varun Dolia ¹ , Jack Hu ² , Kai Chang ³ , Hamish Carr Delgado ¹ , Butrus T. Khuri-Yakub ³ , Fareeha Safir ² , Parivash Moradifar ¹ , Jennifer Dionne ^{1,4} Departments of Materials Science & Engineering ¹ , Electrical Engineering ³ , and Radiology ⁴ , Stanford University; Pumpkinseed Technologies, Inc. ²
3	Gastruloids Enable Modeling of Human Cardiac and Hepatic Organoid Vascularization	Oscar J. Abilez ^{1,2,3,4,5} , Huaxiao Yang ^{1,7} , Yuan Guan ⁸ , Mengcheng Shen ¹ , Zehra Yildirim ¹ , Yan Zhuge ¹ , Rahul K. Bhoi ⁷ , Logan Dunkenberger ^{1,4} , Ravichandra Venkateshappa ¹ , Shane R. Zhao ¹ , Yoshikazu Ono ^{4,5} , Masafumi Shibata ^{4,5} , Peter N. Nwokoye ^{4,5} , Lei Tian ¹ , Kitchener D. Wilson ^{1,9,10} , Evan H. Lyall ¹⁰ , Fangjun Jia ¹ , Hung Ta Wo ¹ , Gao Zhou ^{11,12} , Bryan Aldana ¹³ , Ioannis Karakikes ^{1,4} , Detlef Obal ^{1,2,3,8} , Gary Peltz ⁸ , Christopher K. Zarins ^{1,3,14} , Joseph C. Wu ^{1,2,3,6,15} Cardiovascular Institute ¹ , Maternal & Child Health Research Institute ² , Stanford Bio-X Program ³ , Departments of Cardiothoracic Surgery ⁴ , Cardiovascular Medicine ⁶ , Anesthesia, Pain, & Perioperative Medicine ⁸ , Pathology ⁹ , Genetics ¹² , Bioengineering ¹³ , Surgery ¹⁴ , Radiology ¹⁵ , and Pediatric Cardiac Surgery ⁵ , and Stanford Center for Genomics & Personalized Medicine ¹¹ , Stanford University; Department of Biomedical Engineering ⁷ , University of North Texas; Rosebud Biosciences ¹⁰
4	Cerebellar Contributions to Learned Changes in the Temporal Dynamics of Eye Movements	Aaron P. Adam ¹ , Kellen Vu ¹ , Sriram Jayabal ¹ , Jennifer Raymond ¹ Department of Neurobiology ¹ , Stanford University
5	Uncovering Neural Ensembles in Opioid Intoxication and Precipitated Withdrawal	Gwendolyne Aguilar ¹ , Julia Alexandra Galiza Soares ¹ , Samantha Sutley-Koury ¹ , Jason Tucciarone ¹ Department of Psychiatry & Behavioral Sciences ¹ , Stanford University
6	Integrating SH3 Domains Through Molecular Cloning and Plasmid Recombination for Targeted Antibody Production	Anna Amine ¹ , Wei Zhang ¹ , Bianxiao Cui ¹ Department of Chemistry ¹ , Stanford University
7	<i>In Vitro</i> Model of the Vein-to-Artery Cell Fate Conversion to Test Candidate Arteriogenesis Pathways	Zhainib A. Amir-Ugokwe ^{1,2} , Kyle Loh ^{2,3} , Lay Teng Ang ^{2,3} , Kristy Red-Horse ^{1,2,3,4} Department of Biology ¹ , Stanford Cardiovascular Institute (CVI) ² , and Institute for Stem Cell Biology & Regenerative Medicine ³ , Stanford University; Howard Hughes Medical Institute ⁴
8	Single Cell Protists Signal Non-Self via 'XOR' and 'NOT EQUALS' Logic in Dimer Complexes, with Implications for Malaria Antigenic Variation	Rocky An ^{1,2} , Matthias Garten ³ Departments of Bioengineering ¹ , Electrical Engineering ² , and Microbiology & Immunology ³ , Stanford University
9	Identifying Unusually Bright and Star-Forming Cluster Central Galaxies from Photometric Catalogs	Gia Ancone ^{1,2} , Steven Allen ^{1,2,3} , Adam Mantz ¹ , Artem Poliszczuk ¹ Kavli Institute of Particle Astrophysics & Cosmology ¹ , Department of Physics ² , and SLAC National Accelerator Laboratory ³ , Stanford University
10	<i>In-Situ</i> CryoET Study of the Vault Protein in Alzheimer's Disease	Eli Andino-Frydman ^{2,4} , Pingting Liu ^{1,4} , Cathy Hou ^{3,4} , Gong-Her Wu ^{1,4} , Michael Schmid ⁴ , Judith Frydman ² , Ian Cooney ^{1,4} , Wah Chiu ^{1,4}

		Departments of Bioengineering ¹ , Biology ² , and Computer Science ³ and SLAC National Accelerator Laboratory ⁴ , Stanford University
11	Multiomic Study of Chemotherapy Resistant B-Cells from Pediatric ALL Patient Bone Marrow	Athena Aragon ¹ , Yakun Pang ¹ , Veronica Gonzalez-Pena ¹ , Ben Yellen ² , Charles Gawad ¹ Department of Hematology/Oncology ¹ , Stanford University; Celldom, Inc. ²
12	Disuse-Induced Alterations in Skeletal Muscle Innervation Pattern and Neuromuscular Junction Morphology	Ari Arias ¹ , Elena Monti ¹ , Helen Blau ¹ Department of Microbiology & Immunology ¹ , Stanford University
13	3D Printed μ Dicer for Uniform Tissue Microdissection	Anatoma Arif ¹ , Saisneha Koppaka ¹ , Seth C. Cordts ¹ , Sindy K.Y. Tang ¹ Department of Mechanical Engineering ¹ , Stanford University
14	LipoCatch: A Novel Bacterial Lipoprotein-Based Biomaterial for Small Molecule Encapsulation	Marc Arslanian ¹ , Francesca Starvaggi ¹ , Naima Sharaf ¹ Department of Biology ¹ , Stanford University
15	Investigation the Effect of Early-Life Respiratory Immune Challenges on Neurocognition	Sophia Artandi ¹ , Karen Malacon ¹ , Michelle Monje ¹ Department of Neurology ¹ , Stanford University
16	Brain-Wide Synaptic Alterations Induced by Deletion of Presynaptic Neurexins and LAR-PTPRs	Margarita Artiukhova ¹ , Thomas C. Südhof ^{1,2} Department of Molecular & Cellular Physiology ¹ and Howard Hughes Medical Institute ² , Stanford University
17	Larvae on the Brink: Survival and Choice in a Changing Ocean	Cara Askren ^{1,2} , Ronnie Voskoboynik ^{1,2} , Noah Gordon ^{1,2} , Kathi Ishizuka ^{1,2} , Karla Palmeri ^{1,2} , Jos Domen ² , Chris Garsha ¹ , Thomas Rolander ¹ , Tal Gordon ^{1,2} , Chester Jiamu Yu ^{1,3} , Tom Levy ^{1,2} , Irving L. Weissman ^{1,2,3} , Ayelet Voskoboynik ^{1,2,3} Biology Department Hopkins Marine Station ¹ and Institute for Stem Cell Biology & Regenerative Medicine ² , Stanford University; Hong Kong University of Science & Technology ³
18	A Microscope for Tracking Plasmonic Nanoparticles with Angstrom Resolution on Microsecond Timescales	Jeremy J. Axelrod ¹ , G. Edward Marti ¹ , Steven Chu ^{1,2} Departments of Molecular & Cellular Physiology ¹ and Physics ² , Stanford University
19	Cell Dancing Enhances Stem Cell Differentiation in 3D via Nuclear Mechanotransduction	Manish Ayushman ¹ , Georgios Mikos ² , Xinming Tong ³ , Pamela Cai ² , Andrew Spakowitz ² , Sarah Heilshorn ⁴ , Fan Yang ^{1,3} Departments of Bioengineering ¹ , Chemical Engineering ² , Orthopaedic Surgery ³ , and Materials Science & Engineering ⁴ , Stanford University
20	Upregulation of Senescence Genes, <i>SFN</i> and <i>CDC6</i> , Correlates with Poor Survival in Stage II Hepatocellular Carcinoma	Joshua Badshah ¹ , Greta Cywinska ¹ , Marc Melcher ¹ , Kazunari Sasaki ¹ , Brendan Visser ² , Daniel Delitto ² , Timothy Pruett ³ , Laura Niedernhofer ⁴ , Varvara Kirchner ¹ Divisions of Abdominal Transplantation ¹ and General Surgery ² , Stanford University; Divisions of Transplantation ³ and Molecular Biology ⁴ , University of Minnesota
21	Pileup Identification for the XCC $\gamma\gamma$ Higgs Factory	Joseph Bailey ¹ , Santiago Ampudia Castelazo ¹ , Timothy L. Barklow ¹ , Ariel G. Schwartzman ¹ SLAC National Accelerator Laboratory ¹ , Stanford University
22	Investigation of a Potential-Mutation in the FMR1 Protein-Sequence Which May Be Linked to Autism Behaviors in Fish-Models	Sasha Balasingam ¹ , James Jaggard ¹ , Adriana Lopez Valencia ¹ , Oliver Cho ¹ , Joachim Hallmayer ¹ , Philippe Mourrain ¹ Department of Psychiatry & Behavioral Sciences ¹ , Stanford University
23	Harnessing Lipid Mobility to Engineer Hydrogel Viscoelasticity	Neil Baugh ¹ , Michelle Huang ² , Narelli de Paiva Narciso ¹ , Renato Navarro ¹ , Ruby Onsongo ¹ , David Killian ¹ , Jayniana Williams ¹ , Chris Long ¹ , Sarah Heilshorn ¹ Departments of Materials Science & Engineering ¹ and Chemical Engineering ² , Stanford University
24	Physical Basis of Chromosome Condensation	Andrew J. Beel ¹ , Pierre-Jean Matteï ¹ , Maia Azubel ¹ , Roger D. Kornberg ¹ Department of Structural Biology ¹ , Stanford University

25	Modeling Effect of Acetylation on the Oligomerization of Disease-State Tau Using Molecular Dynamics	Samuel Benabou ¹ , Yanmin Yang ¹ Department of Neurology & Neurological Sciences ¹ , Stanford University
26	Expression of Leukemia Inhibitory Factor Receptor (LIFR) in Mouse Neuroepithelial Progenitors During Early Development	Maitreyi Bharath ^{1,3} , Arjun Rajan ^{2,3} , Ryann Fame ³ Leigh High School ¹ ; Departments of Developmental Biology ² and Neurosurgery ³ , Stanford University
27	Engineering and Design for Enhanced Heart Rate Detection in Cetacean-Borne Tags	Ashley M. Blawas ¹ , Dave E. Cade ¹ , John Calambokidis ² , James A. Fahlbusch ^{1,2} , Ari S. Friedlaender ³ , Jessica M. Kendall-Bar ⁴ , Paul J. Ponganis ⁴ , Brandon Southall ^{3,5} , Jeremy A. Goldbogen ¹ Hopkins Marine Station ¹ , Stanford University; Cascadia Research Collective ² ; Institute of Marine Sciences ³ , University of California Santa Cruz; Scripps Institute of Oceanography ⁴ , University of California San Diego; Southall Environmental Associates (SEA), Inc. ⁵
28	ATF6 Sustains Photoreceptor Segments in Retinal Organoids	Allyssa Bradley ^{1,2,3} , Soyeon Park ^{1,2,3} , Will Temme ^{1,2,3} , Hyejung Min ^{1,2,3} , Soyoung Park ^{1,2,3} , Eun-Jin Lee ^{1,2,3} , Jonathan H. Lin ^{1,2,3} Departments of Ophthalmology ¹ and Pathology ² , Stanford University; VA Palo Alto Healthcare System ³
29	Clinical Risk Stratification and Immunophenotyping of Immune Checkpoint Inhibitor Associated Heart Failure with Reduced Ejection Fraction	Corynn Branche ^{1,2} , Evaline Cheng ¹ , Vivian Huang ¹ , Harrison Chou ¹ , Han Zhu ¹ Departments of Cardiovascular Medicine ¹ and Biology ² , Stanford University
30	Antagonism Between Tumors and Lymphocytes During Metastasis Drives Coevolution	Cort B. Breuer ^{1,2} , Marcos Labrado ^{1,2} , Nathan E. Reticker-Flynn ¹ Department of Otolaryngology (Head & Neck Surgery) ¹ and Immunology Program ² , Stanford University
31	The Role of Oligodendroglia in Glioma Progression: Insights from a Mouse Model Integrated with Single-Cell Transcriptomics	Brandon Bui ¹ , Yao Lulu Xing ¹ , Ruolun Wei ¹ , Alexa Gwyn ¹ , Claudia K. Petritsch ¹ Department of Neurosurgery ¹ , Stanford University
32	Magnetic Field Effects in Fluorescent Proteins	Shaun Burd ¹ , Mark Kasevich ¹ , Nahal Bagheri ² , Srijit Murkerjee ² , Steve Boxer ² , Dara Dowlatshahi ³ , Samsuzzoha Mondal ³ , Jacob Summers ³ , Jerome Wu ³ , Soichi Wakatsuki ³ Departments of Physics ¹ , Chemistry ² , and Structural Biology ³ , Stanford University
33	Hybrid Synthesis of Bottlebrush DNA Polymers for Single-Molecule Rheology	Michael C. Burroughs ¹ , Lisa Nieman ¹ , Ava C. Conyer ^{1,2} , Louis X. Wang ³ , Danielle J. Mai ^{1,3} Departments of Chemical Engineering ¹ and Materials Science & Engineering ³ , Stanford University; Department of Chemical Engineering ² , Howard University
34	One-Step Bioprinting of Endothelialized, Self-Supporting Arterial and Venous Networks	Betty Cai ¹ , David Kilian ¹ , Sadegh Ghorbani ^{1,2} , Julien G. Roth ³ , Alexis J. Seymour ⁴ , Lucia G. Brunel ⁵ , Daniel Ramos Mejia ¹ , Ricardo J. Rios ¹ , Isabella M. Szabo ¹ , Rameshwar R. Rao ⁶ , Sungchul Shin ^{7*} , Sarah C. Heilshorn ^{1*} Departments of Materials Science & Engineering ¹ , Bioengineering ⁴ , Chemical Engineering ⁵ , and Pediatrics (Division of Pediatric Hematology, Oncology, Stem Cell Transplantation & Regenerative Medicine) ⁶ and Institute for Stem Cell Biology & Regenerative Medicine ³ , Stanford University; Department of Health Technology ² , Technical University of Denmark; Department of Agriculture, Forestry, & Bioresources ⁷ , Seoul National University
35	A Programmable Genetic Photothermal System	Sa Cai ^{1,2} , Xiang Wu ¹ , Guosong Hong ^{1,2,3*} , Lei Stanley Qi ^{2,4,5*} (*corresponding authors) Departments of Materials Science & Engineering ¹ and Bioengineering ⁴ , Stanford Bio-X ² , Wu Tsai Neurosciences Institute ³ , and Sarafan ChEM-H ⁵ , Stanford University; Chan Zuckerberg Biohub ⁶

