# Stanford Bio-X Interdisciplinary Initiatives Seed Grants Poster Session

November 10, 2021

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

| POSTER # | TITLE, AUTHORS, and AFFILIATIONS |
|---|---|
| 1 | **Deep Learning Approach to Evaluate Sex Differences in Response to Neuromodulation in Major Depressive Disorder**<br>Rita Hitching[1], Abed Hadipour[2], Turker Turkin[3], Caglar Uyulan[4], Reza Kazemi[4], Angela Phillips[5,6], Srija Seenivasan[5,7], Nevzat Tarhan[8], **Maheen Adamson[5,9]**<br>*Palo Alto Veterans Institute for Research[1]; Department of Psychology[2], University of Tehran; Department of Computer Science & Engineering[3] and Faculty of Humanities & Social Sciences[8], Üsküdar University; Mechatronics Engineering[4], Bülent Ecevit University; Rehabilitation Medicine[7], Veterans Affairs Palo Alto Health Care System[5]; Departments of Psychiatry[6] and Neurosurgery[9], Stanford University* |
| 2 | **Usability of a Virtual Reality Rehabilitation Protocol for Combat Traumatic Brain Injury from the Perspective of Healthcare Providers**<br>Mark Greenhalgh[1,2], Christian Fitzpatrick[3], Timothy Rodabaugh[3], Esmeralda Madrigal[1], Molly Timmerman[1], Deeksha Ahuja[1], Joyce Chung[1], Odette Harris[1,2], Quinn Kennedy[3], **Maheen Adamson[1,2]**<br>*Rehabilitation Services[1], Veterans Affairs Palo Alto Healthcare System; Department of Neurosurgery[2], Stanford University; Naval Postgraduate School[3], Monterey* |
| 3 | **Fiber Tract Integrity in Patients with Brain Injury and Chronic Health Symptoms**<br>**Maheen Adamson[1,5]**, John P. Coetzeea[1,2], Keith Main[3,4], Srija Seenivasana[1], Kaitlly Zhu[1], Rita Hitching[1], Oscar Mier[1], **Xiaojian Kang[1]**<br>*Headache Center for Excellence, Rehabilitation Service[1], VA Palo Alto Health Care System; Departments of Psychiatry & Behavioral Sciences[2] and Neurosurgery[5], Stanford University; Traumatic Brain Injury Center of Excellence[3], Maryland; General Dynamics Information Technology[4], Virginia* |
| 4 | **Evaluation of a Generative Adversarial Network for MR-Based PET Attenuation Correction in PET/MR**<br>**Emily Anaya[1,2]**, Craig S. Levin[1,2,3,4]<br>*Departments of Electrical Engineering[1], Radiology[2], Bioengineering[3], and Physics[4], Stanford University* |
| 5 | **Substrate Stress Relaxation Regulates Collective Cell Migration on Viscoelastic Substrates**<br>**Frank Charbonier[1]**, Ovijit Chaudhuri[1]<br>*Department of Mechanical Engineering[1], Stanford University* |
| 6 | **Selective Targeting of Immune Modulatory Proteins to Mitigate Fibrosis and Inflammation in Sclerodermatous Graft-vs-Host Disease**<br>**Lu Cui[1]**, **Cristabelle De Souza[1]**, Tristan Lerbs[1], Jessica Poyser[3], Maryam Kooshesh[1], Atif Saleem[1], Kerri Rieger[1], Ryanne Brown[1], Bernice Kwong[4], Sebastian Fernandez-Pol[1], Sally Arai[3], Judith A. Shizuru[2,3], Antonia M.S. Müller[3,5], Gerlinde Wernig[1,2]<br>*Departments of Pathology[1], Medicine (Division of Bone Marrow Transplant)[3], and Dermatology[4] and Institute for Stem Cell Biology & Regenerative Medicine[2], Stanford University; Department of Medical Oncology & Hematology[5], University Hospital Zurich* |

