

# Bio-X Interdisciplinary Initiatives Symposium

## August 26, 2013

POSTER #	TITLE	AUTHORS
1	Truncated ERBB2 Amplified Genes: The p110 IRES	Alex Lindqwister <sup>1</sup> , Toby Ward <sup>1</sup> , Mark Pegram <sup>1</sup> Department of Cancer Biology <sup>1</sup> , Stanford University
2	Probing Physical Barriers to Nanostraw Cell Access	Amin Aalipour <sup>1</sup> , Alexander M. Xu <sup>1</sup> , Nicholas A. Melosh <sup>1</sup> Department of Materials Science & Engineering <sup>1</sup> , Stanford University
3	Support Vector Machine Classification of Chronic Pain States Using Real-Time fMRI	Amy Sentis <sup>1</sup> , Epifanio Bagarinao <sup>2</sup> , Sean Mackey <sup>2</sup> Departments of Computer Science <sup>1</sup> and Anesthesia <sup>2</sup> , Stanford University
4	Exploring Myeloid Cell Heterogeneity in Autoimmune Disease	Angad Gogia <sup>1</sup> , Bahareh Ajami <sup>1</sup> , Matt Spitzer <sup>2</sup> , Garry Nolan <sup>2</sup> , Lawrence Steinman <sup>1</sup> Departments of Neurology <sup>1</sup> and Microbiology & Immunology <sup>2</sup> , Stanford University
<i>The poster of Beza Dagne can be found at #107</i>		
5	Tumor Suppressive Effects of Optogenetic and Pharmacological Stimulation in Medulloblastoma Cells	Brianna Balansay <sup>1</sup> , Yujie Tang <sup>1</sup> , Brian Nguyen <sup>1</sup> , Simone Schubert <sup>1</sup> , James M. Cook <sup>3</sup> , Sundari Rallapalli <sup>3</sup> , Frances Jensen <sup>2</sup> , Yoon-Jae Cho <sup>1</sup> Department of Neurology <sup>1</sup> , Stanford University; Children's Hospital Boston <sup>2</sup> ; University of Wisconsin-Milwaukee <sup>3</sup>
6	A Gut Microbe-Plant Interaction Generates Anticancer Compounds: Metabolism of Dietary Glucosinolates by <i>Bacteroides thetaiotaomicron</i> and Implications for Human Health	Camil A. C. Diaz <sup>1</sup> , Andrew P. Klein <sup>1</sup> , Elizabeth S. Sattely <sup>1</sup> Department of Chemical Engineering <sup>1</sup> , Stanford University
7	Higher Rates of Hepatitis B Surface Antigen (HBsAg) Seroclearance in Males and Hepatitis B E-Antigen Negative Chronic Hepatitis B (CHB) Patients	Christina K. Wang <sup>1</sup> , Long H. Nguyen <sup>1</sup> , Irene S. Sonu <sup>2</sup> , Kevin Kin <sup>7</sup> , Huy N. Trinh <sup>4</sup> , Jiayi Li <sup>5</sup> , Jian Q. Zhang <sup>6</sup> , Aijaz Ahmed <sup>3</sup> , Mindie H. Nguyen <sup>3</sup> Liver Transplant Clinic <sup>1</sup> , Department of Medicine <sup>2</sup> , and Division of Gastroenterology and Hepatology <sup>3</sup> , Stanford University; San Jose Gastroenterology <sup>4</sup> ; Department of Gastroenterology <sup>5</sup> , Palo Alto Medical Foundation; Chinese Hospital <sup>6</sup> , San Francisco; Pacific Health Foundation <sup>7</sup>
8	Annotating Regulatory Regions of Personal Genomes	Dana Wyman <sup>1</sup> , Alan Boyle <sup>2</sup> , Michael Snyder <sup>2</sup> Departments of Biology <sup>1</sup> and Genetics <sup>2</sup> , Stanford University
9	Characterizing Psycho-Perceptual Factors Involved with Tumor Detection from Medical Imaging	Danielle Rasooly <sup>1</sup> , David Paik <sup>1</sup> Department of Radiology <sup>1</sup> , Stanford University
10	Defining Nanoproteomic Profiles of Kidney Cancer	Dave R. Praharaj <sup>1</sup> , Jennifer J. O'Rourke <sup>1</sup> , Thomas J. Metzner <sup>1</sup> , Rachael Curtis <sup>1</sup> , Sandy Srinivas <sup>1</sup> , Joanna E. Liliental <sup>1</sup> , John Leppert <sup>1</sup> , Alice C. Fan <sup>1</sup> , Dean W. Felsher <sup>1</sup> Stanford Cancer Institute <sup>1</sup> , Stanford University
11	Development of Polystyrene Microposts for Traction Force Microscopy	David Ayala-Lindeman <sup>1</sup> , Alexandre Ribeiro <sup>1</sup> , Beth Pruitt <sup>1</sup> Department of Mechanical Engineering <sup>1</sup> , Stanford University

12	The Role of CX3CR1 in Focal Ischemic Brain Injury & Inflammation in Mice	David Mundy <sup>1</sup> , Xiaoxing Xiong <sup>2</sup> , Heng Zhao <sup>2</sup> Departments of Biology <sup>1</sup> and Neurosurgery <sup>2</sup> , Stanford University
13	The Effect of Light Wavelength on the Efficacy and Safety of Phototherapy for Neonatal Jaundice	Debra T. Linfield <sup>1</sup> , David N. Lin <sup>1</sup> , Stephanie Schulz <sup>1</sup> , Hendrik J. Vreman <sup>1</sup> , Ronald J. Wong <sup>1</sup> , David K. Stevenson <sup>1</sup> Department of Pediatrics <sup>1</sup> , Stanford University
14	Dynamics of Bacterial Communities through a Time Course Experiment	Fatema AlGharbi <sup>1</sup> , Shariyar Pruisken <sup>1</sup> , Brandon Ewonus <sup>1</sup> , Paul J McMurdie II <sup>2</sup> , Yana Hoy <sup>3</sup> , David Relman <sup>3</sup> , Susan Holmes <sup>2</sup> Mathematical Computational Sciences <sup>1</sup> , Department of Statistics <sup>2</sup> , and School of Medicine <sup>3</sup> , Stanford University
15	The Role of miR-126 in Lung Tumor Angiogenesis	George Chen <sup>1</sup> , Cynthia Kosinski <sup>1</sup> , Calvin Kuo <sup>1</sup> Department of Medicine <sup>1</sup> , Stanford University
16	Smoothed is a Frequent Driver of Drug-Resistant Basal Cell Carcinoma	Geurim Kim <sup>1</sup> , Scott X. Atwood <sup>1</sup> , Kavita Sarin <sup>2</sup> , Jiang Li <sup>1</sup> , Sandra Melo <sup>1</sup> , Frederic J. de Sauvage <sup>3</sup> , Anne Lynn S. Chang <sup>1,2</sup> , Jean Y. Tang <sup>1,2</sup> , Anthony E. Oro <sup>1,2</sup> Program in Epithelia Biology <sup>1</sup> and Department of Dermatology <sup>2</sup> , Stanford University; Department of Molecular Biology <sup>3</sup> , Genentech, Inc.