36	Three Tools to Study UFM1's Role in Ribosome and Protein Quality Control	David Candes ¹ , Francesco Scavone ¹ , Magda Wachalska ¹ , Sam Gumbin ¹ , Celeste Riepe ¹ , Ron Kopito ¹ Department of Biology ¹ , Stanford University
37	Manipulating Cannabinoid Signaling and Metaplasticity to Reverse Learning Impairments in a Mouse Model of Fragile X Syndrome	Natalia Cantu ¹ , Amin Shakhawat ¹ , Jennifer L. Raymond ¹ Department of Neurobiology ¹ , Stanford University
38	Localizing the Effect of Serotonin on Female Social Behaviors	Vibiana Cardenas ¹ , Shuyun Alina Xiao ^{1,2} , Cherry Chen ¹ , Liqun Luo ^{1,2} Department of Biology ¹ and Howard Hughes Medical Institute ² , Stanford University
39	Neural Correlates of Affective Processing in Alcohol Use Disorder: An Analysis with Post Traumatic Stress Disorder Symptom Severity and Diagnosis	Riley E. Carolan ¹ , Daniel M. McCalley ¹ , Timothy C. Durazzo ^{1,2} , Claudia B. Padula ^{1,2} Department of Psychiatry & Behavioral Sciences ¹ , Stanford University; Mental Illness Research Education & Clinical Center ² , VA Palo Alto Health Care System
40	Hidden Comet-Tails of Marine Snow	Rahul Chajwa ¹ , Elliott Flaum ¹ , Kay D. Bidle ⁵ , Benjamin Van Mooy ⁶ , Manu Prakash ^{1,2,3,4} Departments of Bioengineering ¹ , Biology ² , and Oceans ³ and Woods Institute for the Environment ⁴ , Stanford University; Department of Marine & Coastal Science ⁵ , Rutgers University; Woods Hole Oceanographic Institution ⁶
41	From Policies to Pipes: Impact Evaluation of COVID-19 Policies on Campus Using Longitudinal Wastewater Monitoring of SARS-CoV-2 RNA	Elana M. G. Chan ¹ , Amanda Bidwell ¹ , Zongxi Li ¹ , Sebastien Tilmans ¹ , Alexandria B. Boehm ¹ Department of Civil & Environmental Engineering ¹ , Stanford University
42	Sequence Control of Bioinspired Calcium-Responsive Protein-Based Polymers	Marina P. Chang ¹ , Gatha M. Shambharkar ¹ , Winnie Huang ² , Kenny M. Hernandez ² , Danielle J. Mai ^{1,2} Departments of Materials Science & Engineering ¹ and Chemical Engineering ² , Stanford University
43	Milli-Spinner Thrombectomy	Yilong Chang ¹ , Qi Li ¹ , Shuai Wu ¹ , Renee Zhao ¹ Department of Mechanical Engineering ¹ , Stanford University
44	Spinning-Generated Suction for Kidney Stone Removal	Jasmine Vallejo ¹ , Yilong Chang ¹ , Renee Zhao ¹ Department of Mechanical Engineering ¹ , Stanford University
45	Peri-Pancreatic Metastasis of a Suspected Myoepithelioma in a Siberian Hamster	Ching-Hsuan (Emily) Chen ¹ , José G. Vilches-Moure ¹ Department of Comparative Medicine ¹ , Stanford University
46	Autonomous T Cell Activation-Inducible RNA Switches for Cell Therapy	Crystal Chen ¹ , Lei Stanley Qi ^{2,3,4} Departments of Chemical Engineering ¹ and Bioengineering ² and Sarafan ChEM-H Institute ³ , Stanford University; Chan Zuckerberg Biohub ⁴
47	Vertebrate Organ Aging Impacted by Sexual Interaction	Jingxun Chen ¹ , Aleksandra Tsenter ¹ , Madeline J. Housh ¹ , Emma K. Costa ² , Léo-Paul Héraud ¹ , Rishad C. Khondker ¹ , Anne Brunet ¹ Departments of Genetics ¹ and Neurology & Neurosciences ² , Stanford University
48	Programmable Macromolecule Delivery by Engineered Trogocytosis	Xinyi Chen ^{1,2} , Yinglin Situ ¹ , Luna Lyu ³ , Yuexuan Yang ¹ , Aditi Merchant ¹ , Lei Stanley Qi ^{1,4,5} Department of Bioengineering ¹ , Stanford Bio-X Program ² , Institute for Computational & Mathematical Engineering ³ , and Sarafan ChEM-H ⁴ , Stanford University; Chan Zuckerberg Biohub ⁵
49	Long-Term Stable Biochemical Sensing Platform in Complex Biological Environment	Yihang Chen ^{1,2} , Kaiyu X. Fu ^{2,3,5} , H. Tom Soh ^{2,3,4} Departments of Materials Science & Engineering ¹ , Radiology ² , Electrical Engineering ³ , and Bioengineering ⁴ , Stanford University; Department of Chemistry & Biochemistry ⁵ , University of Notre Dame
50	Constructing Neuregulin 1 Knock-In Reporters to Visualize Myelination <i>In Vivo</i>	Maria Valentina Chirinos Pena ¹ , Andrea Navarrete Vargas ¹ , Daniel Lysko ¹ , William Talbot ¹ Department of Developmental Biology ¹ , Stanford University

51	A Spatially Patterned Model of Breast-Cancer Bone Metastasis for Drug Screening and Studying Bone Remodeling Dysregulation	Vedant Chittake ^{1,2} , Michelle Tai ¹ , Fan Yang ^{1,3} Departments of Bioengineering ¹ , Chemistry ² , and Orthopaedic Surgery ³ , Stanford University
52	Optimizing AAV Tools for Studying the Role of Myelin in Neurodegenerative Disease	Puja Chopade ¹ , Emma O'Connell ¹ , Graham Jones ¹ , Brad Zuchero ¹ Department of Neurosurgery ¹ , Stanford University
53	Rapid Proteome-Wide Prediction of Lipid-Interacting Proteins through Ligand-guided Structural Genomics	Jonathan Chiu-Chun Chou ¹ , Cassandra M. Decosto ¹ , Poulami Chatterjee ¹ , Laura M. K. Dassama ^{1,2} Departments of Chemistry (Sarafan ChEM-H Institute) ¹ and Microbiology & Immunology ² , Stanford University
54	Acute and Protracted Fentanyl Withdrawal Promotes Changes in Social, Mood, and Pain Behaviors in Mice	Jean Chun ¹ , Julia Soares ¹ , Gwendolyne Aguilar ¹ , Samantha Sutley-Koury ¹ , Matthew Pomrenze ¹ , Jason Tucciarone ¹ Department of Psychiatry & Behavioral Sciences ¹ , Stanford University
55	Binding NEMO: Peptide-Mediated Disruption of NEMO-IKK- β Binding to Inhibit NF- κ B Activation	Sowmya Chundi ¹ , Rafaela Chitarra Rodrigues Hell ¹ , Eric R. Gross ¹ Department of Anesthesiology, Perioperative & Pain Medicine ¹ , Stanford University
56	Optimized Laser Cooling of Atomic Strontium in an Optical Lattice	Ryan Clairmont ¹ , Guglielmo Panelli ¹ , Erik J. Porter ¹ , Shaun C. Burd ¹ , Mark Kasevich ¹ Department of Physics ¹ , Stanford University
57	Engineering T Cells to Counteract Antigen Density Heterogeneity in HER2+ Breast Cancer	Andrea Cortez Rodriguez ^{1,2} , Nivo van Donk ^{1,2} , Rogelio Hernandez-Lopez ^{1,2} Departments of Bioengineering ¹ and Genetics ² , Stanford University
58	Defining Molecular Pathways in Hepatocellular Recovery During Normothermic Machine Perfusion to Identify Liver Grafts Safe for Transplantation	Greta Cywińska ¹ , Joshua Badshah ² , Varvara Kirchner ² School of Medicine ¹ and Department of Surgery (Abdominal Transplant) ² , Stanford University
59	Early Extracellular Matrix Changes in Primary Sclerosing Cholangitis	Alexandre de Fraipont ¹ , Tzu Han Lo ¹ , Lorand Vancza ¹ , Natalie J. Torok ¹ Department of Gastroenterology & Hepatology ¹ , Stanford University
60	Submucosal Hydrogel for Spring-Mediated Intestinal Lengthening	Narelli de Paiva Narciso ¹ , Fereshteh Salimi-Jazi ² , Renato Navarro ¹ , Gilian Fell ³ , Riley A. Suhar ¹ , Anne-Laure Thomas ² , Talha Rafeeqi ² , Julie-Ann Nguyen ² , Nolan Lopez ² , Sarah Heilshorn ¹ , James Dunn ^{2,4} Departments of Materials Science & Engineering ¹ , Bioengineering ⁴ , Surgery (Divisions of Pediatric Surgery ² and Plastic Surgery ³), Stanford University
61	Targeting Novel Immune Modulatory Proteins for Treating Fibrotic Pathologies	Cristabelle De Souza ¹ , Yu Liu ¹ , Marjia Afrin ¹ , Kouta Nizuma ¹ , Sahar Nasser ¹ , Ariana Motaghanem ¹ , Sophie Puschmann ¹ , Clarissa You ¹ , Gerlinde Wernig ¹ Department of Pathology ¹ , Stanford University
62	A Novel Mouse Model for Authentic Reproduction of Human Chronic Kidney Disease	Qiwen Deng ¹ , Gerlinde Wernig ¹ Department of Pathology ¹ , Stanford University
63	Simulation Studies of Inter-Crystal Scatter and Correction for RF Penetrable TOF-PET Brain Insert for Simultaneous PET/MRI	Finley Desai ¹ , Muhammad Nasir Ullah ¹ , Craig S. Levin ¹ Molecular Imaging Instrumentation Laboratory, Department of Radiology ¹ , Stanford University
64	Evidence of Predisposition to Inflammasome Activation in Non-Obese Diabetic Mice	Binta Diallo ^{1,2} , Brenda Velasco ¹ , Sonia Fonseca ¹ , Jessica Poyser ¹ , Judith Shizuru ¹ Departments of Medicine (Division of Blood & Marrow Transplantation) ¹ and Human Biology ² , Stanford University
65	Single-Molecule Chromatin Configurations Link Transcription-Factor Binding to Expression in Human Cells	Benjamin Doughty ¹ , Julia Schaepe ² , Michaela Hinks ² , Simon Gaudin ¹ , Joshua Lyu ³ , Lacramioara Bintu ² , William Greenleaf ¹ Departments of Genetics ¹ , Bioengineering ² , and Chemistry ³ , Stanford University
66	Free-Space, Label-Free Optical Neural Interface	Yi-Shiou Duh ¹ , Hongquan Li ² , Ching-Ting Tsai ³ , Zihao Ou ⁴ , Martin Hrton ⁴ , Siddharth Doshi ⁴ , Viktoryia Shautsova ⁴ , Yuecheng Zhou ³ , Yang Yang ³ , Erica Liu ³ , Nicholas Melosh ⁴ , Manu Prakash ⁵ , Guosong Hong ⁴ , Bianxiao Cui ³ , Mark L. Brongersma ⁴

		Departments of Physics ¹ , Electrical Engineering ² , Chemistry ³ , Materials Science & Engineering ⁴ , and Bioengineering ⁵ , Stanford University
67	Structural Studies of Acetyl CoA/Propionyl CoA Carboxylase from <i>Nitrosopumilus maritimus</i>	Betul Ertem ^{1,2,5} , Jacob A. Summers ¹ , Irimpan I. Mathews ² , Fatima Pardo Avila ¹ , Ozkan Besler ⁶ , Christopher A. Francis ⁴ , Yasuo Yoshikuni ⁷ , Soichi Wakatsuki ^{1,2} , Hasan DeMirci ^{3,5} Departments of Structural Biology ¹ and Earth System Science ⁴ and Stanford PULSE Institute ² , Stanford University; Koç University Isbank Center for Infectious Diseases ³ and Department of Molecular Biology & Genetics ⁵ , Koc University; Department of Biomedical & Clinical Sciences ⁶ , Lipköping University; The US DOE Joint Genome Institute ⁷ , Lawrence Berkeley National Laboratory
68	RGD-Modified Hydrogel Maintains Cell Growth in Limbal Stem Cell Deficient Mouse Model	Houri Esmacilkhanian ¹ , Aditi Swarup ¹ , Noah Eckman ² , Hala Shakib Dhowre ¹ , Ozlem Ercal ¹ , Athar Shadmani ³ , Eric Appel ² , Albert Y. Wu ¹ Departments of Ophthalmology ¹ and Materials Science & Engineering ² , Stanford University; Department of Ophthalmology ³ , Jefferson University
69	Modeling Cell-Type-Specific Perturbations in Single-Cell Omic Datasets with scAMPI	Camilo Espinosa ¹ , Nima Aghaeepour ¹ Department of Anesthesia ¹ , Stanford University
70	Engineering Yeast Cells with Nitrogenase to Enable Eukaryotic Nitrogen Fixation	Alison Fajardo ¹ , Sapphire Doan ¹ , Phillip Kyriakakis ¹ , Guosong Hong ² Departments of Bioengineering ¹ and Materials Science & Engineering ² , Stanford University
71	Patient-Specific Computational Hemodynamic Performance Modeling of an Off-the-Shelf Multi-Branched Thoracoabdominal Endoprosthesis	Ethan Farah ¹ , Alison Marsden ² , Jason T. Lee ³ , Kenneth Tran ⁴ Departments of Biomechanical Engineering ¹ , Pediatric Cardiology ² , Neurology & Neurological Sciences ³ , and Vascular Surgery ⁴ , Stanford University
72	Measuring Human Brain Barrier Function with Paired CSF and Plasma Proteomics	Amelia Farinas ¹ , Jarod Rutledge ¹ , Veronica Bot ¹ , Hamilton Oh ¹ , Sophia Shi ¹ , Tony Wyss-Coray ¹ Department of Neurology ¹ , Stanford University
73	Investigating the Influence of Tumor-Associated Macrophages on Glioblastoma Cell Migration in a 3D Viscoelastic Model	Mark Fleck ¹ , Audrey Jung ² , Sauradeep Sinha ² , Abena Peasah ² , Sarah Jones ¹ , Fan Yang ^{2,3} Departments of Chemistry ¹ , Bioengineering ² , and Orthopaedic Surgery ³ , Stanford University
74	Exercise-Based Virtual Reality Intervention Performance and Changes in Brain Hemodynamics Using Optical Neuroimaging	Howard Fung ^{1,2} , Selena Niemi ^{2,3} , Suanna Moron ² , Allan Reiss ^{2,4} , Cassondra Eng ² Department of Psychology ¹ , Trinity College; Departments of Psychiatry & Behavioral Sciences ² , Human Biology ³ , and Radiology ⁴ , Stanford University
75	Missing Wedge Completion via Unsupervised Learning with Coordinate Networks	Dave Van Veen ¹ , Jesús G. Galaz-Montoya ² , Liyue Shen ³ , Philip Baldwin ^{4,5} , Akshay S. Chaudhari ⁶ , Dmitry Lyumkis ^{5,7} , Michael F. Schmid ⁸ , Wah Chiu ^{2,8,9} , John Pauly ¹ Departments of Electrical Engineering ¹ , Bioengineering ² , Radiology ⁶ , and Microbiology & Immunology ⁹ , Stanford University; Department of Electrical & Computer Engineering ³ , University of Michigan Ann Arbor; Department of Biochemistry & Molecular Pharmacology ⁴ , Baylor College of Medicine; Department of Genetics ⁵ , The Salk Institute of Biological Sciences; Graduate School of Biological Sciences ⁷ , University of California San Diego; Division of CryoEM & Bioimaging ⁸ , SSRL, SLAC National Accelerator Laboratory
76	Discovery of Small-Molecule Activators of the DNA Repair Enzyme SMUG1	Edward Gao ¹ , Lisa McPherson ² , Shanthi Adimoolam ² , Samyuktha Suresh ² , James M. Ford ² , Eric T. Kool ^{1*} (*corresponding author) Departments of Chemistry ¹ and Medicine ² , Stanford University

