

Bio-X Interdisciplinary Initiatives Symposium

February 25, 2013

POSTER #	TITLE	AUTHORS
1	Acquisition of 3D Indoor Environments with Variability and Repetition	Young Min Kim ¹ , Niloy Mitra ³ , Dongming Yan ⁴ , Leonidas Guibas ² Departments of Electrical Engineering ¹ and Computer Science ² , Stanford University; Department of Computer Science ³ , University College London; Department of Computer Science ⁴ , King Abdullah University of Science & Technology
2	Growth in a Shell-Modeling Growth in Thin Biological Membranes	Manuel Rausch ¹ , Ellen Kuhl ^{1,2,3} Departments of Mechanical Engineering ¹ , Bioengineering ² , and Cardiothoracic Surgery ³ , Stanford University
3	Sufficientness Characterization of Bayesian Nonparametric Markov Models	Sergio Bacallado ¹ , Lorenzo Trippa ² , Stefano Favaro ³ Department of Statistics ¹ , Stanford University; Department of Biostatistics & Computational Biology ² , Harvard School of Public Health; Department of Statistics ³ , Collegio Carlo Alberto
4	Effects of TGF-beta Withdrawal and FGF Supplementation on ADSC Chondrogenesis Under Dynamic Compression	Chun hua Zheng ¹ , Marc E. Levenston ¹ Department of Mechanical Engineering ¹ , Stanford University
5	Biological Design and Genome Optimization using Whole-Cell Models	Jonathan R. Karr ¹ , Markus W. Covert ² Graduate Program in Biophysics ¹ and Department of Bioengineering ² , Stanford University
6	Design and Optimization of Microchips for Purification using Isotachopheresis	Lewis A. Marshall ¹ , Anita Rogacs ² , Juan G. Santiago ² Departments of Chemical Engineering ¹ and Mechanical Engineering ² , Stanford University
7	Species-Altered Fluorescence Imaging (SAFI): A Method for Non-Invasive Full-Field Imaging and Quantification of Chemical Species	Viktor Shkolnikov ¹ , Juan G. Santiago ¹ Department of Mechanical Engineering ¹ , Stanford University
8	STORMSeq: An Open-Source, User-Friendly Pipeline for Processing Personal Genomics Data in the Cloud	Konrad J. Karczewski ^{1,2} , Guy H. Fernald ^{1,2} , Alicia R. Martin ² , Nicholas P. Tatonetti ³ , Joel T. Dudley ⁴ , Michael Snyder ² Program in Biomedical Informatics ¹ and Department of Genetics ² , Stanford University; Department of Biomedical Informatics ³ , Columbia University; Department of Genetics & Genomic Sciences ⁴ , Mount Sinai School of Medicine
9	Engineering Intestinal Microenvironments: Progress Towards a New Preclinical Drug Screening Platform	Rebecca (Snyder) DiMarco ¹ , James Su ² , Calvin Kuo ³ , Sarah C. Heilshorn ² Departments of Bioengineering ¹ , Materials Science & Engineering ² , and Hematology ³ , Stanford University
10	Calibration of the Dual Beam Laser Trap for Accurate Force Measurement of Human Cardiac Myosin	Jongmin Sung ^{1,2} , Henrik Flyvbjerg ³ , James A. Spudich ¹ Departments of Biochemistry ¹ and Applied Physics ² , Stanford University; Department of Micro- and Nanotechnology ³ , Technical University of Denmark

11	Dose-Dependent p21(Cip1/Waf1) Cell Cycle Regulation	K. Wesley Overton ¹ , Clifford L. Wang ¹ Department of Chemical Engineering ¹ , Stanford University
12	<i>De Novo</i> Synthesis of the Cell Wall in <i>E. coli</i> : Reversion of L-forms	Gabriel Billings ¹ , KC Huang ² Departments of Physics ¹ and Bioengineering ² , Stanford University
13	Spatial Gradients in Bacteria	Carolina Tropini ¹ , KC Huang ² Departments of Biophysics ¹ and Bioengineering ² , Stanford University
14	Co-culture of Chondrocytes and Adipose-Derived Stem Cells in Three-Dimensional Biomimetic Hydrogels Promotes Stem Cell Chondrogenesis and Maintains Chondrocyte Phenotype	Janice Lai ¹ , Glen Kajiyama ² , Fan Yang ^{2,3} Departments of Mechanical Engineering ¹ , Orthopaedic Surgery ² , and Bioengineering ³ , Stanford University
15	Improving IMRT Delivery Efficiency with Iteratively Reweighted L1-Minimization for Inverse Planning	Hojin Kim ^{1,2} , Ruijiang Li ¹ , Lei Xing ¹ Departments of Radiation Oncology ¹ and Electrical Engineering ² , Stanford University
16	Effects of p53 Dynamics on Cell Survival	William Noderer ¹ , Clifford Wang ¹ Department of Chemical Engineering ¹ , Stanford University
