

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

**Present**

***Summer Student Poster Day 2012***

**Tuesday, August 7, 2012**

**Poster Presentations**

**1:00 p.m. - 4:00 p.m.**

**Biomedical Research Center**

**Baltimore, MD**

***Light Refreshments Will be Served\****

***\*All light refreshments purchased via personal funds donated by the Training Directors of NIA and NIDA.***

## NIA

### **Brain Physiology & Metabolism Section**

(1) Alisha Jamil (Sophomore)  
Johns Hopkins University - Baltimore, MD  
Altered insulin signaling in the postmortem frontal cortex of Alzheimer's Disease patients  
Mentor: Jagadeesh Rao, Ph.D.

### **Clinical Research Branch**

(2) Marjan Nabili (Graduate School - 3rd Year)  
The George Washington University - Washington, DC  
Computer-Aided Thigh Composition Assessment and Muscle Quality Characterization from MR Images  
Mentor: Sokratis Makrogiannis, Ph.D.

(3) Richard Zheng (Graduate School - 1st Year)  
SUNY Stony Brook Medical School - Stony Brook, NY  
Ankle Proprioception, Balance, and Falls in Older Adults  
Mentor: Eleanor Simonsick, Ph.D.

(4) Govind Warriar (Graduate School - 1st Year)  
University of Kentucky - Lexington, KY  
Age Associated Changes in Left Ventricular Strain  
Mentor: James Strait, M.D., Ph.D.

(5) Olubusayo A. Awe (Senior)  
Morehouse College - Atlanta, GA  
Fungiform Papillae Density in the Baltimore Longitudinal Study of Aging  
Mentor: Chee Chia, M.D. and Josephine Egan, M.D.

### **Laboratory of Behavioral Neuroscience**

(6) Alexander V. Tereshchenko (Senior)  
University of Michigan - Ann Arbor, MI  
Brain Activation during Risky Decision Making  
Mentor: Lori Beason-Held, Ph.D. and Joshua Goh, Ph.D.

(7) Devin English (Graduate School - 2nd Year)  
The George Washington University - Washington, DC  
Community Composition, Racial Discrimination, and Depressive Symptoms in African Americans  
Mentor: Alan Zonderman, Ph.D.

## **Laboratory of Cardiovascular Science**

(8) Kathy T. Wang (Junior)

Mount Hebron High School - Ellicott City, MD

Involvement of MFG-E8 in the Pathogenesis of the Age-associated Atherosclerosis

Mentor: Mingyi Wang, M.D., Ph.D. and Richard Telljohann, M.S.

(9) Toni-Rose M. Guiriba (Sophomore)

Baltimore City Community College - Baltimore, MD

Does the variability in pacemaker cell action potential firing rate depend upon age and autonomic receptor stimulation?

Mentor: Yael Yaniv, Ph.D.

(10) Allison M. Register (Sophomore)

University of Delaware - Newark, DE

Beneficial effects of Resveratrol in the rat chronic heart failure model: Not a magic bullet

Mentor: Mark Talan, M.D., Ph.D. and Shannon Marshall

(11) Lisa A. Tang (Junior)

Dulaney High - Timonium, MD

Applying Split-GFP Tripartite Technology to Study RAGE Interactions and Signaling

Mentor: Li Lin, Ph.D., Wei Wen, Ph.D., and Rebecca Riebe

(12) Nuphar Lendner (Senior)

University of Rochester - Rochester, NY

Proposal for a unifying theory of metabolism, biogenesis, growth, longevity and aging via coordinated regulation of citrate/acetyl-flux dynamics

Mentor: Magdalena Juhaszova, Ph.D.

## **Laboratory of Clinical Investigation**

(13) Ariel C. Harrison (Senior)

Southern University and A & M College - Baton Rouge, LA

Sweet tastants influence cellular differentiation in the gastrointestinal system

Mentor: Josephine Egan, M.D.