77	SARS-CoV 2 orf3A Protein: A Key Factor in Viral Assembly	Alexandra Garcia-Godos ¹ , Rebekah Gullberg ¹ , Juliana Abramovich ¹ , Judith Frydman ¹ Department of Biology ¹ , Stanford University
78	Monomeric SDF-1a Analog: Protein Engineering to Promote Angiogenesis Following Ischemic Injury	Gabrielle George ¹ , Matthew Vergel ¹ , Lisa Lee ¹ , Stefan Elde ¹ , Y. Joseph Woo ¹ Department of Cardiothoracic Surgery ¹ , Stanford University
79	The Effect of Psilocybin on Pain	Tyler Girard ¹ , Nick Gregory ¹ , Boris Heifets ¹ Department of Anesthesiology, Perioperative & Pain Medicine ¹ , Stanford University
80	An Experimental Approach for Optimizing Conditions for Liver Preservation	Milo Golding ¹ , Joshua Park ¹ , David Stewart ^{1,2} , Joshua Badshah ¹ , Bo Liu ¹ , Varvara Kirschner ¹ , Jill Helms ¹ Department of Plastic & Reconstructive Surgery ¹ , Stanford University; Meharry Medical College ²
81	Novel Aldehyde Dehydrogenase 2 Variants in Africans/African Americans Affect Acetaldehyde Metabolism	Maya Goldsberry ¹ , Tanaz Jamilpanah ¹ , Rafaela Chitarra Rodrigues Hell ¹ , Freeborn Rwere ¹ , Eric R. Gross ¹ Department of Anesthesiology, Perioperative & Pain Medicine ¹ , Stanford University
82	A FRET Assay to Quantitate Levels of the Human β -Cardiac Myosin Interacting Heads Motif Based on Its Near-Atomic Resolution Structure	Rama Reddy Goluguri ^{1,2} , Piyali Guhathakurta ³ , Neha Nandwani ^{1,2} , Aminah Dawood ^{1,2} , Seiji Yakota ^{1,2} , David D. Thomas ³ , Kathleen M. Ruppel ^{1,2,4} , James A. Spudich ^{1,2} Departments of Biochemistry ¹ and Pediatrics ⁴ and Stanford Cardiovascular Institute ² , Stanford University; Department of Biochemistry, Molecular Biology & Biophysics ³ , University of Minnesota
83	Characterization of Cyclic Physiology throughout the Menstrual Cycle and Lifespan	Alex Gonzalez ¹ , Johanna O'Day ¹ , Sarah Johnson ¹ , Jeongeun Kim ² , Summer Jasinski ² , Kristen Holmes ² , Jennifer Hicks ¹ , Scott Delp ^{1,3} Wu Tsai Human Performance Alliance ¹ and Department of Bioengineering ³ , Stanford University; WHOOP ²
84	Progression of Localized Collagenous Matrix Accumulation in the Midventral Glands of Siberian Hamsters (<i>Phodopus sungorus</i>)	Christine E. Goodermuth ¹ , José G. Vilches-Moure ¹ Department of Comparative Medicine ¹ , Stanford University
85	Evaluating Beam Induced Background for the Cool Copper Collider	Laith Gordon ¹ , Dimitris Ntounis ¹ , Caterina Vernieri ¹ SLAC National Accelerator Laboratory ¹ , Stanford University
86	Investigation of Variable Elastin-Like Polypeptide Hydrophilic Regions and Phase Change	Jesse D. Grayson ¹ , Brendan M. Wirtz ¹ , Danielle J. Mai ¹ Department of Chemical Engineering ¹ , Stanford University
87	SARS-CoV2 Virus Assembly is Augmented by the orf3A Protein	Rebekah C. Gullberg ¹ , Alexandra Garcia-Godos ¹ , Juliana Abramovich ¹ , Judith Frydman ¹ Department of Biology ¹ , Stanford University
88	Molecular Mapping of Serotonin Receptor Expression Across the Mouse Striatum	Michaela Y. Guo ^{1*} , Daniel F. Cardozo Pinto ^{1*} , Matthew B. Pomrenze ¹ , Neir Eshel ¹ †, Robert C. Malenka ¹ † (*equal contribution; †senior author) Department of Psychiatry & Behavioral Sciences ¹ , Stanford University
89	BAR Domain Proteins Promote Apical Membrane Formation in Drosophila Intestinal Stem Cell Progeny	Vibhu Guru ¹ , Tony Galenza ¹ , Elsa Su ¹ , Lucy Erin O'Brien ^{1,2} Department of Molecular & Cellular Physiology (Institute of Stem Cell Biology & Regenerative Medicine) ¹ , Stanford University; Université de Lausanne ² , Bâtiment Biophore
90	Matrix Shear Strength Regulates T Lymphocyte Migration Through Confining Microenvironments	Byunghang Ha ¹ , Peter Xie ¹ , Maria Korah ² , Daniel Delitto ² , Paul Bollyky ³ , Ovijit Chaudhuri ¹ Departments of Mechanical Engineering ¹ , Surgery ² , and Infectious Diseases ³ , Stanford University
91	Identifying Key Questions from CDR, MoCA, and MMSE for Developing an Accurate Over the Phone MCI Screening Test in Older Adults	Yarah Haddad Tehrani ¹ , Barbara Avelar Pereira ¹ , Hadi Hosseini ¹ Department of Psychiatry & Behavioral Sciences (Interdisciplinary Brain Sciences) ¹ , Stanford University
92	A Novel Solution to Tonically Signaling CAR Therapies: Endogenous T Cell Proteases	Jennifer Lauren Hamad ¹ , Jeremy Bjelajac ² , Crystal Mackall ³ Departments of Biology ¹ , Stem Cell Biology &

		Regenerative Medicine ² , and Pediatrics (Hematology/Oncology) ³ , Stanford University
93	Investigating Prion-Like Behavior in INO80 Complex Subunits	George Hasnah ¹ , Dylan Englund ¹ , Keith Garcia ¹ , Ashby Morrison ¹ Department of Biology ¹ , Stanford University
94	Ocular Implants for Glaucoma Neuroprotection: Ciliary Neurotrophic Factor on Retinal Ganglion Cell Functional Activity and Phase II Trial Structural Outcomes	Katherine Healzer ¹ , Tasneem Khatib ¹ , Gala Beykin ¹ , Zachary Wennberg-Smith ¹ , Jeffrey L. Goldberg ¹ Spencer Center For Vision Research and the Byers Eye Institute ¹ , Stanford University
95	Toward Bacterial Wastewater Monitoring with Surface-Enhanced Raman Spectroscopy and Deep Learning	Liam Herndon ¹ , Babatunde Ogunlade ² , Yirui Zhang ² , Sahil Dagli ² , Halleh Balch ² , Fareeha Safir ⁴ , Alexandria Boehm ³ , Jennifer Dionne ^{2,4} Departments of Chemical Engineering ¹ , Materials Science & Engineering ² , and Civil & Environmental Engineering ³ , Stanford University; Pumpkinseed Technologies ⁴
96	Drug Counterfeits: Isotopic and Trace Elemental Patterns in Pharmaceuticals	Else Holmfred ^{1,2,3} , Page Chamberlain ¹ , Katherine Maher ² , Stefan Stürup ³ Departments of Earth & Planetary Sciences ¹ and Earth System Sciences ² , Stanford University; Department of Pharmacy ³ , University of Copenhagen
97	Investigating the Effects of Vaccine Adjuvants on NK Cell Function for the Improvement of Vaccination Strategies	Elizabeth Hong ¹ , Izumi de los Rios Kobara ² , Catherine A. Blish ^{2,3,4,5} Stanford Bio-X ¹ , Stanford Immunology Program ² , Department of Medicine ³ , and Stanford Medical Scientist Training Program ⁴ , Stanford University; Chan Zuckerberg Biohub ⁵
98	Exploring Subcellular Landscapes with Cryo-Electron Tomography and Vision Foundation Models	Cathy Hou ^{1,2} , Sanket Gupte ¹ , Gong-Her Wu ² , Serena Yeung-Levy ¹ , Wah Chiu ^{2,3} Departments of Computer Science ¹ and Bioengineering ² , Stanford University; Division of CryoEM & Bioimaging ³ , SLAC National Accelerator Laboratory
99	Enhancing PET Image Reconstruction via Generative Deep Learning Models	Ethan Htun ¹ , Sanaz Nazari Farsani ¹ , Garry Chinn ¹ , Mojtaba Jafaritadi ¹ , Jonathan Fisher ² , Farshad Moradi ¹ , Guido Alejandro Davidzon ¹ , Craig Levin ¹ Departments of Radiology ¹ and Electrical Engineering ² , Stanford University
100	Small-Cohort GWAS Discovery with AI over Massive Functional Genomics Knowledge Graph	Kexin Huang ¹ , Tony Zeng ² , Soner Koc ³ , Alexandra Pette ³ , Mika Jain ¹ , Camilo Ruiz ¹ , Hongyu Ren ¹ , Katie Aiello ³ , Laurence Howe ³ , Kim Branson ³ , Jesse Engreitz ² , Martin Jingye Zhang ⁴ , Jure Leskovec ¹ Departments of Computer Science ¹ and Genetics ² , Stanford University; GSK ³ ; Department of Computational Biology ⁴ , Carnegie Mellon University
101	Engineered Matrices Reveal Stiffness-Mediated Chemoresistance in Patient-Derived Pancreatic Cancer Organoids	Bauer L. LeSavage ¹ , Daiyao Zhang ^{2*} , Carla Huerta-López ^{3*} , Aidan E. Gilchrist ^{3*} , Brad A. Krajina ² , Kasper Karlsson ^{4,5,6} , Amber R. Smith ⁷ , Kremena Karagyozeva ⁶ , Katarina C. Klett ⁸ , Michelle S. Huang ² , Christopher Long ³ , Gernot Kaber ⁹ , Christopher M. Madl ^{1,10} , Paul L. Bollyky ⁹ , Christina Curtis ^{4,5,6} , Calvin J. Kuo ⁷ , Sarah C. Heilshorn ³ (*equal contribution) Departments of Bioengineering ¹ , Chemical Engineering ² , Materials Science & Engineering ³ , Medicine (Divisions of Oncology ⁴ , Hematology ⁷ , and Infectious Diseases & Geographic Medicine ⁹), and Genetics ⁵ , Stanford Cancer Institute ⁶ , and Institute for Stem Cell Biology & Regenerative Medicine ⁸ , Stanford University; Department of Materials Science & Engineering ¹⁰ , University of Pennsylvania
102	Advancing Imaging Translation Lab: PET/MRI in Rectal Cancer; MRI Guided Interventions; Pelvic Floor Imaging; Cervical Cancer Screening	Elima Hussain ¹ , Vipul Sheth ¹ Department of Radiology (Body MRI Division) ¹ , Stanford University
103	Cartography of Genomic Interactions Enables Deep Analysis of Single-Cell Expression Data	Md Tauhidul Islam ¹ , Lei Xing ¹ Department of Radiation Oncology ¹ , Stanford University

104	A Mixed-Methods Analysis of Community Factors Influencing Acceptance of Medication for Opioid Use Disorder Services	Sam Jaros ¹ , Maryam Abdel Magid ² , Hannah Cheng ² , Michele Gassman ³ , H�el�ene Chokron Garneau ² , Jay Ford ³ , Mark McGovern ² Department of Epidemiology & Population Health ¹ and Center for Dissemination & Implementation ² , Stanford University; Institute for Clinical & Translational Research ³ , University of Wisconsin Madison
105	SingleStem-Modified Neural Progenitor Cells for Stroke Recovery	Grace Jiang ¹ , Dingying Shan ² , Paul George ² Departments of Bioengineering ¹ and Neurology & Neurological Sciences ² , Stanford University
106	Targeting Voltage-Sensitive Mechanisms of Glioma Growth	Eu Jin Jung ¹ , Minhui Su ¹ , Pamelyn J. Woo ¹ , Michelle Monje ¹ Department of Neurology ¹ , Stanford University
107	Examining the Relationship Between Usage Metrics and Feasibility Outcomes in a Gamified Sensory Device for Youth with Chronic Pain	Zoe K. Jung ¹ , Nicole M. Jehl ¹ , Yerin Yang ¹ , Lauren E. Harrison ¹ , Laura E. Simons ¹ Department of Anesthesiology, Perioperative & Pain Medicine ¹ , Stanford University
108	Predicting Early Liver Allograft Failure Using Machine Learning Models	Ronald G. Junkins ¹ , Jill Helms ² Departments of Mathematics ¹ and Plastic & Reconstructive Surgery ² , Stanford University
109	From Prediction to Precision: AI-Driven Neurostimulation Design for Neuropsychiatric Therapy	Neda Kaboodvand ^{1,2} , Hanie Karimi ³ , Behzad Iravani ^{2,4} Departments of Neurosurgery ¹ and Neurology & Neurological Sciences ⁴ , Stanford University; Department of Clinical Neuroscience ² , Karolinska Institute; School of Medicine ³ , Tehran University of Medical Sciences
110	Development of the First Fluorine-18 Labeled GPR84-Specific PET Tracer for <i>in vivo</i> Imaging of Innate Immune Activation	Mausam Kalita ^{1*} , Renesmee Kuo ^{1*} , Samantha Reyes ¹ , Sydney C. Nagy ¹ , Valentina Straniero ² , Desiree D'Moore ¹ , Andrew Setiadi ¹ , Mira Sundar ¹ , Spencer Mak ¹ , Mallesh Pandrala ¹ , Poorva Jain ¹ , Israt S. Alam ¹ , Sara Marsango ³ , Graeme Milligan ³ , Michelle L. James ^{1,4} (*equal contribution) Departments of Radiology ¹ and Neurology & Neurological Sciences ⁴ , Stanford University; Department of Pharmaceutical Sciences ² , University of Milan; Centre for Translational Pharmacology ³ , School of Molecular Biosciences, College of Medical, Veterinary & Life Sciences, University of Glasgow
111	Generation of iPSC Lines SCVI98 and SCVI911 from Hereditary Transthyretin Cardiac Amyloidosis Patients	Ryan Kern ^{1,2} , Zehra Yildirim ^{1,2} , Jingshan Gao ^{1,2} , Wenqiang Liu ^{1,2} , Ronald M. Witteles ^{1,2} , Joseph C. Wu ^{1,2} Stanford Cardiovascular Institute ¹ and Department of Medicine (Division of Cardiology) ² , Stanford University
112	Predicting Evolutionary Success of Wild Yeast Strains from Short-Term Fitness Data	Alexandra 'Sasha' N. Khristich ¹ , Olivia M. Ghosh ¹ , Dmitri A. Petrov ¹ Department of Biology ¹ , Stanford University
113	3D Bioprinting of Cultivated Meat: Vitamin-Crosslinked Hydrogels Mimicking Bovine Muscle Tissue	David Kilian ¹ , Sofia Madrigal Gamboa ² , Daniel C. L. Robinson ³ , Michelle S. Huang ¹ , Roymara M. Louissaint ¹ , Helen M. Blau ³ , Sarah Heilshorn ¹ Departments of Materials Science & Engineering ¹ , Mechanical Engineering ² , and Microbiology & Immunology and School of Medicine ³ , Stanford University
114	Inhibition of the Gerozyme, 15-PGDH, Rescues Skeletal Muscle Hypertrophy in Response to Overload in Aged Mice	Ireh Kim ¹ , Minas Nalbandian ¹ , Helen Blau ¹ Blau Laboratory, Department of Microbiology & Immunology ¹ , Stanford University
115	Biventricular Loading During <i>Ex-Vivo</i> Heart Perfusion (EVHP) for Enhanced Functional and Metabolic Assessment of Donor Hearts	Taeil Matthew Kim ¹ , Moeed Fawad ¹ , Cassandra Lu ¹ , Jonathan Martin ¹ , Stefan Elde ¹ , Aravind Krishnan ¹ , Elbert Heng ¹ , Daniel Alnasir ¹ , Samuel Eunjun Oh ¹ , Joseph Simmons ¹ , Blaine Chadwick ¹ , Y. Joseph Woo ^{1,2} , Brandon A. Guenthart ¹ Departments of Cardiothoracic Surgery ¹ and Bioengineering ² , Stanford University
116	Multiomic Study of Infantile Hemangiomas Using Primary Template-Directed Amplification (PTA)	Alexandra Kowalczyk ¹ , Veronica Gonzalez-Pena ¹ , Athena Aragon ¹ , Yakun Pang ¹ , Alexander Urban ² , Dawn Siegel ³ , Charles Gawad ¹