17	Synthesis and Optical Ignition of Aluminum-based Nanoengineered Reactive Materials	Yuma Ohkura ¹ , Shih-Yu Liu ¹ , Pratap M. Rao ¹ , In Sun Cho ¹ , Xiaolin Zheng ¹ Department of Mechanical Engineering ¹ , Stanford University
18	Single Chip Microfluidically Partitioned Giant Magnetoresistive Sensor Arrays Enable Sample Multiplexing in Biosensing	Daniel Bechstein ¹ , Jung-Rok Lee ¹ , Dokyoon Kim ² , Richard S. Gaster ⁴ , Junyi Wang ³ , James A. Weaver ³ , Shan X Wang ^{2,3} Departments of Mechanical Engineering ¹ , Materials Science & Engineering ² , and Electrical Engineering ³ , and School of Medicine ⁴ , Stanford University
19	Injectable Protein-Engineered Hydrogels to Improve Cell Transplantation	Widya Mulyasasmita ¹ , Andreina Parisi-Amon ¹ , Cindy Chung ^{2,3} , Sarah Heilshorn ² Departments of Bioengineering ¹ , Materials Science & Engineering ² , and Mechanical Engineering ³ , Stanford University
20	Extreme Electric Fields Drive Chemical Catalysis in an Enzyme Active Site	Stephen D. Fried ¹ , Sayan Bagchi ² , Steven G. Boxer ¹ Department of Chemistry ¹ , Stanford University; Physical & Materials Chemistry Division ² , National Chemical Laboratory
21	Single Cell Analysis of Personal Gamete Genome	Jianbin Wang ¹ , Christina Fan ¹ , Barry Behr ² , Stephen Quake ¹ Departments of Bioengineering ¹ and Obstetrics & Gynecology ² , Stanford University
22	Gene Expression Profiling in an Adult Stem Cell Lineage Identified a Putative Transcriptional Repressor Critical for Differentiation	Jongmin Kim ¹ , Margaret T. Fuller ^{2,3} Departments of Chemical & Systems Biology ¹ , Developmental Biology ² , and Genetics ³ , Stanford University
23	Insights into the Dynamics of Biomolecular Self-Assembly	Alia P. Schoen ¹ , Arunagirinathan M.A. ¹ , Nicholas Cordella ² , Shafiqh Mehraeen ³ , Kelly N. L. Huggins ¹ , Mirjam Leunissen ⁴ , Andrew J. Spakowitz ² , Sarah C. Heilshorn ¹ Departments of Materials Science & Engineering ¹ , Chemical Engineering ² , and Mechanical Engineering ³ , Stanford University; FOM Institute AMOLF ⁴
24	Bacterial Programming via M13-based Transmission of DNA-based Logic Gates	Monica E. Ortiz ¹ , Jerome Bonnet ¹ , Drew Endy ¹ Department of Bioengineering ¹ , Stanford University

25	Mathematical Modeling of the Interactions between Cellular Programs in Response to Oncogene Inactivation	Chinyere Nwabugwu ^{1,3} , Kavya Rakhra ² , Dean Felsher ² , David Paik ³ Departments of Electrical Engineering ¹ , Medicine ² , and Radiology ³ , Stanford University
26	Accelerating Neuronal Genetic Research in <i>C. elegans</i> with Computer Vision and Machine Learning	Roshni Cooper ¹ , Kang Shen ² Departments of Electrical Engineering ¹ and Biology ² , Stanford University
27	Quantitative Biological Measurements of White Matter Development	Jason D. Yeatman ^{1,2} , Aviv Mezer ^{1,2} , L. Michael Perry ^{1,2} , Jennifer Nguyen ¹ , Keith Main ¹ , Brian A. Wandell ^{1,2} Department of Psychology ¹ and Center for Cognitive & Neurobiological Imaging ² , Stanford University
28	Single-Molecule Recreation of the Cadherin/Catenin/Actin Complex	Craig D. Buckley ¹ , Jiongyi Tan ⁵ , Beth L. Pruitt ² , William I. Weis ^{3,5} , W. James Nelson ⁴ , Alexander R. Dunn ^{1,5} Departments of Chemical Engineering ¹ , Mechanical Engineering ² , Structural Biology ³ , and Biology ⁴ , and the Biophysics Program ⁵ , Stanford University
29	Engineered Hepatocyte Growth Factor Mutants: New Tools for Tissue Regeneration and Vascularization	Cassie Liu ¹ , Douglas S. Jones II ² , Ping-Chuan Tsai ² , Jennifer R. Cochran ² Departments of Chemical Engineering ¹ and Bioengineering ² , Stanford University
30	Fabricating Thin Film Solar Cells on Cheap and Light-Weight Substrates	Chi Hwan Lee ¹ , Dong Rip Kim ² , In Sun Cho ¹ , Nemeth William ³ , Qi Wang ³ , Xiaolin Zheng ^{1*} Department of Mechanical Engineering ¹ , Stanford University; Department of Mechanical Engineering ² , Hanyang University; National Renewable Energy Laboratory ³
31	Engineering Agatoxin, a Cystine-Knot Peptide from Spider Venom, as a Molecular Probe for <i>In Vivo</i> Tumor Imaging	Cheuk Lun Leung ¹ , Sarah J. Moore ² , Heidi Norton ² , Jennifer R. Cochran ^{1,2,3,4} Departments of Chemical Engineering ¹ and Bioengineering ² , Stanford Cancer Institute ³ , and Bio-X Program ⁴ , Stanford University