(14) Mathavi G. Sankar (Sophomore)

Centennial High School - Ellicott City, MD

Mitochondrial-associated genes in a novel model of aging

Mentor: Bronwen Martin, Ph.D. and Sana Siddiqui, Ph.D.

(15) Khalea A. Wrensford (Senior)  
Howard University - Washington, DC  
Cannabinoid 1 Receptor Antagonists Increase Insulin Content in Diabetic Mice  
Mentor: Josephine Egan, M.D. and Wook Kim, Ph.D.

(16) Jamar J. Borland (Sophomore)  
University of Central Florida - Orlando, FL  
Protein Expression and Activity Analysis of Serine Racemase with Ketamine and its Metabolites  
in PC-12 and 1321N1 cells  
Mentor: Rajib Paul, Ph.D.

### **Laboratory of Epidemiology, Demography, and Biometry**

(17) Jingbo Yi (Junior)  
Cornell University – New York  
Estimating partial attributable risks of dementia for multiple risk factors  
Mentor: Bingbing Yu, Ph.D.

### **Laboratory of Experimental Gerontology**

(18) Christian Amador (Graduate School - 1st Year)  
Saint Louis University - St. Louis, MO  
Cytochrome B5 Reductase overexpression increases lifespan in mice  
Mentor: Alejandro Martin-Montalvo, Ph.D. and Rafael de Cabo, Ph.D.

(19) Cecilia Wang (Graduate School - 1st Year)  
Saint Louis University - St. Louis, MO  
The Prolongevity Effect of A Cranberry Extract in *Drosophila melanogaster*  
Mentor: Sige Zou, Ph.D.

(20) Annia Mesa (Graduate School - 2nd Year)  
Florida International University - Miami, FL  
Effect of age on skeletal muscle stem cell abundance and activation  
Mentor: Jessica Curtis, Ph.D. and Rafael de Cabo, Ph.D.

### **Laboratory of Genetics**

(21) Jacob C. Kimmel (Senior)  
Satellite High School - Satellite Beach, FL  
Do Different Tissues Age at Different Rates?  
Mentor: Ilya Goldberg, Ph.D.

(22) Melissa A. Beyer (Junior)  
Clemson University - Clemson, SC  
Foxl2 and Lhx8 regulation of the cortico-medullary gradient of the ovary by control of extracellular matrix organization: A possible factor in premature ovarian failure  
Mentor: Emanuele Pelosi, Ph.D.

(23) Nikki C. Boggess (Junior)  
University of Kansas - Lawrence, KS  
Best 2, a sweat gland expressed gene, recombineering based promoter isolation and characterization.  
Mentor: Ramaiah Nagaraja, Ph.D.

(24) Huiwen Liu (Sophomore)  
Rice University - Houston, TX  
Topoisomerase 3-beta is essential for the normal stress response and locomotion in *Drosophila melanogaster*  
Mentor: Weidong Wang, Ph.D. and Weiping Shen, Ph.D.

### **Laboratory of Molecular Biology and Immunology**

(25) Michael R. Patlovich (Senior)  
F.W. Buchholz High School - Gainesville, FL  
BLC-PE38 is a novel formulation that efficiently depletes B cells expressing CXCR5  
Mentor: Arya Biragyn, Ph.D.

(26) Katherine W. Turlington (Sophomore)  
University of Maryland - College Park, MD  
The Effect of Age on B Cell Populations and Function  
Mentor: Patricia Gearhart, Ph.D. and Lisa Russell, Ph.D.

(27) William B. Zhang (Junior)  
Duke University - Durham, NC  
Age-associated Changes in Murine Naive T Lymphocytes  
Mentor: Nan-ping Weng, M.D., Ph.D.

(28) Nahal M. Sadegh (Sophomore)  
Loyola University Maryland - Baltimore, MD  
Differential mTOR signaling in wild type vs. Lck -/- Jurkat cells  
Mentor: Paritosh Ghosh, Ph.D. and Rachel Munk, B.S.