		Departments of Pediatric Oncology/Hematology ¹ , Psych/Major Laboratories and Clinical & Translational Neurosciences Incubator ² , and Pediatric Dermatology ³ , Stanford University
117	Scalable Microparticle Fabrication via r2rCLIP: Enabling a New Era of Advanced Particle Applications	Jason M. Kronenfeld ¹ , Lukas Rother ² , Max A. Saccone ^{2,3} , Maria T. Dulay ² , Malayasia S.J. Moses ² , Amy E. Laturski ¹ , Nina M. Brown ⁴ , Bryan VanSaders ⁴ , Holden T. Maecker ⁵ , Henrich M. Jaeger ⁴ , Joseph M. DeSimone ^{2,3} Departments of Chemistry ¹ , Radiology ² , Chemical Engineering ³ , and Microbiology & Immunology ⁵ , Stanford University; Department of Physics and James Franck Institute ⁴ , University of Chicago
118	Synthetic Viral RNA of the HIV Virus	Miri Krupkin ¹ , Joseph Puglisi ¹ , Elisabetta Viani Puglisi ¹ Department of Structural Biology ¹ , Stanford University
119	Construction of Synthetic Cell with a Cytoskeleton Using 2-Photon Polymerization and Microfluidic Methods	Myra Kurosu Jalil ¹ , Saisneha Koppaka ¹ , Sindy K.Y. Tang ¹ Department of Mechanical Engineering ¹ , Stanford University
120	Long Distance Vertical Migration in a Non-Motile Cell	Adam G. Larson ^{1*} , Rahul Chajwa ^{1*} , Hongquan Li ¹ , Manu Prakash ^{1,2,3,4} (*equal contribution) Departments of Bioengineering ¹ , Biology ² , and Oceans ³ and Woods Institute of the Environment ⁴ , Stanford University
121	TRAINS: A Novel Gene Delivery Platform for Engineering CAR NK Cells in Cancer Immunotherapy	Amy E. Laturski ¹ , Maria T. Dulay ² , Yue Xu ² , Catherine Blish ³ , Joseph M. DeSimone ^{2,4} Departments of Chemistry ¹ , Radiology ² , Medicine ³ , and Chemical Engineering ⁴ , Stanford University
122	Mitochondria and E3 Ligase Defects in Advanced Tauopathy Patient Brains	Masako Le-Maciukiewicz ^{1,2} , Darlene Nguyen ^{1,5} , Goonho Park ^{1,2} , Angela Galdamez ^{1,2} , Wenjun Yan ³ , Leon Chea ^{1,2} , Pauline Chu ⁴ , Raymond Sobel ^{1,2} , Jonathan H. Lin ^{1,2,3} VA Palo Alto Healthcare System ¹ ; Departments of Pathology ² , Ophthalmology ³ , and Comparative Medicine ⁴ , Stanford University; University of California Los Angeles ⁵
123	Identifying Proteins that Regulate Asymmetric Cell Division During Hematopoiesis	Abigail Lee ¹ , Gerson Ascencio ¹ , Lauren Goins ¹ Department of Developmental Biology ¹ , Stanford University
124	Examining the Role of Human Amyloid- β and Apolipoprotein E Isoforms in Alzheimer's Disease Pathology	Aubrey Lemer ¹ , Alberto Siddu ^{1,2} , Thomas S \ddot{u} dhof ^{1,2,3} Department of Cellular & Molecular Physiology ¹ , Howard Hughes Medical Institute ² , and School of Medicine ³ , Stanford University
125	Building Healthcare Capacity Through Scalable Distributed Biological Manufacturing of Molecular Diagnostics	Hope T. Leng ¹ , Anesta Kothari ¹ , Nisha Gopal ² , Adam Larson ¹ , Abby Cummings ³ , Smiiti Mittal ¹ , Manu Prakash ¹ Departments of Bioengineering ¹ , Structural Biology ² , and Mechanical Engineering ³ , Stanford University
126	Ten-Earth: A Microscope Cluster for Higher-Throughput Monitoring of Experimental Plankton Population Dynamics	Ethan Li ¹ , Jeonghyun An ² , Olivia Tomassetti ³ , Abigail C. Cummings ³ , Manu Prakash ^{1,4,5} Departments of Bioengineering ¹ , Mechanical Engineering ³ , Biology ⁴ , and Oceans ⁵ , Stanford University; BASIS Independent Silicon Valley ²
127	Bridging Clinical Outcomes and Molecular Profiles in Lung Cancer via Multiplex Immunofluorescence	Yuchen Li ¹ , Yuanyuan Li ² , Jonathan W. Mulholland ² , Ruijiang Li ^{1*} (*corresponding author) Department of Radiation Oncology ¹ and Cell Science Imaging Facility ² , Stanford University
128	Optimization of Beta-Cell-Selective Accumulation and Bio-Activity of Zinc-Dependent Beta-Cell-Targeted Compounds	Jongmin (Brian) Lim ¹ , Sooyeon Lee ² , Justin Annes ² Departments of Bioengineering ¹ and Medicine (Endocrinology, Gerontology, & Metabolism) ² , Stanford University
129	INVASION SENSATION: Pharmacological Inhibition of MAP4K4 with a Novel Small Molecule Inhibitor Prevents Spheroid Invasion of Patient	Ellie Lin ^{1,2} , Cesar A. Garcia ^{1,2} , Laura M. Prolo ^{1,2,3} Departments of Neurosurgery ¹ and Cancer Biology ² , Stanford University; Division of Pediatric Neurosurgery ³ , Lucile Packard Children's Hospital

	Derived Pediatric High-Grade Gliomas in a Matrigel Matrix	
130	First in Human Evidence of Ibogaine's Effects on Cortical Dynamics in Veterans with Traumatic Brain Injury	Jennifer I. Lissemore ¹ , Anna Chaiken ¹ , Kirsten Cherian ¹ , Derrick Buchanan ¹ , Flint Espil ¹ , Jakob N. Keynan ¹ , Malvika Sridhar ¹ , Camarin E. Rolle ¹ , Manish Saggari ¹ , Corey J. Keller ^{1,2,3} , Nolan R. Williams ¹ Department of Psychiatry & Behavioral Sciences ¹ and Wu Tsai Neuroscience Institute ² , Stanford University; VA Palo Alto Healthcare System and the Sierra Pacific Mental Illness, Research, Education, & Clinical Center (MIRECC) ³
131	Engineering CAR T Cell Phenotype Using Synthetic JAK/STAT Signaling Programs	Jenny Liu ¹ , Alex Beckett ¹ , Jodie Lunger ¹ , Tony Salcido-Alcantar ¹ , Wansang Cho ¹ , Nakoa Po ¹ , Kyle Daniels ¹ Department of Genetics ¹ , Stanford University
132	Bacterial Recombination, Not Purifying Selection, Dominates the Dynamics of dN/dS	Zhiru Liu ¹ , Benjamin H. Good ^{1,2,3} Departments of Applied Physics ¹ and Biology ² , Stanford University; Chan Zuckerberg Biohub ³
133	Interpenetrating Networks of Amorphous and Fibrillar Collagen Promote Hydrogel Stability and Cell Spreading	Christopher Long ¹ , Lucia G. Brunel ² , Fotis Christakopoulos ¹ , Betty Cai ¹ , Patrik K. Johansson ¹ , Diya Singhal ² , Annika Enejder ¹ , David Myung ³ , Sarah Heilshorn ¹ Departments of Materials Science & Engineering ¹ , Chemical Engineering ² , and Ophthalmology ³ , Stanford University
134	Umbilical Cord Plasma Protects and Rejuvenates Aged Fibroblasts	Eduardo Ramirez Lopez ^{1,2,4} , Andy P. Tsai ^{1,2} , James Haberberger ^{2,3} , Ching Chieh Chou ⁵ , Emma Costa ^{1,2} , Alina Isakova ^{2,3} , Judith Frydman ^{2,5} , Tony Wyss-Coray ^{1,2,3} Departments of Neurology & Neurological Sciences ¹ and Biology ⁵ , Wu Tsai Neurosciences Institute ² , Phil & Penny Knight Initiative for Brain Resilience ³ , and REACH Initiative ⁴ , Stanford University
135	Synchronicity in Marmoset Monkeys	Noah Lowe ¹ , Tohar Sion Yarden ¹ , Melinda Zhu ¹ , Keren Haroush ¹ Department of Neurobiology ¹ , Stanford University
136	Linkage Equilibrium Between Rare Mutations	Anastasia S. Lyulina ^{1,2*} , Zhiru Liu ^{2*} , Benjamin H. Good ^{1,2,3} (*equal contribution) Departments of Biology ¹ and Applied Physics ² , Stanford University; Chan-Zuckerberg Biohub ³
137	Optimization of the 3-Dimensional Photovoltaic Implants for Human Retinal Geometry	Vladimir Mamchik ¹ , Mohajeet B. Bhuckory ^{1,2} , Andrew Shin ³ , Quentin Devaud ⁶ , Davis Pham-Howard ^{1,2} , Nathan Jensen ⁵ , Daniel Palanker ^{1,2,4} Departments of Ophthalmology ¹ , Materials Science & Engineering ³ , Physics ⁴ , and Electrical Engineering ⁵ and Hansen Experimental Physics Laboratory ² , Stanford University; Swiss Federal Institute of Technology Lausanne (EPFL) ⁶
138	Creating a Multi-Stain 3D Atlas of Mouse Brain	Emilie Manning ¹ , Zerlina Lai ¹ , Komal Sharma ¹ , Yonatan Winetraub ¹ Department of Structural Biology ¹ , Stanford University
139	Climate Change and Shifts in Plant Form and Function in the Arctic Willow (<i>Salix</i>)	Paul T. Markley ¹ , Barnabas H. Daru ¹ Department of Biology ¹ , Stanford University
140	Disrupting Bacterial Biofilms on Kidney Stones: <i>Ex Vivo</i> Efficacy and <i>In Vivo</i> Safety	Daniel Massana Roquero ^{1,2} , Grace Holton ^{1,2} , T. Jessie Ge ^{1,2} , Zachary Kornberg ¹ , Gabriela Rodriguez ¹ , Vinh La ¹ , Hubert Lau ^{2,3} , Kathleen Mach ^{1,2} , Joseph Liao ^{1,2} Departments of Urology ¹ and Pathology ³ , Stanford University; VA Palo Alto Health Care System ²
141	Developmental Characterization of Neuronal 5-HT _{2A} Receptor Expression in Htr2a ^{A242-eGFP-Cre} x Ai.14 Mice	Kathryn Mattox ^{1,2} , Nicholas Denomme ^{1,2} , Robert Malenka ¹ , Boris Heifets ^{1,2} Departments of Psychiatry & Behavioral Sciences ¹ and Anesthesiology, Perioperative & Pain Medicine ² , Stanford University
142	Juvenile Mice Terminate the Acute Inflammatory Response to Stroke More Efficiently than Adult Mice	Elizabeth W. Mayne ^{1,2} , Kelly Vanden ¹ , Marion S. Buckwalter ^{1,3}

