

4:23—4:28 pm

Anthony Zhu ~ Harvard (N. Natarajan / R. Lee)

You may be what you eat: Dietary composition as a contributing factor to cardiac and renal health in mammals

4:29—4:34 pm

Courtney Clark ~ Harvard (F. Price / L. Rubin)

Expansion of human in vitro derived satellite cells as a cell therapy to treat muscle degenerative disorders

4:35—4:40 pm

Haofan Li ~ Kenyon College (A. Petsakou / N. Perrimon)

Screening for cholinergic presynaptic molecules that affect gut regeneration

4:41—4:46 p.m.

Carlos Marquez~ Rensselaer Polytechnic Institute

(G. Lee / K. K. Parker)

Heart-on-a-Chip: Exercise Induced Arrhythmia Modeling

4:47—4:52 p.m.

Samantha Tham ~ Harvard (S. Choi / Y-C. Hsu)

Developing a viral-mediated approach to study hair growth and wound repair

4:53-5:00 p.m.

Presentation of Nada Anzak Award

M. William Lensch and **Maureen Herrmann**

5:00-5:05 p.m.

Closing Remarks

Brock Reeve

5:05—5:30 pm POSTER PREVIEW and REMOVAL

5:45-7:30 p.m.

Celebratory dinner

Mentors and PIs invited—HSCI, Bauer Bldg. Lobby

Harvard Stem Cell Institute
Internship Program (HIP)

HSCI Co-directors:

Douglas A. Melton, Ph.D. (Harvard)

David Scadden, M.D. (MGH/Harvard)

HSCI Executive Director:

Brock Reeve, M.Phil, M.B.A

Faculty Director of HIP:

William Anderson, Ph.D.

Administrative Director of HIP:

Maureen Herrmann, Ed.M.

With gratitude

The Harvard Stem Cell Institute extends its sincere thanks to the

undergraduate internship

selection committee

and to the participating

lab mentors, PIs and faculty guests.

This program would not be possible without your support, engagement and encouragement.

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FOURTEENTH ANNUAL UNDERGRADUATE INTERNSHIP SYMPOSIUM

THURSDAY
15 AUGUST 2019

HSCI HARVARD
STEM CELL INSTITUTE

1000 scientists. One goal. Discovering cures.

HARVARD UNIVERSITY

MAXWELL-DWORKIN

ROOM G115

ROBERT AND NAIDA LESSIN FORUM

33 OXFORD STREET

CAMBRIDGE, MA USA

PROGRAM SCHEDULE

11:00 am Welcome and introduction
Brock Reeve and **Maureen Herrmann**

GROUP A

11:15—11:20 am
Ahmed AboHamad ~ Connecticut College
(T. Ichinose / K. Shah)
Investigating Whether TGF β Expression Promotes oHSV Oncolysis in Glioblastoma

11:21—11:26 am
Aurelia Bleinroth ~ Witten/Herdecke University
(Q. Guo / S. McAllister)
The effect of CDK4/6 inhibition on the tumor microenvironment and breast cancer metastasis

11:27—11:32 am
Mauricio Garcia ~ Harvard (R. Amamoto / C. Cepko)
Transcriptional Profiling of Specific Cell Types in Frozen Retinal Tissue

11:33—11:38 am
Vivek Hariharan ~ Georgia Institute of Technology
(H. Ke / D. Deming / Y. Wang / Q. Zhu / W. Marasco)
Developing a Novel Tripartite IGHV Germline Gene Targeted Vaccine to Achieve “Universal” Protection Against Influenza A Strains

11:39—11:44 am
Anish Karpurapu ~ Duke (L. Jiang/D. Breault/D. Carlone)
Epigenetic Role of CXXC Finger Protein 1 in Regulating Chondrogenesis During Limb Development

11:45—11:50 am
Patrick Kasl ~ University of Wisconsin-Madison
(C. Walesky/C. Winston/W. Goessling)
Hepatocellular Responses to Chronic Non-Alcoholic Fatty Liver Disease

11:51—11:56 am
Elaine Katz ~ Harvard (A. Almada / N. Horwitz / A. Wagers)
Discovering Transcriptional Mechanisms that Activate Muscle Stem Cells to Regenerate Skeletal Muscle

11:57 am—12:02 pm
Anna Kolchinski ~ Tufts University (M. Almamun / A. Cantor)
Exploring the Effects of the Novel FLI1 W284C Mutation

12:03—12:08 pm
Huong Le ~ Harvard
(J. Froberg / T. Addison / K. Wang / J. Macklis)
Functions and intraneuronal distribution of TDP-43 in cortical projection neurons

12:09 —12:55 pm POSTER PREVIEW & light lunch

GROUP B

1:00—1:05 pm
Rick Li ~ Harvard (E. Bao / R. Voit / V. Sankaran)
Developing genome editing approaches in primary human hematopoietic cells to interrogate trait-associated variation.