(29) Diana J. Cardenas (Junior)  
The Good Hope School - Christiansted, VI  
Post-transcriptional Regulation of C-reactive Protein  
Mentor: Nicole Noren Hooten, Ph.D. and Michele Evans, M.D.

(30) Jason W. Xu (Senior)  
Great Valley High School - Malvern, PA  
Linking long noncoding RNA to cellular senescence  
Mentor: Myriam Gorospe, Ph.D. and Kotb Abdelmohsen, Ph.D.

### **Laboratory of Molecular Gerontology**

(31) Fourbears S. George (Senior)  
Eastern Michigan University - Ypsilanti, MI  
Specificity of Fe-S Cluster DNA Helicases to Unwind G-Quadruplex Structures that Interfere with Genomic Stability  
Mentor: Robert Brosh, Ph.D.

(32) James K. Wang (Graduate School - 3rd Year)  
California State University, Los Angeles - Los Angeles, CA  
Effects of Diet on Mitochondrial Functions in a Mouse Model of Premature Aging  
Mentor: Morten Scheibye-Knudsen, M.D.

### **Laboratory of Neurogenetics**

(33) Ginamarie Shrader (Senior)  
Eleanor Roosevelt High School - Greenbelt, MD  
Mutational Spectrum of RAB24 and GBA2 in Recessive Ataxia Monia BenHamed Hammer  
Mentor: Andrew Singleton, Ph.D.

### **Laboratory of Neuroscience**

(34) Cassius A. Bajoo (Graduate School - 4th Year)  
Florida International University - Miami, FL  
Repositioning of Dipeptidyl Peptidase 4 (DPP-4) Inhibitors Effective in Type 2 Diabetes Mellitus (T2DM) as a Treatment Strategy for Parkinsons Disease.  
Mentor: Nigel Greig, Ph.D. and Yazhou Li, Ph.D.

(35) Sarah C. Collica (Junior)  
Yale University - New Haven , CT  
The link between muscle alpha2-AMPK activity and memory function.  
Mentor: Tali Kobil, Ph.D. and Henriette van Praag, Ph.D.

(36) Hongyu Chen (Freshman)  
Dartmouth College - Hanover, NH  
Finding Word Associations from Gene Sets  
Mentor: Stuart Maudsley, Ph.D. and Bronwen Martin, Ph.D.

(37) Soumya Chigurupati (Freshman)

Notre Dame of Maryland University – Baltimore, M.D.

A Role for DNA Repair Protein Polymerase Beta in Cognition and Anxiety

Mentor: Sarah Rothman, Ph.D., Peter Sykora, Ph.D., and Mark Mattson, Ph.D.

### **Research Resources Branch**

(38) Clarence R. Manual (Graduate School - 2nd Year)

University of Medicine and Dentistry - Newark, NJ

Investigating genomic instability in single-cell hippocampal neurons in Alzheimer Disease

Mentor: Kevin Becker, Ph.D.

# **National Institute on Drug Abuse**

## **Office of the Scientific Director – Animal Care Section**

(39) Taylor Parker (Sophomore)  
Kansas State University - Manhattan, KS  
Can You Telazol the Difference? A Comparative Study of Ketamine-Xylazine and  
Telazol-Xylazine for Anesthesia in Rats  
Mentor: Kyle Stump, D.V.M.

## **Behavioral Neuroscience Research Branch**

(40) Ricky Abichandani (Junior)  
Union County Magnet High School - Scotch Plains, NJ  
Double Labeling Immunohistochemistry for Somatostatin and Fos in Rat Striatum  
Mentor: Bruce Hope, Ph.D.

(41) Yasmeen Watson (Junior)  
The Agnes Irwin School - Rosemont, PA  
An Examination of the Effectiveness and Permanence of Gradual Extinction in Suppressing  
Pavlovian Approach Behavior for Food  
Mentor: Charles Pickens, Ph.D.