| | |
|---|---|
| 7 | **Longitudinal Immune Profiling Reveals Pivotal Targets Against Post COVID-19 Pulmonary Fibrosis**<br>**Lu Cui[1,2]**, Zhuoqing Fang[3], Cristabelle Madona De Souza[1,2], Tristan Lerbs[1,2], Yuan Guan[2], Irene Li[4], Sylvia K. Plevritis[4], Shih-Yu Chen[5], Gerlinde Wernig[1,2]<br>*Departments of Pathology[1], Anesthesiology, Perioperative & Pain Medicine[3], and Biomedical Data Science[4] and Institute of Stem Cell Biology & Regenerative Medicine (ISCBRM)[2], Stanford University; Institute of Biomedical Sciences[5], Academia Sinica, Taiwan* |
| 8 | **Transparency in Control of Upper-Limb Prostheses**<br>**Shivani Guptasarma[1]**, Monroe Kennedy III[1]<br>*Department of Mechanical Engineering[1], Stanford University* |
| 9 | **Peptide Nucleic Acid-Dependent Artifact Can Lead to False-Positive Triplex Gene Editing Signals**<br>**Pui Yan Ho[1,2]**, Zhen Zhang[3], Mark E. Hayes[3], Andrew Curd[3], Carla Dib[1,2], Maire Rayburn[1,2], Sze Nok Tam[3], Tumul Srivastava[3], Brandon Hriniak[3], Xiao-Jun Li[3], Scott Leonard[3], Lan Wang[3], Somayeh Tarighat[3], Derek S. Sim[3], Mark Fiandaca[3], James Coull[3], Allen Ebens[3], Marshall Fordyce[3], Agnieszka Czechowicz[1,2]<br>*Department of Pediatrics (Division of Hematology, Oncology, Stem Cell Transplantation & Regenerative Medicine)[1] and Institute for Stem Cell Biology & Regenerative Medicine[2], Stanford University; Vera Therapeutics, Inc.[3]* |
| 10 | **Matrix Viscoelasticity and Adhesion Signaling Regulate Human Pluripotent Stem Cell Morphogenesis**<br>**Dhiraj Indana[1]**, Pranay Agarwal[2], Nidhi Bhutani[2], Ovijit Chaudhuri[1]<br>*Departments of Mechanical Engineering[1] and Orthopaedic Surgery[2], Stanford University* |
| 11 | **Squid: Simplifying Quantitative Imaging Platform Development and Deployment**<br>**Hongquan Li[1]**, Deepak Krishnamurthy[2], Ethan Li[2], Rinni Bhansali[1], Pranav Vyas[2], Chew Chai[2], Nibha Akireddy[1], Manu Prakash[2]<br>*Departments of Electrical Engineering[1] and Bioengineering[2], Stanford University* |
| 12 | **Genetic Characterization of PD-1/PD-L1 Blockade Therapy Response in Melanoma**<br>**Aditi Limaye**[1], Julia Belk[1,2], Ansuman Satpathy[1]<br>*Departments of Pathology[1] and Computer Science[2], Stanford University* |
| 13 | **Modeling the Interaction of Ketamine with the Opioid System**<br>**Pierre Llorach[1]**, Daniel Rijsketic[1], John Sencaj[1], Boris Heifets[1]<br>*Department of Anesthesiology, Perioperative & Pain Medicine[1], Stanford University* |
| 14 | **Computational Investigation Reveals Motifs Facilitating *Drosophila* Navigation**<br>**Benjamin Midler[1,2]**, Lydia Hamburg[3], Aleksandr Rayshubskiy[4], Rachel Wilson[4], Shaul Druckmann[2,5,6]<br>*Departments of Psychology[1], Biophysics[3], and Neurobiology[5], Stanford Bio-X[2], and Wu Tsai Neurosciences Institute[6], Stanford University; Department of Neurobiology[4], Harvard University* |
| 15 | **Predicting Short Term Plasticity in Humans After Repetitive Stimulation Using Spectral Temporal Electrophysiological Features**<br>**Saachi Munot[1,2,3,4]***, Naryeong Kim[1,2,3,4]*, Austin Talbot[1,2,3,4], Gayathri Ganesan[1,2,3,4], Corey J. Keller[1,2,3,4] |

