

Theses for Honors in Biochemical Sciences 2009

Meera Elizabeth Atreya

~Hoopes Prize~

Engineering Recombinase Enzymes to Emulate the CCR5delta32 Mutation Conferring Resistance to HIV Infection

Dr. David Liu, Laboratory Sponsor

Justin S. Becker

~Hoopes Prize~

Budding yeast Bub1 and Sgo1 have an Ipl1-independent role in promoting sister chromatid biorientation that is essential in cells of higher ploidy

Dr. David Pellman, Laboratory Sponsor

David Blauvelt

Analysis of Olfactory Bulb Glomerular Responses to Odors in Mice of Different Behavioral States

Dr. Venkatesh Murthy, Laboratory Sponsor

Bianca Calderon

*Tandem Repeats in Promoter Regions of *S. cerevisiae* Generate Variability in Gene Expression with Phenotypic Consequences*

Dr. Kevin Verstrepen, Laboratory Sponsor

Gustav Cederquist

Post-Mitotic Regulation of Lmo4 During the Generation of Precise Neuronal Subtype and Cortical Area Identities

Dr. Jeffrey Macklis, Laboratory Sponsor

Anna Hang Chen

Probing the Spatial and Temporal Organization of Carbon Fixation: In Vivo Visualization of the Cyanobacterial Carboxysome

Dr. Pamela Silver, Laboratory Sponsor

Calvin Hughes Chen

*Studies on TarO Bi-functionality using Heterologous Complementation and Identification of the Glycosyl Transferase Involved in Late-Stage Wall Teichoic Acid Modifications in *Staphylococcus aureus**

Dr. Suzanne Walker, Laboratory Sponsor

Tzong-Yang Albert Chen

Characterizing Transcriptional Dynamics and Networks of Endodermal Organ Formation

Dr. Doug Melton, Laboratory Sponsor

Hannah Chung

*The Distribution of Fitness Effects of Deleterious Mutations in the Yeast *Saccharomyces Cerevisiae**

Dr. Andrew Murray, Laboratory Sponsor

Nicolae Done

Cloning, Expression and Purification of Moen5, A Prenyltransferase in the Moenomycin A Biosynthetic Pathway

Dr. Suzanne Walker, Laboratory Sponsor

Jennifer Esch

Morphology and Laminar Segregation of Single Retinal Ganglion Cell Axon Arbors in the Superior Colliculus of the Mouse

Dr. Joshua Sanes, Laboratory Sponsor

Michael Gladstone

The Role of Interleukin-21 in CD8+ T Cell Anti-Viral Immune Responses

Dr. Norm Letvin, Laboratory Sponsor

Jessica Stewart Hightower

In Vitro Directed Differentiation of Mouse ES Cells to Cells in Pancreatic Lineage using Small Molecules and Ectopic Expression of Key Transcription Factors

Dr. Doug Melton, Laboratory Sponsor

Jenny Hsu

Insights into the Intercellular Transport of Gene Silencing in a Nematode Worm

Dr. Craig Hunter, Laboratory Sponsor

Russell Phelps Kelley

~Hoopes Prize~

Modulation of Gag-Specific Cellular Immune Responses to Prototype HIV Vaccines by Toll-Like Receptor Ligands in Mice

Dr. Dan Barouch, Laboratory Sponsor

June-Ho Kim

~Hoopes Prize~

The Role of an Alternatively Translated Intracellular Isoform of Oseopontin in T Helper Cell Polarization

Dr. Harvey Cantor, Laboratory Sponsor

David Bernard Kopelman

Y-Box Binding Protein 1 is a Novel Substrate of Granzyme A

Dr. Judy Lieberman, Laboratory Sponsor

Yonit Lavin

B Cell Cross-Presentation and their Role in CD8+ T Cell Priming

Dr. Hidde Ploegh, Laboratory Sponsor

Albert Li

~Hoopes Prize~

Structural Studies of TRPV1 Activation by Capsaicin

Dr. Rachelle Gaudet, Laboratory Sponsor

Christina Wenshin Li

Progress Toward the Total Synthesis of Lepadiformine

Dr. David Evans, Laboratory Sponsor

Janet Li

The Collaboration between Epigenetic and Genetic Mutation in Medulloblastoma

Dr. Laurie Jackson-Grusby, Laboratory Sponsor

Michael Lin

The Role of Sonic hedgehog in adult skeletal muscle development

Dr. Amy Wagers, Laboratory Sponsor

Jennifer S. Love

Investigation of the Molecular Basis for Variant Late-Infantile Neuronal Ceroid Lipofuscinosis through Identification of CLN6 Protein Binding Partners using the Split-Ubiquitin Yeast System