32	Integration of Rapid DNA Hybridization and Capillary Zone Electrophoresis	Crystal Han ^{1*} , Supreet Bahga ^{1*} , Juan Santiago ¹ (*equal contribution) Department of Mechanical Engineering ¹ , Stanford University
33	Sensitive and Selective microRNA Detection with Isotachophoresis Hydrogel Capture Assay	Giancarlo Garcia-Schwarz ¹ , Juan G. Santiago ¹ Department of Mechanical Engineering ¹ , Stanford University
34	Recent Progress Towards Robotic Ultrasound Guidance for Radiation Therapy of Dynamic Soft-Tissue Targets	Jeff Schlosser ^{1,2} , Ken Salisbury ^{3,4} , Dimitre Hristov ⁵ Departments of Mechanical Engineering ¹ , Bioengineering ² , Computer Science ³ , Surgery ⁴ , and Radiation Oncology ⁵ , Stanford University
35	Temporal Expression Quantitative Trait Loci	Trevor Martin ¹ , Hunter Fraser ¹ Department of Biology ¹ , Stanford University
36	Complex Chemoattractive and Chemorepellent Kit Signals Revealed by Direct Imaging of Murine Mast Cells in Microfluidic Gradient Chambers	Meghaan Smith ¹ , Amir Shamloo ² , Milan Manchandia ³ , Maheswaran Mani ³ , Christopher Nguyen ³ , Thomas Jahn ³ , Kenneth Weinberg ³ , Sarah Heilshorn ⁴ Departments of Chemical Engineering ¹ , Mechanical Engineering ² , Hematology, Oncology, & Stem Cell Transplantation ³ , and Materials Science & Engineering ⁴ , Stanford University
37	Capturing Reprogramming in Action: Heterokaryon RNA-Sequencing Identifies a Secreted Factor that Enhances iPS Generation	Jennifer J. Brady ^{1,2} , Mavis Li ^{3,4} , Hui Jiang ^{3,4} , Wing H. Wong ³ , Helen M. Blau ^{1,2} Baxter Laboratory for Stem Cell Biology ¹ , Departments of Microbiology & Immunology ² and Statistics ³ , and Institute for Computational & Mathematical Engineering ⁴ , Stanford University

38	Two Dimensional Magnetic Trap Arrays for Droplet Control	Georgios Katsikis ¹ , Manu Prakash ² Departments of Mechanical Engineering ¹ and Bioengineering ² , Stanford University
39	Detection and Quantitation of Circulating Tumor Cells by Bioluminescence Imaging in an Orthotopic Mammary Carcinoma Model	Laura S. Sasportas ^{1,2} , Sanjiv S. Gambhir ^{1,2} Departments of Bioengineering ¹ and Radiology ² , Stanford University
40	Perceptual Similarity Measures in CT Images of Focal Liver Lesions	Jessica Faruque ¹ , Daniel Rubin ² , Christopher Beaulieu ² , Sandy Napel ² Departments of Electrical Engineering ¹ and Radiology ² , Stanford University
41	Catabolism of Cartilage and Meniscus Tissues in Response to Adipokines	James Nishimuta ¹ , Marc Levenston ¹ Department of Mechanical Engineering ¹ , Stanford University
42	Mechanochemical Coupling in DNA Gyrase	Aakash Basu ¹ , Paul Lebel ¹ , Allyn Schoeffler ³ , James Berger ³ , Zev Bryant ² Departments of Applied Physics ¹ and Bioengineering ² , Stanford University; Department of Molecular & Cellular Biology ³ , University of California-Berkeley
43	Building Markov State Models with Solvent Dynamics	Chen Gu ¹ , Huang-Wei Chang ¹ , Lutz Maibaum ⁵ , Vijay Pande ² , Gunnar Carlsson ³ , Leonidas Guibas ⁴ Institute for Computational & Mathematical Engineering ¹ and Departments of Chemistry ² , Mathematics ³ , and Computer Science ⁴ , Stanford University; Department of Chemistry ⁵ , University of Washington
44	Soft Selective Sweeps are the Primary Mode of Recent Adaptation in <i>Drosophila melanogaster</i>	Nandita R. Garud ¹ , Philipp W. Messer ² , Erkan O. Buzbas ^{2,3} , Dmitri A. Petrov ² Departments of Genetics ¹ and Biology ² , Stanford University; Department of Statistical Science ³ , University of Idaho
45	Punch Card Programmable Microfluidics	George Korir ¹ , Manu Prakash ¹ Department of Bioengineering ¹ , Stanford University
46	Bayesian Sequential Partition - A New Method for Density Estimation and its Applications	Luo Lu ¹ , Wing Wong ¹ , Hui Jiang ² Department of Statistics ¹ , Stanford University; Department of Biostatistics ² , University of Michigan
47	Effect of Age on Stiffness Modulation During Postural Maintenance of the Arm	Tricia L. Gibo ¹ , Amy J. Bastian ^{2,3} , Allison M. Okamura ⁴ Department of Mechanical Engineering ¹ , Johns Hopkins University, Department of Neuroscience ² , Johns Hopkins School of Medicine, Kennedy Krieger Institute ³ ; Department of Mechanical Engineering ⁴ , Stanford University