(42) Tommy N. Nguyen (Graduate School - 4th Year)  
University of Maryland School of Medicine - Baltimore, MD  
Effects of Food Restriction and Amphetamine on Tone Seeking Behavior in Rats  
Mentor: Satoshi Ikemoto, Ph.D.

(43) Erica Richardson (Freshman)  
Western High School - Baltimore, MD  
Double Labeling Immunohistochemistry for Parvalbumin and Fos in Rat Striatum  
Mentor: Bruce Hope, Ph.D.

(44) Erin Richardson (Freshman)  
Western High School - Baltimore, MD  
Effects of Dopamine Neuron Inhibition on Pavlovian Discrimination Learning with Food in Mice  
Mentor: Satoshi Ikemoto, Ph.D.

(45) Sarah Schwarzschild (Junior)  
Johns Hopkins University - Baltimore, MD  
Possible Role of Peripheral Effect of Nicotine on Locomotor Sensitization  
Mentor: Eugene Kiyatkin, M.D., Ph.D. and Yavin Shaham, Ph.D.

(46) Rahel Zemen (Freshman)  
University of Maryland Baltimore County - Catonsville, MD  
Novel Place Preference Test For Rats  
Mentor: Roy Wise, Ph.D.

(47) Syrena M. Bracey (Junior)  
St. Stephen's and St. Agnes School - Alexandria, VA  
The Effect of Nicotine on Rats Previously Exposed to THC  
Mentor: Charles Schindler, Ph.D. and Leigh Panlilio, Ph.D.

(48) George L. Hartstein (Junior)  
Emory University - Atlanta, GA  
Assessing the Ability of JM6 to Prevent Neurodegeneration in a Mouse Model of Alzheimer's Disease  
Mentor: Charles Schindler, Ph.D.

(49) Joy Stewart (Senior)  
Morgan State University - Baltimore, MD  
Escalation of Cocaine Self-Administration in Rats with Nosepoke as an Operant  
Mentor: Charles Schindler, Ph.D.

### **Cellular Neurobiology Research Branch**

(50) Patricia Bai (Junior)  
Dulaney High School - Timonium, MD  
GFP Reporter Plasmids Detecting Tubulin Expression in vitro  
Mentor: William Freed, Ph.D. and Mark Coggiano, M.S.

(51) Maame A. Agyapong (Junior)  
REACH! Partnership High School - Baltimore, MD  
BIII-Tubulin in Vitro Human Cellular Module  
Mentor: William Freed, Ph.D. and Ora Dillon-Carter, M.S.

(52) Andy Lin (Junior)  
Saint Mary's High School - Stockton, CA  
Generation of Pre-frontal Cortical Tissue from Human Embryonic Stem Cells  
Mentor: Chun-Ting Lee, Ph.D.

(53) Grace A. Blair (Sophomore)  
University of North Carolina at Chapel Hill - Chapel Hill, NC  
Exploring the Contribution of the Orbitofrontal Cortex to the Computation of Aggregate Prediction Error in a Superconditioning Task  
Mentor: Guillermo Esber, Ph.D. and Geoffrey Schoenbaum, M.D., Ph.D.

(54) Will Johnson (Junior)  
Catonsville High School – Catonsville, MD  
Assessing the Effect of Cocaine Use on Different Forms of Value Based Behavior and Learning  
Mentor: Joshua Jones, Ph.D and Geoffrey Schoenbaum, M.D., Ph.D.

(55) Martha W. Zemen (Junior)  
Paint Branch High School - Burtonsville, MD  
Serotonin Projection from the Dorsal Raphe Nucleus  
Mentor: Antonello Bonci, M.D. and Geoffrey Schoenbaum, M.D., Ph.D.