17	Safety Parameters of Bone Marrow Derived Stem Cell Transplantation for Treatment of Ischemic Cardiomyopathy	Gia Garrett <sup>1,2</sup> , Elly Seo <sup>1,2</sup> , Andrew Lee <sup>1,2</sup> , Charles Chan <sup>1,2</sup> , Joe Wu <sup>1,2</sup> Departments of Radiology <sup>1</sup> and Medicine <sup>2</sup> , Stanford University
18	Investigation of Potential Metabolic Gene in Ewing's Sarcoma	Greeshma Somashekar <sup>1</sup> , Dana Gwinn <sup>1</sup> , Alejandro Sweet-Cordero <sup>1</sup> Department of Pediatrics <sup>1</sup> , Stanford University
19	Investigating the Relationship between Nimitin and STK25	Habib Khoury <sup>1</sup> , Ivan Millan <sup>1</sup> , Yanmin Yang <sup>1</sup> Department of Neurology <sup>1</sup> , Stanford University
20	The Role of FoxO Transcription Factors in Neuronal Conversion from Aging Fibroblasts	Issa Yousif <sup>1</sup> , Henrik Ahlenius <sup>1</sup> , Marius Wernig <sup>1</sup> Institute for Stem Cell Biology & Regenerative Medicine <sup>1</sup> , Stanford University
21	Hippocampal Field Inhibiting Potentials: A Novel Screening for General Anesthetics	James Nie <sup>1</sup> , Boris D. Heifets <sup>1</sup> , Beza A. Dagne <sup>1</sup> , Melis Sunay <sup>1</sup> , Bruce MacIver <sup>1</sup> , Robert Malenka <sup>1</sup> Department of Psychiatry & Behavioral Sciences <sup>1</sup> , Stanford University
22	Engineering Adipose-Derived Stem Cells using Biodegradable Polymeric Nanoparticles to Overexpress HGF and CXCR4 for Therapeutic Angiogenesis	Jeffrey Choi <sup>1</sup> , Lorenzo Deveza <sup>2,4</sup> , Sungwon Lim <sup>2</sup> , Fan Yang <sup>2,3</sup> Departments of Biology <sup>1</sup> , Bioengineering <sup>2</sup> , and Orthopaedic Surgery <sup>3</sup> and School of Medicine <sup>4</sup> , Stanford University
23	Elucidating the Role of ZNF521 on Vascular Smooth Muscle Cell Proliferation in Moyamoya Disease	Jimmy He <sup>1</sup> , Lorelei Shoemaker <sup>1</sup> , Gary Steinberg <sup>1</sup> Department of Neurosurgery <sup>1</sup> , Stanford University
24	Interactions between p53 and the lncRNA DINO: Effects of Post-Translational Modifications on RNA Binding	Katherine G. Nabel <sup>1,2</sup> , Adam M. Schmitt <sup>1,2,3</sup> , Tiffany Hung <sup>1,2</sup> , Howard Y. Chang <sup>1,2</sup> Howard Hughes Medical Institute <sup>1</sup> , Program in Epithelial Biology <sup>2</sup> , and Department of Radiation Oncology <sup>3</sup> , Stanford University
25	Promotion of Muscle Stem Cell Fate in Bioengineered Culture Environments	Kevin Aliado <sup>1</sup> , Andrew Ho <sup>1</sup> , Helen M. Blau <sup>1</sup> Baxter Laboratory for Stem Cell Biology Institute for Stem Cell Biology & Regenerative Medicine Department of Microbiology & Immunology <sup>1</sup> , Stanford University
26	Anterior Cruciate Ligament Modifiable Biomechanical Risk Factors	Kieran Chung <sup>1</sup> , Rebecca Shultz <sup>2</sup> , Jason Drago <sup>2</sup> Departments of Biomechanical Engineering <sup>1</sup> and Orthopedic Surgery <sup>2</sup> , Stanford University

27	Characterization of Schwann Cell Growth and Behavior on Variable Geometry $\beta$ -TCP Scaffolds	Lauren Sweet <sup>1</sup> , Yunqing Kevin Kang <sup>2</sup> , Chris Czisch <sup>3</sup> , Lukasz Witek <sup>4</sup> , Yang Shi <sup>4</sup> , Jim Smay <sup>4</sup> , Giles Plant <sup>3</sup> , Yunzhi Peter Yang <sup>2</sup> Departments of Biology <sup>1</sup> , Orthopedic Surgery <sup>2</sup> , and Neurosurgery <sup>3</sup> , Stanford University; Department of Chemical Engineering <sup>4</sup> , Oklahoma State University
28	Regulation of the Hedgehog Pathway by Endogenous and Synthetic Small Molecules Targeting Smoothed	Lila Neahring*, Benjamin Myers <sup>1,2,3,4</sup> , Philip Beachy <sup>1,2,3,4</sup> (*undeclared) Institute for Stem Cell Biology & Regenerative Medicine <sup>1</sup> , Departments of Biochemistry <sup>2</sup> and Developmental Biology <sup>3</sup> , and Howard Hughes Medical Institute <sup>4</sup> , Stanford University
29	Boolean Analysis of CpG Methylation and Recurrent Mutations in Acute Myeloid Leukemia with Implications for Therapy and Prognosis	Linda Yu <sup>1,2</sup> , Subarna Sinha <sup>3</sup> , Daniel Thomas <sup>1,2</sup> , David Dill <sup>3</sup> , Ravindra Majeti <sup>3</sup> Institute for Stem Cell Biology & Regenerative Medicine <sup>1</sup> and Departments of Medicine (Division of Hematology) <sup>2</sup> and Computer Science <sup>3</sup> , Stanford University
30	NKp30 Recruitment to the Natural Killer Cell's Immune Synapse	Lisa Ly <sup>1</sup> , Uzi Hadad <sup>1</sup> , Olivia Martinez <sup>1</sup> , Sheri Krams <sup>1</sup> Department of Surgery <sup>1</sup> , Stanford University
31	Generation of a Fully Mouse Monoclonal Antibody Blocking the CD47-SIRPalpha Interaction	Mariam Kyarunts <sup>1</sup> , Adriel Cha <sup>1</sup> , Jens Volkmer <sup>1</sup> , Teja Nayik <sup>1</sup> , Irv Weissman <sup>1</sup> Department of Biology <sup>1</sup> , Stanford University
32	The Brain in Performance: Understanding Brain Waves through Sound and Space	Michael Iorga <sup>1</sup> , Juan-Pablo Caceres <sup>3</sup> , Chris Chafe <sup>3</sup> , Josef Parvizi <sup>2</sup> Departments of Biology <sup>1</sup> and Neurology <sup>2</sup> and CCRMA <sup>3</sup> , Stanford University
33	Earthquakes and Elephants: Effects of Seismic Activity on Immune Cell Distribution in Asian Elephants	Mira Nencheva <sup>1</sup> , Harry Peachey <sup>5</sup> , Mariya Kalashnikova <sup>2</sup> , Allison Litzinger <sup>2</sup> , Firdaus S. Dhabhar <sup>1,3,4</sup> Department of Psychiatry & Behavioral Sciences (Laboratory of Stress Immunology) <sup>1</sup> , Former student of Department of Psychiatry & Behavioral Sciences (Laboratory of Stress Immunology) <sup>2</sup> , Institute for Immunity, Transplantation, & Infection Laboratory of Stress Immunology <sup>3</sup> , and Cancer Institute, Stanford University <sup>4</sup> ; Columbus Zoo <sup>5</sup>
