

**The National Institute on Aging and
The National Institute on Drug Abuse
Intramural Research Programs**

Present

Student Poster Day 2010

Tuesday, August 3, 2010

Poster Presentations

12:30 p.m. 4:00 p.m.

Biomedical Research Center

Baltimore, MD

Light Refreshments Will be Served

NIA

Brain Physiology & Metabolism Section

(1) Kevin H. Chen (Freshman)
University of Chicago - Chicago, IL
Alterations in Neurotransmitter Transporters in Postmortem Frontal Cortex of Alzheimer's Patients
Mentor: Jagadeesh Rao, Ph.D.

Laboratory of Cardiovascular Science

(2) Bhavana S. Vangara (Junior)
University of Florida - Gainesville, FL
It Takes Two to Tango, but Three to Glow: Using a Split GFP Tripartite System to Elucidate RAGE Oligomerization
Mentor: Li Lin, Ph.D. and Edward Lakatta, M.D.

(3) Adrian G. Cadar (Junior)
University of North Texas - Denton, TX
Novel Enzymatic Activities of the Firefly Luciferase
Mentor: Steven Sollott, M.D. and Magdalena Juhaszova, Ph.D.

(4) Shweta Shukla (2010 Graduate)
Dulaney High School - Cockeysville, MD
Differences in Sarcoplasmic Reticulum Ca^{2+} Loading and Spontaneous Ca^{2+} Release in Permeabilized Young and Old Mouse Sinoatrial Nodal Cells (SANC): Effect of PDE Inhibition.
Mentor: Sjevda Sirenko, Ph.D. and Edward Lakatta, M.D.

Laboratory of Cellular and Molecular Biology

(5) Joseph T. Berko (2010 Graduate)
University of Maryland Eastern Shore – Princess Anne, MD
Micro-RNA profiling in HeLa Cells During Cell Cycle
Mentor: Myriam Gorospe, Ph.D.

(6) Anabel Gonzalez Gil (2010 Graduate)
Florida International University - Miami, FL
Comparative Analysis of Sea Urchin and Mammalian Rag1/Rag2 proteins
Mentor: Sebastian Fugmann, Ph.D.

(7) Akihiro C. Ko (2010 Graduate)
Dulaney High School - Timonium, MD
Effects of Kinase Inhibition in an *in vitro* Model of Ovarian Cancer Drug Resistance
Mentor: Patrice Morin, Ph.D. and Cheryl Sherman-Baust, B.S.

(8) Julia M. Nagle (Sophomore)
Harvard University - Cambridge, MA
Investigating Novel Binding Partners of the DNA Damage Sensor Protein PARP-1
Mentor: Nicole Noren Hooten, Ph.D. and Michele Evans, M.D.

Laboratory of Clinical Investigation

(9) Samuel H. Smith (Junior)
University of New Mexico - Albuquerque, NM
Relationship of Circulating Plasma Polyunsaturated Fatty Acids with Plasma Sex
Hormone-Binding Globulin
Mentor: Josephine Egan, M.D. and Chee Chia, M.D.

(10) Megan A. Sichler (Sophomore)
Cornell University - Ithaca, NY
Differential Expression and Function of Estrogen Receptor Alpha
and Estrogen Related Receptor Alpha in Ovarian Cancer Cell Lines
Mentor: Chester Frazier, M.D.

Laboratory of Epidemiology, Demography and Biometry

(11) Wajiha Z. Akhtar (Graduate Student-2nd year)
University of Florida - Gainesville, FL
Association of Chronic Kidney Disease with Cognitive Performance and Gait Speed in
Older Adults
Mentor: Kushang Patel, Ph.D.

(12) Shauna T. Linn (Sophomore)
Johns Hopkins University - Baltimore, MD
Gait Speed in the Older U.S. Population: Findings from the National Health and Nutrition
Examination Surveys, 1988-1994 and 1999-2002
Mentor: Kushang Patel, Ph.D. and Jack Guralnik, M.D., Ph.D.

(13) Melody Liu (Sophomore)
Thomas Jefferson High School for Science and Technology - Alexandria, VA
Assessing the Differences of Cognitive Profile among Dementia Subtypes
Mentor: Binbing Yu, Ph.D. and Caroline Phillips, M.S.

