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1	Developmental Phosphoproteomics Identifies CK2 as a Novel Therapeutic Target in Medulloblastoma	Teresa Purzner[1], Steve Gygi[2], Josh Elias[3], Matthew P. Scott[1,4], Yoon-Jae Cho[5,6] Departments of Developmental Biology[1], Systems Biology[3], Neurology[5], and Neurosurgery[6], Stanford University; Department of Cell Biology[2], Harvard University; Carnegie Institute of Science[4]
2	Engineering Emergent Multicellular Behavior Through Synthetic Adhesion Programs	David Glass[1], Ingmar Riedel-Kruse[1] Department of Bioengineering[1], Stanford University
3	Engineering Patterned Biofilms for Microbial Consortia	Xiaofan Jin[1], Ingmar Riedel-Kruse[1] Department of Bioengineering[1], Stanford University
4	Targeted Delivery of siRNA using Knottin-Protein Conjugates for Glioblastoma	Sungwon Lim[1], Sandra M. DePorter[1], Camila Kofman[2], Jennifer R. Cochran[1,2] Departments of Bioengineering[1] and Chemical Engineering[2], Stanford University
5	Frequency-Selective Control of Cortical and Subcortical Networks by Central Thalamus	Jia Liu[1], Hyun Joo Lee[1], Andrew Weitz[2], Zhongnan Fang[1], Peter Lin[1], ManKin Choy[1], Robert Fisher[1], Vadim Pinskiy[3], Alexander Tolpygo[3], Partha Mitra[3], Nicholas Schiff[4], Jin Hyung Lee[1,2] Departments of Neurology & Neurological Sciences[1] and Bioengineering[2], Stanford University; Cold Spring Harbor Laboratory[3]; Department of Neurology[4], Weill Cornell Medical College
6	Improved Phylogenetic Ordinations for Microbiome Data	Julia Fukuyama[1], Susan Holmes[1] Department of Statistics[1], Stanford University
7	3D Nanoelectrodes for Electrophysiology: How Size Affects Seal Resistance	Allister McGuire[1], Francesca Santoro[1], Ziliang Carter Lin[2], Yi Cui[3], Bianxiao Cui[1] Departments of Chemistry[1], Applied Physics[2], and Materials Science & Engineering[3], Stanford University
8	Deep Learning Models of the Retinal Response to Natural Scenes	Lane McIntosh[1]*, Niru Maheswaranathan[1]*, Aran Nayebi[2], Surya Ganguli[3], Stephen A. Baccus[4] (*equal contribution) Neuroscience Program[1] and Departments of Computer Science[2], Applied Physics[3], and Neurobiology[4], Stanford University
9	Enhancer-Promoter Contact Dynamics in Stem Cell Differentiation	Brook Barajas[1], Adam Rubin[1], Mayra Furlan-Magaril[2], Imani Howard[1], Daniel Kim[1], Max Mumbach[1], Howard Chang[1], Peter Fraser[2], Paul Khavari[1] Department of Epithelial Biology[1], Stanford University; Program in Nuclear Dynamics[2], Babraham Institute
10	Learning Causal Disease Variants and Transcription Factor Binding Through Deep Learning Sequence-to-Chromatin Accessibility Models	Peyton Greenside[1], Avanti Shrikumar[2], Jason Buenrostro[3], Ryan Corces[4], Ravi Majeti[5], Howard Chang[4], Will Greenleaf[3], Anshul Kundaje[2,3] Biomedical Informatics Training Program[1], Departments of Computer Science[2], Genetics[3], and Medicine (Division of Hematology)[5], and Center for Personal Dynamic Regulomes[4], Stanford University

11	Elucidating the Mechanisms Underpinning the Promotion of Plant Iron Acquisition by Root Microbiota	Mathias J.E.E.E. Voges[1,2], Yang Bai[3], Ruben G. Oter[3], Haruhiko Inoue[3], Paul Schulze-Lefert[3], Elizabeth S. Sattely[2] Departments of Bioengineering[1] and Chemical Engineering[2], Stanford University; Department of Plant Microbe Interactions[3], Max Planck Institute for Plant Breeding Research, Germany