34	Bag of TRICs: The Complexities of Prefoldin-TRIC Interaction Unveiled	Phuong Nguyen <sup>1</sup> , Dan Gestaut <sup>1</sup> , Judith Frydman <sup>1</sup> Department of Biology <sup>1</sup> , Stanford University
35	Understanding the Functional Role of C/EBP $\beta$ in Insulin Resistant Adipocytes	Nicole Dalal <sup>1</sup> , Asuka Ota <sup>2</sup> , Mary N. Teruel <sup>2</sup> Departments of Human Biology <sup>1</sup> and Chemical & Systems Biology <sup>2</sup> , Stanford University
36	Creating Myotonic Dystrophy Triplet Repeat Corrected Cell Lines using Engineered Nucleases	Niraj Punjya <sup>1</sup> , Ayal Hendel <sup>1</sup> , Matthew Porteus <sup>1</sup> Department of Pediatrics <sup>1</sup> , Stanford University
37	Cherry Picking: Proteolytic and Chaotropic Disassembly of Monomeric Red Fluorescent Proteins	Oliver Hamto <sup>1</sup> , Luke Oltrogge <sup>1</sup> , Steven Boxer <sup>1</sup> Department of Chemistry <sup>1</sup> , Stanford University
38	Canonical Wnt Signaling Promotes Skin Graft Survival and Angiogenesis	Olivia S. Jew <sup>1</sup> , Khosrow S. Houschyar <sup>1</sup> , Andrew A. Smith <sup>1</sup> , Jill A. Helms <sup>1</sup> Department of Surgery (Division of Plastic & Reconstructive Surgery) <sup>1</sup> , Stanford University
39	Karplusplus: Improving the Karplus Relation	Osama El-Gabalawy <sup>1</sup> , TJ Lane <sup>2</sup> , Kyle Beauchamp <sup>3</sup> , Vijay Pande <sup>2</sup> Departments of Biology <sup>1</sup> , Chemistry <sup>2</sup> , and Biophysics <sup>3</sup> , Stanford University

40	Modeling Perceptual Learning with Deep Networks	Rachel Lee <sup>1</sup> , Andrew Saxe <sup>2</sup> , Jay McClelland <sup>3</sup> Departments of Symbolic Systems <sup>1</sup> , Electrical Engineering <sup>2</sup> , and Psychology <sup>3</sup> , Stanford University
41	Detection of Electrocardiographic Differences Between Athletes and Patients with Hypertrophic Cardiomyopathy	Rachel Bent <sup>1</sup> , Marco Perez <sup>1,2</sup> , Victor Froelicher <sup>2</sup> , Euan Ashley <sup>1,2</sup> Stanford Center for Inherited Cardiovascular Disease <sup>1</sup> and Department of Cardiovascular Medicine <sup>2</sup> , Stanford University
42	The Humanized BLT Mouse Model has Superior Human Lymphocyte Engraftment but Lacks an Adequate Allograft Immune Response	Raman Nelakanti <sup>1</sup> , Nigel Kooreman <sup>1</sup> , Patricia de Almeida <sup>1</sup> , Joseph Wu <sup>1</sup> Department of Medicine (Division of Cardiology) <sup>1</sup> , Stanford University
43	Identification of Deer Antler Proliferation Genes for Accelerating Growth of hMSCs	Rashmi Sharma <sup>1</sup> , Elmer Ker <sup>2</sup> , Stephen Quake <sup>1</sup> , Joseph C. Wu <sup>3</sup> , Howard Chang <sup>4</sup> , William J. Maloney <sup>2</sup> , Yunzhi Peter Yang <sup>2</sup> Departments of Bioengineering <sup>1</sup> , Orthopaedic Surgery <sup>2</sup> , Radiology <sup>3</sup> , and Dermatology <sup>4</sup> , Stanford University
44	Copy Number Variation in Lymphoblastoid Cell Line Samples: A Blood vs. LCL Comparison	Rebekah Oragwu <sup>2</sup> , Xiaowei Zhu <sup>1</sup> , Alexander Urban <sup>1</sup> Departments of Psychiatry & Behavioral Sciences <sup>1</sup> and Human Biology <sup>2</sup> , Stanford University
45	Characterization of RDE-1 Function in the <i>C. elegans</i> Exogenous RNAi Pathway	Richard Li <sup>1,2,3</sup> , Andrew Z. Fire <sup>1,2</sup> Departments of Genetics <sup>1</sup> , Pathology <sup>2</sup> , and Chemical Engineering <sup>3</sup> , Stanford University
46	Increasing Cortical Plasticity and Connectivity by Targeting PirB	Richard W. Sapp <sup>1</sup> , David N. Bochner <sup>2</sup> , George Sebastia Vidal Pérez-Treviño <sup>2</sup> , Maja Djurasic <sup>2</sup> , Carla J. Shatz <sup>1,2</sup> Departments of Biology <sup>1</sup> and Neurobiology <sup>2</sup> , Stanford University
47	Mechanical Stimulation and Bone Healing	Robert Carrera <sup>1</sup> , Alesha Castillo <sup>2</sup> Departments of Bioengineering <sup>1</sup> and Surgery - Plastic and Reconstructive Surgery <sup>2</sup> , Stanford University
48	Evaluation of CD90 as a Therapeutic Antibody Target on Cancer Stem Cells	Robin Z. Cheng <sup>1</sup> , Stephen Willingham <sup>1</sup> , Irving L. Weissman <sup>1</sup> Institute for Stem Cell Biology & Regenerative Medicine <sup>1</sup> , Stanford University
49	Influence of Gender in Early-Stage Math Learning	Rosy Karna <sup>1</sup> , Kaustubh Supekar <sup>2</sup> , Vinod Menon <sup>2,3</sup> Departments of Biology <sup>1</sup> , Psychiatry & Behavioral Sciences <sup>2</sup> , and Neurology & Neurological Sciences <sup>3</sup> , Stanford University
50	Understanding the Function of RAI1 through Genetic Mosaic Analysis in Mice	Samantha Zarate <sup>1,2</sup> , Casey Guenther <sup>1,2</sup> , Liqun Luo <sup>1,2</sup> Howard Hughes Medical Institute <sup>1</sup> and Department of Biology <sup>2</sup> , Stanford University
51	Interaction of Gli1 with Basic Helix-Loop-Helix Transcription Factors During Cerebellar Development	Sara M. Broski <sup>1,2,3</sup> , James G. Purzner <sup>1,2,3</sup> , Eunice Y. Lee <sup>1,2,3</sup> , Alexander S. Brown <sup>1,2,3</sup> , Matthew P. Scott <sup>1,2,3</sup> Departments of Developmental Biology <sup>1</sup> , Genetics <sup>2</sup> , and Bioengineering <sup>3</sup> , Stanford University
52	Modifying Collective Physiology of Endothelial Cells on Electrospun Elastin via Nanoscale Control of Cell-Matrix Interactions	Shamik Mascharak <sup>1</sup> , Patrick Benitez <sup>1</sup> , Sarah C. Heilshorn <sup>2</sup> Departments of Bioengineering <sup>1</sup> and Materials Science & Engineering <sup>2</sup> , Stanford University