		Department of Neurology & Neurological Sciences ¹ , Division of Child Neurology ² , and Stanford Stroke Center ³ , Stanford University
143	Mutating and Expressing Magnets-Coagulase for Photoregulation in Fibrin-Based Stereolithography	Elsa McElhinney ¹ , Josh Sampson ¹ , Mark Skylar-Scott ¹ Department of Bioengineering ¹ , Stanford University
144	Investigating the Mechanical Modulation of Patient-Derived Synovial Cell Inflammatory Responses Using Engineered Hydrogels	Leah McGillicuddy ¹ , Tamaghna Gupta ¹ , Nidhi Bhutani ¹ Department of Orthopaedic Surgery ¹ , Stanford University
145	Supramolecular Polymer-Nanoparticle Hydrogels Recruit Key Immune Cells to Niche and Improve mRNA Vaccine Response	Emily L. Meany ¹ , Eric A. Appel ^{1,2} Departments of Bioengineering ¹ and Materials Science & Engineering ² , Stanford University
146	Personalized CT Organ Dose Estimation from Scout Images	Maria Jose Medrano ¹ , Abdullah-Al-Zubaer Imran ¹ , Sen Wang ¹ , Grant Stevens ² , Justin Ruey Tse ¹ , Adam Wang ^{1,3} Departments of Radiology ¹ and Electrical Engineering ³ , Stanford University, GE HealthCare ²
147	Comparative Analysis of Disease Activity Indices in Juvenile and Adult Ulcerative Colitis Rat Models: Implications for Targeted Treatments	Shayaan Memon ^{1*} , Alix Guevara-Tique ^{1*} , Steven Levitte ^{1,2} , Abantika Ganguly ¹ , Sophie Frolik ¹ , Tanish Sharma ¹ , Jing Wang ¹ , Shashank Chetty ¹ , Benjamin William Dulken ¹ , Avnesh Thakor ^{1,3} (*equal contribution) Interventional Radiology Innovation at Stanford (IRIS) ¹ , Division of Pediatric Gastroenterology, Hepatology, & Nutrition ² , and Department of Pediatric Radiology (Interventional Radiology) ³ , Stanford University
148	Investigating the Role of Myelin Plasticity in Serotonergic Functions	Alexandra Midler ¹ , Abigail Rogers ^{1,2} , Michelle Monje ^{1,3} Departments of Neurology ¹ and Biology ² , Stanford University; Howard Hughes Medical Institute ³
149	Design of Small Molecule Tools for the Study of CLC-2 Chloride Channels in the Central Nervous System	Steven Miller ¹ , Signe Dahlberg-Wright ¹ , Alex Powers ² , John Huguenard ³ , Ron Dror ² , Merritt Maduke ⁴ , Justin Du Bois ¹ Departments of Chemistry ¹ , Computer Science ² , Neurology & Neurological Sciences ³ , and Molecular & Cellular Physiology ⁴ , Stanford University
150	iGETLiving: A Novel Digital Graded Exposure Treatment for Youth Living with Chronic Pain	Dionne Chen ^{1,2} , Katrina Guardino ^{2,3} , Emma F. Gaydos ² , Lara A. Minassians ² , Sabrina Olivares ² , Lauren E. Harrison ² Bates College ¹ ; Department of Anesthesiology, Perioperative, & Pain Medicine ² , Stanford University
151	Developing HIPK4 Inhibitors for Non-Hormonal Male Contraception	Bradley Moon ⁴ , Zaile Zhuang ¹ , Riley Togashi ² , James K. Chen ^{1,2,3} Departments of Chemical & Systems Biology ¹ , Chemistry ² , Developmental Biology ³ , and Mathematics ⁴ , Stanford University
152	Injectable Hydrogels to Treat Ischemic Stroke	Jordan Taylor Moore ^{1,2} , Jack Tzu-Chieh Wang ² , Kristy Anne Zera ² , Neil Baugh ¹ , Meghan Elizabeth Hefferon ¹ , Marion Buckwalter ² , Sarah C. Heilshorn ¹ Departments of Materials Science & Engineering ¹ and Neurology ² , Stanford University
153	Using Organoid and Directed Differentiation Models to Explore Functional Divergence in Human and Chimpanzee: Implications for Cardiovascular Development and Disease	Jeffrey Naftaly ¹ , Alex Starr ¹ , Hunter Fraser ¹ , Kristy Red-Horse ^{1,2} Department of Biology ¹ , Stanford University; Howard Hughes Medical Institute ²
154	Mitochondrial Dysfunction in 22q11.2DS Neuropathology	Dhriti Nagar ¹ , Wojciech P. Michno ¹ , Saw Htun ¹ , Anca M. Pasca ¹ Department of Pediatrics ¹ , Stanford University
155	A Mouse Model for Choroid Plexus Carcinoma	Srilalitha Nair ^{3,5} , Hannah Pescaru ¹ , Briana Griffin ² , Ryan Humphries ³ , Blake Zhou ⁴ , Ryann Fame ^{1,3,4} Wu Tsai Neurosciences Institute ¹ , Department of Neurosurgery ³ , and Neurosciences Graduate Program ⁴ , Stanford University; Meharry Medical College HBMC REACH ² ; Basis Independent Silicon Valley ⁵
156	Transcriptomic Analyses and Novel Organoid and Xenograft Modeling Reveals Potential Drug	Suhani Chaudhary ^{1*} , Emon Nasajpour ^{1*} , Dena Panovska ^{1*} , Yao Lulu Xing ^{1*} , Alexa Gwyn ^{1,3*} , Daniella Morales ^{1*} , Tejas Dhami ¹ , Leif Rabin ¹ , Caitlynn To-

	Sensitivities in a KRAS G12V-Mutant Colorectal Cancer Brain Metastasis	Duyen Tran ¹ , Michitaka Nakano ² , Cara Rada ² , Anuja Anand Sathe ⁴ , Jeffrey Nirschl ⁵ , Steven Chang ¹ , Pardes Habib ¹ , Hanlee Ji ⁴ , Hannes Vogel ⁵ , Michael Lim ¹ , Melanie Hayden Gephart ¹ , Calvin Kuo ² , Claudia K. Petritsch ¹ (*equal contribution) Departments of Neurosurgery ¹ , Medicine (Divisions of Hematology ² and Oncology ⁴), and Pathology ⁵ , Stanford University; Department of Neuroscience & Behavior ³ , Vassar College
157	Radiotherapy for a Hypoxic Lung Tumor-on-a-Chip Model	Rohollah Nasiri ¹ , Guillem Pratx ¹ Department of Radiation Oncology ¹ , Stanford University
158	Regulation of Alternative 3' End Cleavage in <i>Drosophila</i> Adult Stem Cell Lineage	Iliana Nava ¹ , Lorenzo Gallicchio ¹ , Margaret T. Fuller ¹ Department of Developmental Biology ¹ , Stanford University
159	Manipulating Immune Cells in the Aged Brain with Engineered Proteins Reveals T Cells as Drivers of Aging	Paloma Navarro Negro ¹ , Max Hauptschein ¹ , Gita C. Abhiraman ² , Daniel J. Richard ¹ , Olivia Y. Zhou ¹ , Lucy Xu ¹ , Robert A. Saxton ² , Ricardo A. Fernandes ² , K. Christopher Garcia ² , Anne Brunet ¹ Departments of Genetics ¹ and Molecular & Cellular Physiology ² , Stanford University
160	Correlation of IL-6 and Red Blood Cells/Hemoglobin in Mouse Model of Diamond-Blackfan Anemia	Nicholas Neoman ¹ , Y. Lucy Liu ¹ , Kathleen M. Sakamoto ¹ Division of Hematology/Oncology/Stem Cell Transplantation & Regenerative Medicine ¹ , Stanford University
161	Awareness of MLOps Across Deployed AI/ML-Enabled Tools in Healthcare and Considerations for Resilient Infrastructure	Madelena Y. Ng ^{1,2*} , Alexey Youssef ^{3,4*} , Malvika Pillai ^{1,5} , Vaibhavi Shah ² , Tina Hernandez-Boussard ^{1,2} (*equal contribution) Departments of Medicine (Biomedical Informatics) ¹ , Biomedical Data Science ² , and Bioengineering ³ , Stanford University; Department of Engineering Science ⁴ , University of Oxford; VA Palo Alto Health Care System ⁵
162	Assaying Motor Impulsivity in a Mouse Model of Parkinson's Disease	Jenny Nguyen ¹ , Deniz Bingul ² , Scott Owen ² Departments of Bioengineering ¹ and Neurosurgery ² , Stanford University
163	Thomas: Learning to Explore Human Preference via Probabilistic Reward Model	Sang T. Truong ¹ , Martin Nguyen ¹ , Luca Morlok ¹ , Tho Quan ² , Sanmi Koyejo ¹ Department of Computer Science ¹ , Stanford University; University of Technology – VNU-HCM ²
164	Stereo-Active Molecular Property Prediction with Graph Attention Neural Networks	Nhi Ngoc Truong ¹ , Nhat Quang Tran ² , Martin Nguyen ¹ , Sanmi Koyejo ¹ , Sang T. Truong ¹ Department of Computer Science ¹ , Stanford University; Miverva ²
165	The Effects of Multimodal Environments on the Brain and Cognitive Functioning in Virtual Reality Using fNIRS	Selena Niemi ^{1,2} , Howard Fung ^{1,3} , Suanna Moron ¹ , Allan Reiss ^{1,4} , Cassandra Eng ¹ Departments of Psychiatry & Behavioral Sciences ¹ , Human Biology ² , and Radiology ⁴ , Stanford University; Department of Psychology ³ , Trinity College
166	The Effect of Tryptophan on Down Syndrome: Behavior, Learning, & Memory	Jessie Ong ¹ , Stella Tapia Lopez ¹ , Tula Kurishige ¹ , Elsa Pittaras ¹ , H. Craig Heller ¹ Department of Biology ¹ , Stanford University
167	Investigating the Mysterious Mechanisms of Cancer Resistance in Axolotls	Ernesto Orellana ¹ , Sonia Bustos Barocio ¹ , Maria Barna ¹ Department of Genetics ¹ , Stanford University
168	PERK Prevents Tau Pathology in Cerebral Organoids	Soyoung Park ^{1,2} , Goonho Park ^{1,2} , Angela Galdamez ^{1,2} , Li Li ³ , Anca M. Pasca ³ , Jonathan Lin ^{1,2} Departments of Pathology ¹ and Pediatrics (Neonatology) ³ , Stanford University; VA Palo Alto Healthcare System ²
169	Novel Pro-Remodeling Smooth Muscle Cells in Tobacco-Induced Abdominal Aortic Aneurysms	Om Patel ¹ , Wenduo Gu ¹ , Isabella Damiani ¹ , Sugandha Basu ¹ , Paul Cheng ¹ Department of Cardiovascular Medicine ¹ , Stanford University
170	E-Cigarette Flavorings Inhibit Acetaldehyde Metabolism	Sherry Peng ¹ , Freeborn Rwere ¹ , Eric R. Gross ¹ Department of Anesthesiology, Perioperative, & Pain Medicine ¹ , Stanford University

171	Inferring Excitation/Inhibition Balance from Low Gamma 1/f Slope in Electrophysiological Data from Primates and Humans	Alex Perry ¹ , Michelle Hedlund ² , Anjali Datta ³ , Vivek Buch ³ Stanford Bio-X ¹ and Departments of Electrical Engineering ² and Neurosurgery ³ , Stanford University
172	Imaging Neural Correlates of Aberrant Pain Processing and Modulation in Fibromyalgia Using Simultaneous Spinal Cord-Brain Functional Magnetic Resonance Imaging	Dario Pfyffer ^{1,2} , Merve Kaptan ^{1,2} , Christine S.W. Law ^{1,2} , Kenneth A. Weber II ^{1,2} , Valeria Oliva ^{1,2} , Sandrine Bédard ^{1,2} , Teresa Indriolo ^{1,2} , Tara Maronesy ^{1,2} , Gary H. Glover ³ , Sean Mackey ^{1,2} Systems Neuroscience & Pain Lab ¹ and Departments of Anesthesiology, Perioperative & Pain Medicine ² and Radiology ³ , Stanford University
173	Improving Postsurgical Fall Detection for Older Americans Using LLM-Driven Analysis of Clinical Narratives	Malvika Pillai ^{1,2} , Terri L. Blumke ³ , Joachim Studnia ⁴ , Yuqing Wang ² , Zachary P. Veigulis ³ , Anna D. Ware ³ , Peter J. Hoover ³ , Ian R. Carroll ⁵ , Keith Humphreys ⁶ , Thomas F. Osborne ^{3,7} , Steven M. Asch ^{1,8} , Tina Hernandez-Boussard ^{2*} , Catherine M. Curtin ^{1,9*} (*senior author) VA Palo Alto Health Care System ¹ ; Departments of Medicine (Biomedical Informatics) ² , Anesthesiology ⁵ , Psychiatry & Behavioral Sciences ⁶ , Radiology ⁷ , and Surgery (Division of Plastic & Reconstructive Surgery) ⁹ , Institute for Computational & Mathematical Engineering ⁴ , and Division of Primary Care & Population Health ⁸ , Stanford University; National Center for Collaborative Healthcare Innovation ³ , VA Palo Alto Healthcare System
174	Engineering a Vascularized Endometrial Model for Investigation of Embryo Implantation	Max Polanek ¹ , Celeste Sanchez ² , Molika Sinha ³ , Nicole Horsley ² , Alexander R. Dunn ¹ , Matteo A. Molè ³ Departments of Chemical Engineering ¹ , Stem Cell Biology & Regenerative Medicine ² , and Obstetrics & Gynecology ³ , Stanford University
175	Developing a Mobile Version of Trail Making Test for Large Scale Testing of Executive Function in Patient Populations	Mensure Polat ¹ , Ashwin Ramayya ¹ Department of Neurosurgery ¹ , Stanford University
176	Design of Modular Readout Electronics for Cadmium Zinc Telluride (CZT) PET Imaging of the Plant Rhizosphere	Shirin Pourashraf ^{1,2} , Muhammad Nasir Ullah ² , Andrew Groll ^{1,2} , Derek Innes ² , Shiva Abbaszadeh ⁶ , Craig S. Levin ^{1,2,3,4,5} Molecular Imaging at Stanford ¹ and Departments of Radiology ² , Electrical Engineering ³ , Bioengineering ⁴ , and Physics ⁵ , Stanford University; Basking School of Engineering ⁶ , University of California Santa Cruz
177	Cadmium Zinc Telluride (CZT)-Based PET Scanner for Plant Rhizosphere Imaging	Muhammad Nasir Ullah ¹ , Shirin Pourashraf ¹ , Andrew Groll ² , Derek Innes ¹ , Shiva Abbaszadeh ⁷ , Craig S. Levin ^{1,4,5,6,7,8} Departments of Radiology ¹ , Engineering Physics ⁵ , Electrical Engineering ⁶ , Bioengineering ⁷ , and Physics ⁸ and Molecular Imaging Program at Stanford ⁴ , Stanford University; Reflexion ² ; Basking School of Engineering ³ , University of California Santa Cruz
178	Perturbing and Tracing Tumor Lineages Resistant to NK Killing	Yuanhao Qu ^{1,2,3*} , Betty Liu ^{2*} , William A. Johnson ^{1,2} , Xiaotong Wang ¹ , Nicholas W. Hughes ¹ , Ravi K. Dinesh ¹ , Chen Chen ^{4,5} , Imran Mohammad ^{4,5} , John Sunwoo ^{4,5} , William J. Greenleaf ^{2,3,†} , Le Cong ^{1,2,3,†} (*equal contribution; †corresponding authors) Departments of Pathology ¹ , Genetics ² , and Otolaryngology (Head & Neck Surgery) ⁴ , Cancer Biology Program ³ , and Stanford Cancer Institute ⁵ , Stanford University
179	Dynamic Mechanical Properties During Formation and Degradation of Star Polymer Hydrogels	Eleanor L. Quirk ¹ , Michael C. Burroughs ¹ , Brendan M. Wirtz ¹ , Tracy H. Schloemer ² , Daniel N. Congreve ² , Danielle J. Mai ¹ Departments of Chemical Engineering ¹ and Electrical Engineering ² , Stanford University

