

BMB Honors Theses

2015

The Effects of a Pyrrole-Based, Microtubule-Depolymerizing Compound on Activated Murine Macrophages

By: John A Ciemniecki

Advisor: Krista Stenger

An NMR-Guided Approach to the Isolation of Secondary Metabolites from NRPS and PKS Gene Clusters

By: Connor P Craig

Advisor: Jonathan Dattelbaum

Calcium (II) Catalyzed Addition Reactions

By: Callie C Dullin

Advisor: Kristine Nolin

Broadening the functional interactions of Ded1, a *Saccharomyces cerevisiae* DEAD-box ATPase involved in translation initiation

By: Audrey Kindsfather

Advisor: Angie Hilliker

Multi-wavelength Collisional Quenching to Study Ligand-Protein Interactions in Glutamate Dehydrogenase

By: Chun Li

Advisor: Ellis Bell

Isolation of Microbial NRPS and PKS Gene Clusters for Natural Product Isolation

By: Danielle N O'Hara

Advisor: Jonathan Dattelbaum

The Role of Entropy and Conformational Plasticity in Nucleotide Interactions with Glutamate Dehydrogenase

By: Angela Tata

Advisor: Ellis Bell

Development of a genetic over-expression system for the freshwater sponge *Ephydatia muelleri*

By: Joe Walsh

Advisor: April Hill

2014

Addition Reactions of Electron-Deficient Cyclopropanes Catalyzed by Calcium(II) Complexes

By: Caroline M. Braun

Advisor: Kristin Nolin

Formyl Group Activation of Bromopyrrole Suzuki Cross-Coupling: Application to a Formal Synthesis of Lamellarin G trimethyl ether

By: Andrew Harrison

Advisor: John Gupton

Multi-technique Quantitative Analysis and Socioeconomic Considerations of Lead, Cadmium, and Arsenic in Children's Toys and Toy Jewelry

By: Margot Hillyer

Advisor: Michael Leopold

A conservative isoleucine to leucine mutation of Klentaq1 DNA Polymerase 1 induces conformational change for cold-sensitive phenotype

By: Emma Caroline Materne

Advisor: Eugen Wu

Do the Inter-Nucleotide Domain loops act as an Entropic Sink in the Catalytic Activity of 3- Phosphoglycerate Dehydrogenase (3pGDH)?

By: Christina Meehan

Advisor: Ellis Bell

One-Pot Heteroconjugate Addition-Diels–Alder Reactions and Acetate-Catalyzed Aldol Reactions of  $\alpha$ -Silyl Nitriles

By: Carly Mueller

Advisor: Wade Downey

Construction of a Functional HA-Epitope Tagged AqK2P Channel with Surface Expression

By: Arianna A. Prinzbach

Advisor: Linda Boland

The mis-regulation of the DJNK pathway in a Drosophila model of Machado-Joseph Disease influences neurodegeneration

By: Catherine Marie Romberger

Advisor: John Warrick

Regiospecific Functionalization of Pyrroles Using Formyl-Group Activated Suzuki Coupling: Application to a Formal Synthesis of Polycitones A and B and Polycitrin A.

By: Michael Wormald

Advisor: John Gupton

*Vesicular Monoamine Transporter-1: Association with Neuropsychiatric Disorders*

By: Yingying Geng  
Advisor: Krista Stenger

2013

Monolayer-Protected Nanoparticle Doped Xerogels as Functional Components of Amperometric Glucose Biosensors

By: Michael Hartley Freeman  
Advisor: Michael Leopold

Synthesis of Cyclopropane via Knoevenagel Condensation and Cyclopropanation with Sulfur Ylide

By: Lora Gao  
Advisor: Kristin Nolin

Synthesis of 8-oxo-2'-deoxyguanosine Triphosphate Analogues and Investigations into the Promutagen Potential of 8-oxo-2'-deoxyguanosine

By: Michael Ghio  
Advisor: Michelle Hamm

Adenovirus Type 5 Virions Asymmetrically Lose Icosahedral Structure at Low pHs of Endosomes

By: Jennifer Marie Jarboe  
Advisor: Eugene Wu

The Inner Workings of the DNA Copying Nanomachine: Kinetic Studies of DNA Polymerase I

