CLINICAL APPLICATIONS: COMPLEX 3D SYSTEMS FOR THERAPY AND DRUG DISCOVERY
Sponsored by: T-CiRA Discovery
Chairs: Ben M. Maoz, Tel Aviv University, Israel
Misao Fujita, Center for iPS Cell Research and Application, Kyoto University, Japan

ETHICS OF HUMAN BRAIN ORGANOID RESEARCH FROM THE PERSPECTIVE OF SOCIAL SCIENCE SURVEY
Misao Fujita, Center for iPS Cell Research and Application, Kyoto University, Japan

3D ORGANOIDS GENERATED FROM HUMAN TROPHOBLAST STEM CELLS MODEL EARLY PLACENTAL DEVELOPMENT AND SUSCEPTIBILITY TO EMERGING VIRAL INFECTIONS
Rowan Karvas, Washington University in St. Louis, USA

PREDICTING ARRHYTHMOGENIC DRUG RISK IN A METABOLICALLY MATURED CARDIAC MICROPHYSIOLOGICAL SYSTEM
Verena Charwat, University of California, Berkeley, USA

BIOPRINTED 3D HUMAN OUTER BLOOD RETINAL BARRIER UNCOVERS RPE-DEPENDENT CHOROIDAL PHENOTYPE IN ADVANCED MACULAR DEGENERATION
Russell Quinn, National Institutes of Health (NIH), USA

COMPLEX Activity AND SHORT-TERM MEMORIES IN RECIPROCALLY CONNECTED CEREBRAL ORGANIODS
Tatsuya Osaki, The University of Tokyo, Japan

HUMAN LENS REGENERATION VIA TRANSPLANTATION OF PLURIPOTENT STEM CELL-DERIVED LENS EPITHELIAL CELLS; A POTENTIAL NEW TREATMENT FOR CHILDHOOD CATARACT
Michael O’Connor, Western Sydney University, Australia

ORGANS-ON-A-CHIP: A NEW TOOL FOR THE STUDY OF HUMAN PHYSIOLOGY
Ben M. Maoz, Tel Aviv University, Israel

CLINICAL APPLICATIONS: ENGINEERING TISSUE AND ORGANS
Sponsored by: BlueRock Therapeutics
Chairs: James Hudson, University of Queensland; QIMR Berghofer, Australia
Randolph S. Ashton, University of Wisconsin, USA

STANDARDIZATION OF A SCALABLE HUMAN NEURAL ROSETTE ASSAY FOR ASSESSMENT OF NEURAL TUBE DEFECT RISK & DEVELOPMENTAL NEUROTOXICITY
Randolph S. Ashton, University of Wisconsin, USA

IDENTIFYING GENETIC REGULATORS OF ENDOCRINE AND BETA CELL IN VITRO DIFFERENTIATION VIA GENOME-WIDE LOSS-OF-FUNCTION SCREENING
Adrian Veres, Harvard University, USA

IGF1R DELETION IN A HOST EMBRYO AUGMENTS DONOR CONTRIBUTION TO HOST TISSUES IN BOTH INTRA- AND INTER-RODENT CHIMERAS
Toshiya Nishimura, The University of Tokyo, Japan

3D-PRINTED ABCB5-POSITIVE STEM CELLS FOR TREATING BILATERAL LIMBAL STEM CELL DEFICIENCY
Catherine Lee, Brigham and Women's Hospital, Harvard Medical School, USA

ELECTRICAL PROPERTIES AND OPTOGENETIC STIMULATION OF HUMANIZED CHAMBER-SPECIFIC ENGINEERED HEART TISSUES COMBINING DECELLULARIZED HEARTS WITH INDUCED PLURIPOTENT STEM CELL DERIVED CARDIOMYOCYOTES
Matteo Ghiringhelli, Technion-Israel Institute of Technology, Israel
HYPOIMMUNE IPSC-DERIVED CELL PRODUCTS TREAT CARDIOVASCULAR DISEASES IN IMMUNOCOMPETENT ALLOGENIC MICE
Tobias Deuse, UCSF, USA