1:06—1:11 pm
Samantha Marglous ~ University of Chicago
(Y. Shen / V. Sankaran)
Recapitulating natural human deletions in blood stem cells with genome editing to treat hemoglobin disorders

1:12—1:17 pm
Sarah Maggipinto ~ Boston University (L. Zhong / S. Agarwal)
Telomere Maintenance Mechanism in Dyskeratosis Congenita Induced Pluripotent Stem Cells

1:18—1:23 pm
Amandhi Mathews ~ Univ. of Dallas (E. Moore/ Y. Yang)
Role of Prx-1 expressing cells and their primary cilia in long bone fracture

1:24—1:29 pm
Uzochi Nwoko ~ Harvard (M. Alemany-Ribes/M. Alves/S. Raj/A. Craft)
Exploring the Effect of the WISP3 Gene on Cartilage Development and Degeneration

1:30—1:35 pm
Romario Thomas ~ St. Francis College
(S. Raj/X. Niu/J. Galloway / A. Craft)
Specification of Tenocytes and Tendon Tissues from Embryonic Stem Cells



1:36—1:41 pm
Cheryl Pan ~ Columbia University (H. Lee / T. Young-Pearse)
Characterizing Astrocytes Derived from iPSCs to Study Alzheimer’s Disease

1:42—1:47 pm
Alexander Ren ~ Harvard (J. Shim / C. Woolf)
Modeling painful channelopathies using CRISPR-engineered iPSC-derived sensory neurons

1:48—1:53 pm
Mahtabin Rodela Rozbu ~ Asian University for Women
(C. Lee / K. Karpova / N. Frank)
3D Bio-printing Using Human Corneal Epithelial Cells: Optimizing Bio-print Material and Cell Concentration to Treat Limbal Stem Cell Deficiency

1:54—2:30 pm POSTER PREVIEW

GROUP C

2:35—2:40 pm
Gizem Terzioglu ~ Emory University
(S. Hegarty/S. Mao/J. Stanicka/Z. He)
Kinome-wide CRISPR deletion screen for regulators of RGC survival and regeneration after optic nerve crush

2:41—2:46 pm
Stacy Jo ~ Harvard (T. Osborn/A. Moskites/D. Dinesh/ Z. Macbain/A. Townson/P. Hallett/O. Isacson)
The use of T-cell-derived iPSCs differentiated into midbrain dopaminergic neurons in the 6-hydroxydopamine rat model of Parkinson’s Disease

2:47—2:52 pm
Sabrina Cancelliere ~ University of Toronto
(K. Daneshvar / A. Mullen)
Exploring DIGIT-mediated formation of BRD3 condensates in definitive endoderm differentiation

2:53—2:58 pm
Debolina Ghosh ~ Harvard (N. Guo/H. Zanga/A. Sahay)
Investigating the Role of Klf9 in the Division Pattern and Differentiation of Neural Stem Cells in the Adult Hippocampus

Posters on view between
each session break

2:59—3:04 pm
Gabriela Hayward-Lara ~ Princeton
(C. Vicidomini/ A. Sahay)
Characterization of the Role of a Secreted Phospholipase in the Hippocampal Neurogenic Niche

3:05—3:10 pm
Arun Kumar ~ Vellore Institute of Technology
(S. Bukhari/S. Truesdell/S. Lee/S. Vasudevan)
Regulation of RNA modification and antiviral response in chemoresistant cancer cells

3:11—3:16 pm
Tam (Nina) M. Le ~ UCLA (A. Sexauer / N. Aziz / D. Sykes)
Exploring the role of STAT3/5 downstream of FLT3 in acute myeloid leukemia cells treated with an inhibitor of DHODH

3:17—3:22 pm
Christopher Rios ~ Harvard (B. Peacker / A. Wagers)
Direction of in vivo homology-directed repair and non-homologous end joining events in the liver and skeletal muscles at the single-cell level

3:23—3:28 pm
Benyapa Khowpinitchai ~ Carroll University
(R. Sherwood)
Identifying skippable exons in cell-essential genes

3:29—4:00 pm POSTER PREVIEW & refreshments

GROUP D

4:05 — 4:10 pm
Aishah Ahmed ~ Harvard (J. Garbern/R. Sereda/R. Lee)
mTOR inhibition increased human induced pluripotent stem cell-derived cardiomyocyte yield in three-dimensional cell culture via suppression of the Akt-mTOR-S6K phosphorylation axis

4:11—4:16 pm
Maggie Chen ~ Harvard (V. Bassaneze / R. Hew / R. Lee)
Candidate Modified RNAs for Cardiac Regeneration

4:17—4:22 pm
Marinna Okawa ~ Harvard (S. Dagdeviren/V. Melnik/R. Lee)
The Role of Arrestin Domain Containing 4 in Glucose Metabolism