(56) Navkiran Aujla (Senior)  
Whitman College – Walla Walla, WA  
Encoding the Value of Actions: The Effect of Orbitofrontal Cortical Input on Striatal Neural Activity during Decision Making  
Mentor: Thomas Stalnaker, Ph.D. and Geoffrey Schoenbaum, M.D., Ph.D.

(57) Keenan T. Hope (Senior)  
Long Reach High School - Ellicott City, MD  
Sigma 1 Receptor Antagonists Prevent Cocaine- Induced Locomotion and NAc Firing Adaptations  
Mentor: Said Kourrich, Ph.D.

(58) Mark V. Wilcox (Graduate School – 1st year)  
Johns Hopkins University – Baltimore, MD  
Analysis of Neuronal Activity in the Insular Cortex Using in vivo Recording Techniques  
Mentor: Antonello Bonci, M.D. and Ikue Kusumoto, Ph.D.

(59) David O. Ahumada (Junior)  
Walter Payton College Prep - Chicago, IL  
Electrophysiological Characterization of Orbitofrontal Cortical Neurons in Cocaine- Experienced Rats  
Mentor: Carl Lupica, Ph.D.

### **Integrative Neuroscience Research Branch**

(60) Helen Kong (Senior)  
Centennial High School - Ellicott City, MD  
Immediate Early Gene Expression in the Striatum of a Mouse Model of Slow Dopamine Degeneration  
Mentor: Cristina Backman, Ph.D.

(61) Kun Leng (Freshman)  
Columbia University - New York, NY  
Changes in the Brain Lipid Profile of MDMA Binge Administered Rats  
Mentor: Amina Woods, Ph.D. and Jeremy Post, B.S.

(62) Damilola O. Dada (Junior)  
Clear Falls High School - League City, TX  
Analysis of Heart Lipids Using MALDI-MS  
Mentor: Amina Woods, Ph.D. and Ludovic Muller, Ph.D.

(63) Natasha Ceballos (Junior)  
The Good Hope School - USVI  
Cocaine Induces Sig- 1R Nuclear Membrane Translocation and thereby Regulates Gene  
Expression via Interacting with Nuclear Membrane Proteins  
Mentor: Tsung-Ping Su, Ph.D. and Cheing-Ying Chuang, Ph.D.

(64) Isobel A. Hawes (Junior)  
Science and Mathematics Academy - Aberdeen, MD  
Cocaine Treatment Increases Dendritic Spine Formation by Regulating the Phosphorylation of  
Nrf2 through Sigma-1 Receptors  
Mentor: Shao-an Wang, M.S. and Tsung-Ping Su, Ph.D.

(65) Safiya Correia (Freshman)  
Boston University - Boston, MA  
Cellular Composition of the A10 Region  
Mentor: Marisela Morales, Ph.D. and Hui-Ling Wang, Ph.D.

(66) Connor P. Reeves (Junior)  
University of Maryland - College Park, MD  
Glutamatergic Neurons in the Mesohabenular Pathway in Rats  
Mentor: Marisela Morales, Ph.D. and David Root, Ph.D.

### **Chemical Biology Research Branch**

(67) Serena Yin (Junior)  
Johns Hopkins University - Baltimore, MD  
Effects of Cocaine on the Expression of Cannabinoid CB2 Receptors in Mouse Brain  
Mentor: Zheng-Xiong Xi, M.D., Ph.D. and Eliot Gardner, Ph.D.

(68) Giselle Appel (Sophomore)  
George Washington University – Washington, DC  
Effects of Modafinil on Nicotine Self-Administration in Rats  
Mentor: Zheng-Xiong Xi, M.D., Ph.D. and Eliot Gardner, Ph.D.

(69) Biko McMillan (Junior)  
St. Croix Educational Complex High School – St. Croix, USVI  
Effects of Modafinil on Cocaine Self Administration in Rats  
Mentor: Zheng-Xiong Xi, M.D., Ph.D.