53	Cognitive and Neuroanatomical Manifestations of Glucocorticoid Receptor Polymorphism in Fragile X Syndrome	Sharon Bade Shrestha <sup>1</sup> , David Hong <sup>1,2</sup> , Allan Reiss <sup>1,2</sup> Center for Interdisciplinary Brain Sciences Research <sup>1</sup> and Department of Psychiatry & Behavioral Sciences <sup>2</sup> , Stanford University

54	Understanding the Molecular Mechanisms of Microtubule Polarity in the Ciliated Neurons: A Study in <i>Caenorhabditis elegans</i>	Stephanie Wang <sup>1</sup> , Jing Yan <sup>1</sup> , Kang Shen <sup>1</sup> Department of Biology <sup>1</sup> , Stanford University
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56	Identifying Early Events of Hedgehog Signaling	Tally Buckstaff <sup>1</sup> , Teresa Purzner <sup>2</sup> , Matthew Scott <sup>2</sup> Departments of Human Biology <sup>1</sup> and Developmental Biology <sup>2</sup> , Stanford University
57	Double-Blind, Randomized, Placebo-Controlled Trial of Oxytocin Treatment for Social Deficits in Children with Autism	Tara Trujillo <sup>1</sup> , Dean S. Carson <sup>1</sup> , Antonio Y. Hardan <sup>1</sup> , Karen J. Parker <sup>1</sup> Department of Psychiatry & Behavioral Sciences <sup>1</sup> , Stanford University
58	Combating Catheter-Associated Biofilms with Curcumin Analogs	Thien-Linh Le <sup>2</sup> , Ji-Yuon Lim <sup>1</sup> , Yi-Ju Hsieh <sup>2</sup> , Michael Hsieh <sup>2</sup> , Lynette Cegelski <sup>1</sup> Departments of Chemistry <sup>1</sup> and Urology <sup>2</sup> , Stanford University
59	A Novel Motor Protein? Testing the Activity of the Putative ATPase Domain of BPAG1n4	Trevor Mooney <sup>1</sup> , Yanmin Yang <sup>1</sup> Department of Neurology & Neurological Sciences <sup>1</sup> , Stanford University
60	Rate Limiting Step of Wnt3a Secretion from CHO-S Cells	Ubah Jimale Dimbil <sup>1</sup> , Girija Dhamdhare <sup>1</sup> , Jill Helms <sup>1</sup> Department of Surgery <sup>1</sup> , Stanford University
61	Data Mining on Electronic Medical Records	William Chen <sup>1</sup> , Kenneth Jung <sup>1</sup> , Paea LePendu <sup>1</sup> , Nigam Shah <sup>1</sup> Department of Biomedical Informatics <sup>1</sup> , Stanford University
62	Dendritic Spine Stability and Density are Regulated by PirB	Josephine Chen <sup>1,2</sup> , George S. Vidal <sup>1,2,3</sup> , Maja Djurisic <sup>1,2</sup> , Adam Aharon <sup>4</sup> , Yi Zuo <sup>4</sup> , Carla Shatz <sup>1,2</sup> Departments of Biology <sup>1</sup> and Neurobiology <sup>2</sup> and Neurosciences Ph.D. Program <sup>3</sup> , Stanford University; MCD Biology <sup>4</sup> , University of California-Santa Cruz
63	Model-less Feedback Control of Continuum Manipulators in Constrained Environments	Michael Yip <sup>1</sup> , David Camarillo <sup>1</sup> Department of Bioengineering <sup>1</sup> , Stanford University
64	Force-Dependent Interactions Between Actin Filaments and a Minimal Adherens Junction Complex	Craig D. Buckley <sup>1</sup> , Jiongyi Tan <sup>5</sup> , Beth L. Pruitt <sup>2</sup> , William I. Weis <sup>3,5</sup> , W. James Nelson <sup>4</sup> , Alexander R. Dunn <sup>1,5</sup> Departments of Chemical Engineering <sup>1</sup> , Mechanical Engineering <sup>2</sup> , Structural Biology <sup>3</sup> , and Biology <sup>4</sup> and the Biophysics Program <sup>5</sup> , Stanford University
65	A Plasmonic Chip for Biomarker Discovery and Diagnosis of Type-1 Diabetes	Bo Zhang <sup>1</sup> , Rajiv Kumar <sup>2</sup> , Brian Feldman <sup>2</sup> , Hongjie Dai <sup>1</sup> Departments of Chemistry <sup>1</sup> and Pediatrics <sup>2</sup> , Stanford University
66	Gene Expression Profiling in an Adult Stem Cell Lineage Identified a Putative Transcriptional Repressor Critical for Differentiation	Jongmin Kim <sup>1</sup> , Margaret T. Fuller <sup>2,3</sup> Departments of Chemical & Systems Biology <sup>1</sup> , Developmental Biology <sup>2</sup> , and Genetics <sup>3</sup> , Stanford University
67	From Cell Wall Structure to Morphogenesis	Carolina Tropini <sup>1,3</sup> , Timothy K. Lee <sup>1</sup> , Jen Hsin <sup>1</sup> , Samantha M. Desmarais <sup>1</sup> , Tristan Ursell <sup>1</sup> , Russell D. Monds <sup>1*</sup> , Kerwyn Casey Huang <sup>1,2,3*</sup> (*corresponding authors) Departments of Bioengineering <sup>1</sup> and Microbiology & Immunology <sup>2</sup> and the Biophysics Program <sup>3</sup> , Stanford University
68	Stiffness of Hyaluronic Acid Matrix Influence T Cells in Autoimmune T1D	Adi de la Zerda <sup>1</sup> , Tim Thauland <sup>2</sup> , Sarah Heilshorn <sup>1</sup> , Paul Bollyky <sup>3</sup> , Manish Butte <sup>2</sup> Departments of Materials Science & Engineering <sup>1</sup> , Pediatric Allergy & Immunology <sup>2</sup> ,

		and Medicine-Infectious Diseases <sup>3</sup> , Stanford University
69	Delayed Regulation in Lateral Inhibition Leads to Defect Robustness in Patterning	David Glass <sup>1</sup> , Xiaofan Jin <sup>1</sup> , Ingmar Riedel-Kruse <sup>1</sup> Department of Bioengineering <sup>1</sup> , Stanford University
70	Physical Modeling of Chromosome Segregation in Bacteria Reveals Impact of Force and DNA Relaxation	Thomas Lampo <sup>1</sup> , Nathan Kuwada <sup>2</sup> , Paul Wiggins <sup>2,3</sup> , Andrew Spakowitz <sup>1</sup> Department of Chemical Engineering <sup>1</sup> , Stanford University; Departments of Physics <sup>2</sup> and Bioengineering <sup>3</sup> , University of Washington
71	Genome Evolution During Progression to Breast Cancer	Daniel Newburger <sup>1*</sup> , Dorna Kashef-Haghighi <sup>3*</sup> , Ziming Weng <sup>4*</sup> , Raheleh Salari <sup>3</sup> , Robert Sweeney <sup>4</sup> , Alayne Brunner <sup>4</sup> , Shirley Zhu <sup>4</sup> , Xiangqian Guo <sup>4</sup> , Sushama Varma <sup>4</sup> , Megan Troxell <sup>5</sup> , Robert West <sup>4</sup> , Serafim Batzoglou <sup>3</sup> , Arend Sidow <sup>2,4</sup> (*equal contribution) Biomedical Informatics Training Program <sup>1</sup> and Departments of Genetics <sup>2</sup> , Computer Science <sup>3</sup> , and Pathology <sup>4</sup> , Stanford University; Department of Pathology and Knight Cancer Institute <sup>5</sup> , Oregon Health & Science University