| | |
|---|---|
| | *(*Equal contribution) Department of Psychiatry & Behavioral Sciences[1] and Wu Tsai Neuroscience Institute[2], Stanford University; VA Palo Alto Healthcare System[3]; Sierra Pacific Mental Illness, Research, Education, & Clinical Center (MIRECC)[4]* |
| 16 | **Morphine Tolerance and Reward Is Regulated by Aldehyde Dehydrogenase-2 in Mice**<br>**Beatriz S. Neto[1]**, Rafaela C. R. Hell[1], Vanessa O. Zambelli[1,2], Juliana S. Salgado[1,3], Boris D. Heifets[1,3], Vivianne L. Tawfik[1], Eric R. Gross[1]<br>*Departments of Anesthesiology, Perioperative & Pain Medicine[1] and Psychiatry & Behavioral Sciences[4] and Nancy Pritzker Laboratory[3], Stanford University; Butantan Institute[2], Brazil* |
| 17 | **Noise Analysis and Rational Design of Intrinsically Stretchable Devices for Minimally-Invasive Electroencephalogram Recording with High Signal-to-Noise Ratio**<br>**Yuya Nishio[1]**, Donglai Zhong[2], Boris Murmann[1], Zhenan Bao[2]<br>*Departments of Electrical Engineering[1] and Chemical Engineering[2], Stanford University* |
| 18 | **Development of A Toolbox of Research Studies for Fanconi Anemia**<br>**Rofida Nofal**[1,2,3], Yan Yi Chan[1,2,3], Sushmita Sen[1,2,3], Hana Hoang[1,2,3], Supawat Thongthip[1,2,3], Agnieszka Czechowicz[1,2,3]<br>*Department of Pediatrics (Division of Stem Cell Transplantation & Regenerative Medicine)[1], Center for Definitive & Curative Medicine[2], and Institute for Stem Cell Biology & Regenerative Medicine[3], Stanford University* |
| 19 | **Impaired Recovery from General Anesthesia in a Mouse Model of ADLH2*2**<br>**Ryan Ozawa[1]**, Candida Goodnough[1], Katie Chang[1], Eric Gross[1]<br>*Department of Anesthesiology[1], Stanford University* |
| 20 | **Identifying Protein Interactors of Type 2 Diabetes Genes *CALCOCO2* and *PROX1* Through Immunoprecipitation**<br>**Alina Pollner[1,2]**, Varsha Rajesh[1,2], Mohammad Ovais Azizzanjani[3], Nicole Krentz[1,2], Peter Jackson[3], Anna L. Gloyn[1,2], Yingying Ye[1,2]<br>*Departments of Pediatrics[1], Endocrinology[2], and Microbiology & Immunology[3], Stanford University* |
| 21 | **Growth Factor-Loaded Collagen Gels for Enhanced Corneal Wound Healing: Effect of Matrix Crosslinking Chemistry**<br>**Youngyoon Amy Seo**[1,2], Gabriella Fernandes-Cunha[2], David Myung[2,3]<br>*Departments of Biology[1], Ophthalmology[2], and Chemical Engineering[3], Stanford University* |
| 22 | **Interactions of Physical Activity, Muscular Fitness, Adiposity, and Genetic Risk for Non-Alcoholic Fatty Liver Disease**<br>**Theresia M. Schnurr[1,2,3],** Sophia Figueroa Katz[1,2,4], Johanne M. Justesen[1,2,3], Jack W. O'Sullivan[1,2], Peter Saliba-Gustafsson[1,2,5], Themistocles L. Assimes[1,2,6], Ivan Carcamo-Orive[1,2,7], Aijaz Ahmed[8], Euan A. Ashley[1,2,9,10,] Torben Hansen[3], Joshua W. Knowles[1,2,7,11]<br>*Departments of Medicine (Divisions of Cardiovascular Medicine[1] and Gastroenterology & Hepatology[8]), Genetics[9], and Biomedical Data Science[10], Cardiovascular Institute[2], Stanford Diabetes Research Center[7], and Stanford Prevention Research Center[11], Stanford University; Novo Nordisk Foundation Center for Basic Metabolic Research[3], University of Copenhagen; Cleveland Clinic Lerner College of Medicine[4], Case Western Reserve University; Cardiovascular Medicine Unit, Department of Medicine[5], Center for Molecular Medicine at BioClinicum, Karolinska University Hospital, Karolinska Institutet; VA Palo Alto Health Care System[6]* |

23 **Development and Replication of a Depression EEG Biomarker**
**Austin Talbot**[1], Scott Linderman[2,3], Corey Keller[1,4,5]
*Departments of Psychiatry & Behavioral Sciences[1] and Statistics[2] and Wu Tsai Neurosciences Institute[3], Stanford University; Veterans Affairs Palo Alto Healthcare System[4]; Sierra Pacific Mental Illness, Research, Education, & Clinical Center (MIRECC)[5]*

24 **Next-Generation Genome Writing with Diverse Bacterial Retrons**
**Amberly Vu**[1], Shi-An Chen[1], Hunter Fraser[1]
*Department of Biology[1], Stanford University*

25 **Strain-Insensitive Intrinsically Stretchable Transistors and Circuits**
**Weichen Wang**[1], Sihong Wang[2], Zhenan Bao[2]
*Departments of Materials Science & Engineering[1] and Chemical Engineering[2], Stanford University*

26 **A Thumb-Size Bispectral EEG (BSEEG) Device Can Capture Delirium Severity and Predict Mortality**
**Takehiko Yamanashi**[1], Kaitlyn J. Crutchley[2], Gen Shinozaki[1]
*Department of Psychiatry & Behavioral Sciences[1], Stanford University; Department of Psychiatry[2], University of Iowa*

27 **Photoacoustic and Fluorescence Molecular Imaging of Bacterial Infections**
**Stella Yang**[1], Aimen Zlitni[2], Sanjiv Gambhir[2], Tulio Valdez[1]
*Departments of Otolarnygology[1] and Radiology[2], Stanford University*

28 **Magnetic Origami Robot for Biomedical Devices**
Shuai Wu[1], Qiji Ze[1], Jize Dai[2], **Renee Zhao**[1]
*Department of Mechanical Engineering[1], Stanford University; Department of Mechanical Engineering[2], The Ohio State University*

29 **Efficient Formation of Ultrasound Images with the Chirp Scaling Algorithm**
**Louise Zhuang**[1], Jeremy Dahl[2], Marko Jakovljevic[2]
*Departments of Electrical Engineering[1] and Radiology[2], Stanford University*