180	Motor Cortex Transcriptome After Post-Stroke Optogenetic Neuronal Stimulation	Nahin T. Radit ¹ , Haruto Uchino ¹ , Terrance Chiang ¹ , Anika Kim ¹ , Alex G. Lee ¹ , Michelle Y. Cheng ¹ , Gary K. Steinberg ^{1,2} Department of Neurosurgery ¹ and Stanford Stroke Center ² , Stanford University
181	Personalized Models of BeamF3 Targeting in Transcranial Magnetic Stimulation for Depression: Implications for Precision Clinical Translation	Divya Rajasekharan ¹ , Michelle R. Madore ^{1,2} , Paul Holtzheimer ³ , Kelvin O. Lim ⁴ , Leanne Maree Williams ^{1,2*} , Noah S. Philip ^{5*} (*senior authors) Department of Psychiatry & Behavioral Sciences ¹ , Stanford University; Mental Illness Research, Education & Clinical Center ² , VA Palo Alto Health Care System; Geisel School of Medicine at Dartmouth, National Center for PTSD, VA Medical Center ³ , U.S. Department of Veterans Affairs; Department of Psychiatry & Behavioral Sciences ⁴ , University of Minnesota Medical School; Department of Psychiatry & Human Behavior ⁵ , Brown University
182	3D-Printed Lattice Microarray Patches (L-MAPs) for Tunable and Versatile Intradermal Delivery	Netra Unni Rajesh ¹ , Jihyun (Luna) Hwang ² , Gunilla Jacobson ³ , Maria Dulay ³ , Shaomin Tian ⁴ , Jillian Perry ⁵ , Joseph M. DeSimone ^{2,3} Departments of Bioengineering ¹ , Chemical Engineering ² , and Radiology ³ , Stanford University; Departments of Microbiology & Immunology ⁴ and Pharmacoengineering & Molecular Pharmaceutics ⁵ , University of North Carolina Chapel Hill
183	Beyond3Rs: Going Beyond Replacement, Reduction, and Refinement for Better Animal Research	Anna S. Ratuski ¹ , Joanna N. Baker ² , Joseph P. Garner ¹ Departments of Comparative Medicine ¹ and Biology ² , Stanford University
184	Detecting Hypertrophic Cardiomyopathy Through Whole Genome Sequencing and Deep Phenotyping	Shriya Reddy ¹ , Bruna Gomes ¹ , Euan Ashley ¹ Department of Cardiovascular Medicine ¹ , Stanford University
185	Antisense Oligonucleotide Therapeutic Approach for Timothy Syndrome	Xiaoyu Chen ^{1,2,3*} , Fikri Birey ^{1,2,3,6*} , Min-Yin Li ^{1,2,3} , Omer Revah ^{1,2,3} , Rebecca Levy ⁵ , Mayuri Vijay Thete ^{1,2,3} , Noah Reis ^{1,2,3} , Konstantin Kaganovsky ^{1,2,3} , Massimo Onesto ^{1,2,3} , Noriaki Sakai ¹ , Zuzana Hudacova ¹ , Jin Hao ^{1,2,3} , Xiangling Meng ^{1,2,3} , Seiji Nishino ¹ , John Huguenard ⁴ , Sergiu P. Pasca ^{1,2,3} (*equal contribution) Departments of Psychiatry & Behavioral Sciences ¹ and Neurology ⁴ (Division of Child Neurology ⁵), Stanford Brain Organogenesis, Wu Tsai Neurosciences Institute ² , and Stanford Bio-X ³ , Stanford University; present address: Department of Human Genetics ⁶ , Emory University
186	Characterizing CXCR4 Activation in the Regenerating Heart of Neonatal Mice	Lauren Rose Reyes ¹ , Jeffrey Naftaly ² , Karen Martinez Gonzalez ³ , Daniel Sorensen ⁴ , Kristy Red Horse ^{2,3,4} Program in Human Biology ¹ , Department of Biology ² , and Institute for Stem Cell Biology & Regenerative Medicine ³ , Stanford University; Howard Hughes Medical Institute ⁴
187	Tracking Innate Immune Activation via a Novel GPR84-Targeted Radiotracer in a Murine Model of Multiple Sclerosis	Samantha T. Reyes ¹ , Mausam Kalita ¹ , Renesmee C. Kuo ² , Valentina Straniero ³ , Sara Marsango ⁴ , Mallesh Pandrala ¹ , Noeen Malik ¹ , Poorva Jain ¹ , Lorenzo Suigo ³ , Sydney C. Nagy ¹ , Spencer H. Mak ¹ , Mira Sundar ¹ , Tahlia Wu ¹ , Ermanno Valoti ³ , Graeme Milligan ⁴ , Michelle L. James ^{1,5} Departments of Radiology ¹ , Electrical Engineering ² , and Neurology & Neurological Sciences ⁵ , Stanford University; Department of Pharmaceutical Sciences ³ , University of Milan; Centre for Translational Pharmacology, School of Molecular Biosciences, College of Medical, Veterinary & Life Sciences ⁴ , University of Glasgow
188	The Development of Bacteriophages as Biodegradable Sunscreen Agents	Tooba S. Riaz ¹ , Maryam Hajfathalian ¹ , Jessica Sacher ¹ , Saumel Rodriguez ¹ , Paul Bollyky ¹

		Department of Medicine (Division of Infectious Diseases) ¹ , Stanford University
189	Design Rules for Supramolecular Hydrogel-Cell Interactions: From Growing Tissue Towards Controlling Neural Interfaces	Laura Rijns ^{1,2,5} , Joost Wijnakker ³ , Wim de Lau ³ , Victor A. Veenbrink ^{1,2} , Hans Clevers ⁴ , E.W. Meijer ^{1,2} , Patricia Y. W. Dankers ^{1,2} , Zhenan Bao ⁵ Institute for Complex Molecular Systems ¹ and Department of Biomedical Engineering ² , Eindhoven University of Technology (TU/e); Hubrecht Institute ³ , Utrecht University; Roche Pharma Research & Early Development ⁴ ; Department of Chemical Engineering ⁵ , Stanford University
190	Mapping Valproic Acid, an Anticonvulsant and Mood-Stabilizing Drug, to the Chemosensory Nervous System of <i>C. elegans</i>	Lucero E. Rogel-Hernandez ¹ , Emily Fryer ¹ , Helena Casademunt ² , Hanson Lu ² , Aravinthan Samuel ² , Miriam B. Goodman ¹ Department of Molecular & Cellular Physiology ¹ , Stanford University; Department of Physics and the Center for Brain Science ² , Harvard University
191	Dual Contrast-Enhanced Micro-Computed Tomography for Simultaneous Characterization of Macrocalcification and Trilayer Structural Remodeling in Explanted Human Aortic Valves	Ines Ross Tacco ^{1,2,8,9*} , Mustapha El Zeini ^{1,2,8,9*} , Angela Kabiri ³ , Arturas Vailionis ⁴ , John Perrino ⁵ , Kristin C. Jensen ⁶ , Thomas A. Burdon ³ , Yasuhiro Shudo ³ , Joseph Woo ³ , Lydia-Marie Joubert ⁷ , Ian Y. Chen ^{1,2,8,9} (*equal contribution) Departments of Medicine (Division of Cardiovascular Medicine) ¹ , Cardiothoracic Surgery ³ , and Pathology ⁶ , Stanford Cardiovascular Institute ² , Stanford Nano Shared Facilities ⁴ , and Cell Sciences Imaging Facility ⁵ , Stanford University; Division of CryoEM & Bioimaging ⁷ , SLAC National Accelerator Laboratory; Medical Service, Cardiology Section ⁸ and Radiology Service ⁹ , VA Palo Alto Health Care System
192	Reproducibility and Repeatability of Quantitative T2 and T2* Mapping of Osteosarcomas in a Mouse Model	Raheleh Roudi ¹ , Laura J. Pisani ¹ , Fabrizio Pisani ¹ , Tie Liang ¹ , Heike E. Daldrup-Link ^{1,2} Departments of Radiology (Molecular Imaging Program at Stanford) ¹ and Pediatrics (Hematology/Oncology) ² , Stanford University
193	Understanding Reactive Conversions of Polymers for Additive Manufacturing	Max A. Saccone ^{1,2} , Philip R. Onffroy ¹ , Jason M. Kronenfeld ³ , Ian A. Coates ¹ , Joseph M. DeSimone ^{1,2} Departments of Chemical Engineering ¹ , Radiology ² , and Chemistry ³ , Stanford University
194	Single-Molecule Investigation of DNA Interrogation by an Ancestral RNA-Guided Nuclease	Iren Saffarian-Deemyad ¹ , Zehan Zhou ² , Kevin Daniel Palacio Aris ³ , Honglue Shi ² , Noor Al-Sayyad ¹ , Jennifer Doudna ² , Zev Bryant ⁴ Departments of Physics ¹ , Biophysics ³ , and Bioengineering ⁴ , Stanford University; Department of Molecular & Cell Biology ² , University of California Berkeley
195	Exploring Vertebrate Systems-Aging Mechanisms Using the African Killifish	Fakhrunnesa Samim ¹ , Natalie M. Schmahl ² , Emma K. Costa ³ , Jingxun Chen ² , Anne Brunet ² , Tony Wyss-Coray ³ Stanford Community College Outreach Program ¹ and Departments of Genetics ² and Neurology & Neurological Sciences ³ , Stanford University
196	Assessing Treatment Responses in Patient-Derived Head and Neck Cancers Organoids	Zahra Sardar Melli ¹ , Arnav Sankaranthi ¹ , Ivan Stepanek ² , John B. Sunwoo ² , Guillem Pratx ¹ , Syamantak Khan ¹ Departments of Radiation Oncology (Division of Medical Physics) ¹ and Otolaryngology (Division of Head & Neck Surgery) ² , Stanford University
197	Systemic Wound Responses Attenuate Regeneration Suppressors to Facilitate Regeneration	Souradeep R. Sarkar ¹ , Bo Wang ¹ Department of Bioengineering ¹ , Stanford University
198	Anatomical Adaptation and Transcriptomics of Enteric Neurons in Response to Mechanical Force and Smooth Muscle Cell Piezo-1 Deletion	Arshia T. Sazi ¹ , Siavash Shariatzadeh ¹ , Chih-Hsin Chen ¹ , James C.Y. Dunn ¹ Department of Surgery (Division of Pediatric Surgery) ¹ , Stanford University

199	Novel Photocrosslinkable Carbomer Derivative for the Additive Manufacturing of Transparent Structures Using Light and Extrusion Based Bioprinting	Dominic Ruetsche ¹ , Max Scherer ² , Soham Sinha ¹ , Jianyi Du ¹ , Joshua Sampson ¹ , Mark Skylar-Scott ¹ Departments of Bioengineering ¹ and Chemistry ² , Stanford University
200	Stanford Spezi: Facilitating Healthcare Access and Innovation Through a Modular Software Ecosystem	Paul Schmiedmayer ¹ , Andreas Bauer ¹ , Philipp Zagar ¹ , Vishnu Ravi ¹ , Nick Riedman ¹ , Paul Johannes Kraft ¹ , Vasiliki Bikia ¹ , Adrit Rao ¹ , Aydin Zahedivash ¹ , Oliver Aalami ¹ Stanford Byers Center for Biodesign ¹ , Stanford University
201	Integrating an Immersive Virtual Reality Assessment and MRI Image Segmentations to Test for Mild Cognitive Impairment	Emma S. Shaw ¹ , Tammy T. Tran ¹ , Daniel F. Tadeo ¹ , Eliza Johnson ¹ , Khanh Nguyen ¹ , Jeremy Bailenson ¹ , Anthony D. Wagner ¹ , S.M. Hadi Hosseini ¹ Department of Psychiatry & Behavioral Sciences (Computational Brain Research & Intervention Lab) ¹ , Stanford University
202	Anhedonia in an Unmedicated OCD Sample	Julia S. Shaw ¹ , Peter J. van Roessel ¹ , Pavithra Mukunda ¹ , Booil Jo ¹ , Carolyn I. Rodriguez ¹ Department of Psychiatry & Behavioral Sciences ¹ , Stanford University
203	Working Across Disciplines to Advance the Use of Environmental DNA for Marine Biodiversity Monitoring	Meghan M. Shea ¹ , Alexandria Boehm ² Emmett Interdisciplinary Program in Environment & Resources (E-IPER) ¹ and Department of Civil & Environmental Engineering ² , Stanford University
204	Community Responses to the Diel Cycle in Hot Spring Phototrophic Mats	Amanda N. Shelton ¹ , Feiqiao B. Yu ^{1,2} , Arthur Grossman ¹ , Devaki Bhaya ¹ Biosphere Sciences & Engineering ¹ , Carnegie Science; Chan Zuckerberg Biohub ²
205	Sex Differences Emerge in Targeting Descending Spinal Cord Modulation Circuit for Analgesia	Aniyah Shen ¹ , Hyun Geun Shim ¹ , Xiaoke Chen ¹ Department of Biology ¹ , Stanford University
206	Efficient Generation of Xeno-Free Human Endothelial Cells for Cardiovascular Precision Medicine	Mengcheng Shen ^{1,2} , Lakshman Sundaram ³ , Nirmal Vadgama ^{1,2} , Mohamed Ameen ^{1,4} , Sadhana Gaddam ⁵ , Joydeep Bhadury ^{6,7} , Amit Manhas ^{1,2} , Xin Wang ^{7,8} , Emily Warren ⁹ , Cao Xu ^{1,2} , Yang Zhou ^{1,2} , Shane Zhao Rui ^{1,2} , Xiaohui Kong ^{1,2} , Renjie Shang ^{1,2} , Roel Nusse ^{7,8} , Hiromitsu Nakauchi ^{6,7} , Sharon Gerecht ⁹ , Joe Z. Zhang ^{1,2} , Chun Liu ^{1,2} , Joseph C. Wu ^{1,2} Stanford Cardiovascular Institute ¹ , Departments of Medicine ² , Computer Science ³ , Cancer Biology ⁴ , Dermatology ⁵ , Genetics ⁶ , and Developmental Biology ⁸ , and Institute for Stem Cell Biology & Regenerative Medicine ⁷ ; Stanford University; Department of Biomedical Engineering ⁹ , Duke University
207	Muscle-Atrophy-Independent Reduction in Mydriatic Pupil Size: Insights into Intraoperative Floppy Iris Syndrome	Yingchun Shen ¹ , Jingyu Zhao ¹ , Chien-Hui Lo ¹ , Yang Sun ¹ Department of Ophthalmology ¹ , Stanford University
208	Unraveling Tau Propagation: Using Molecular Dynamics to Reveal the Tangled Secrets of Alzheimer's Disease	Sunstone Shi ¹ , Sam Benabou ¹ , Chang Li ¹ , Ian Song ¹ , Nash Yong ¹ , Wei Wang ¹ , Yanmin Yang ¹ Department of Neurology & Neurological Sciences ¹ , Stanford University
209	Viscoelastic Measurements of Abscess Fluid Using a Magnetic Stress Rheometer	Audrey Shih ¹ , Stella J. Chung ¹ , Sanna E. Herwald ² , Alexander M. Vezeridis ² , Gerald G. Fuller ¹ . Departments of Chemical Engineering ¹ and Radiology ² , Stanford University
210	Spatial Profiling of the Fetal-Maternal Interface	Molika Sinha ¹ , Nicole Horsley ² , May Levin ³ , Max Polanek ⁴ , Celeste Sanchez ² , Matteo A. Molè ¹ Departments of Obstetrics & Gynecology ¹ , Stem Cell Biology & Regenerative Medicine ² , Computer Science ³ , and Chemical Engineering ⁴ , Stanford University
211	Quantifying Mechanical Loads in the Hamstrings During Sprinting and Nordic Hamstring Exercises (NHE)	Kristen Steudel ^{1*} , Nicos Haralabidis ² , Reed Gurchiek ³ , Jennifer Hicks ² , Scott Delp ^{1,2} (*corresponding author) Departments of Mechanical Engineering ¹ and Bioengineering ² , Stanford University; Department of Bioengineering ³ , Clemson University