By: Emily P. Kornberg  
Advisor: Eugene Wu

Investigation into the Mutagenic Potential of 8-Oxo-2'-deoxyguanosine (OdG) using KF<sup>-</sup> and pol  $\beta$

By: Emily McFadden  
Advisor: Michelle Hamm

Vesicular Monoamine Transporter-1 Polymorphisms: Association with Neuropsychiatric Disorders

By: Margaret Nelson  
Advisor: Krista Stenger

Characterization of neurosteroid binding to the amino terminal domain of GluN2B, a specific N-methyl-D-aspartate receptor subunit

By: Ryan Scott Roard

Advisor: Lisa Gentile

$\alpha$ -Adrenergic Receptor Expression and Regulation on the Surface of Macrophages

By: Lindsey L. Templeton

Advisor: Krista Stenger

2012

Determining the Role of Methionines in the Activity and Subunit Interactions of Glyoxysomal Malate Dehydrogenase

By: Farren Billue

Advisor: Ellis Bell

The Relationship Between Live Coral and Macroalgae in South Caicos as Influenced by Herbivorous Fishes

By: Sarah Byce

Advisor: Paula Lessem, Anemarie Kramer

Probing Subunit Interactions in 3-Phosphoglycerate Dehydrogenase

By: Bradley Falk

Advisor: Ellis Bell

A Study of the Catalytic Reaction Mechanism of Malate Dehydrogenase using Quantum Mechanics and Molecular Dynamics Tools

By: Hugo Guterres

Advisor: Ellis Bell

Homology Model and Targeted Mutagenesis Identify Critical Residues for Arachidonic Acid Inhibition of Kv4 Channels

By: Robert Heler

Advisor: Linda Boland

Characterizing the Role of the SIT and Hemolysin Proteins in High Affinity Iron Acquisition in the Tsetse Symbiont *Sodalis glossinidius*

By: Kaitlin Markoja

Advisor: Laura Runyen-Janecky

Determination of the Atomic Resolution Structure of a DNA Polymerase I Isolated from *Rhodothermus marinus*

By: Natalie S. Omattage

Advisor: Eugen Wu

The Role of Histidines in Neurosteroid Binding of NMDA GluN2B and D Subunits

By: Sarah Rhoads

Advisor: Lisa Gentile

Elucidation of the Pax/Six Gene Regulatory Network in *Ephydatia muelleri*

By: Anna Rued

Advisor: April Hill

Trimethylsilyl Trifluoromethanesulfonate-mediated Additions to Acetals, Nitrones,  
and Aminals

By: Chelsea Safran

Advisor: Wade Downey

Characterization of Achromobactin Iron Acquisition in *Sodalis glossinidius*

By: Caitlin Lee Smith

Advisor: Laura Runyen-Janecky

The Optimization of a One-Pot Heteroconjugate Addition-Oxidation-Diels-Alder  
Reaction

By: Christina Viveló

Advisor: Wade Downey

The Linkage Between Citrate and pH Regulation of Malate Dehydrogenase and  
Protein Folding

By: Helen Yanta

Advisor: Ellis Bell

2011

Studies into the Mutagenic Potential of the DNA Lesion 8-Oxo-2'-deoxyguanosine  
with various DNA polymerase

By: Kelly Crowley

Advisor: Michelle Hamm

Investigation of Subunit Interaction in Glyoxysomal Malate Dehydrogenase using  
Engineered Cysteine Residues

By: Mary Jane Drake

Advisor: Ellis Bell

The Effect of Polysubstituted Pyrrole Compounds on the Inflammatory Response

By: Lauren Folgosa

Advisor: Krista Stenger

Utilizing Molecular Dynamics to Study Ionotropic Glutamate Receptors

By: Jenna Landers

Advisor: Carol Parish

Determination of CREB Binding Protein Levels and an Examination of Proteomic Profiles in the Drosophila Model of the Human Neurodegenerative Disease Spinocerebellar Ataxia Type III/ Machado-Joseph Disease  
By: Andrew Lawrence Simmelink  
Advisor: John Warrick