12	Physical Modeling of Chromosome Dynamics Reveals Influence of Stress Communication between Connected Loci	Thomas J. Lampo[1], Andrew S. Kennard[2], Andrew J. Spakowitz[1,2] Department of Chemical Engineering[1] and Biophysics Program[2], Stanford University
13	Collective Ciliary Dynamics Govern Complex Locomotive Behavior in a Simple Animal - A Multi-Scale Approach	Matthew Bull[1], Manu Prakash[2] Departments of Applied Physics[1] and Bioengineering[2], Stanford University
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15	A Novel Split Firefly Luciferase Complementation Strategy for Interrogating the Regulation of SNAP29 Homodimerization in Starvation-Induced Autophagy	Ian Y. Chen[1], Thillai Veerapazham[2], Eric Marceau[3], Jon Stack[3], Chun Liu[3], Nazish Sayed[3], Elena Matsa[3], Ramasamy Paulmurugan[2], Joseph C. Wu[1,2,3] Departments of Medicine (Division of Cardiovascular Medicine)[1] and Radiology[2], and Stanford Cardiovascular Institute[3], Stanford University
16	Cell-Based Tissue Engineering Treatment Restores Active and Passive Tension Properties in Mouse Model of Volumetric Muscle Loss	Melinda Cromie[1,2,3], Marco Quarta[2,3], Justin Blonigan[3], Robert Chacon[3], Thomas Rando[2,3] Departments of Mechanical Engineering[1] and Neurology[2], Stanford University; Center for Tissue Regeneration[3], VA Palo Alto Health Care System
17	Investigating Folding and Catalysis of the glmS Ribozyme Riboswitch at the Single-Molecule Level	Andrew Savinov[1], Steven M. Block[2,3] Biophysics Program[1] and Departments of Applied Physics[2] and Biology[3], Stanford University
18	Data-Driven Structural Priors for Shape Completion	Minhyuk Sung[1], Vladimir G. Kim[1,2], Roland Angst[1,3], Leonidas Guibas[1] Department of Computer Science[1], Stanford University; Adobe Research[2]; Max Planck Institute for Informatics[3]
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21	3D-Assisted Feature Synthesis for Novel Views of an Object	Hao Su[1], Fan Wang[2], Eric Yi[2], Leonidas Guibas[1] Departments of Computer Science[1] and Electrical Engineering[2], Stanford University
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30	Enhancing Adipose-Derived Stem Cell-Based Cartilage Regeneration Using Macroporous Microribbon Scaffolds	Heather Rogan[1], Krista Chew[1], Fan Yang[1,2] Departments of Bioengineering[1] and Orthopaedic Surgery[2], Stanford University
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34	Gene-Centric Discovery of Novel Secondary Metabolite Pathways in *Arabidopsis thaliana*	Jakub Rajniak[1], Elizabeth S. Sattely[1] Department of Chemical Engineering[1], Stanford University
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49	Orientation-Sensitive Microscopy of Axonal Cargoes Demonstrates Molecular Motor-Dependent Rotational Dynamics	Luke Kaplan[1], Praveen Chowdary[2], Bianxiao Cui[2] Biophysics Program[1] and Department of Chemistry[2], Stanford University