212	Comparative Cryogenic Electron Tomography of Fibroblasts from Young and Aged Patients with and without Alzheimer's Disease	Grier Stretch ¹ , Cathy Hou ² , Pingting Liu ¹ , Ching Chieh Chou ³ , Gong-Her Wu ¹ , Ian Cooney ¹ , Sanket Gupte ² , Michael Schmid ⁴ , Serena Yeung-Levy ³ , Judith Frydman ³ , Wah Chiu ^{1,4} Departments of Bioengineering ¹ , Computer Science ² , and Biology ³ and SLAC National Laboratory ⁴ , Stanford University
213	Effects of Therapeutic Peptides on SARS-CoV-2 Structure Visualized by Cryogenic Electron Tomography	Guan-Chin Su ^{1*} , Jesús G. Galaz-Montoya ^{1*} , Jiayi Yin ¹ , Amrita Ojha ^{2,3} , Josefine Nielsen ¹ , Annelise Barron ¹ , Shirin Einav ^{2,3} , Wah Chiu ^{1,3,4} (*equal contribution) Departments of Bioengineering ¹ , Medicine (Division of Infectious Diseases & Geographic Medicine) ² , and Microbiology & Immunology ³ , Stanford University; Division of CryoEM & Bioimaging ⁴ , SSRL, SLAC National Accelerator Laboratory
214	Development of a Multivariable Prediction Model for Fall Risk in Older Adults Post-Emergency Department Discharge Using Smartphone-Based Mobility Measures	Brian Suffoletto ^{1*} , David Kim ¹ , Caitlin Toth ¹ , Waverly Mayer ¹ , Nick Ashenburg ¹ , Michelle Lin ¹ , Michael Losak ¹ (*corresponding author) Department of Emergency Medicine ¹ , Stanford University
215	Illuminating MS Treatment Response Using a Novel PET Tracer for CD19-Positive B Cells	Samantha T. Reyes ¹ , E. Carmen Azevedo ¹ , Mira Sundar ¹ , Mackenzie L. Carlson ² , Israt S. Alam ¹ , Sydney C. Nagy ¹ , Michelle L. James ^{1,3} Departments of Radiology (Molecular Imaging Program at Stanford) ¹ , Bioengineering ² , and Neurology & Neurological Sciences ³ , Stanford University
216	Inhibitory Dynamics During Sharp Wave-Ripples in the Hippocampus	Gergely G. Szabo ¹ , Balazs Varga ¹ , Jordan S. Farrell ^{1,2} , Barna Dudok ^{1,3} , Csaba Varga ^{1,4} , Tilo Gschwind ¹ , Ivan Soltesz ¹ Department of Neurosurgery ¹ , Stanford University; present affiliation: Boston Children's Hospital & Harvard Medical School ² ; Baylor College of Medicine ³ ; Szentagothai Research Center, Department of Physiology ⁴ , University of Pecs
217	Diffusion-Based 3D Bioprinting of Multi-Cellular Cardiovascular Bio-Orthogonally Crosslinked Channels	Isabella Szabo ¹ , David Kilian ¹ , Betty Cai ¹ , Sarah Heilshorn ¹ Department of Materials Science & Engineering ¹ , Stanford University
218	A Spatially Patterned 3D Model of Breast Cancer Bone Metastasis to Assess Dysregulation of Bone Remodeling for Drug Discovery	Michelle Tai ¹ , Eva C. González Díaz ¹ , Callan E. Monette ¹ , Joy Wu ² , Fan Yang ^{1,3} Departments of Bioengineering ¹ , Medicine (Endocrinology) ² , and Orthopaedic Surgery ³ , Stanford University
219	SPACEc: A Streamlined, Interactive Python Workflow for Multiplexed Image Processing and Analysis	Yuqi Tan ^{1,2*} , Tim N. Kempchen ^{1,3,4*} , Martin Becker ⁵ , Max Haist ^{1,2} , Dorien Feytaerts ⁷ , Yang Xiao ^{6,8} , Graham Su ^{9,10} , Andrew J. Rech ¹¹ , John W. Hickey ^{1,2,12} , Garry P. Nolan ^{1,2†} (*equal contribution; †senior author) Departments of Microbiology & Immunology ¹ , Pathology ² , and Anesthesia ⁷ , Stanford University; University of Heidelberg ³ ; German Cancer Research Center ⁴ ; University of Rostock ⁵ ; Departments of Biomedical Engineering ⁶ and Systems Biology ⁸ , Columbia University; Department of Biomedical Engineering ⁹ , Yale University; Yale Stem Cell Center and Yale Cancer Center ¹⁰ , Yale School of Medicine; Department of Pathology ¹¹ , University of Pennsylvania; Department of Biomedical Engineering ¹² , Duke University
220	Antigen-Gated DREADDs for Manipulation of Defined Synaptic Connections	Reika Tei ¹ , Nicholas Kalogiropoulos ¹ , Peter Malcolm Klein ² , Ivan Soltesz ² , Alice Ting ¹ Departments of Genetics ¹ and Neurosurgery ² , Stanford University
221	High-Throughput Discovery of Regulatory Domains in RNA-binding Proteins	Abby R. Thurm ¹ , Yaara Finkel ² , Cecelia Andrews ³ , Xiangmeng S. Cai ^{2,4,5} , Colette Benko ³ , Lacramioara Bintu ²

		Biophysics Graduate Program ¹ and Departments of Bioengineering ² , Developmental Biology ³ , and Genetics ⁴ , Stanford University; Basic Sciences & Engineering Initiative ⁵ , Betty Irene Moore Children's Heart Center, Lucile Packard Children's Hospital
222	TSC22D4 Is a Glucose-Binding Protein Required in Adipogenesis	Vivian Tien ^{1,2} , Ian Ferguson ² , Lindsey Meservey ² , Weili Miao ² , Vanessa Lopez-Pajares ² , Douglas Porter ² , Paul Khavari ^{2,3,4} Department of Bioengineering ¹ and Programs in Epithelial Biology ² and Cancer Biology ³ , Stanford University; VA Palo Alto Healthcare System ⁴
223	RNA-seq Analysis Reveals Aging-Associated Genes in TET1 ^{-/-} and Aged Mice	Aaron Tran ¹ , Akshay Pandey ¹ , Yudhishtar Bedi ¹ , Nidhi Bhutani ¹ Department of Orthopaedic Surgery ¹ , Stanford University
224	Investigating the Role of ADGRE2 in Serous Endometrial Cancer	Alexis Tran ¹ , Elisa Zhang ¹ , Asmita Bhattacharya ¹ , Xavier Gaeta ¹ , Jose Cedano ¹ , Michael Strug ¹ , Calvin Kuo ¹ Department of Hematology ¹ , Stanford University
225	Hemisphere-Specific Gene Expression in <i>Drosophila melanogaster</i> : A New Genetic Tool	Janina Troper ¹ , Timothy Currier ¹ , Thomas Clandinin ¹ Department of Neurobiology ¹ , Stanford University
226	Amortized Nonmyopic Bayesian Optimization for the Dynamic Cost Settings	Sang Truong ¹ , Duc Nguyen ¹ , Ryan-Rhys Griffiths ² , Willies Neiswanger ¹ , Stefano Ermon ¹ , Nick Haber ¹ , Sanmi Koyejo ¹ Department of Computer Science ¹ , Stanford University; University of Cambridge ²
227	Establishing the Molecular Landscape of Quiescence in Ciliated Cells via STAMP	Rachel E. Turn ^{1*} , Mohammad O. Aziz-Zanjani ^{1*} , Artemis Xu ¹ , Leilani LaBrie ¹ , Peter K. Jackson ¹ (*co-first authors) Baxter Laboratory, Department of Microbiology & Immunology ¹ , Stanford University
228	Regulation of Beta Cell Glucose Stimulated Insulin Secretion via Post-Translational Modifications	Mohammad O. Aziz-Zanjani ^{1*} , Rachel E. Turn ^{1*} , Artemis Xu ¹ , Leilani LaBrie ¹ , Peter K. Jackson ¹ (*co-first authors) Baxter Laboratory, Department of Microbiology & Immunology ¹ , Stanford University
229	The Probability Landscape of Chromatin Behaviors	Tee Udomlumleart ^{1,2} , Wai Shing Tang ³ , Pilar Cossio ³ , Alistair Boettiger ¹ Departments of Developmental Biology ¹ and Genetics ² , Stanford University; Center of Computational Mathematics ³ , Flatiron Institute
230	Computationally Screening Small Molecule Covalent Inhibitors for PLpro	Sybre van den Bedem ¹ , Kiana Karimi ^{1,2} , Samsuzzoha Mondal ^{1,2} , Soichi Wakatsuki ^{1,2} Department of Structural Biology ¹ , Stanford University; SLAC National Accelerator Laboratory ²
231	Cellular Resolution Multi-Modality Data Co-Registration Enabling 3D Virtual Biopsy of <i>Ex-Vivo</i> Human Bulk Tissues	Aidan Van Vleck ¹ , Yonatan Winetraub ¹ , Adam de la Zerda ^{1,2} Departments of Structural Biology ¹ and Electrical Engineering ² , Stanford University
232	Image-Guided Glioblastoma Therapy with Dual-Enzyme Activated Theranostic Nanoparticles	Shokri Varniab ¹ , Edwin Chang ^{1,2} , Ching Huang ¹ , Jie Wang ¹ , Vidyani Suryadevara ¹ , Manoj Kumar ¹ , Tie Liang ¹ , Emma Wu ¹ , Zubeda Khatoon ³ , Goreti Morais ³ , Robert Falconer ³ , Yifeng Shi ⁴ , Grigory Tikhomirov ⁴ , Kerem Nernekli ¹ , Laura Pisani ¹ , Heike Daldrup-Link ^{1,5*} (*corresponding author) Departments of Radiology (Molecular Imaging Program at Stanford) ¹ and Pediatrics (Pediatric Oncology) ⁵ and Stanford Center for Innovation in <i>In Vivo</i> Imaging (SCi3) at Porter, Canary Center for Cancer Early Detection ² , Stanford University; Institute of Cancer Therapeutics, Faculty of Life Sciences ³ , University of Bradford; Department of Electrical Engineering & Computer Sciences ⁴ , University of California Berkeley
233	Deep Learning-Based Segmentation of Radiographs Using CT Scan Data	Sauram Vasanawala ¹ , Sergios Gatidis ² , John Pauly ¹ Departments of Electrical Engineering ¹ and Radiology ² , Stanford University

234	Osmotic Response Is Disrupted in Dystrophic Patient-Derived iPSC Endothelial Cells	Carlos D. Vera ¹ , Nerea Jimenez Tellez ¹ , Shane R. Zhao ¹ , Carlos A. Obejero-Paz ¹ , Joseph C. Wu ¹ Stanford Cardiovascular Institute ¹ , Stanford University
235	Quantifying λ phage Lytic Cycle Dynamics in Relation to Host Physiology	Ann Vu ¹ , Mathis Leblanc ² , Jonas Cremer ¹ Department of Biology ¹ and Biophysics Program ² , Stanford University
236	Progress Towards (-)-Batrachotoxin and Toxin Derivatives to Explore Voltage-Gated Sodium Channel Allostery	Anne M. Wampler ¹ , Justin Du Bois ¹ Department of Chemistry ¹ , Stanford University
237	Using Mouse Incisors as a Model to Understand Junctional Epithelium Attachment to Tooth	Alison Wan ¹ , Bien Antonio Dela Cruz ¹ , Fabiana Aellos ¹ , Bo Liu ¹ , Jill Helms ¹ Department of Plastic & Reconstructive Surgery ¹ , Stanford University
238	High-Throughput Fabrication of Geometrically Complex Nanoenvironments for Single-Molecule Fluorescence Microscopy	Lucy Wang ¹ , Danielle J. Mai ² Departments of Materials Science & Engineering ¹ and Chemical Engineering ² , Stanford University
239	Enhancing Spatial Resolution of Radiotherapy Dosimetric Measurements by Deep Learning	Siqi Wang ¹ , Clinton Gibson ¹ , Siqi Ye ¹ , Gregory Szalkowski ¹ , Ramish Ashraf ¹ , Lei Wang ¹ , Lei Xing ¹ Department of Radiation Oncology ¹ , Stanford University
240	Linear and Object Motion Sensitive Cells Form a Basis for Depth Estimation in the Mouse Primary Visual Cortex	Javier C. Weddington ^{1*} , Joshua B. Melander ^{1*} , Stephen A. Baccus ² (*equal contribution) Neurosciences Interdepartmental Program ¹ and Neurobiology Department ² , Stanford University
241	PTER Is an N-acetyltaurine Hydrolase That Regulates Feeding and Obesity	Wei Wei ^{1,2} , Xuchao Lyu ^{1,2,3} , Andrew L. Markhard ^{1,2} , Sipei Fu ^{1,2,4} , Rachel E. Mardjuki ^{2,5,6} , Peter E. Cavanagh ⁵ , Xianfeng Zeng ^{2,7} , Jakub Rajniak ^{2,7} , Nannan Lu ^{8,9} , Shuke Xiao ^{1,2} , Meng Zhao ^{1,10,12} , Maria Dolores Moya-Garzon ^{1,2,3} , Steven D. Truong ^{1,2} , Jonathan Chiu-Chun Chou ⁶ , Lianna W. Wat ^{1,10,11} , Saranya Chidambaranathan-Reghupaty ^{1,10,11} , Laetitia Coassolo ^{1,10,11} , Duo Xu ^{2,5} , Fangfang Shen ^{2,6} , Wentao Huang ¹² , Cuauhtemoc B. Ramirez ¹³ , Cholsoon Jang ¹³ , Lingyin Li ^{2,5,14} , Katrin J. Svensson ^{1,10,11} , Michael A Fischbach ^{2,7} , Jonathan Z. Long ^{1,2,3,10,11,15*} (*corresponding author) Departments of Pathology ¹ , Biology ⁴ , Biochemistry ⁵ , Chemistry ⁶ , Bioengineering ⁷ , and Neurology & Neurological Sciences ⁸ , Sarafan ChEM-H ² , Wu Tsai Human Performance Alliance ³ , Wu Tsai Neurosciences Institute ⁹ , Stanford Diabetes Research Center ¹⁰ , Cardiovascular Institute ¹¹ , and The Phil & Penny Knight Initiative for Brain Resilience at the Wu Tsai Neurosciences Institute ¹⁵ , Stanford University; Department of Biology ¹² , Massachusetts Institute of Technology; Department of Biological Chemistry ¹³ , University of California Irvine; Arc Institute ¹⁴
242	Targeting Siglec-7 and Siglec-9 Immune Checkpoints for Enhanced Prostate Cancer Immunotherapy	Ru M. Wen ¹ , G. Edward W. Marti ³ , Jessica C. Stark ² , Zenghua Fan ⁶ , Nicholas Riley ² , Xiangyue Zhang ⁵ , Hongjuan Zhao ¹ , Lawrence Fong ⁶ , Edgar Engleman ⁵ , Carolyn R. Bertozzi ^{2,7} , Sharon J. Pitteri ⁴ , James D. Brooks ¹ Departments of Urology ¹ , Chemistry (Sarafan ChEM-H) ² , Molecular & Cellular Physiology ³ , Radiology ⁴ , and Pathology ⁵ , Stanford University; Howard Hughes Medical Institute ⁶ ; Helen Diller Family Comprehensive Cancer Center ⁷ , University of California San Francisco
243	FXD5 Plays Diverse Roles in Immune Evasion and Tumor Progression in Prostate Cancer	Ru M. Wen ¹ , G. Edward W. Marti ² , Zenghua Fan ⁴ , Fernando Jose Garcia Marques ³ , Zhengyuan Qiu ¹ , Eric E. Peterson ¹ , Abel Bermudez ³ , Hongjuan Zhao ¹ , Lawrence Fong ⁴ , Sharon J. Pitteri ³ , James D. Brooks ¹ Departments of Urology ¹ , Molecular & Cellular Physiology ² , and Radiology ³ , Stanford University; Helen Diller Family Comprehensive Cancer Center ⁴ , University of California San Francisco

