

Previous Award Recipients

September 2020 Competition

Charles Bou-Nader

Molecular basis of PKR regulation by viral and host non-coding RNAs

Mentor: Jinwei Zhang

Xiaofei Bai

Deciphering the functional roles of PIEZO mechanosensors in reproduction

Mentor: Andy Golden

Yusuke Okuno

An Atomic View of the Molecular Mechanism of Urea Denaturation using NMR Spectroscopy

Mentor: Marius Clore

March 2020 Competition

Sezen Meydan Marks

Understanding genome-wide and single molecule dynamics of colliding ribosomes

Mentor: Nicholas Guydosh

September 2019 Competition

Benjamin Alleva (GBB)

Population-Scale analysis of *PRDM9* diversity and genomic rearrangements in humans

Mentor: Rafael Camerini-Otero

John Jimah (LCMB)

Structural basis of dynamin-mediated membrane fission and actin bundling

Mentor: Jenny Hinshaw

Peter Kropp (LBG)

Mentor: Andy Golden
Analysis of the Genetics and Biology of multiple Mitochondrial Dysfunctions
Syndromes

Vojtech Skop (DEOB)
Understanding mouse energy expenditure and body temperature regulation
Mentor: Marc Reitman

March 2019 Competition

Ujjayini Ghosh (LCP)
Investigating the integration of disparate transcriptional signals in T cell fate decisions
Mentor: Bob Tycko

Amy Sutton (DEOB)
Investigating the role of AgRP neurons in the development of activity-based anorexia
Mentor: Michael Krashes

Lei Wang (LBC)
Adipocyte G signaling regulates whole-body glucose homeostasis and insulin sensitivity
Mentor: Jurgen Wess

September 2018 Competition

Bridget Matikainen-Ankney (DEOB)
Investigating the persistent effects of obesity on physical activity
Mentor: Alexaai Kravitz

Juhyung Lee (LMB)
Molecular mechanisms of misfolding-associated protein secretion
Mentor: Yihong Ye

Theodoros Karamanos (LCP)
An Atomic View of the Protein Quality Control Network in Function & under Stress
Mentor: Marius Clore

March 2018 Competition

Benjamin Leadem (LCDB)
Role of Epigenetic Modifiers in Regulating Terminal Erythroid
Mentor: Ann Dean

Guoyou Liu (LCDB)
Role of Enhancer Looping Factor LDB1 in Hepatocyte Identity and Function
Mentor: Ann Dean

Di Wu (LCDB)
The RNA Exosome in Mouse Development
Mentor: Jurrien Dean

September 2017 Competition

Yanling Ma (LDB)
The Role of a Novel Retinol Dehydrogenase HSD17B13 in Non-alcoholic Fatty Liver Disease
Mentor: Yaron Rotman

Xiang Guo (LCDB)
Role of ETO2 in enhancer activity and chromatin organization during hemoglobin switching
Mentor: Ann Dean

Zhengpin Wang (LCDB)
Sperm-specific Nuclear protein 1 (SSNP1) is required for maintenance of Mouse Spermatogonial Stem cells
Mentor: Jurrien Dean

March 2017 Competition

Dahong Chen (LCDB)
Shep Regulates Neuronal Remodeling by Interacting with Chromatin Insulators in *Drosophila*
Mentor: Elissa Lei

Jack Davison (LBC)
Elucidation and Exploitation of antibiotic-encoding genes from a Rare Marine Alga
Mentor: Carole Bewley

September 2016 Competition

Alberto Ceccon (LCP)

Dynamics of amyloid-like proteins: from soluble to Nanoparticle-induced Insoluble Fibrils

Mentor: Marius Clore

Marielle Walti (LCP)

Molecular Chaperones in action: Determination of the Protein Folding Mechanism of GroEL at atomic resolution

Mentor: Marius Clore

March 2016 Competition

Lihui Wang (LMB)

Molecular Mechanisms of Intercellular Transmission of Misfolded Proteins

Mentor: Yihong Ye

James Taylor (LMB)

Bacterial Self-Organization and Patterning : a Minimal and Mechanistic Approach

Mentor: Kiyoshi Mizuuchi

Ramon Pinol Machon

Regulation of Energy Homeostasis by Hypothalamic Bombesin-like Receptor 3 Neurons

Mentor: Marc Reitman

September 2015 Competition

Rakesh Sikdar (GBB)

Characterizing the Molecular Mechanism of Assembly and Secretion of a Trimeric Autotransporter Adhesin

Mentor: Harris Bernstein

Saiprasad Pydi (LBC)