48	Nano-Scale Proteomic Profiling to Define Diagnostic Signatures and Biomarkers of Therapeutic Activity in Hematologic and Solid Malignancies	Alice C Fan ¹ , John Leppert ² , Joanna E. Liliental ³ , Jason Gotlib ⁴ , James D. Brooks ² , Chiara Sabatti ⁵ , Sandy Srinivas ¹ , Paul Wender ⁶ , Peter Greenberg ⁴ , Dean W. Felsher ¹ Division of Oncology ¹ , Department of Medicine Department of Urology ² Department of Medicine ³ , Translational Research and Applied Medicine Program Division of Hematology ⁴ , Department of Medicine Department of Statistics ⁵ , Department of Chemistry ⁶ , Stanford University

49	Scaling Up Synthetic Genetically Encoded Data Storage Devices	Pakpoom Subsoontorn ¹ , Jerome Bonnet ¹ , Drew Endy ¹ Department of Bioengineering ¹ , Stanford University
50	The Medusa of Spatial Sorting	Michael Kerber ¹ , Herbert Edelsbrunner ² , Carl-Philipp Heisenberg ² , Gabriel Krens ² Department of Computer Science ¹ , Stanford University; Institute of Science and Technology ² , Austria
51	Quantitative Targeted Proteomics of Epididymal Adipose Tissue from Insulin Resistant ob/ob Mice Indicate Adipocyte Differentiation is Defective	Asuka Ota ¹ , Robert Ahrends ¹ , Kyle M. Kovary ¹ , Wen-Jun Shen ² , Fredric B. Kraemer ² , Mary N. Teruel ¹ Departments of Chemical and Systems Biology ¹ and Endocrinology ² , Stanford University
52	Accelerating The Development of Hippocampal Neurons using Nanopillar Structures	Wenting Zhao ¹ , Kai Zhang ² , Wenjun Xie ² , Lindsey Hanson ² , Ziliang Lin ³ , Bianxiao Cui ² , and Yi Cui ¹ Departments of Materials Science and Engineering ¹ , Chemistry ² , and Applied Physics ³ , Stanford University
53	Dual Contrast CMR for Evaluation of Telmisartan and Amlodipine Combination Therapy in the Diabetic Murine Myocardial Injury Model	Paul J. Kim ¹ , Yongquan Gong ² , Xiaohu Ge ¹ , Rajesh Dash ¹ , Ildiko Toma ³ , Phillip P. Harnish ⁴ , Robert C. Robbins ² , Phillip C. Yang ¹ Division of Cardiovascular Medicine ¹ , and Department of Cardiothoracic Surgery ² , Stanford University; Advanced Bionics ³ , Valencia, CA, USA; Eagle Vision Pharmaceutical Corporation ⁴ , Downingtown, PA, USA
54	Restorative Effects of Alpha-1A Adrenergic are Detectable using T2* and Targeted Nanoparticles in a Mouse Myocardial Infarction (MI) Model	Justin Lam ¹ , Y. Gong ² , R.C. Robbins ² , P.C. Simpson ² , P.C. Yang ¹ , Rajesh Dash ¹ Division of Cardiovascular Medicine ¹ and Division of Cardiac Surgery ² , Stanford School of Medicine; Division of Cardiology ³ , UCSF and SF VAMC
55	Probing the Role of Rotational Dynamics in Axonal Transport	Luke Kaplan ¹ , Bianxiao Cui ² Biophysics Program ¹ and Department of Chemistry ² , Stanford University
56	Gene Synthesis by Oligo Templated Polymerization (OTP)	Adi Barzel ¹ , John Collier ² , Keith Anderson ³ , Ronald W. Davis ³ , Mark A. Kay ¹ Department of Pediatrics ¹ , Stanford Functional Genomic Facility ² and Stanford Genome Technology Center ³ , Stanford University
57	Does Estrogen Receptor Signaling Modulate the Response of Human Macrophages to Wear Particles?	Chenguang Li ¹ , Christophe Nich ¹ , Joseph K. Antonios ¹ , Zhenyu Yao ¹ , Karin Kealoha-Steck ² , Magali Fontaine ² , Stuart B. Goodman ¹ Departments of Orthopaedic Surgery ¹ and Pathology ² , Stanford University
58	Impact of Rare Variants on Gene Expression	Xin Li ^{1,4} , Alexis Battle ^{3*} , Konrad Karczewski ^{2*} , Kevin S. Smith ¹ , Kim Kukurba ² , Stephen B. Montgomery ^{1,2,4} Departments of Pathology ¹ , Genetics ² , and Computer Science ³ , Stanford University Corresponding authors ⁴ : Xin Li and Stephen B. Montgomery
59	High-Throughput Lineage Tracking Reveals a High Rate of Beneficial Mutations	*These authors contributed equally to this work Sasha Levy ¹ , Jamie Blundell ^{2,3} , Dmitri Petrov ² , Daniel Fisher ³ , Gavin Sherlock ¹ Departments of Genetics ¹ , Biology ² and Applied Physics ³ , Stanford University

60	Analysis of Cell Fate Acquisition in Maize Anthers by High-Throughput Small RNA Profiling	Han Zhang ¹ , Jixian Zhai ² , Blake Meyers ² , Virginia Walbot ¹ Department of Biology ¹ , Stanford University; Department of Plant and Soil Sciences ² , University of Delaware