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89	Rapid Point-of-Card Detection of *Mycobacterium tuberculosis*	Yunfeng (Jerry) Cheng[1,2,3], Jinghang Xie[1,2,3], Jianghong Rao[1,2,3]* (*corresponding author) Molecular Imaging Program at Stanford (MIPS)[1] and Departments of Radiology[2] and Chemistry[3], Stanford University
90	Absence of Bistability in Rb Hyperphosphorylation During Cell-Cycle Entry	Mingyu Chung[1], Chad Liu[1], Hee Won Yang[1], Ariel Jaimovich[1], Tobias Meyer[1] Department of Chemical & Systems Biology[1], Stanford University
91	Ultra-high Field Magnetic Resonance Imaging of Magnetic Susceptibility in Cortical Lesions of Multiple Sclerosis	Wei Bian[1], Eric Tranvinh[1], May Han[2], Brian Rutt[1], Michael M. Zeineh[1] Departments of Radiology[1] and Neurology[2], Stanford University
92	SHG Microendoscopy Reveals Slowing of Motor Units with ALS in SOD1G93A Mice	Xuefeng Chen[1], Mark Schnitzer[2,3,4], Scott Delp[1,5] Departments of Mechanical Engineering[1], Biology[2], Applied Physics[3], and Bioengineering[5] and Howard Hughes Medical Institute[4], Stanford University
93	Steerable Ablation Probes for Percutaneous Treatment of Tumors in the Liver	Joseph D. Greer[1], Troy K. Adebar[1], Gloria L. Hwang[1], Allison M. Okamura[1] Departments of Mechanical Engineering[1] and Radiology[2], Stanford University
94	Building a Multi-Well Format, Open-Source Oscillating Fluid Exchange System for Cell-Based Assays	Tsung-Yuan Wu[1], Stefan Tholen[2], Allison Okamura[1], Mary N. Teruel[2] Departments of Mechanical Engineering[1] and Chemical & Systems Biology[2], Stanford University

95	Human Induced Pluripotent Stem Cell-derived Cardiomyocytes Reveals Hypokalemia-Induced Exacerbation of Ventricular Arrhythmogenicity of Anti-Arrhythmic Drugs	Praveen Shukla[1,2,3], Elena Matsa[1,2,3], Priyanka Garg[1,2,3], Wenyi Chen[1,2,3], Arun Sharma[1,2,3], Oscar J. Abilez[1,2,3], Joseph D. Gold[1,5], Joseph C. Wu[1,2,3]* (*corresponding author) Stanford Cardiovascular Institute[1], Institute for Stem Cell Biology & Regenerative Medicine[2], Departments of Medicine (Division of Cardiology)[3], Chemistry[4], and Cardiothoracic Surgery[5], Stanford University
96	Blockade of the Neogenin-RGMb-BMP Signaling Hub Inhibits Allergen-Induced Airway Hyperreactivity	Sanhong Yu[1,2,3,4], Krystle M. Leung[1,2], Hye-Young Kim[1,2,5], Yanping Xiao[3,4], Lee A. Albacker[1,2,6], Dale T. Umetsu[1,2,7], Gordon J. Freeman[3,4], Rosemarie DeKruyff[1,2,8] Division of Immunology[1], Children's Hospital Boston; Departments of Pediatrics[2] and Medicine[4], Harvard Medical School; Department of Medical Oncology[3], Dana-Farber Cancer Institute, Boston; Department of Biomedical Sciences[5], Seoul National University College of Medicine, Korea; (present address) Foundation Medicine, Inc.[6], Cambridge, MA; (present address) Genentech, Inc.[7], South San Francisco; (present address) Department of Medicine[8], Stanford University
97	Strain-Sensitive Upconverting Nanoparticles for Imaging Forces in Biology	Alice Lay[1], Michael Wisser[2], Yu Lin[3], Tarun Narayan[2], Michael Krieg[4], Ashwin Atre[2], Miriam Goodman[4], Jennifer Dionne[2] Departments of Applied Physics[1], Materials Science & Engineering[2], Geological & Environmental Sciences[3], and Molecular & Cellular Physiology[4], Stanford University