Role of Beta-arrestins in Adipocyte function and whole body glucose and energy homeostasis

Mentor: Jurgen Wess

Wenwei Zheng (LCP)

Understanding Coupled Folding and Binding of an Intrinsically Disordered Protein
Mentor: Robert Best

March 2015 Competition

Jesse Carlin (DEOB)
The Role of Adenosine Receptors A1 and A3 in Central Body Temperature Regulation
Mentor: Marc Reitman

Simona Rosu (LCMB)
Germ Cell Proliferation and Quality Control in the *C. elegans* Germline
Mentor: Orna Cohen-Fix

Jessica Pierce (GBB)
Characterization of Toxin Secretion in Cancer-Associate Strains of *B. fragilis*
Mentor: Harris Bernstein

Ha Youn Shin (LGP)
Regulation of Mammary-Specific and Hormone-Induced Gene Networks
Mentor: Lothar Hennighausen

September 2014 Competition

Amit Joshi (LCMB)
Role of novel ER shaping Proteins in Pre-Peroxisome Vesicle Formation
Mentor: William Prinz

Kwan Wood Lam (GBB)
Genome-Wide Studies of Meiotic Recombination Intermediates and Crossovers in Mice
Mentor: Rafael Camerini-Otero

Ezequiel Nazer (LCDB)
Role of the *Drosophila* Argonaute Protein AGO2 in Transcriptional Silencing of Spermatogenesis
Mentor: Elissa Lei

March 2014 Competition

Kimberly LeBlanc (DEOB)
Exploring the Role of Dopamine Release and its Downstream Effects in Obesity
Mentor: Alexxai, Kravitz

Chia Li (DEOB)
Unraveling Central Wiring Diagrams Underlying Homeostatic Processes of Appetite
Mentor: Michael Krashes

Katherine Truex (LCP)
First steps Toward Watching Nucleic Acids Fold
Mentor: William Eaton

Emily Webber (DEOB)
Satiety in the Lateral Hypothalamus
Mentor: Michael Krashes

September 2013 Competition

Bo Xiong (LCDB)
Identification of Sperm Receptor Essential for Gamete Recognition
Mentor: Jurien Dean

Danielle Friend (DEOB)
Parsing Apart the Role of Striatal D2 Dopamine Receptors in Obesity
Mentor: Alexxai Kravitz

Elisavet Serti (LDB)
Innate Antiviral Immunity Against Hepatitis C Virus
Mentor: Barbara Rehmann

March 2013 Competition

David Libich (LCP)
The 'Dark-State' of GroEL: Understanding Transient Substrate Binding by Solution NMR
Mentor: Marius Clore

Jennifer Plank (LCDB)
Defining the Role of Eto2 in Mediating Fetal to Adult Hemoglobin Switching
Mentor: Ann Dean

Giselle Roman-Hernandez (GBB)
Mechanistic studies of Outer Membrane Protein (OMP) assembly in *E. coli*
Mentor: Harris Bernstein

September 2012 Competition

Aimee Jaramillo-Lambert (LBG)

Sperm Derived Factors are Essential for Embryonic Development in *C. elegans*

Mentor: Andy Golden

Alison Walters (LCMB)

Investigating the Mechanism and Regulation of Nuclear Envelope Expansion in *S. cerevisiae*

Mentor: Orna Cohen-Fix

Chen-Che Huang (LERB)

Thyroid Hormone-mediated Adrenal Remodeling

Mentor: Douglas Forrest

Dalya Lateef (DEOB)

Role of Bombesin Receptor Subtype-3 in Energy Metabolism and Cardiovascular Regulation

Mentor: Marc Reitman

Nikolaos Sgourakis (LCP)

Study of the m4 Immune Evasion Protein and its Interactions with MHC-I using NMR, DEER and Rosetta

Mentor: Ad Bax

Li-Quan Zhou (LCDB)

Role of Histone H3.3 in Reprogramming Gamete Chromatin to Activate Embryonic Genes

Mentor: Jurrien Dean

March 2012 Competition

Marvin Bayro (LCP)

Understanding Supramolecular Interactions in HIV-1 Gag Assembly

Mentor: Robert Tycko

Lalit Deshmukh (LCP)

Structural Studies of the HIV-I Capsid Dimer in Solution Using NMR, Small/wide Angle X-ray Scattering and Other Biophysical Techniques.