Laboratory of Genetics

(14) Chiemela J. Ogbonna (Sophomore)

University of Maryland Eastern Shore – Princess Anne, MD
MDZSCAN4 Response to DNA Damage Induced by Mitomycin-C
Mentor: Minoru Ko, Ph.D. and Michal Zalzman, Ph.D.

(15) Sandra M. Mantilla (Junior)

Florida International University - Miami, FL
Effect of Temperature on the Timing of Age-state Transitions in *c. Elegans*
Mentor: Ilya Goldberg, Ph.D.

(16) Hejia Wang (Freshman)

University of Pennsylvania - Philadelphia, PA
Investigating RecQL5-Associated Complex in Genome Stabilization
Mentor: Weidong Wang, Ph.D. and Nurul Islam, Ph.D.

(17) Christopher Chen (Sophomore)

Cornell University - Ithaca, NY
Tracking Directed Embryonic Stem Cell Differentiation Using Morphology and Pattern Recognition
Mentor: Ilya Goldberg, Ph.D. and John Delaney, Ph.D.

Laboratory of Immunology

(18) Loren L. Fierstein (Sophomore)

Towson University - Towson, MD
Is CCR4 Chemokine Receptor Leading Breast Cancer Cells to Lungs?
Mentor: Ioana Bodogai, Ph.D. and Arya Biragyn, Ph.D.

(19) Sean M. Zohorsky (2010 Graduate)

University of Dallas - Irving, TX
Role of PKC-theta in activating mTOR downstream signaling
Mentor: Paritosh Ghosh, Ph.D.

Laboratory of Molecular Gerontology

(20) Stephen L. Yu (Freshman)

University of Maryland College Park - College Park, MD
DNA Repair and Replication Fork Helicases Are Differentially Affected by Sugar Phosphate Backbone Modification
Mentor: Robert Brosh, Ph.D. and Suhasini Avvaru, Ph.D.

(21) Irfan S. Khan (Freshman)
Howard Community College - Columbia, MD
Functional Analysis of ChLR1 Helicase Defective in Warsaw Breakage Syndrome
Mentor: Robert Brosh, Ph.D.

(22) Jennifer A. Ross (Junior)
University of Kentucky - Lexington, KY
The Cloning, Purification, and Biological Characterization of the RecQ4 RAPADILINO Mutant
Mentor: Deb Croteau, Ph.D. and Vilhelm Bohr, M.D., Ph.D.

(23) Nicole A. Harris (2010 Graduate)
University of North Texas - Denton, TX
Delineating the Mechanisms by which the DNA Repair Protein APE1 Affects Genome Stability
Mentor: David Wilson, Ph.D.

Laboratory of Neuroscience

(24) Kriti D. Gandhi (Junior)
McGill University - Montreal, Canada
Combining Running and Environmental Enrichment Improves Open Field Adaptation and Adult Neurogenesis
Mentor: Henriette van Praag, Ph.D. and Tali Kobilov-Moav, Ph.D.

(25) Courtney M. Carroll (Junior)
Hamilton College - Clinton, NY
Does SKN-1/NRF2 impact Chemosensory Behavior?
Mentor: Catherine Wolkow, Ph.D.

(26) Kayla L. Mohr (Freshman)
Lynchburg College - Lynchburg, VA
Investigating the Role of PTEN Subcellular Compartmentalization in Differentiation and Proliferation of Murine Neuronal Stem Cells
Mentor: Simonetta Camandola, Ph.D.

(27) Nathan D. Herdener (Senior)
Oregon State University - Corvallis, OR
The Effects of Chronic Mild Stress on Alzheimer's Disease
Mentor: Sarah Rothman, Ph.D. and Mark Mattson, Ph.D.

(28) Mario A. Pita (Junior)
University of Central Florida - Orlando, FL
A Role for Toll-like Receptor 3 in Synaptic Plasticity and Cognition
Mentor: Eitan Okun, Ph.D.

Laboratory of Personality And Cognition

(29) Timothy J. Hohman (Graduate Student-3rd year)
American University - Washington, DC
Personality and Subjective Cognitive Complaints
Mentor: Lori Beason-Held, Ph.D.