72	High-Throughput, Comprehensive Analysis of Mammalian Translation Initiation Motifs by FACS-seq	William Noderer <sup>1</sup> , Clifford Wang <sup>1</sup> Department of Chemical Engineering <sup>1</sup> , Stanford University
73	A Memory Frontier for Complex Synapses	Subhaneil Lahiri <sup>1</sup> , Surya Ganguli <sup>1</sup> Department of Applied Physics <sup>1</sup> , Stanford University
74	Single Chip Microfluidically Partitioned Giant Magnetoresistive Sensor Arrays Enable Sample Multiplexing in Biosensing	Daniel Bechstein <sup>1</sup> , Jung-Rok Lee <sup>1</sup> , Dokyoon Kim <sup>2</sup> , Richard S. Gaster <sup>4</sup> , Junyi Wang <sup>3</sup> , James A. Weaver <sup>3</sup> , Shan X. Wang <sup>2,3</sup> Departments of Mechanical Engineering <sup>1</sup> , Materials Science & Engineering <sup>2</sup> , and Electrical Engineering <sup>3</sup> , and School of Medicine <sup>4</sup> , Stanford University
75	A RNA-based Control Platform for Programming Protein Function via Alternative Splicing	Melina Mathur <sup>1</sup> , Christina D. Smolke <sup>1</sup> Department of Bioengineering <sup>1</sup> , Stanford University
76	Optogenetic Control of Targeted Motor Neurons in Freely Moving Rats	Kate Montgomery <sup>1*</sup> , Chris Towne <sup>1*</sup> , Shrivats Iyer <sup>1</sup> , Karl Deisseroth <sup>1,2,5</sup> , Scott Delp <sup>1,3,4</sup> (*equal contribution) Departments of Bioengineering <sup>1</sup> , Psychiatry & Behavioral Sciences <sup>2</sup> , Orthopaedic Surgery <sup>3</sup> , and Mechanical Engineering <sup>4</sup> and Howard Hughes Medical Institute <sup>5</sup> , Stanford University
77	The Genomics of Neurodevelopment: Transcriptional Networks Underlying the Developing Neocortex	James H. Notwell <sup>1</sup> , Aaron M. Wenger <sup>1</sup> , Shoa L. Clarke <sup>2</sup> , Tisha Chung <sup>3</sup> , Geetu Tuteja <sup>3</sup> , Harendra Guturu <sup>4</sup> , Whitney Heavner <sup>3,5</sup> , Bruce T. Schaar <sup>3</sup> , Gill Bejerano <sup>1,3</sup> Departments of Computer Science <sup>1</sup> , Genetics <sup>2</sup> , Developmental Biology <sup>3</sup> , Electrical Engineering <sup>4</sup> , and Biology <sup>5</sup> , Stanford University
78	Hand Motion Tracking System Using Inertial Measurement Units	Pankaj Sharma <sup>1</sup> , Vivian Lei <sup>2</sup> , Sakti Srivastava <sup>2</sup> Departments of Electrical Engineering <sup>1</sup> and Surgery <sup>2</sup> , Stanford University
79	Single-Molecule Dynamics in the Primary Cilium: Characterization of Smoothed Movement in Response to Sonic Hedgehog Signaling	Lucien Weiss <sup>1</sup> , Ljiljana Milenkovic <sup>2</sup> , Steffen Sahl <sup>1</sup> , Raymond Wu <sup>1</sup> , Matthew Scott <sup>2</sup> , W. E. Moerner <sup>1</sup> Departments of Chemistry <sup>1</sup> and Developmental Biology <sup>2</sup> , Stanford University
80	On-Demand Generation of Seizures with Defined Origin and Network Propagation Pathways	Andrew Weitz <sup>1</sup> , Zhongnan Fang <sup>2</sup> , Hyun Joo Lee <sup>3</sup> , Robert Fisher <sup>3</sup> , Wesley Smith <sup>4</sup> , Jia Liu <sup>4</sup> , Peter Lin <sup>3</sup> , Matthew Rosenberg <sup>5</sup> , Jin Hyung Lee <sup>1,3</sup>

		Departments of Bioengineering <sup>1</sup> , Electrical Engineering <sup>2</sup> , and Neurology & Neurological Sciences <sup>3</sup> , Stanford University; Neuroscience Interdepartmental Program <sup>4</sup> and Department of Psychology <sup>5</sup> , UCLA
81	Discovery of Antibiotic Biosynthesis Pathways in Dietary Plants	Andrew P. Klein <sup>1</sup> , Gülbenk Anarat-Cappillino <sup>1</sup> , Elizabeth S. Sattely <sup>1</sup> Department of Chemical Engineering <sup>1</sup> , Stanford University
82	Frontal Lobe Contributions to Probabilistic and Deterministic Learning	Matthew D. Sacchet <sup>1,2</sup> , Janice Chen <sup>3,4</sup> , Daphna Shohamy <sup>5</sup> , Anthony D. Wagner <sup>1,2</sup> Department of Psychology <sup>1</sup> and Neurosciences Program <sup>2</sup> , Stanford University; Department of Psychology <sup>3</sup> and Neuroscience Institute <sup>4</sup> , Princeton University; Department of Psychology <sup>5</sup> , Columbia University
83	The Potential of Positron Emission Tomography (PET) for Intra-Treatment Dynamic Tumor Tracking: A Phantom Study	Jaewon Yang <sup>1,2</sup> , Tokihiro Yamamoto <sup>3</sup> , Samuel R. Mazin <sup>4</sup> , Edward E. Graves <sup>2</sup> , Paul J. Keall <sup>5*</sup> (*corresponding author) Departments of Electrical Engineering <sup>1</sup> and Radiation Oncology <sup>2</sup> , Stanford University; Department of Radiation Oncology <sup>3</sup> , University of California-Davis; RefleXion Medical, Inc. <sup>4</sup> ; Radiation Physics Laboratory <sup>5</sup> , University of Sydney
84	Transcriptomics- and Metabolomics-Driven Discovery of a Novel Indolic Secondary Metabolite Pathway in <i>Arabidopsis</i>	Jakub Rajniak <sup>1</sup> , Elizabeth Sattely <sup>1</sup> Department of Chemical Engineering <sup>1</sup> , Stanford University
85	Kinematic Asymmetry Increases with Activity Demand after Arthroscopic Partial Medial Meniscectomy	Shannon Edd <sup>1,3</sup> , Nathan Netravali <sup>1,3</sup> , Julien Favre <sup>1</sup> , Nicholas Giori <sup>2,3</sup> , Thomas Andriacchi <sup>1,2,3</sup> Departments of Mechanical Engineering <sup>1</sup> and Orthopaedic Surgery <sup>2</sup> , Stanford University; Veterans Affairs Palo Alto RR&D Center <sup>3</sup>
86	The Effects of PEG Hydrogel Structure and Crosslinking Density on Protein Diffusion	Soah Lee <sup>1</sup> , Xinming Tong <sup>2</sup> , Fan Yang <sup>2,3</sup> Departments of Materials Science & Engineering <sup>1</sup> , Orthopaedic Surgery <sup>2</sup> , and Bioengineering <sup>3</sup> , Stanford University