Dr. Susan Cotman, Laboratory Sponsor

Cesar Lopez Angel

SIV Envelope Evolution in the Semen and Blood of Acutely SIV-Infected Rhesus Macaques

Dr. Norm Letvin, Laboratory Sponsor

Sara Aviva Manning

~Hoopes Prize~

The Great Wall of Bacteria: Discovery of Different Intrinsic Length Biases in Penicillin-Binding-Proteins

Dr. Dan Kahne, Laboratory Sponsor

Amanda Mason

Identifying Cell Cycle Stage-Specific Polycomb Group Protein Complexes
Dr. Nicole Francis, Laboratory Sponsor

Efi Efraim Massasa

Memory of the mouse ES cell transcriptional program through cell division
Dr. Kevin Eggan, Laboratory Sponsor

David Mattos

Studying the extracellular function of Protocadherin- α proteins
Dr. Tom Maniatis, Laboratory Sponsor

Benjamin Morris

Site-directed Fluorescent Labeling of the Dual Transmembrane Domains of the Ecto-enzyme CD39
Dr. Guido Guidotti, Laboratory Sponsor

Vanessa Mitsialis

Role of CC2D1A in Brain Development and Non-Syndromic Mental Retardation
Dr. Christopher A. Walsh, Laboratory Sponsor

Vera Mucaj

Developing a Novel Targeted Therapy for Brain Cancers
Dr. Pamela Silver, Laboratory Sponsor

Eva Nong

Force-dependent DNA Replication of HIV Reverse Transcriptase, Taq and T7 polymerases: A minimalist Two-Segment Structural Model
Dr. Dudley Herschbach, Laboratory Sponsor

Kimberly Wei Wei Oo

A Synthesis of an Eight-Carbon Disulfide Crosslinker Still Images of a Motion Picture: Using Static Crystal Structures to Understand the Behavior of a DNA Glycosylase
Dr. Greg Verdine, Laboratory Sponsor

Jason Pan

Molecular determinants of SIRT6 subcellular localization
Dr. Frederick Alt, Laboratory Sponsor

Gordon Powers

*A novel screen to identify small molecule natural products mediating interspecies interactions between soil microbes and *Bacillus subtilis**
Dr. Roberto Kolter, Laboratory Sponsor

Zoe Sarnak

Characterization of the B-box 2 Domain of TRIM5 α and its Role in Anti-Retroviral Activity

Dr. Joseph Sodroski, Laboratory Sponsor

Christina Eloisa Tartaglia

Suppression of a mouse model of multiple sclerosis by immunization with an aluminium adjuvant and low dosages

Dr. Jack Strominger, Laboratory Sponsor

Pedro Teixeira

Significance of the Association Between Epstein-Barr Virus's EBNA3A and Human Protein CtBP for Maintaining Immortalized B Cell Growth

Dr. Elliot Kieff, Laboratory Sponsor

Kaloyan M. Tsanov

~Henderson Prize~

An Embryonic Stem Cell Based System for Rapid Analysis of Developmentally Regulated Enhancer Elements

Dr. Andrew McMahon, Laboratory Sponsor

Lekha Tummalapalli

Characterization of Endoplasmic Reticulum Tubule Generation in BSCI cells

Dr. Tomas Kirchhausen, Laboratory Sponsor

Cindy Ung

Role of Arl8b in Phagolysosome Biogenesis

Dr. Michael B. Brenner, Laboratory Sponsor

Christina G. Vangelakos

The Immune Response of Murine Peritoneal Cells to Bacteroides fragilis

Dr. Dennis Kasper, Laboratory Sponsor

Jue Wang

Characterizing the Microscopic Culturability of Soil Microbes

Dr. Roy Kishony, Laboratory Sponsor

Xinyu Wang

Histone Deacetylase 2 Negatively Regulates Extinction of Conditioned Fear

Dr. Li-Huei Tsai, Laboratory Sponsor

Wenxin Xu

Characterization of the mutational landscape for type-2 antifolate resistance at the DHFR locus of P. falciparum

Dr. Dan Hartl, Laboratory Sponsor

Jennifer Yan

Manipulations of autophagy-related genes and their effects on the protective properties of parkin

Dr. Matthew LaVoie, Laboratory Sponsor

Jimmy Chen Yang

~Hoopes Prize~

Discovery, Synthesis, and Steps Toward Target Identification of the Novel 2-amino-3-hydroxyindole Anti-malarial Drug Class

Dr. Jon Clardy, Laboratory Sponsor

Youyang Yang

SALL4 regulates HOXA genes in normal hematopoiesis and leukemogenesis

Dr. Li Chai, Laboratory Sponsor

Ching Zhu

A Novel Interaction between Calmodulin and the Proteasome

Dr. Daniel Finley, Laboratory Sponsor