BROMODOMAIN AND EXTRATERMINAL INHIBITION BLOCKS INFLAMMATION-INDUCED CARDIAC DYSFUNCTION
James Hudson, University of Queensland; QIMR Berghofer, Australia

CLINICAL APPLICATIONS: ROAD TO CLINIC I (REGENERATIVE MEDICINE)
12:00 – 13:10 EDT
Sponsored by: BlueRock Therapeutics
Chairs: Elena Cattaneo, University of Milan and National Institute of Molecular Genetics, Italy
Timothy Kieffer, University British Columbia, Canada

STEM CELL DERIVED ISLETS TO TREAT DIABETES
Timothy Kieffer, University British Columbia, Canada

TWO STEP WNT SIGNALLING ACTIVATION FACILITATES THE INDUCTION OF HUMAN PLURIPOTENT STEM CELL DERIVED MIDBRAIN DOPAMINERGIC NEURONS FOR TRANSLATIONAL USE
Tae Wan Kim, Memorial Sloan Kettering Cancer Center, USA

CELL FUSION TO COMBINE THERAPEUTIC PROPERTIES
Kathryn Lye, University of Toronto, Canada

INFORMING IN VITRO STEM CELL DIFFERENTIATION THROUGH SINGLE-CELL RNASEQ ANALYSIS OF THE DEVELOPING HUMAN FETAL STRIATUM
Elena Cattaneo, University of Milan and National Institute of Molecular Genetics, Italy

CLINICAL APPLICATIONS: ROAD TO CLINIC II (DRUG DISCOVERY)
12:00 – 13:10 EDT
Sponsored by: Surrozen
Chairs: Junya Toguchida, Center for iPS Cell Research and Application, Kyoto University, Japan
Jane S. Lebkowski, Regenerative Patch Technologies, USA

PHASE 1/2A CLINICAL ASSESSMENT OF A BIOENGINEERED, RPE CELL-BASED IMPLANT FOR THE TREATMENT OF ADVANCED DRY AGE-RELATED MACULAR DEGENERATION
Jane S. Lebkowski, Regenerative Patch Technologies, USA

COMBINED GENETIC AND CHEMICAL SCREENS USING HUMAN NEURAL STEM CELLS IDENTIFY ZIKA VIRUS RESISTANCE FACTORS AND NEW DRUG CANDIDATES
Pei-Hsuan Chu, National Center for Advancing Translational Sciences (NCATS), USA

ROPALS TRIAL: PHASE 1/2A, DOUBLE-BLIND, PLACEBO-CONTROLLED STUDY OF ROPINIROLE HYDROCHLORIDE FOR ALS PATIENTS BASED ON THE IPSC DRUG REPOSITIONING
Shinichi Takahashi, Keio University School of Medicine, Japan

APPLICATION OF DISEASE-SPECIFIC IPS CELLS FOR DISCLOSING THE PATHOMECHANISM AND DISCOVERING THERAPEUTIC CHEMICALS FOR INTRACTABLE DISEASES
Junya Toguchida, Center for IPS Cell Research and Application, Kyoto University, Japan

MITOCHONDRIAL DYNAMICS REGULATE INTERFERON SIGNALING AND AGE-RELATED CHANGES IN HSPC
Carolina Petrillo, Columbia University Medical Center, USA

ADULT HEMATOPOIETIC STEM CELL CLONAL CONTRIBUTION IS DETERMINED BY MACROPHAGE SENSING OF CALRETICULIN 3 ON HEMATOPOIETIC STEM CELLS DURING DEVELOPMENT
Samuel Wattrus, Harvard Stem Cell Institute, Institute, USA

STEM CELL CLONALITY AND THE NICHE
Leonard I. Zon, Boston Children's Hospital, USA