87	Insights into the Dynamics of Biomolecular Self-Assembly	Alia P. Schoen <sup>1</sup> , Arunagirinathan M.A. <sup>1</sup> , Nicholas Cordella <sup>2</sup> , Shafiqh Mehraeen <sup>3</sup> , Kelly N. L. Huggins <sup>1</sup> , Mirjam Leunissen <sup>4</sup> , Andrew J. Spakowitz <sup>2</sup> , Sarah C. Heilshorn <sup>1</sup> Departments of Materials Science & Engineering <sup>1</sup> , Chemical Engineering <sup>2</sup> , and Mechanical Engineering <sup>3</sup> , Stanford University; FOM Institute AMOLF <sup>4</sup>
88	Knee Flexion Moment During Walking Influences Medial Compartment Cartilage Thickness in Patients with Knee Osteoarthritis	Eric F. Chehab <sup>1</sup> , Julien Favre <sup>2</sup> , Jennifer C. Erhart-Hledik <sup>2,4</sup> , Thomas P Andriacchi <sup>2,3,4</sup> Departments of Bioengineering <sup>1</sup> , Mechanical Engineering <sup>2</sup> , and Orthopaedics <sup>3</sup> , Stanford University; Palo Alto Veterans Affairs <sup>4</sup>
89	Biodetection Considerations for Organic Field-Effect Transistors	Mallory L. Hammock <sup>1</sup> , Oren Knopfmacher <sup>1</sup> , Zhenan Bao <sup>1</sup> Department of Chemical Engineering <sup>1</sup> , Stanford University
90	Dose Measurement and Estimation Methods in an Elliptical Body Phantom for a Conebeam CT System	Jang-Hwan Choi <sup>1,2</sup> , Dragos Constantin <sup>1</sup> , Geoff Nelson <sup>1</sup> , Rebecca Fahrig <sup>1</sup> Departments of Radiology <sup>1</sup> and Mechanical Engineering <sup>2</sup> , Stanford University
91	Real-Time Observation of Transcription Initiation from the T7A1 Promoter	Furqan M. Fazal <sup>1*</sup> , Cong A. Meng <sup>2*</sup> , Steven Block <sup>1,3</sup> (*equal contribution) Departments of Applied Physics <sup>1</sup> , Chemistry <sup>2</sup> , and Biology <sup>3</sup> , Stanford University
92	Calculations of the Electric Field in the Solution Phase with a Polarizable	Stephen D. Fried <sup>1</sup> , Lee-Ping Wang <sup>1</sup> , Steven G.

	Model	Boxer <sup>1</sup> , Pengyu Ren <sup>2</sup> , Vijay S. Pande <sup>1</sup> Department of Chemistry <sup>1</sup> , Stanford University; Department of Biomedical Engineering <sup>2</sup> , University of Texas-Austin
93	Topology-Driven Trajectory Synthesis with an Example on Retinal Cell Motions	Chen Gu <sup>1</sup> , Michael Kerber <sup>2</sup> , Leonidas Guibas <sup>2</sup> Institute for Computational & Mathematical Engineering <sup>1</sup> and Department of Computer Science <sup>2</sup> , Stanford University
94	Stem Cells Catalyze Cartilage Formation by Neonatal Articular Chondrocytes in 3D Biomimetic Hydrogels	Janice Lai <sup>1</sup> , Glen Kajiyama <sup>2</sup> , R. Lane Smith <sup>2</sup> , William Maloney <sup>2</sup> , Fan Yang <sup>2,3</sup> Departments of Mechanical Engineering <sup>1</sup> , Orthopaedic Surgery <sup>2</sup> , and Bioengineering <sup>3</sup> , Stanford University
95	Frequency Dependence of Ultrasound Neuromodulation	Patrick Ye <sup>1</sup> , Randy King <sup>1</sup> , Julian Brown <sup>2</sup> , William Newsome <sup>2</sup> , Kim Butts Pauly <sup>1,3</sup> Departments of Bioengineering <sup>1</sup> , Neurobiology <sup>2</sup> , and Radiology <sup>3</sup> , Stanford University
96	Instrument Design to Measure the Optical Properties of Reflectance and Transmittance	Mihye Shin <sup>1,2</sup> , Josh Star-Lack <sup>3</sup> , Martin Janecek <sup>4</sup> , Eric Abel <sup>3</sup> , Daniel Shedlock <sup>3</sup> , Rebecca Fahrig <sup>1</sup> Departments of Radiology <sup>1</sup> and Mechanical Engineering <sup>2</sup> , Stanford University; Varian Medical Systems <sup>3</sup> ; Lawrence Berkeley National Laboratory <sup>4</sup>
97	Image-based Modeling of Complex Abdominal Aortic Aneurysms Repaired with Branched Endograft	Robert Stineman <sup>1</sup> , Ga-Young Kelly Suh <sup>2</sup> , Jason T. Lee <sup>2</sup> , Ronald L. Dalman <sup>2</sup> , Christopher P. Cheng <sup>2</sup> Departments of Chemistry <sup>1</sup> and Surgery <sup>2</sup> , Stanford University
98	Synchronous Droplet Microfluidics: One "Clock" to Rule Them All	Georgios Katsikis <sup>1</sup> , Manu Prakash <sup>2</sup> Departments of Mechanical Engineering <sup>1</sup> and Bioengineering <sup>2</sup> , Stanford University
99	Early Change in Glioma Metabolism after Anti-Angiogenesis Treatment Measured by Hyperpolarized [1-13C]pyruvate	Jae Mo Park <sup>1</sup> , Sonal Josan <sup>1</sup> , Taichang Jang <sup>2</sup> , Milton Merchant <sup>2</sup> , Dirk Mayer <sup>1</sup> , Lawrence Recht <sup>2</sup> , Daniel Spielman <sup>1</sup> Department of Radiology <sup>1</sup> and Neurology <sup>2</sup> , Stanford University
100	Quantitative Single Cell XIST Expression in Human Pre-implantation Embryos and Nascent Female iPSCs	Sharon F Briggs <sup>1,2</sup> , Antonia Dominguez <sup>1,2</sup> , Shawn Chavez <sup>1</sup> , Renee Reijo Pera <sup>1</sup> Institute for Stem Cell Biology & Regenerative Medicine <sup>1</sup> and Department of Genetics <sup>2</sup> , Stanford University
101	A Coordinated Immune Response to Surgical Trauma Revealed by Single Cell Mass Cytometry of Human Peripheral Blood	Gabriela Fragiadakis <sup>1</sup> , Brice Gaudilliere <sup>2</sup> , Martin Angst <sup>2</sup> , Garry Nolan <sup>1</sup> Departments of Microbiology & Immunology <sup>1</sup> and Anesthesia <sup>2</sup> , Stanford University
102	A High-Fidelity, Validated Model of Temperature Effects in Electrophoresis	Anita Rogacs <sup>1</sup> , Juan G. Santiago <sup>1</sup> Department of Mechanical Engineering <sup>1</sup> , Stanford University
103	Protein-Engineered 3D Matrix for Controlled Delivery of Bioactive Cargo	Karen Dubbin <sup>1</sup> , Andreina Parisi-Amon <sup>2</sup> , Widya Mulyasmita <sup>2</sup> , Yuki Hori <sup>1</sup> , Cheryl Wong Po Foo <sup>1</sup> , Sarah Heilshorn <sup>1</sup> Departments of Materials Science and Engineering <sup>1</sup> and Bioengineering <sup>2</sup> , Stanford University
