

4:36—4:41 pm

**Hannah Rasmussen** ( J. Hoggatt / T. Tate / D. Scadden)

*Novel Therapeutics to Enhance Bone Marrow Transplantation*

4:42—4:47 pm

**Arianna Rech** ( A. Choudhuri / L. Zon)

*Interaction between lineage and signalling transcription factors in the differentiation of erythrocytes*

4:48—4:53 pm

**Dominick Zheng** ( J. Rivera-Feliciano / E. Rosado-Olivieri / D. Melton )

*A Screen to Identify Novel Secreted Effectors of Activin A in Definitive Endoderm Induction*

4:54—5:00 p.m.

**Closing remarks**

**Willy Lensch**

5:00—5:25 pm **POSTER PREVIEW and REMOVAL**



5:30—7:30 p.m.

**Celebratory Dinner**  
**Cambridge Queen's Head Pub**  
**Mentors and PIs invited**



# TENTH ANNUAL UNDERGRADUATE INTERNSHIP SYMPOSIUM

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### Harvard Stem Cell Institute Internship Program (HIP)

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*David Scadden, MD* (MGH/Harvard)

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Faculty Co-Directors  
*M. William (Willy) Lensch, PhD* and  
*William Anderson, PhD*

Administrative Director:  
*Maureen Herrmann, EdM*

*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.*

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THURSDAY

13 AUGUST 2015



HARVARD UNIVERSITY

MAXWELL-DWORKIN

ROOM G115

33 OXFORD STREET

CAMBRIDGE, MA USA

# PROGRAM SCHEDULE

10:45 am Welcome and introduction  
**M. William Lensch, PhD** | Faculty Co-Director

## GROUP A

11:00—11:05 am  
**Centura Anbarasu** ( S. Rowbotham / C. Kim)  
*Investigating the Role of G9a and Glp in Lung Stem Cells and Lung Tumor Progression*

11:06—11:11 am  
**Brenda Briones Miranda** ( F. Sher / D. Bauer)  
*Investigating mechanisms whereby noncoding genetic variation influences blood cell traits in a human immortalized hematopoietic stem/progenitor cell line*

11:12—11:17 am  
**Gabrielle Crobsy** ( D. Carlone / M. Shah / D. Breault)  
*Understanding the role of mTert+ cells in tooth development*

11:18—11:23 am  
**Laura Hyder** ( D. Shah)  
*Analyzing Pharmacological Targets Stimulating Endothelial Emergence of Hematopoietic Stem Cells*

11:24—11:29 am  
**Se-Jin (Joyce) Kim** ( S. Balbach / S. Orkin)  
*The role of EZH2 in alveolar rhabdomyosarcoma cells*

11:30—11:35 am  
**Polina Krivykh** ( B. Singh / E. Buttermore / C. Woolf)  
*Cancer Chemotherapy-induced Peripheral Neuropathy Phenotypic Screen*

11:36—11:41 am  
**Irene Wong** ( Y-F. Lu / R. Sugimura / G. Daley)  
*Ectopic Expression of Combinatorial Transcription Factors Confers Formation of Hematopoietic Progenitors from iPSCs*

11:42—11:47 am  
**Anna Zhao** ( S. Morris / G. Rowe / G. Daley )  
*Interrogating the Role of Circadian Rhythm in Leukemogenesis and Hematopoiesis*

11:48—11:53 am  
**Lauren Otto** ( C. Leung / F. Slack)  
*Analysis of the transcriptional regulation of let-7 in C. elegans*

11:54—11:59 am  
**Cho Han Chiang** ( M. Saxena / R. Shivdasani)  
*Optimization of 4C—Seq in Mouse Intestinal Villus Cells*

12:00—12:05 pm  
**Connor Kenny** ( M-J. Kim/ T. Serwold )  
*Generating a Novel in vitro Culture System for Functional Thymic Epithelial Cell Progenitors*

**12:06 —12:52 pm POSTER PREVIEW & light lunch**

## GROUP B

12:55—1:00 pm  
**May Barakat** ( A. Brodovskaya / J. Whited)  
*Characterizing Vascularization Within the Regenerating Axolotl Limb*

1:06—1:11 pm  
**Anastasia Brodovskaya** ( M. Barakat / J. Whited )  
*Visualizing Limb Vascularization in Regenerating and Homeostatic Axolotl Limbs*

1:12—1:17 pm  
**Edgar Garcia** ( R. Morizane / A. Lam / N. Gupta / J. Bonventre)  
*Modeling Kidney Injury and Fibrosis in Nephron Organoids Derived from hPSCs*