Mentor: Marius Clore

September 2011 Competition

Nick Anthis (LCP)

Uncovering the Molecular Details of Calmodulin Signaling by Paramagnetic NMR

Mentor: Marius Clore

Matteo Avella (LCDB)

Role of the Zona Pellucida in Human Fertilization

Mentor: Jurrien Dean

Ling Chin Hwang (LMB)

Elucidating the Mechanism of Bacterial Plasmid Partition

Mentor: Kiyoshi Mizuuchi

Simon Messing (LMB)

Elucidation of Repetitive Extragenic Palindromic Sequences Propagation in Bacteria by Tyrosine Transposases

Mentor: Fred Dyda

March 2011 Competition

Mawadda Al-Naeeli (MMB)

Erythropoietin and Obesity-induced Inflammation and Insulin Resistance

Mentor: Constance Noguchi

Michelle Bond (LCBB)

Elucidating the role of O-GlcNAc in Innate Immunity using *C. elegans* as a model

Mentor: John Hanover

Yanfen Liu (LMB)

Function and Regulation of Deubiquitinases in ER Protein Quality Control

Mentor: Yihong Yi

Ari Meerson (PECRB)

Assessing the Roles of Micro RNAs in Human Obesity and Type 2 Diabetes

Mentor: Leslie Baier

David Murray (LMB)

Structure and Molecular Mechanism of SNX8 Cargo Recognition

Mentor: James Hurley

Kyung Hyun Ryu (LGP)

Linking H3K27 Methylation and the Transcription Factor STAT5 in Mammary development

Mentor: Lothar Hennighausen

September 2010 Competition

Emily Clough (LCDB)

Sexual Dimorphism in *Drosophila* from Genotype to Phenotype

Mentor: Brian Oliver

Christine Jao (LMB)

Structure of the ESCRT -I and -II Membrane Budding Assembly

Mentor: James Hurley

Reiner Jumpertz (PECRB)

Manipulation of the Gut Microbiota: Impact on Energy Balance in Humans

Mentor: Jonathan Krakoff

Leah Matzat (LCDB)

RNA-mediated Tissue Specific Regulation of a Chromatin Insulator in *Drosophila*

Mentor: Elisa Lei

Anthony Vecchiarelli (LMB)

Mechanistic Studies of ATP-driven Biomolecular Patterning and Positioning

Mentor: Kiyoshi Mizuuchi

March 2010 Competition

Katerina Alexaki (GDDB)

In Vivo Models of Serine Palmitoyltransferase Manipulation and Impact on Diabetes

Mentor: Richard Proia

Joshua Chappie (LMB)

Structural and Mechanistic Studies of Dynamin

Mentor: Frederick Dyda

September 2009 Competition

Robin Evans Stanley (LMB)

Structural and Bio-chemical Characterization of the Autophagy PI3KC 3 Complex

Mentor: James Hurley

Jin-Gu Lee (LMB)

Biological function of Lysine29-linked Polyubiquitin Chain

Mentor: Yhiong Ye

Anil Kumar Kamaraju (DB)

Identification of Novel Small-Molecule Inhibitors of “SMAD 3” for Therapeutic Purposes

Mentor: Sushil Rane

Qisheng Li (LDB)

Discovery of Hepatitis C Virus Host Dependencies through Genome-wide Genetic Studies

Mentor: Jake Liang

March 2009 Competition

Edina Rosta (LCP)

Role of Proton Transfer in the Catalytic Reaction of RNase H

Mentor: Gerhard Hummer

Marie Thearle (PECRB)

Effects of Exenatide on Thermogenesis and Weight in Non-diabetic Obese Subjects

Mentor: Jonathan Krakoff

Yan Wang (MDB)

Menin Regulates the AKT Signaling Pathway through its Interaction with AKT

Mentor: Stephen Marx

Thomas Wollert (LMB)

Reconstitution of ESCRT-mediated Membrane Budding *in Vitro*

Mentor: James Hurley

September 2008 Competition

Anna Allen (LBG)

Investigating Precocious Oocyte Maturation and the Calcium Wave in *C. elegans*

Mentor: Andy Golden

Anna Burkart (LCDB)

Role of a Cortical-Granule Metalloprotease in the Post-Fertilization Block to Polyspermy

Mentor: Jurrien Dean

Robert Brychta (CEB)

Optimizing Energy Expenditure Detection in Human Metabolic Chambers

Mentor: Kong Chen

Michelle Mondoux (LMB)

Analysis of Hexosamine Signaling in *C. elegans*: a Model of Insulin Resistance

Mentor: Michael Krause

Emmanuel Thomas (LDB)

A Novel Mechanism of Action of Ribavirin in Hepatitis C Antiviral Therapy

Mentor: Jake Liang

March 2008 Competition

Nina Peel (LBG)