Research Resources Branch

(30) Colleen T. Harrington (Junior)
University of Virginia - Charlottesville, VA
Analysis of Differential Protein Expression by DIGE and LC-MS
Mentor: Rong-Fong Shen, Ph.D.

NIDA

Behavioral Neuroscience Research Branch

(31) Elizabeth S. Cogan (Junior)

Montclair State University- Montclair, NJ

The Effect of Injection Duration on the Acquisition of Cocaine Self-Administration in Rats

Mentor: Charles Schindler, Ph.D.

(32) Amy N. Hamaker (Junior)

Brigham Young University-Provo, UT

The Effects of Food Restriction on Visual Signal Seeking

Mentor: Satoshi Ikemoto, Ph.D. and Fiori Vollrath-Smith, B.A.

(33) Shannon Y. Adams (Junior)

Phillips Academy - Andover, MA

Incubation of conditioned fear in the conditioned suppression model in rats: role of cue-shock interval, food restriction conditions, length of conditioned cue, and generality to conditioned freezing

Mentor: Charles Pickens, Ph.D.

(34) Makeda A. Carroll (Freshman)

Long Reach High School - Columbia, MD

Role of Neuronal Pentraxin 1 in the 6OHDA model of Parkinson's Disease

Mentor: Toni Shippenberg, Ph.D. and Silvia Pontis, Ph.D.

(35) Madeleine M. Mateo (1st year Graduate Student)

University of Maryland, College Park - College Park, MD

Cellular identity of Fos-labeled prefrontal cortex neurons in rat following reexposure to heroin-related cues

Mentor: Bruce Hope, Ph.D. and Sanya Fanous, Ph.D.

(36) Milo Hou (Junior)

Dulaney High School- Timonium, MD

Differential distribution of brain-derived neurotrophic factor (BDNF) and glial cell-derived neurotrophic factor (GDNF) in rat brain regions and peripheral tissues

Mentor: Qing Rong Liu, Ph.D.

(37) Lauren M. Belayneh (Junior)

The Madeira School- Alexandria, VA

Regional expression of green fluorescent protein (GFP) in cfos GFP transgenic rats following acute methamphetamine injection

Mentor: Bruce Hope, Ph.D. and Sanya Fanous, Ph.D.

(38) Matthew S. Miller (Senior)
Colgate University - Hamilton, NY
Modulation of Pain by Neuronal Pentraxins
Mentor: Toni Shippenberg, Ph.D. and Reggie Wang, Ph.D.

Cellular Neurobiology Research Branch

(39) Richard K. Rothman (Junior)
Franklin and Marshall College - Lancaster, PA
Action of cocaine in primary neurons: Hijacking sigma-1 receptors from the ER
mitochondrion interface
Mentor: ShangYi Tsai, Ph.D.

(40) Lina Montoya (Sophomore)
Johns Hopkins University - Baltimore, MD
Distribution of glutamatergic neurons and dopaminergic markers in the A10 dopamine
system
Mentor: Marisela Morales, Ph.D.

(41) Betsir G. Zemen (Sophomore)
University of Maryland Baltimore County - Baltimore, MD
Ventral tegmental input from the pedunculo pontine and laterodorsal tegmental nuclei is
dominated by glutamatergic and GABAergic neurons
Mentor: Marisela Morales, Ph.D.

(42) Ellen M. Gibson (Senior)
Virginia Commonwealth University- Richmond, VA
Imaging and structural analysis of phospholipids and sphingolipids in the brain.
Mentor: Amina Woods, M.D., Ph.D. and Alice Delvolve, Ph.D.

(43) Daniel D. Brauer (Junior)
Kamehameha High School- Honolulu, HI
DAD1R-Mediated Increase in Quantal Glutamate Synaptic Currents in the Lateral
Habenula: A Disappointing Circuit
Mentor: Carl Lupica, Ph.D. and Cameron Good, Ph.D.

(44) Ly Li (Sophomore)
University of Pittsburgh - Pittsburgh, PA
Application of qtRT-PCR for Phenotyping Cells
Mentor: Marisela Morales, Ph.D.

