

Students and Teachers As Research Scientists Program
SCHOLAR RESEARCH PAPERS
Friday, July 16, 2010
101 Benton Hall – 120 Research Complex – 121 Research Complex

Mr. Tony Kardis, Senior Program Advisor
Mr. Terrence Brennan, Student Advisor
Ms. Jennifer Freund, Student Advisor

Erum Ahmed, Marquette High School, “Quantitation of Immunoproteasomes and Housekeeping Proteasomes in Cells Treated with Interferons,” Dr. Dorota Skowrya, Saint Louis University

Hima Atluri, Visitation Academy, “The Effect of Knocking Down P₂Y₁ Expression in Mice on Bone Metastasis,” Dr. Katherine Weilbaecher, Washington University

Danielle Baron, Clayton High School, “The Effect of Fluoxetine on the Stress Response of *Drosophila melanogaster*,” Dr. Wendi Neckameyer, Saint Louis University

Taylor Bell, Francis Howell North High School, “Computational Modeling of the EGF Pathway Yields Possible Cancer Treatment,” Dr. Chung Wong, UM-St. Louis

Dushyant Bhatnagar, Parkway South High School, “Energy Conversion of Amino Acids Through the Use of Mitochondria Catalysts for Electrodes,” Dr. Shelley Minter, Saint Louis University

Vivek Biswas, MICDS, “Fe(II) Effect on the Desorption of Arsenic From Hematite Solids,” Dr. Jeffrey Catalano and Dr. Yun Luo, Washington University

Aashish Chalasani, MICDS, “Intracavity Laser Spectroscopy of Gas-Phase Platinum Carbide and Platinum Chloride Molecules,” Dr. James O'Brien and Dr. Leah O'Brien, UM-St. Louis/SIU-E

Dabin Choe, MICDS, “Accuracy of Self-reported Sleep When Compared with 24-hour Holter Recordings of the Community-Dwelling Elderly,” Dr. Phyllis Stein, Washington University

Danielle Cicka, Westminster Christian Academy, “Sleep Patterns in Gulf War Veterans With and Without Gulf War Illness,” Dr. Phyllis Stein, Washington University

Jesse Drapekin, Whitfield School, “Exploring the Dominant Axis in Facial Expressiveness During Human Communication,” Dr. J. Gail Neely, Washington University

Will Ewing III, Chaminade College Prep, “Developing Nanoporous Gold as a Support for Immobilized Antibody-Enzyme Conjugates of Potential Use in Diagnostics,” Dr. Keith Stine, UM-St. Louis

Chloe Ferris, MICDS, “Epigenetic Regulation of FoxP3 in CD8 T-Cells,” Dr. Rajeev Aurora, Saint Louis University

Katie Foster, Villa Duchesne, “Effect of Nickel Ions on Electrochemical Oscillations in H₂O₂ – H₂SO₄ – Pt Electrode System,” Dr. Istvan Kiss, Saint Louis University

Sabrina Fritz, Villa Duchesne, “Investigations of Critical Molecular and Physical Properties Associated with Protein Solubility,” Dr. Der-Chyan Hwang, Solae, LLC

Ravali Gummi, Marquette High School, “*Drosophila* on Drugs: Study of Imipramine on Stress Response Circuitry,” Dr. Wendi Neckameyer, Saint Louis University

Rohit Gummi, Marquette High School, “Distinct Populations of Synaptic Vesicle Release Events,” Dr. Amy Harkins, Saint Louis University

Mrigank Gupta, Parkway West High School, “The Effect of Gene Knockout on GGA Expression in the Eye,” Dr. Joseph Eissenberg, Saint Louis University

Ryan Hall, Chaminade College Prep, “The Effect of NTBI on the Phosphorylation of SMAD 1, 5, 8,” Dr. Robert Fleming, Saint Louis University

Tia Harper, Wentzville Holt High School, “Catalytic Investigation of a Novel Phosphinoxazoline-Ruthenium Complex Utilizing Gas Chromatography,” Dr. Eike Bauer, UM-St. Louis