61	Quantitative Optical Microscopy of Intra-Cellular Huntingtin Aggregation	Steffen J. Sahl ¹ , Lucien E. Weiss ¹ , Willianne I. M. Vonk ² , Lana Lau ¹ , Judith Frydman ² , W. E. Moerner ¹ Departments of Chemistry ¹ and Biology ² , Stanford University Jose A. G. Ferreira ^{1,2,3} , Karl V. Clemons ^{1,2,3} , Jeffrey J. Wine ^{4,5} , Richard B. Moss ⁴ , David A. Stevens ^{1,2,3} California Institute for Medical Research ¹ ; Santa Clara Valley Medical Center ² ; Department of Infectious Diseases and Geographic Medicine ³ , Department of Pediatrics ⁴ , Cystic Fibrosis Research Laboratory, Psychology Department ⁵ , Stanford University
62	Fungal Biofilm in Cystic Fibrosis	
63	PPR-Dependent Signaling in Osteoprogenitors Regulates Bone Marrow Hematopoietic Stem Cell and Leukocyte Niches	Cristina Panaroni ¹ , Joy Y Wu ¹ Division of Endocrinology ¹ , Stanford University
64	Loss of Gsα Early in Osteoprogenitors Favors Adipogenic Differentiation of Mesenchymal Progenitors	Hamid Saeed ¹ , Joy Wu ¹ Department of Endocrinology ¹ , Stanford University
65	Two-Color, 3D Super-Resolution Imaging of Bacterial Protein Ultrastructures with the Double-Helix Point-Spread Function Microscope	Andreas Gahlmann ¹ , Jerod L. Ptacin ² , Ginni Grover ³ , Sean Quirin ³ , Alexander R. S. von Diezmann ¹ , Marissa K. Lee ¹ , Mikael P. Backlund ¹ , Rafael Piestun ³ , Lucy Shapiro ² , W. E. Moerner ¹ Departments of Chemistry ¹ and Developmental Biology ² , Stanford University; Department of Electrical, Computer, and Energy Engineering ³ , University of Colorado at Boulder
66	Magnetic Manipulation of Axonal Transport and Neurotrophin Signaling in Live Neurons	Praveen Chowdary ¹ , Chong Xie ¹ , Yasuko Osakada ¹ , Daphne Che ¹ , Chin Chun Ooi ² , Shan Wang ² , Bianxiao Cui ¹ Departments of Chemistry ¹ and Materials Science & Engineering ² , Stanford University
67	Elucidation of the Photodynamics of Single LH2 Proteins in Solution	Gabriela Schlau-Cohen ¹ , June Southall ² , Richard Cogdell ² , W.E. Moerner ¹ Department of Chemistry ¹ , Stanford University; Department of Botany ² , University of Glasgow
68	A Real Time Imaging System for Tracking Freely Moving <i>C. elegans</i> for Touch Assays	Eileen A. Mazlochette ¹ , Chris Fang-Yen ² , Miriam B. Goodman ³ , Beth L. Pruitt ⁴ Departments of Electrical Engineering ¹ , Mechanical Engineering ⁴ , and Molecular and Cellular Physiology ³ , Stanford University; Department of Bioengineering ² , University of Pennsylvania
69	Stretchable, Conformal Microelectrode Array Fabricated With Patterned Flex Circuit Technology	Rebecca E. Taylor ¹ , Chris M. Boyce ^{2*} , Mary C. Boyce ^{2,3} , Beth L. Pruitt ¹ Department of Mechanical Engineering ¹ , Stanford University; Infinite Corridor Technology ² , LLC Winchester, MA; Department of Mechanical Engineering ³ , MIT *Currently, Chemical Engineering, University of Cambridge, UK
70	Targeted Contrast-Enhanced Ultrasound Imaging using KDR-Targeted Microbubbles for Early Breast Cancer Detection in a Transgenic Mouse Model	Sunitha Bachawal ¹ , Kristin Jensen ² , Amelie Lutz ¹ , Sanjiv Sam Gambhir ¹ , Francois Tranquart ⁴ , Lu Tian ³ , Jürgen K. Willmann ¹ Departments of Radiology/MIPS ¹ , Pathology ² and Health Research and Policy ³ , Stanford University; Bracco Research SA ⁴ , Geneva, Switzerland

71	Characteristic of Edge Sharpness in Liver Lesions	Inseong Kim ¹ , Jiaping Xu ¹ , Christopher F. Beaulieu ² , Daniel Rubin ² , Sandy Napel ² Departments of Electrical Engineering ¹ and Radiology ² , Stanford University
72	Molecular Imaging of Inflammation in Inflammatory Bowel Disease with a Clinically Translatable Dual-Selectin-targeted US Contrast Agent: Comparison with FDG PET/CT in a Mouse Model	Huaijun Wang ¹ , Steven Machtaler ¹ , Thierry Bettinger ⁴ , Amelie M. Lutz ¹ , Richard Luong ² , Philippe Bussat ⁴ , Sanjiv S. Gambhir ¹ , François Tranquart ⁴ , Lu Tian ³ , Jürgen K. Willmann ¹ Departments of Radiology/MIPS ¹ , Comparative Medicine ² , and Health, Research & Policy ³ , Stanford University; Bracco Suisse ⁴ , Geneva, Switzerland