244	Protease-Driven Phase Separation of Elastin-Like Polypeptides	Brendan M. Wirtz ¹ , Ally G. Yun ¹ , Chloe Wick ¹ , Xiaojing J. Gao ¹ , Danielle J. Mai ¹ Department of Chemical Engineering ¹ , Stanford University
245	Light-Orchestrated Microdroplet Reactor for Solid-Phase DNA Synthesis	Mo Wu ¹ , Mohammad Asif Zaman ¹ , Wei Ren ¹ , Michael A. Jensen ² , Ronald W. Davis ² , Lambertus Hesselink ¹ Departments of Electrical Engineering ¹ and Biochemistry ² , Stanford University
246	Mycobacteriophage Functionalized Magnetic Nanocrystal Clusters for Highly Sensitive and Rapid Detection of <i>Mycobacterium</i> Tuberculosis	Zhen Xiao ¹ , Jianghong Rao ¹ Department of Radiology ¹ , Stanford University
247	Investigations into RNA-Centered Proximity Labeling Tools for Interactome Mapping	Albert Xie ¹ , Bo Cai ¹ , Alice Ting ¹ Department of Genetics ¹ , Stanford University
248	Stress Drives the Rapid Emergence of Heritable Non-Genetic Drug Resistance	Jinglin Lucy Xie ¹ , Sifei Yin ¹ , Theo Yang ^{1,2} , Kiran Chandrasekher ¹ , Luke Hanson ³ , David Kim ⁴ , Lucas Esqueda ¹ , Kyla Ost ³ , Catherine Hogan ⁵ , Niaz Banaei ⁶ , June Round ⁷ , Judith Berman ⁸ , Daniel Jarosz ^{1,9} Departments of Chemical & Systems Biology ¹ , Chemical Engineering ² , Pathology ⁶ , and Developmental Biology ⁹ , Stanford University; Department of Immunology & Microbiology ³ , University of Colorado; Agriculture & Agri-Food Canada ⁴ ; Department of Pathology & Laboratory Medicine ⁵ , University of British Columbia; Department of Pathology ⁷ , University of Utah; Department of Molecular Microbiology & Biotechnology ⁸ , Tel Aviv University
249	Tirzepatide in the Reversal of Lipotoxicity and Adipose Tissue Dysfunction in Humans with Overweight/Obesity	Jasmine Yang ¹ , Colleen Burns ¹ , Rachel Huynh ¹ , Evelyn Yandle ¹ , Chun Sabrina Johnston ¹ , Dalia Perelman ¹ , Heping Chen ¹ , Tracey McLaughlin ¹ Department of Endocrinology ¹ , Stanford University
250	The Beneficial Exposome — A Pilot Multifaceted Exploration of the Anti-Inflammatory Properties of Essential Oils	Jenny Kim ¹ , Tyler Yang ¹ , Michael Snyder ¹ Department of Genetics ¹ , Stanford University
251	Kirigami Electronics for Long-Term Electrophysiological Recording of Human Neural Organoids and Assembloids	Xiao Yang ^{1,2,3,4*} , Csaba Forró ^{1,5,6*} , Thomas L. Li ^{1,2,3,4} , Yuki Miura ^{2,3,4} , Tomasz J. Zaluska ¹ , Ching-Ting Tsai ¹ , Sabina Kanton ^{2,3,4} , James P. McQueen ^{2,3,4} , Xiaoyu Chen ^{2,3,4} , Valentina Mollo ⁵ , Francesca Santoro ^{5,6,7} , Sergiu P. Paşca ^{2,3,4†} , Bianxiao Cui ^{1,3,4†} (*equal contribution; †corresponding authors) Departments of Chemistry ¹ and Psychiatry & Behavioral Sciences ² , Stanford Brain Organogenesis ³ , Wu Tsai Neurosciences Institute, and Stanford Bio-X ⁴ , Stanford University; Center for Advanced Biomaterials for Healthcare ⁵ , Istituto Italiano di Tecnologia; Institute for Biological Information Processing – Bioelectronics ⁶ , Forschungszentrum Jülich; Neuroelectronic Interfaces ⁷ , RWTH Aachen University
252	Untethered Amphibious Soft Robot with Multimodal Locomotion	Xiao Yang ¹ , Sophie Leanza ¹ , Qiji Ze ¹ , Renee Zhao ^{1*} (*corresponding author) Department of Mechanical Engineering ¹ , Stanford University
253	Plasma Membrane Curvature Regulates the Formation of Contacts with the ER in Both Muscle Cells and Non Muscle Cells	Yang Yang ¹ , Luis Valencia ¹ , Chih-Hao Lu ¹ , Melissa Nakamoto ¹ , Ching-Ting Tsai ¹ , Chun Liu ^{2,3,4} , Joseph Wu ^{2,3,4} , Bianxiao Cui ¹ Departments of Chemistry ¹ , Medicine ² , and Radiology ³ and Stanford Cardiovascular Institute ⁴ , Stanford University
254	Tube Voltage Modulation for Reducing Noise in Photon Counting CT	Yirong Yang ^{1,2} , Sen Wang ² , Grant M. Stevens ³ , Adam S. Wang ^{1,2} Departments of Electrical Engineering ¹ and Radiology ² , Stanford University; GE HealthCare ³
255	Site-Specific Bioconjugation of Fab Fragment for Enhanced Tumoral PET Imaging	Tin-Yo Charles Yen ¹ , Jiyao Yu ¹ , Sheng-Yao Dai ¹ , QunFeng Fu ¹ , Chu Zhang ² , Irene Lim ¹ , Noeen Malik ¹ , Jianghong Rao ¹

		Department of Radiology ¹ , Stanford University; Department of Chemistry ² , Tsinghua University
256	Development of a Quantum Optimal Nonlinear Bioimaging System	Tzu-Chieh Yen ¹ , Shaun Burd ¹ , Joshua Reynolds ¹ , Samsuzzoha Mondal ² , Soichi Wakatsuki ² , Mark Kasevich ¹ Departments of Physics ¹ and Structural Biology ² , Stanford University
257	Retinal Ganglion Cell Type Identification from Compressed Recordings of Spontaneous Electrical Activity	Swetha Yogeswaran ¹ , Matthias Wurdack ² , E.J. Chichilnisky ^{2,3,4} Departments of Computer Science ¹ , Neurosurgery ² , and Ophthalmology ³ and Hansen Experimental Physics Laboratory ⁴ , Stanford University
258	Structural and Computational Insights into Dynamics and Intermediate States of Orexin 2 Receptor Signaling	Shun Yokoi ^{1,2} , Ryoji Suno ³ , Ayori Mitsutake ¹ Department of Physics, School of Science & Technology ¹ , Meiji University; Department of Structural Biology ² , Stanford University; Department of Medical Chemistry ³ , Kansai Medical University
259	Examining the Role of Von Willebrand Factor in the Immune Response to Factor VIII Through a Novel Double Knockout Murine Model	Elizabeth S. York ¹ , Huong C. Chau ¹ , Glaivy Batsuli ¹ Department of Pediatrics ¹ , Stanford University
260	XR-methylSeq: Enriching and Profiling Methylomes for Tumor Classification and Liquid Biopsies	Jingru Yu ¹ , Lauren S. Ahmann ¹ , Yvette Y. Yao ² , Angus Toland ³ , Alicia Snowden ⁴ , Chandler Ho ⁵ , Netanel Loyfer ⁶ , Tommy Kaplan ^{6,7} , Hannes Vogel ¹ , Linlin Wang ⁸ , Brooke Howitt ¹ , Brittany Holmes ¹ , Alarice Cheng-Yi Lowe ¹ , Wei Gu ¹ Department of Pathology ¹ , Stanford University; Clinical Laboratories ⁵ , Stanford Health Care; School of Medicine ² , University of Calgary; Children's Hospital Colorado ³ , University of Colorado Anschutz Medical Campus; College of Medicine ⁴ , Howard University; School of Computer Science & Engineering ⁶ and Department of Developmental Biology & Cancer Research ⁷ , The Hebrew University of Jerusalem; Department of Laboratory Medicine ⁸ , University of California San Francisco
261	Robotic Interface and Cloning Strategies Accelerate Protein Biomaterial Expression Screening	Allison G. Yun ¹ , Brendan M. Wirtz ¹ , Danielle J. Mai ¹ Department of Chemical Engineering ¹ , Stanford University
262	Blocking the VLA4-VCAM1 Axis Prevents Cognitive Decline in a Mouse Model of Infarct-Induced Neurodegeneration	Kristy Zera ¹ , Karen Bradshaw ¹ , Oliver Hahn ¹ , Aulden Foltz ¹ , Li Zhu ¹ , Todd Peterson ¹ , Hanadie Yousef ^{1,2} , Davis Lee ^{1,2} , Tony Wyss-Coray ^{1,2,3} , Marion S. Buckwalter ^{1,3} Departments of Neurology & Neurological Sciences ¹ and Neurosurgery ³ , Stanford University; VA Palo Alto Health Care System ²
263	Evaluation of PTCH1 Clinical Variants Validates the Molecular Mechanisms of PTCH1 Function	Carl Zhang ¹ , Qianqian Wang ² , Daniel E. Asarnow ³ , Yifan Cheng ^{3,4} , Philip A. Beachy ^{2,5,6} Departments of Bioengineering ¹ , Urology ⁵ , and Developmental Biology ⁶ and Institute for Stem Cell Biology & Regenerative Medicine ² , Stanford University; Department of Biochemistry & Biophysics ³ and Howard Hughes Medical Institute ⁴ , University of California San Francisco
264	Frozen Flow: Motility of Ice Diatoms	Qing Zhang ¹ , Hope T. Leng ¹ , Kevin Arrigo ^{2,3} , Manu Prakash ^{1,3,4,5} Departments of Bioengineering ¹ , Earth System Science ² , Biology ⁴ , and Oceans ⁵ , and Woods Institute for the Environment ³ , Stanford University
265	AI-Assisted Surface-Enhanced Raman Spectroscopy and Electrokinetics for Bacterial Identification in Wastewater	Yirui Zhang ¹ , Liam Herndon ² , Punnag Padhy ¹ , Alexander Al Zubeidi ¹ , Baba Ogunlade ¹ , Ariel Stiber ¹ , Alexandria Boehm ³ , Jennifer Dionne ¹ Departments of Materials Science & Engineering ¹ , Chemical Engineering ² , and Civil & Environmental Engineering ³ , Stanford University

266	Viroid-Like Colonists of Human Microbiomes	Ivan N. Zheludev ¹ , Robert C. Edgar ² , Maria Jose Lopez-Galiano ³ , Marcos de la Peña ³ , Artem Babaian ^{4,5} , Ami S. Bhatt ^{6,7} , Andrew Z. Fire ^{6,8} Departments of Biochemistry ¹ , Genetics ⁶ , Medicine (Division of Hematology) ⁷ , and Pathology ⁸ , Stanford University; independent researcher ² ; Instituto de Biología Molecular y Celular de Plantas ³ , Universidad Politécnica de Valencia–CSIC; Department of Molecular Genetics ⁴ and Donnelly Centre for Cellular & Biomolecular Research ⁵ , University of Toronto
267	Deconvolution of the Proteomic and Transcriptomic Landscape of the Human Cardiac Conduction System	Kaila Kalauokaaea-Kahele ¹ , Bowen Zheng ² , Jonathan Achter ³ , Katherine Dang ¹ , Lauren Duan ¹ , Carolin Sailer ³ , Alicia Lundby ³ , William R. Goodyer ¹ Departments of Pediatrics ¹ and Biology ² , Stanford University; Novo Nordisk Foundation Center for Protein Research, Department for Proteomics ³ , University of Copenhagen
268	Navigating Captivity: Motile Lives of Dinoflagellate Symbionts in an Acoel Worm	Grace Zhong ¹ , Manu Prakash ^{1,2,3} Departments of Bioengineering ¹ and Biology ² and Woods Institute for the Environment ³ , Stanford University
269	An Integrase-Based Tool for Studying and Controlling DNA Integration During <i>Agrobacterium</i> -Mediated Transformation of Plants	Vivian Zhong ¹ , Jennifer Brophy ¹ Department of Bioengineering ¹ , Stanford University
270	Deep Learning-Powered Recursive Latent Manifold Embedding for Revealing Neurocognitive Patterns	Zixia Zhou ¹ , Lei Xing ¹ Department of Radiation Oncology ¹ , Stanford University
271	Avian Influenza RNA in Wastewater Solids Across the United States During the Spring 2024 Outbreak	Alessandro Zulli ¹ , Marlene Wolfe ² , Bridgitte Shelden ² , Dorothea Duong ³ , Bradley White ³ , Elana Chan ¹ , Amanda Bidwell ¹ , Abigail Paulos ² , Stephen Hilton ² , Vikram Chan-Herur ³ , Alexandria Boehm ¹ Department of Civil & Environmental Engineering ¹ , Stanford University; Emory University ² ; Verily Life Sciences LLC ³
272	Chemokine Regulation of Placental Vascular Development	James B. Zwierzynski ^{1,4} , Mira N. Moufarrej ¹ , Kristy Red-Horse ^{1,2,3,4} Department of Biology ¹ , Institute for Stem Cell Biology & Regenerative Medicine ² , Howard Hughes Medical Institute ³ , and Cardiovascular Institute ⁴ , Stanford University