Calvin Irwin, Parkway North High School, “Mutagenesis of Enzyme Salutaradine Reductase in *Papaver seniferum* to Decrease Substrate Specificity,” Dr. Toni Kutchan, Donald Danforth Plant Science Center

Scott Jeffrey, Clayton High School, “A Study of the Equity of Access to Parks by Area-Level Characteristics in the Dallas-Tarrant Counties,” Dr. Christy Hoehner, Washington University

Colman Jin, John Burroughs School, “Developing Nanoporous Gold as Support for an Electrochemical Immunoassay,” Dr. Keith Stine, UM-St. Louis

Peter Kempf, Lindbergh High School, “Catalytic Tuning of Cobalt-doped Carbon Nanotube Growth,” Dr. Shelley Minter, Saint Louis University

Kyle Kong, MICDS, “Mechanism of Morphine Modulation of Thrombospondin Levels in Astrocytes,” Dr. Mariana Beltcheva, Saint Louis University

Shawn Kuo, Parkway Central High School, “Rapid Reduction and Reaction of Glutathione with Atomic Oxygen,” Dr. Ryan McCulla, Saint Louis University

Rebecca Lambert, Westminster Christian Academy, “Assessing the Preparedness of Home Health Agencies,” Dr. Terri Rebmam, Saint Louis University

Paul Lisker, Clayton High School, “Exploring the Dominant Axis of Facial Expressiveness During Human Communication,” Dr. J. Gail Neely, Washington University

Mimi Liu, Clayton High School, “Metabolism of Testosterone and Cognitive Behavior in Female Rats,” Dr. Chaya Gopalan, St. Louis College of Pharmacy

Ryan Liu, Ladue Horton Watkins High School, “Attempted Synthesis and Study of a Novel Silylborane,” Dr. Peter Gaspar, Washington University

Johanna Lowell, Crossroads College Prep, “Analyzing the Preparedness of Home Health Agencies for a Comprehensive Disaster Plan,” Dr. Terri Rebmam, Saint Louis University

Amit Nanda, Whitfield School, “Influence of Drug-Binding Kinetics on Epidermal Growth Factor Signaling,” Dr. Chung Wong, UM-St. Louis

Madhav Narayan, Marquette High School, “Examining Hemispheric Asymmetries in Cortical Folding Between Term Born Infants and Premature Infants at Term Equivalency: A Surface-Based Analysis,” Dr. Amit Mathur and Dr. Terrie Inder, Washington University

Radhika Natarajan, Francis Howell High School, “Assessment of ^{99m}Tc -Sestamibi as a Potential Noninvasive Imaging Probe in Human Pancreatic Carcinoma Cells,” Dr. Vijay Sharma, Washington University

Olivia Newbury, Metro Academic and Classical High School, “The Effects of Lesioning the Globus Pallidus on Process S Sleep,” Dr. Michael Anch, Saint Louis University

Ryan Patterson, O'Fallon Township High School, “Characterization of Antibodies to Proteasome Subunits B5 and B5_i,” Dr. Dorota Skowrya, Saint Louis University

Cat Pherigo, Francis Howell North High School, “Transient Kinetic Characterization with Y-Procedure: Application to CO Oxidation on Pd Catalyst,” Dr. Grigoriy Yablonsky, Washington University

Vikram Ponnusamy, Parkway South High School, “Stability of Standard and Non-Standard RNA Bases,” Dr. Brent Znosko, Saint Louis University

Emily Puleo, Visitation Academy, “Genial Glands as a Secondary Sexual Characteristic of the Red-Spotted Newt, *Notophthalmus viridescens*,” Dr. Robert Aldridge, Saint Louis University

Mary Puleo, Visitation Academy, “Using GIS and Remote Sensing to Create a 3-Dimensional Map,” Dr. Abuduwasiti Wulamu, Saint Louis University

Beenish Qayum, Ladue Horton Watkins High School, “Obtaining a Fret Signal after Ligation of RNA Using DNA as a Catalyst,” Dr. Dana Baum, Saint Louis University

Stephen Ryan, Missouri Academy, “Intracavity Laser Absorption Spectroscopy of PtC and HCl Gas,” Dr. James O'Brien and Dr. Leah O'Brien, UM-St. Louis/SIU-E