73	Role of Angiogenesis in IBD: Assessment with Functional and Molecular US Imaging	Ferdinand Knieling ¹ , Steven Machtaler ¹ , Huaijun Wang ¹ , Katheryne Wilson ¹ , Sunitha Bachawal ¹ , Jürgen K. Willmann ¹ Department of Radiology/MIPS ¹ , Stanford University
74	Solution X-Ray Measurements Yield Atomic Resolution	Derek Mendez ¹ , TJ Lane ² , Jongmin Sung ¹ , Daniel Ratner ³ , Sebastian Doniach ¹ Departments of Applied Physics ¹ and Chemistry ² Stanford University; Linac Coherent Light Source ³ , SLAC
75	New Models to Explore Inflammation-Associated Carcinogenesis in Schistosomiasis	Jared Honeycutt ¹ , Chi-Ling Fu ³ , Justin Odegaard ² , Michael H. Hsieh ^{1,3} Stanford Immunology ¹ , Departments of Pathology ² and Urology ³ , Stanford University
76	Macrophage Regulation of Schistosomal Bladder Pathogenesis	Chi-Ling Fu ¹ , Justin Odegaard ² , Michael H. Hsieh ¹ Departments of Urology ¹ and Pathology ² , Stanford University
77	The Effect of the Local Host Response to Helminth Eggs on the Resolution of Concomitant Bacterial Infection	Yi-Ju Hsieh ¹ , Chi-Ling Fu ¹ , Michael H. Hsieh ¹ Department of Urology ¹ , Stanford University
78	Immunomodulatory Proteins of Schistosoma haematobium	Luke F. Pennington ¹ , Debalina Ray ² , Shailja Patel ¹ , Yi Ju Hsieh ¹ , Chi-Ling Fu ¹ , Michael H. Hsieh ¹ Department of Urology ¹ , Stanford University; Department of Pathology ² , University of California-San Francisco
79	Inducing Variations in the Shortening of Single Cardiomyocytes with Localized Mechanical Stimulation	Gadryn C. Higgs ^{1,2} , Alexandre J.S. Ribeiro ^{1,2} , Kathia Zaleta ^{2,3} , Euan Ashley ^{2,3} , Beth L. Pruitt ^{1,2} Department of Mechanical Engineering ¹ , Cardiovascular Institute ² , Stanford School of Medicine ³ , Stanford University
80	Mechanical Biomarkers of Oocyte and Embryo Viability	Livia Zarnescu ¹ , Jinnuo Han ² , Renee Reijo-Pera ² , Barry Behr ² , David Camarillo ¹ Departments of Bioengineering ¹ and Obstetrics and Gynecology ² , Stanford University
81	Simultaneous Purification and Fractionation of Nucleic Acids and Proteins from Complex Samples using Isotachopheresis	Yatian Qu ¹ , Lewis Marshall ¹ , Juan G. Santiago ¹ Department of Mechanical Engineering ¹ , Stanford University
82	On-chip Protein Extraction and Albumin Removal from Plasma/Serum by Using Cationic Isotachopheresis	Yatian Qu ¹ , Lewis Marshall ¹ , Juan G. Santiago ¹ Department of Mechanical Engineering ¹ , Stanford University
83	Breast Cancer Database Curation and Analysis of Treatment-Dependent Biomarkers	Katie Planey ¹ , Purvesh Khatri ² , Atul Butte ² Biomedical Informatics Training Program ¹ and Division of Systems Medicine, Department of Pediatrics ² , Stanford University

84	Osteogenic Differentiation and <i>In Vivo</i> Complementation of Osteoblast-Deficient Embryos by Induced Pluripotent Stem Cells	Yi-Shiuan Tzeng ¹ , Rhiannon Chubb ² , James B. Oh ^{2,3} , Alyssa Riley ³ , Xiaojing Huang ³ , Sean M. Wu ⁴ , Joy Y. Wu ^{1,2} Division of Endocrinology ¹ , School of Medicine, Stanford University; Endocrine Unit ² and Cardiovascular Research Center ³ , Massachusetts General Hospital; Cardiovascular Institute ⁴ , Stanford University
85	Selective Chemical and Biological Detection with Organic Field Effect Transistors	Mallory L. Hammock ¹ , Zhenan Bao ¹ Department of Chemical Engineering ¹ , Stanford University
86	Quantitative Proteomics Reveals a Fundamental Mechanism for Controlling the Rate of Cell Differentiation: Noise-Mediated Switch-Broadening	Robert Ahrends ¹ , Byung Ouk Park ¹ , Kyle M. Kovary ¹ , Asuka Ota ¹ , Ellen Abell ¹ , Mary N. Teruel ¹ Department of Chemical and Systems Biology ¹ , Stanford University
87	Identification of Novel Biomarkers for Early Detection of Ovarian Cancer	Linda Szabo ¹ , Purvesh Khatri ² , Xiaodan Liu ³ , Zhongkai Hu ³ , Bruce Ling ³ , Atul J. Butte ^{1,2} Departments of Biomedical Informatics ¹ , Pediatrics Systems Medicine ² , and Translational Medicine ³ , Stanford University
88	Selective Inhibition of the MCP-1/CCR2 Axis Decreases Systemic Trafficking of Macrophages in the Presence of UHMWPE Particles	Zhenyu Yao ¹ , Michael Keeney ^{1,2} , Kensuke Egashira ³ , Fan Yang ^{1,2} , Stuart Goodman ^{1,2} Departments of Orthopaedic Surgery ¹ and Bioengineering ² , Stanford University; Department of Cardiovascular Research, Development, and Translational Medicine ³ , Kyushu University