Chemical Biology Research Branch

(45) Ross W. Bittman (Junior)

Johns Hopkins University - Baltimore, MD

Ligand Binding Profile of Mu-Delta Dimer Opioid Receptors as Compared to Mu Opioid Receptors.

Mentor: Christina Dersch, M.S. and Richard Rothman, M.D., Ph.D.

(46) Sheila A. Dougherty (Graduate Student-1st year)

California State University - Chico, CA

Ligand Binding Profile of Mu-Delta Dimer Opioid Receptors as Compared to Delta Opioid Receptors.

Mentor: Christina Dersch, M.S. and Richard Rothman, M.D., Ph.D.

(47) Catrissa L. LightfootSiordia (2nd Year)

UC San Diego School of Medicine - La Jolla, CA

Characterization of Partial Substrates of the Dopamine Transporter

Mentor: Richard Rothman, M.D., Ph.D. and John Partilla, B.S.

Medications Discovery Research Branch

(48) Jonathon S. Farzanfar (Senior)

Towson University - Towson, MD

Acute and Chronic Effects of Cocaine in Planaria (*Dugesia Tigrina*)

Mentor: Jonathan Katz, Ph.D. and Jonathan Slezak, Ph.D.

(49) Kaylin K. Tsukayama (Junior)

Kamehameha Schools/Kapalama Campus - Honolulu, HI

Effects of modafinil on mesolimbic dopamine transmission

Mentor: Jonathan Katz, Ph.D. and Gianluigi Tanda, Ph.D.

Molecular Neurobiology Research Branch

(50) Jacqueline Ibarra (Junior)

The Preuss School UCSD - La Jolla, CA

Distribution of Glutamatergic Neurons and Dopamine D2 Receptors in the A10 Dopamine System

Mentor: Marisela Morales, Ph.D. and Stanley Ng, B.A.

(51) Jocelyn M. Reaves (Junior)

Saint Ignatius College Prep - Chicago, IL

Amphetamine locomotion in VMAT2 KO/synuclein overexpressing double transgenic mice

Mentor: Frank Hall, Ph.D. and George Uhl, M.D., Ph.D.

(52) Carina L. Felix (Senior)
St. Croix Educational Complex High School - St. Croix, MD
Effect of KEPI (Ppp1r14c) Deletion on Fentanyl Analgesia
Mentor: Jana Drgonova, Ph.D.

Molecular Neuropsychiatry Research Branch

(53) Ping T. Yeh (Graduate Student-1st year)
Rice University - Houston, TX
Posttreatment with Amphetamine Enhances Reinnervation in Stroke Rats
Mentor: Yun Wang, M.D., Ph.D. and Hui Shen, M.D.

(54) Moshe A. Honick (Sophomore)
Montgomery College - Rockville, MD
Methamphetamine induces Sch23390 sensitive increases in the striatal expression of inhibin beta A and follistatin.
Mentor: Genevieve Beauvais, M.S.

(55) Shanan Kumar (Senior)
Saint Andrew's School - Boca Raton, FL
Methamphetamine Self-Administration Causes Alterations in the Expression of Glutamate NMDA Receptors in the Striatum
Mentor: Irina Krasnova, Ph.D. and Jean Cadet, M.D.

(56) Jose E. Rivas (Senior)
Suffield Academy - Suffield, CT
Differential Expression of Striatal Metabotropic Glutamate Receptors Consequent to Methamphetamine Self-Administration
Mentor: Irina Krasnova, Ph.D. and Jean Cadet, M.D.

(57) Kelsey Vargas (Graduate Student-3rd year)
DePaul University- Chicago, IL
Chronic Methamphetamine Administration Alters the Expression of Genes Involved in Regulating Synaptic Plasticity in the Rat Striatum.
Mentor: Subramaniam Jayanthi, Ph.D.

(58) Jessica Brannock (Senior)
Patapsco High and Center for the Arts - Baltimore, MD
Activin A and Follistatin Participate in Methamphetamine-Induced Neuroadaptions in the Rat Striatum
Mentor: Subramaniam Jayanthi, Ph.D. and Jean Cadet, M.D.