Leigh Ryffel, Clayton High School, “Investigating Climate Change in the St. Louis and Columbia Areas,” Dr. Timothy Eichler, Saint Louis University

Sydney Schein, MICDS, “Expression Analysis of Soybean G Gamma Subunits by Quantitative Real Time PCR,” Dr. Sona Pandey, Donald Danforth Plant Science Center

Gabi Schroeder, Missouri Academy, “The Structure of KirBac 1.1 When Combined with Membrane Lipids,” Dr. Decha Enkvetchakul, Saint Louis University

Andy Schwartz, St. Louis Priory, “Comparison of Analytical Techniques for Quantification of Lipids in Microalgae,” Dr. Richard Sayre, Donald Danforth Plant Science Center/Washington University

Saahil Sheth, Fort Zumwalt West High School, “The Structure Determination of a Nitrogen Donor Metal Complex Using Single Crystal X-ray Diffraction,” Dr. Nigam Rath, UM-St. Louis

Avital Shulman, Block Yeshiva High School, “Embryonic Stem Cell Differentiation Along the Oligodendrocyte Lineage: The Effects of Morphine,” Dr. Mariana Beltcheva, Saint Louis University

Jake Simpher, John Burroughs School, “The Immobilization of Enzymes in Sol-Gel for the Purpose of Improving the Stability of Biofuel Cells,” Dr. Shelley Minter, Saint Louis University

Bobby Song, Parkway West High School, “The Effect of Lesioning the Globus Pallidus on Homeostatic Rat Sleep,” Dr. Michael Anch, Saint Louis University

Nathan Stein, Francis Howell High School, “Assessing the Effect of Saturation on Photoelectron Image Subtraction,” Dr. Richard Mabbs, Washington University

Conor Tillinghast, John Burroughs School, “Stacking Interactions in DNA: Computational Modeling and Application in DNA Intercalators,” Dr. Michael Lewis, Saint Louis University

Hima Veeramachaneni, Parkway South High School, “How RecOR Change DNA Conformation to Initiate Homologous Recombination,” Dr. Sergey Korolev, Saint Louis University

Elise Viox, Cor Jesu Academy, “NPC4 and Myb66 Oil Biosynthesis Pathways and NPC4 Response to NaCl Stress in *Camelina sativa*,” Dr. Xuemin (Sam) Wang, UM-St. Louis/Donald Danforth Plant Science Center

Melissa Wang, Ladue Horton Watkins High School, “How 1 is Greater than 2: The Kinetic Study of 4CL and STS Fusion Protein,” Dr. Oliver Yu, Donald Danforth Plant Science Center

Zach Weinstock, Parkway North High School, “The Role of the Globus Pallidus in Sleep Homeostasis,” Dr. Michael Anch, Saint Louis University

Erica Westenberg, Rolla High School, “A Study of the Mutations in the Gene ACVRI that Cause Fibrodysplasia Ossificans Progressiva,” Dr. Steven Mumm and Dr. Michael Whyte, Washington University

Paul Wheeler, Westminster Christian Academy, “Senescence and Mitochondrial – Nuclear Communications in *Neurospora crassa*,” Dr. Jack Kennell, Saint Louis University

Emily Wilson, Parkway Central High School, “The Urogenital System of Male *Rhyacotritonidae*: An Anatomical and Phylogenetic Study,” Dr. Robert Aldridge, Saint Louis University

Jacqueline Yap, Lafayette High School, “Analysis of Enzymes Extracted from *Sulfolobus solfataricus* and *Gluconobacter SP.33*,” Dr. Shelley Minter, Saint Louis University

Stephanie Zhang, Parkway North High School, “Interferon-beta Expression During Adult and Neonatal Responses to Respiratory Viral Infection,” Dr. Laurie Shornick, Saint Louis University

Philip Zhang, Clayton High School, “Sub-cellular Localization of a Potentially Oncogenic Non-coding RNA,” Dr. Michael Tomasson, Washington University

Andy Zhou, John Burroughs School, “Correlation Between tDNA and Phenotype of the *Arabidopsis* Dip 1 Mutant,” Dr. Wenyan Xiao, Saint Louis University