104	Role of Polyacrylamide Gel Properties on Extracellular Matrix Deposition for Spatial Cell Patterning	Aleksandra K. Denisin <sup>1,2</sup> , Alexandre J. S. Ribeiro <sup>2</sup> , Beth L. Pruitt <sup>2</sup> Departments of Bioengineering <sup>1</sup> and Mechanical Engineering <sup>2</sup> , Stanford University
105	Planar Cell Polarity Signal Rectification by Prickle/Spiny-Legs Isoform Selection	Katherine A. Sharp <sup>1,2</sup> , Jessica Olofsson <sup>1</sup> , Maja Matis <sup>1</sup> , Jeffrey D. Axelrod <sup>1</sup> Departments of Pathology <sup>1</sup> and Genetics <sup>2</sup> , Stanford University
106	Inhibitory Synapses are Essential for Gamma Frequency Neuronal	Bruce MacIver <sup>1</sup>



	Oscillations, but the Time Course of Inhibition does not Contribute to Oscillation Frequency	Neuropharmacology Lab <sup>1</sup> , Stanford University
107	Food for Thought: A Better Way to Feed Your Brain Slices	Beza A Dagne <sup>1</sup> , Melis K Sunay <sup>1</sup> , James Nie <sup>1</sup> and Bruce MacIver <sup>1</sup> Neuropharmacology Lab <sup>1</sup> , Stanford University
108	Expanding the Experimental Potential of a Novel <i>ex vivo</i> Model for Primary Human Prostate Cancer	Sophia L. Maund <sup>1</sup> , Rosalie Nolley <sup>1</sup> , Donna M. Peehl <sup>1</sup> Department of Urology <sup>1</sup> , Stanford University
109	Preclinical Trial of a New Dual mTOR Inhibitor, MLN0128, using Renal Cell Carcinoma Tumor Grafts	Alexandre Ingels <sup>1</sup> , Hongjuan Zhao <sup>1</sup> , Alan E. Thong <sup>1</sup> , Matthias Saar <sup>1</sup> , Maija P. Valta <sup>1,2</sup> , Rosalie Nolley <sup>1</sup> , Jennifer Santos <sup>1</sup> , Donna M. Peehl <sup>1</sup> Department of Urology <sup>1</sup> , Stanford University; Department of Medicine <sup>2</sup> , Turku University Hospital, Turku, Finland
110	Endogenous Biasing and Enhancement of Selection Signals in a Spatial Attention Network	Shreesh P. Mysore <sup>1</sup> , Eric I. Knudsen <sup>1</sup> Department of Neurobiology <sup>1</sup> , Stanford University
111	A Multipurpose Mouse Model to Explore Period3 Function in Cell Fate Decisions	Katherine Krueger <sup>1</sup> , Maria Jose Costa <sup>1</sup> , Brian Feldman <sup>1</sup> Department of Pediatrics <sup>1</sup> , Stanford University
112	Selective Capture of Bacterium Cells Using Cell-Imprinted Polymers	Kangning Ren <sup>1</sup> , Niaz Banaei <sup>2</sup> , Richard N. Zare <sup>1</sup> Departments of Chemistry <sup>1</sup> , Pathology and Medicine <sup>2</sup> , Stanford University
113	Diffusion Spectrum MRI in a Fixed Human Brain Specimen: A Comparison of Different q-Space Sampling Densities	Qiyuan Tian <sup>1</sup> , Brian L. Edlow <sup>2</sup> , Rebecca Folkerth <sup>3</sup> , Ariel Rokem <sup>4</sup> , Jennifer A. McNab <sup>5</sup> Departments of Electrical Engineering <sup>1</sup> , Psychology <sup>4</sup> , and Radiology <sup>5</sup> , Stanford University; Department of Neurology <sup>2</sup> , Massachusetts General Hospital, Boston, MA; Department of Pathology <sup>3</sup> , Brigham and Women's Hospital, Boston, MA
114	Datums: A Knowledge Base and Representation System for Experimental Findings Concerning Cellular Response to Stimuli	Merrill Knapp <sup>1</sup> , Tim McCarthy <sup>2</sup> , Carolyn Talcott <sup>2</sup> Biosciences Division <sup>1</sup> and Computer Science Laboratory <sup>2</sup> , SRI International, Menlo Park, CA
115	A Novel System for Magnetic Tracking of Eye Position in Freely Behaving Animals	Jason S. Schwarz <sup>1</sup> , Devarajan Sridharan <sup>1</sup> , Eric I. Knudsen <sup>1</sup> Department of Neurobiology <sup>1</sup> , Stanford University
116	Map-Based Exploration of Intrinsic Shape Differences and Variability	Raif Rustamov <sup>1</sup> , Maks Ovsjanikov <sup>2</sup> , Omri Azencot <sup>3</sup> , Mirela Ben-Chen <sup>3</sup> , Frederic Chazal <sup>4</sup> , Leonidas Guibas <sup>1</sup> Department of Computer Science <sup>1</sup> , Stanford University; LIX <sup>2</sup> , Ecole Polytechnique; Computer Science <sup>3</sup> , Technion; Geometrica <sup>4</sup> , INRIA
117	Development of Radiation Free Whole Body MR Imaging Technique for Staging of Children with Cancer	Christopher Klenk <sup>1</sup> , Rakhee Gawande <sup>1</sup> , Jessica Donig <sup>1</sup> , Himani Madnawat <sup>1</sup> , Deqiang Qiu <sup>1</sup> , Andrew Quon <sup>1</sup> , Jarrett Rosenberg <sup>1</sup> , Michael Moseley <sup>1</sup> , Heike E. Daldrup-Link <sup>1</sup> Department of Radiology, Molecular Imaging Program <sup>1</sup> , Stanford University
118	Uneven Homeostatic Proliferation of Naïve T Cells Contracts and Biases the Human T Cell Receptor Repertoire with Age	Qian Qi <sup>1</sup> , Yi Liu <sup>2</sup> , Yong Cheng <sup>3</sup> , Jacob Glanville <sup>4</sup> , David Zhang <sup>1</sup> , Ji-Yeun Lee <sup>2</sup> , Cornelia Weyand <sup>1</sup> , Scott Boyd <sup>2</sup> , Jorg Goronzy <sup>1</sup> Department of Medicine (Division of Immunology and Rheumatology) <sup>1</sup> and Departments of Pathology <sup>2</sup> , Genetics <sup>3</sup> and Immunology <sup>4</sup> , Stanford University
119	Oligonucleotide Selective Sequencing (OS-Seq): A Rapid, Efficient and Flexible Targeting Technology for Ultra-Deep Detection of Cancer Mutations and Rearrangements	Erik S. Hopmans <sup>1</sup> , Georges Natsoulis <sup>2</sup> , Jason Buenrostro <sup>1</sup> , Sue Grimes <sup>1</sup> , John Bell <sup>1</sup> , Hanlee P. Ji <sup>1,2</sup> Stanford Genome Technology Center <sup>1</sup> and Division of Oncology, School of Medicine <sup>2</sup> , Stanford University

120	Mechanical Stimulation and Measurement of FcεRI Mediated Degranulation in Mast Cells using Atomic Force Microscopy	Kenneth Hu <sup>1</sup> , Philipp Starkl <sup>2</sup> , Stephen J Galli <sup>2</sup> , Manish J Butte <sup>1</sup> Departments of Pediatrics <sup>1</sup> and Pathology <sup>2</sup> , Stanford University