1:18—1:23 pm  
**Alejandra Lerma-Ortiz** ( Y. Xie / Z. Li)  
*CRISPR/Cas9-based Lineage Tracing System by Introducing Random Indel Mutations in Rosa26 or AAVS1*

1:24—1:29 pm  
**Kimberly Ma** ( A. Cox / M. Fort / A. Tismodes / W. Goessling)  
*Role that the Hippo pathway effector Yap plays in metabolic reprogramming during development*

1:30—1:35 pm  
**Colin Marts** ( T. Poggioli / R. Lee )  
*Producing Bivalent Neuregulin for use as a therapy in a chronic heart failure model*

1:36—1:41 pm  
**Arifeen Rahman** ( S. Carroll / R. Lee)  
*Characterizing the role of ARRDC3 in regulating glucagon signaling in the liver*

1:41—1:46 pm  
**Daniel O' Brian** ( B. Banerjee / R. Sherwood/ R. Maas)  
*Genotyping of cells in a cancer population using a dCas9 directed version of the split Venus system*

1:47—1:52 pm  
**Steven Ryu** ( C. Muratore / T. Young-Pearse )  
*Characterizing Neural Development in a DISC1 Disruption Model in Cerebral Organoids*

1:53—1:58 pm  
**Grant Sprow** ( M. Grinstein / J. Galloway )  
*Tendon Cell Proliferation in Mus Musculus and the Identification of Distinct Tendon Cell Populations*

**2:00—2:30 pm POSTER PREVIEW & refreshments**

## GROUP C

2:30—2:35 pm  
**Ameed Abualteen** ( K. Daneshvar / J. Pondick / A. Mullen)  
*Cas9-Mediated Programming of Human Embryonic Stem Cells Towards Endoderm*

2:36—2:41 pm  
**Pakanat Decharatanachart** ( K. McAvoy / A. Sahay)  
*Impact of Modulating Competition Dynamics of Adult-born Neurons on Hippocampal Afferent Connectivity*

2:42—2:47 pm  
**Alexia Zagouras** ( N. Guo/ A. Sahay)  
*Examining the Role of Klf9 in Regulation of Activation and Quiescence of Neural Stem Cells in the Adult Hippocampus*

2:48—2:53 pm  
**Petros Fessas** ( J. Pereira / D. Moakley / B. Wainger)  
*The effects of SOD1 A4V expression on the transcriptional profile of iPS-derived motor neurons*

2:54—2:59 pm  
**Caroline Moran** ( T. Gallegos / I. Drummond)  
*Interactions Between the FGF and Wnt Signalling Pathways in Zebrafish Kidney Regeneration*

3:00—3:05 pm  
**Steven Toffel** ( B. Watmuff / R. Karmacharya)  
*Optimization of dendritic spine labeling with the carbocyanine dye Dil and immunohistochemistry*



Posters on view between  
each session break

3:06—3:11 pm  
**Sarah Kassenaar** ( J. Kempfle / A. Edge)  
*Histological Analysis of the Role of Sox2 During Inner Ear Development*

3:12—3:17 pm  
**Nora Torres** ( J. Moore / Q. Tang / D. Langenau)  
*Zap70 mutant zebrafish: an immune compromised transplantation model*

3:18—3:23 pm  
**Anirudh Udutha** ( Y. Zhu / K. Shah )  
*Developing Therapeutic Stem Cells to Simultaneously Target Cell Proliferation and Death Pathways in Glioblastomas*

**3:24—3:55 pm POSTER PREVIEW**

## GROUP D

4:00 — 4:05 pm  
**Lloyd Chen** ( A. Crespo / A. van der Zwan / T. Tilburgs / J. Strominger)  
*Characterization of HLA-C expression in Human extravillous trophoblasts*

4:06—4:11 pm  
**Jason Cheng** ( M. Tabebordbar / A. Wagers)  
*CRISPR/Cas9-Mediated Exon-Skipping to Treat Duchenne Muscular Dystrophy*

4:12—4:17 pm  
**Luke Demas** ( / Y-C. Hsu )  
*The Role of Adipogenic Sonic Hedgehog Signaling in Skin Development*

4:18—4:23 pm  
**Danielle Feffer** ( N. Baryawno / D. Scadden )  
*Defining driver genes for cancer metastasis via a pooled cDNA in vivo screen*

4:24—4:29 pm  
**Dani Keahi** ( T. Ahfeldt / L. Rubin)  
*Analysis of the role of NeuroD6 in the specification of midbrain dopaminergic neuron subsets and potential neuroprotectivity against Parkinson's disease pathology*

4:30—4:35 pm  
**Priyanka Kumar** ( K. Ozkan / H. Padmanabhan / J. Macklis )  
*Directed differentiation of corticospinal motor neurons from endogenous progenitors using modified RNA*