89	Applied Cardiovascular Devices	Jeff Caves ¹ , Paul Wang ¹ Department of Medicine ¹ , Stanford University
90	Highly Stable Organic Polymer FET Sensor for Selective Detection in the Marine Environment	Oren Knopfmacher ¹ , Mallory L. Hammock ¹ , Anthony L. Appleton ¹ , Gregor Schwartz ¹ , Zhenan Bao ¹ Department of Chemical Engineering ¹ , Stanford University
91	Chemical Rescue of Malaria Parasites Lacking an Essential Plastid Organelle	Ellen Yeh ¹ Department of Pathology ¹ , Stanford University
92	MRI Signal Alteration of Iron Oxide Labeled Mesenchymal Stem Cells After Macrophage Phagocytosis	Olga Lenkov ¹ , Isaac Lam ¹ , Hossein Nejadnik ¹ , Lydia Mandrussow ¹ , Daniel Golovko ¹ , Heike E. Daldrop-Link ¹ Department of Radiology ¹ , Stanford University
93	Microtubule Stability Mediated by New Mammalian STOP Domain Family Members	Irene Onyeneho ¹ , Tim Stearns ² Departments of Molecular & Cellular Physiology ¹ and Genetics ² , Stanford University
94	Isotachopheresis with Two-Stage Separation and Ionic Spacer for High Sensitivity DNA Hybridization Assay	Charbel Eid ¹ , Giancarlo Garcia-Schwarz ¹ , Juan Santiago ¹ Department of Mechanical Engineering ¹ , Stanford University
95	SWEET-Based Pathogen Susceptibility: From Sugar Transport in Plant to Pathogen Resistance in the Field	Davide Sosso ¹ , Virginia Walbot ² , Alex Dunn ³ , Li Gao ² , David Schuler ⁴ , Bing Yang ⁵ , Frank White ⁶ , Mark Schnitzer ⁷ , Wolf Frommer ¹ Carnegie Institution for Science ¹ , Stanford, CA; Departments of Biology ² and Chemical Engineering ³ , Stanford University; Department of Genetics ⁴ , Karlsruhe Institute of Technology; Department of Genetics, Development, and Cell Biology ⁵ , Iowa State University; Department of Plant Pathology ⁶ , Kansas State University; James Clark Center-Howard Hughes Medical Institute ⁷ , Stanford University

96	High-Throughput Single Cell Sequencing of the Autoantibody Repertoire in Pulmonary Arterial Hypertension	Lisa K. Scalfone ^{1,2} , Yann Chong Tan ^{1,2} , Chia-Hsin Ju ^{1,2} , Sarah Kongpachith ^{1,2} , Casey S. Lee ^{1,2} , Orr Sharpe ^{1,2} , Patricia A. Del Rosario ¹ , Roham T. Zamanian ¹ , William H. Robinson ^{1,2} Division of Immunology and Rheumatology ¹ , Stanford University; Palo Alto VA Health Care System ² , Palo Alto, CA
97	Macrophage Polarization in Response to Wear Particles in vitro	Joseph K Antonios ¹ , Zhenyu Yao ¹ , Chenguang Li ¹ , Allison J Rao ¹ , Stuart B Goodman ¹ Department of Orthopaedic Surgery ¹ , Stanford University
98	Bifocal Modeling: Comparing Real and Ideal Biological Models in K-12 Biology Education	Tamar Fuhrmann ¹ , Shima Salehi ¹ , Paulo Blikstein ¹ School of Education ¹ , Stanford University
99	Restorative Effects of Alpha-1A Adrenergic Receptors Are Detectable Using T2* and Targeted Nanoparticles in a Mouse Myocardial Infarction (MI) Model	Justin Lam ¹ , Y. Gong ² , R.C. Robbins ² , P.C. Simpson ³ , P.C. Yang ¹ , R. Dash ¹ Division of Cardiovascular Medicine ¹ and Department of Cardiac Surgery ² , Stanford School of Medicine; Division of Cardiology ³ , UCSF and SF VAMC
100	Optimizing Acoustic Cavitation for Ultrasound-Microbubble-Mediated Drug Delivery: Phantom Study and Preliminary in Vivo Results	Tzu-Yin Wang ¹ , Jung Woo Choe ² , Steven Machtaler ¹ , Rammohan Devulapally ¹ , Pierre Khuri-Yakub ² , Ramasamy Paulmurugan ¹ , Juergen Willmann ¹ Departments of Radiology ¹ and Electrical Engineering ² , Stanford University
101	Dancing Droplets: A New Vapor Phase Driving Mechanism in Self-Propelled Droplets	Nate James Cira ¹ , Manu Prakash ¹ Department of Bioengineering ¹ , Stanford University
102	Foldscope: Origami Based Print and Fold Microscope	Jim Cybulski ¹ , James Clements ² , Manu Prakash ² Departments of Mechanical Engineering ¹ and Bioengineering ² , Stanford University
103	Mosquitoes Meet Microfluidics : High-Throughput Tools for Insect-Vector and Parasite Ecology in Field Settings	Haripriya Mukundarajan ¹ , Manu Prakash ² Departments of Mechanical Engineering ¹ and Bioengineering ² , Stanford University