98	TET-Mediated Stable 5hmC Deposition, but Not TDG Function, Is Required for Chondrogenic Differentiation	Fiorella Grandi[1], Sarah E. B. Taylor[1], Ye Henry Li[2], Piera Smeriglio[1], Wing H. Wong[3], Nidhi Bhutani[1] Departments of Orthopaedic Surgery[1], Structural Biology[2], and Statistics[3], Stanford University
99	Development of a Novel Platform for Derivation of Single Cell Adipocytes from Human Induced Pluripotent Stem Cells (hiPSCs)	Mohammad Shahbazi[1], Philip Lee[1], Paige Cundiff[2], Fahim Abbasi[1], Sunita D'Souza[2], Ihor Lemischka[2], Thomas Quertermous[1], Joshua W. Knowles[1] Stanford Cardiovascular Institute[1], Stanford University; Department of Developmental & Regenerative Biology[2], Icahn School of Medicine at Mount Sinai, New York
100	Capsule Endoscopic Ultrasound Device	Farah Memon[1], Gerard Touma[1], Junyi Wang[1], Spyridon Baltsavias[1], Morten Rasmussen[1], Chienliu Chang[1], Eric W. Olcott[1], R. Brooke Jeffrey[1], Amin Arbabian[1], Butrus (Pierre) T. Khuri-Yakub[1] Department of Electrical Engineering[1], Stanford University
101	Enantioselective Photolysis of Chiral Molecules Using Resonant Dielectric Nanoparticles	Chi-Sing Ho[1], Yang Zhao[2], Aitzol Garcia[3], Jennifer Dionne[2] Departments of Applied Physics[1] and Materials Science & Engineering[2], Stanford University; Donostia International Physics Center[3], Donostia, Spain
102	Microfluidic Worm Dispenser	Florian Bienefelt[1,4], Frédéric Loizeau[1], Eileen Mazzochette[2], Sylvia Fechner[3], Jürgen Brugger[4], Miriam B. Goodman[1,3], Beth L. Pruitt[1,3] Departments of Mechanical Engineering[1], Electrical Engineering[2], and Molecular & Cellular Physiology[3], Stanford University; École

		Polytechnique Fédérale de Lausanne[4], Switzerland
103	A Stretchable Live Cell Platform to Probe Gut Mechanobiology	Joan Teixidor[1,4], Jens Moeller[3], Bryon Foys[2], Chase Wood[2], Lucy Erin O'Brien[2], Beth Pruitt[1,2] Departments of Mechanical Engineering[1], and Molecular & Cellular Physiology[2], Stanford University; Department of Health Science & Technology[3], ETH Zürich; Department of Microengineering[4], École Polytechnique Fédérale de Lausanne[4], Switzerland
104	Transcription Factor Dynamics Identify a Circadian Code for Fat Cell Differentiation	Zahra Bahrami-Nejad[1]*, Michael L. Zhao[1]*, Sabine van Schie[1], Mingyu Chung[1], Mary N. Teruel[1] (*equal contribution) Department of Chemical & Systems Biology[1], Stanford University
105	Social Status of Robots: Supporting Design of Human-Robot Relationships with Exploratory Assessment	Jamy Li[1,2], Wendy Ju[1] (collaborations with Rene Kizilcec[2], Jeremy Bailenson[2], Byron Reeves[2]) Center for Design Research[1] and Department of Communication[2], Stanford University
106	Gene Expression Meta Analysis to Create a Quantitative Measure of Field Change in Smoker Airway Epithelium: Towards More Precise Risk Estimates of Tobacco Attributable Disease	Evan Minty[1,2]*, Rohun Kshirsagar[3]*, Timothy Sweeney[2,3], Francesco Vallania[3], Winn Haynes[2], Hua Fan Minogue[3], Kari Nadeau[3], Purvesh Khatri[2,3] (*first authors) O'Brien Institute for Public Health[1], University of Calgary; Biomedical Informatics Training Program[2], Stanford University; Institute for Immunity, Transplantation, & Infection[3], Stanford University