System-wide analysis of tubulin glutamylation in *C. elegans*

Mentor: Kevin O'Connell

Zachary Schultz (LCP)

Nanoscale Biomembrane Characterization: from model systems to intact cellular membranes

Mentor: Ira Levin

Yang Shen (LCP)

Protein structural patterns obtained from NMR chemical shifts using neural networks

Mentor: Ad Bax

Hariom Yadav (DB)

Role of TGF- β 1 signaling in insulin resistance and adipogenesis

Mentor: Sushil Rane

Frances Yap (GBB)

Mechanism of Translational Regulation Inside the Ribosome Tunnel

Mentor: Harris Bernstein

September 2007 Competition

Orsolya Barabas (LMB)

Directing Asymmetric DNA Transposons to Alternate Sequences

Mentor: Fred Dyda

Xin-Hua Liao (LCDB)

Functional Analyses of the TOR Kinase Complex TORC2

Mentor: Alan Kimmel

Deepak Sharma (LBG)

Molecular Mechanism Underlying Roles of Ssa Hsp70 Chaperones in Yeast Prion Propagation

Mentor: Daniel Masison

Pu Tian (GBB)

Two State Conformational Change of Membrane-embedded Beta Barrels

Mentor: Harris Bernstein

Athanasios Vasilopoulos (GDDB)

Role of BRCA1 in Mammary Cancer Stem Cells and Possible Therapeutic Implications

Mentor: Chuxia Deng

March 2007 Competition

Michaelleen Callahan-Douclevff (LCP)
Characterizing the Target Search Process of a Multi-Protein Transcription Complex
Mentor: Marius Clore

Kan-Nian Hu (LCP)
Probing Protein Conformations in Unfolded States Using Solid-State NMR Techniques
Mentor: Robert Tycko

Erica Rosemond (LBC)
Elucidation of Novel Protein Partners of G-Protein Coupled Receptors
Mentor: Jurgen Wess

Keren Witkin (LMCB)
Yeast Nuclear Architecture and its Role in Regulating Nuclear Function
Mentor: Orna Cohen-Fix

September 2006 Competition

Gagandeep Gahlay (LCDB)
Characterization of the Role of ZP2 in Post-Fertilization Block to Sperm Binding
Mentor: Jurrien Dean

Jean-Marc Guettier (CEB)
In Vivo Control of GPCR Signaling Pathways
Mentor: Jurgen Wess

Thomas Leonard (LMB)
Mechanistic Studies of Protein Kinase C
Mentor: James Hurley

Kathryn Stein (LBG)
Mechanism of spe-11-dependent Oocyte Activation in *C. elegans*
Mentor: Andy Golden

March 2006 Competition

Meryem Bektas (GDDB)
Sphingosine-phosphate Lyase in Signaling
Mentor: Richard Proia

Rongjin Guan (LMB)
Molecular Basis of Ligand Recognition by Human Toll-like Receptor 2
Mentor: David Davies

Ying Huang (LDB)
Negative Regulation of IFN Pathway by HCV Infection
Mentor: Jake Liang

Jinfa Ying (LCP)
Novel NMR Methods Applied to Studying HA Peptide-induced Membrane Fusion
Mentor: Ad Bax

September 2005 Competition

Robert Best (LCP)
Coarse-Grain Models for Simulation of Protein Folding
Mentor: William Eaton

Rodney Brister (LMCB)
Characterization of the T4 Origins of DNA Replication
Mentor: Nancy Nossal

Jordan Chill (LCP)
Novel NMR Methodologies for Study of Membrane Proteins
Mentor: Ad Bax

Lei Li (LCDB)
Discovering New Potential Target Genes of FIG α
Mentor: Jurrien Dean

Eric Liu (IAB)
Beta Cell Regeneration and Immunology in Type 1 Diabetes
Mentor: David Harlan

Jason Mears (LCBB)
The Structural Basis of Mitochondrial Fission
Mentor: Jenny Hinshaw

Cheryl Woolhead (GBB)
Ribosome Nascent Chain Communication During Translation
Mentor: Harris Bernstein

March 2005 Competition

Keith Giles (LMB)

The Establishment of Heterochromatin in Vertebrate Cells

Mentor: Gary Felsenfeld

Bo Li (LBC)

Analysis of G Protein-Coupled Receptors in Yeast

Mentor: Jurgen Wess

Kusai Merchant (LCP)

Watching a Protein Fold by Single Molecule Fluorescence

Mentor: William Eaton

Anant Paravastu (LCP)

Structural Studies of Alzheimer's β -Amyloid Fibrils

Mentor: Robert Tycko