104	Synchronous Microfluidic Circuits and Logic	Georgios Katsikis ¹ , Manu Prakash ² Departments of Mechanical Engineering ¹ and Bioengineering ² , Stanford University
105	Punch Card Programmable Microfluidics	George Korir ¹ , Manu Prakash ¹ Department of Bioengineering ¹ , Stanford University
106	Dynamic Cell Junctions as Active Fluid in the World's Simplest Metazoan	Arjun Bhargava ¹ , Manu Prakash ² Vice Provost for Undergraduate Education ¹ , Department of Bioengineering ² , Stanford University
107	New Far-Red Fluorescent Proteins for Non-Invasive Imaging of Stem Cell Differentiation	Jun Chu ^{1,2} , Russell D Haynes ⁵ , Stéphane Y Corbel ⁵ , Pengpeng Li ³ , Emilio González-González ⁴ , Paula J Cranfill ⁶ , Michelle Baird ⁶ , Michael W Davidson ⁶ , Christopher H Contag ⁴ , Kang Shen ³ , Helen M Blau ⁵ , Michael Z Lin ^{1,2} Departments of Bioengineering ¹ , Pediatrics ² and Biological Sciences ³ , Molecular Imaging Program and Department of Microbiology and Immunology ⁴ , Baxter Laboratory for Stem Cell Biology and Stem Cell Institute ⁵ , Stanford University; National High Magnetic Field Laboratory and Department of Biological Science ⁶ , Florida State University
108	Local Dendritic Stimulation Evokes Local Synaptic Incorporation of Newly Synthesized PSD95	Yang Geng ¹ , Jin Yang ² , Margaret Butko ² , Roger Y Tsien ² , Michael Z Lin ¹ Departments of Pediatrics and Bioengineering ¹ , Stanford University; Department of Pharmacology ² , UCSD

109	SMASH: Small Molecule-Assisted Shut-off of Specific Protein Production	Hokyoung Chung ¹ , Yunwen Huo ¹ , Conor Jacobs ¹ , Jin Yang ² , Richard K. Plemper ³ , Roger Y. Tsien ² , Michael Z. Lin ¹ Departments of Pediatrics and Bioengineering ¹ , Stanford University; Department of Pharmacology ² , University of California-San Diego; Department of Pediatrics ³ , Emory University
110	Astrocyte-Secreted Thrombospondins are Required for Cochlear Synapse Formation	Diana Mendus ¹ , Felix Wangsawihardja ¹ , Vidya Sundaresan ¹ , Mirna Mustapha ¹ Department of Otolaryngology ¹ - Head & Neck Surgery, Stanford University
111	A New Tool for Molecular Diagnostics: Cytokine and Autoantibody Measurement Platform	Jung-Rok Lee ¹ , Jordan V. Price ² , Paul J. Utz ² , Shan X. Wang ³ Department of Mechanical Engineering ¹ , Medicine (Division of Immunology and Rheumatology) ² , and Materials Science and Engineering ³ , Stanford University
112	VCSEL-Based Sensors for Rapid Molecular Blood Monitoring	Meredith M. Lee ¹ , Jelena Levi ^{2,4} , Amy Hanlon ¹ , Sanjiv S. Gambhir ^{2,4} , James L. Zehnder ³ , James S. Harris ¹ Departments of Electrical Engineering ¹ , Radiology ² , Pathology and Medicine (Hematology) ³ , Stanford University Canary Center at Stanford for Cancer Early Detection ⁴
113	MEMS Force Probes for Cell Mechanobiology with Microsecond Resolution	Joseph C. Doll ¹ , Anthony W. Peng ² , Anthony J. Ricci ² , and Beth L. Pruitt ¹ Departments of Mechanical Engineering ¹ and Otolaryngology, Head and Neck Surgery ² , Stanford University
114	Impaired Pulmonary Angiogenesis in Idiopathic Pulmonary Arterial Hypertension is Linked to Abnormal Pericyte Function and Reduced Endothelial-Pericyte Interactions	Ke Yuan ¹ , Mark Orcholski ¹ , Alice Richter ¹ , Eszter Vladar ² , Jeffrey Axelrod ² , Marlene Rabinovitch ³ , Vinicio de Jesus Perez ¹ Divisions of Pulmonary/Critical Care Medicine ¹ , Pathology ² and Pediatrics ³ , Stanford University
115	Wnt7a Promotes Pulmonary Angiogenesis via Activation of Wnt Signaling and Modulation of VEGF Response in Pulmonary Endothelial Cells	Mark Orcholski ¹ , Ke Yuan ¹ , Vanessa Rojas ¹ , Joseph Crossno ² , Robert Winn ² , Vinicio de Jesus Perez ¹ Department of Pulmonary and Critical Care Medicine ¹ , Stanford University; Department of Medicine ² , University of Colorado, Denver
116	Real-Time Force Measurement of Cell-Generated Forces during Bacterial Phagocytosis	Jens Möller ^{1,2} , Joey C. Doll ² , Matthew A. Hopcroft ³ , Eileen A. Mazzonchette ² , Ki Wook Jung ² , Viola Vogel ¹ , Beth L. Pruitt ² Department for Health Sciences and Technology(D-HEST) ¹ ETH; Department of Mechanical Engineering ² , Stanford University; Hewlett-Packard Laboratories ³