121	Efficient Similarity Queries via Lossy Compression	Idoia Ochoa <sup>1</sup> , Amir Ingber <sup>1</sup> , Tsachy Weissman <sup>1</sup> Department of Electrical Engineering <sup>1</sup> , Stanford University
122	Decellularized Cardiac Matrix as a Scaffold for Myocardium Regeneration	Rosemond Ho <sup>1</sup> , Hilda Huang <sup>1</sup> , Nooshin Beygui <sup>1</sup> , Evgenios A. Neofytou <sup>1</sup> , Bhagat Patlolla <sup>1</sup> , Paul Chang <sup>1</sup> , Robert C. Robbins <sup>1</sup> , Ramin E. Beygui <sup>1</sup> Department of Cardiothoracic Surgery <sup>1</sup> , Stanford University
123	A Novel Approach for Assessing Structural Variants from Genetic Mixtures	Charlie Xia <sup>1,2</sup> , Nancy Zhang <sup>2</sup> , Hanlee Ji <sup>1</sup> Department of Medicine (Division of Oncology) <sup>1</sup> , Stanford University ; Department of Statistics <sup>2</sup> , Wharton School-University of Pennsylvania
124	Suppression of Wear Particles Induced Pro-inflammatory Cytokine Production in Macrophages via NF-κB decoy deoxyoligonucleotide	Tzu-hua Lin <sup>1</sup> , Zhenyu Yao <sup>1</sup> , Sato Taishi <sup>1</sup> , Deanna K. Woo <sup>1</sup> , Chenguang Li <sup>1</sup> , Jukka Pajarinen <sup>1</sup> , Stuart B. Goodman <sup>1,2</sup> Departments of Orthopaedic Surgery <sup>1</sup> and Bioengineering <sup>2</sup> , Stanford University
125	Characterization and Prediction of Retinal Disease via Novel Quantitative SD-OCT Imaging Biomarkers	Luis de Sisternes <sup>1</sup> , Theodore Leng <sup>2</sup> , Daniel L. Rubin <sup>1</sup> Department of Radiology <sup>1</sup> and Byers Eye Institute <sup>2</sup> , Stanford University
126	Aperture-Embedded Polymer Microlens Printing for Ultra-Low-Cost Microscopy Platforms (Foldscope)	Laurel Kroo <sup>1</sup> , Manu Prakash <sup>2</sup> Department of Mechanical Engineering <sup>1</sup> , Olin College of Engineering; Department of Bioengineering <sup>2</sup> , Stanford University
127	Cortical Folding in Brain Development	Nickolas Forsch <sup>1</sup> , Maria Holland <sup>2</sup> , Ellen Kuhl <sup>2</sup> Department of Biomedical Engineering <sup>1</sup> , Washington University in St. Louis; Department of Mechanical Engineering <sup>2</sup> , Stanford University
128	Modulation of Macrophage Polarization <i>in vitro</i> Using Osmotic Pumps	Jukka Pajarinen <sup>1</sup> , Yasunobu Tamaki <sup>2</sup> , Joseph K. Antonios <sup>1</sup> , Tzu-hua Lin <sup>1</sup> , Zhenyu Yao <sup>1</sup> , Michiaki Takagi <sup>2</sup> , Yrjö Konttinen <sup>3</sup> , Stuart Goodman <sup>1</sup> Department of Orthopaedic Surgery, Orthopaedic Research Laboratories <sup>1</sup> , Stanford University; Department of Orthopaedic Surgery <sup>2</sup> , Yamagata University School of Medicine, Yamagata, Japan; Department of Medicine <sup>3</sup> , Institute of Clinical Medicine, University of Helsinki, Helsinki, Finland
129	Defining the Chromatin Structure in CMV-Specific T Cells in Elderly Individuals by Transposase-Directed Sequencing	Jason D. Buenostro <sup>1,2</sup> , Sabine Le Saux <sup>3</sup> , Paul G. Giresi <sup>2</sup> , David W. Zhang <sup>3</sup> , Lisa C. Zaba <sup>2</sup> , Howard Y. Chang <sup>2</sup> , William J. Greenleaf <sup>1</sup> , Jörg J. Goronzy <sup>3,4</sup> Department of Genetics <sup>1</sup> , Program in Epithelial Biology, Howard Hughes Medical Institute <sup>2</sup> , and Department of Medicine (Division of Immunology and Rheumatology) <sup>3</sup> , Stanford University; Department of Medicine <sup>4</sup> , Palo Alto Veteran Administration Health Care System
130	Mechanisms of Adipogenesis Control by the Circadian Gene Period3	Maria Jose Costa <sup>1</sup> , Brian J Feldman <sup>1</sup> Department of Pediatrics <sup>1</sup> , Stanford University
131	The Human Genome Contracts Again	Dmitri Pavlichin <sup>1</sup> , Tsachy Weissman <sup>2</sup> , Golan Yona <sup>2</sup> Departments of Physics <sup>1</sup> and Electrical Engineering <sup>2</sup> , Stanford University
132	Creating Novel Imaging Tools to Diagnose Stem Cell Rejection <i>In Vivo</i>	Christopher Dove <sup>1</sup> , Hossein Nejadnik <sup>1</sup> , James Marshel <sup>2</sup> , Carmel Chan <sup>3</sup> , Kevin Paik <sup>4</sup> , Jeong Hyun <sup>4</sup> , Heike Daldrup-Link <sup>1</sup> Departments of Radiology <sup>1</sup> and Bioengineering <sup>2</sup> ,

		Multimodality Molecular Imaging Lab (MMIL) <sup>3</sup> and Institute for Stem Cell Biology & Regenerative Medicine <sup>4</sup> , Stanford University
133	Evolution of the Cadherin-Catenin Complex: New Insights from the Starlet Sea Anemone, <i>Nematostella vectensis</i>	Nat Clarke <sup>1</sup> , Phil Miller <sup>2</sup> , Chris Lowe <sup>1</sup> , James Nelson <sup>1,2</sup> Departments of Biology <sup>1</sup> and Molecular & Cellular Physiology <sup>2</sup> , Stanford University
134	Adaptive Segmentation of Liver Lesion from Organ Border	Inseong Kim <sup>1</sup> , Christopher F. Beaulieu <sup>2</sup> , Daniel Rubin <sup>2</sup> , Sandy Napel <sup>2</sup> Departments of Electrical Engineering <sup>1</sup> and Radiology <sup>2</sup> , Stanford University
135	Systematic Genomic Discovery of Clinical Relevant Gene Aberrations Across Twelve Different Cancers	HoJoon Lee <sup>1</sup> , Hanlee P. Ji <sup>1,2</sup> Division of Oncology <sup>1</sup> and Stanford Genome Technology Center <sup>2</sup> , Stanford University
136	Real-Time Schistosomiasis Diagnosis System for Low-Resource Settings	Jennifer Bone <sup>1</sup> , John Waldeisen <sup>1</sup> , Debkishore Mitra <sup>1</sup> , Conor R. Caffrey <sup>2</sup> , Ivan Dimov <sup>1,3</sup> , Michael Hsieh <sup>3</sup> DiAssess <sup>1</sup> Inc. and Center for Discovery and Innovation in Parasitic Diseases, Department of Pathology <sup>2</sup> , University of California San Francisco; School of Medicine <sup>3</sup> , Stanford University