- (59) Jonathan S. Na (Senior)
Phillips Academy - Andover, MA
Acute effects of a nontoxic dose of methamphetamine on Ier2, Slco2a1, and Sik1 expression in the rat striatum
Mentor: Jean Cadet, M.D. and Michael McCoy, M.S.
- (60) Jacqueline A. Wulu (Graduate Student 1st year -)
Drexel University - Philadelphia, PA
Chronic methamphetamine administration results in differential expression of neuromedin U, tachykinins 1 and 2 as well as their receptors in the rat striatum
Mentor: Subramaniam Jayanthi, Ph.D. and Jean Cadet, M.D.
- (61) Maile K. Hollinger (Junior)
Kamehameha High School - Honolulu, HI
Screening of small molecules for neuroprotective activity against methamphetamine neurotoxicity in rat primary ventral mesencephalic cultures
Mentor: Yun Wang, M.D., Ph.D. and Katie Zuchowski, M.A.
- (62) Munanchu Poudel (Freshman)
Towson High School-Towson, MD
A Single Exposure to Methamphetamine Altered Gene Expression Responses to Acute Methamphetamine Challenge: Focus on the AP1 Family of Transcription Factors
Mentor: Jean Cadet, M.D. and Irina Krasnova, Ph.D.
- (63) Anthony L. Rooks (Senior)
Gilman - Baltimore, MD
The effects of mesencephalic astrocyte-derived neurotrophic factor (MANF) on protein trafficking in SY5Y cells
Mentor: Brandon Harvey, Ph.D.
- (64) April Zhu (Senior)
Centennial High School - Ellicott City, MD
The Effects of Methamphetamine on Locomotion in C. Elegans
Mentor: Brandon Harvey, Ph.D. and Christopher Richie, M.D.
- (65) Tom Liang (Sophomore)
Johns Hopkins University - Baltimore, MD
Voltammetric Recording in Drug-Sensitized Mice
Mentor: Yun Wang, M.D., Ph.D.
- (66) Rashalai A. Currington (Senior)
University of Maryland Eastern Shore - Princess Anne, MD
Methamphetamine Self-administration is Associated with Changes in the Expression of Glutamate AMPA Receptors
Mentor: Irina Krasnova, Ph.D. and Jean Lud Cadet, M.D.

(67) Brian R. Katz (Senior)
Atholton High School - Columbia, MD
A Single Exposure to Methamphetamine Altered Gene Expression Responses to Acute
Methamphetamine Challenge: Focus on the AP1 Family of Transcription Factors
Mentor: Jean Cadet, M.D. and Irina Krasnova, Ph.D.

Neuroimaging Research Branch

(68) Andrew C. Chaffin (Graduate Student-1st year)
Brigham Young University - Provo, UT
Conditioned odor preference in the Common Marmoset (*Callithrix jacchus*): a validation
study
Mentor: Elliot Stein, Ph.D. and Annabelle Belcher, Ph.D.

(69) Justin E. Morales (Senior)
Sterling High School - Somerdale, NJ
Duration and Efficacy of Glycopyrrolate to Reduce Pilocarpine-Induced Secretory
Activity
Mentor: Bruce Vaupel, Ph.D.

(70) Laura Hobbs (Graduate Student-2nd year)
University of Rochester - Rochester, NY
Menstrual cycle influences on resting state functional connectivity
Mentor: Betty Jo Salmeron, M.D. and Elliot Stein, Ph.D.

(71) Hafeez O. Sulaimon (Graduate Student-4th year)
The Hun School of Princeton - Ewing, NJ
Neurochemical Changes in the Rat Anterior Cingulate Cortex and Hippocampus after
Chronic Ethanol Exposure measured by Magnetic Resonance Spectroscopy.
Mentor: Elliot Stein, Ph.D. and Svetlana Chefer, Ph.D.

(72) Likun Xi (Sophomore)
Duke University - Durham, NC
Spontaneous Neuronal Activity in the Rat Whisker Barrel Cortices Modulated by
Whisker Stimulation
Mentor: Hanbing Lu, Ph.D. and Yihong Yang, Ph.D.

(73) Yue Wang (2010 Graduate)
University of Arizona -Tucson, AZ
Characterization of Brain Activity in Neuropathic Pain Rats
Mentor: Yihong Yang, Ph.D.