## **Clinical Pharmacology and Therapeutics Research Branch**

(70) Kathleen Harrelson (Senior)  
University of Maryland, College Park – College Park, MD  
Intensive Physiological Monitoring in the Field: Stress, Drugs, and Craving  
Mentor: Kenzie Preston, Ph.D.

(71) Shatevia S. Stone (Graduate School - 2nd Year)  
South Carolina State University – Orangeburg, SC  
Do People Who Use Cocaine and/or Heroin Have Disrupted Circadian (Day/Night) Cycles?  
Mentor: Kenzie Preston, Ph.D. and Michelle Jobes, Ph.D.

(72) George H. Burton (Senior)  
Salisbury University – Salisbury, MD  
Predicting Smoking Risk Perception in Smokers With and Without Schizophrenia  
Mentor: Bill Kowalyczk, Ph.D. and Stephen Heishman, Ph.D.

## **Molecular Targets & Medications Discovery Research Branch**

(73) Aaron Chafitz (Sophomore)  
University of Maryland – College Park, MD  
Assessment of Modafinil (Provigil) Actions on Cocaine- induced Stimulation of Mesolimbic Dopamine Neurotransmission  
Mentor: Gianluigi Tanda, Ph.D.

(74) Gabriel Yepes (Junior)  
Montgomery College – Rockville, MD  
Mapping the Infralimbic and Prelimbic Cortical Projections to the Nucleus Accumbens by Using Electrical Stimulation and MAP-kinase Phosphorylation  
Mentor: Cesar Quiroz- Molina, Ph.D.

(75) Sydney N. Hawkins (Senior)  
James Irwin Charter High School – Colorado Springs, CO  
Involvement of Dopamine D4 Receptor and Reinforcing Effects of Food: A Behavioral-Economic Assessment  
Mentor: Jonathan Katz, Ph.D. and Dawn French-Evans, B.S.

(76) Stephanie D. Hopkins-Spencer (Senior)  
The Charter School of Wilmington – Wilmington, DE  
A Pharmacological Analysis of the Affects of Cocaine on Locomotion in Planaria (*Dugesia dorotocephala*)  
Mentor: Jonathan Katz, Ph.D. and Bettye Campbell

(77) Curtis A. Bradley (Graduate School -1st year)  
James Madison University – Harrisonburg, VA  
A Comparison of the Impact of Methylphenidate and Atomoxetine on Impulsive Choice in the Rat  
Mentor: Jonathan L Katz, Ph.D.

(78) Yamini T. Naidu (Junior)  
Valley Catholic High School – Beaverton, OR  
Characterization of Intracellular Signaling in Cells expressing the Dopamine D1 Receptor and the Dopamine D1-D3 Heteromer  
Mentor: Xavier Guitart, Ph.D. and Sergi Ferre, M.D., Ph.D.

(79) Jessica C. Brannock (Sophomore)  
Salisbury University – Salisbury, MD  
Serotonin Syndrome: Comparison of Citalopram and Escitalopram  
Mentor: Jonathan Katz, Ph.D. and Dawn French-Evans, B.S.

(80) Jennifer R. Cha (Senior)  
Cherry Hill High School East – Cherry Hill, NJ  
Identification of a mGlu 5b-mAChR M4 Heteromer in HEK293 Cells Via Bioluminescence Resonance Energy Transfer (BRET)  
Mentor: Ning- Sheng Cai, M.D., Ph.D. and Sergi Ferri, M.D., Ph.D.

### **Molecular Neurobiology Research Branch**

(81) Christopher A. Aremu (Junior)  
The Tome School – North East, MD  
The Effects of Combined Genetic Manipulations of the Vesicular Monoamine Transporter 2 (VMAT2) and  $\alpha$ -Synuclein on Amphetamine Stimulated Behavior  
Mentor: George Uhl, M.D., Ph.D. and F. Scott Hall, Ph.D.

(82) Isaiah N. Maze (Senior)  
Paul Laurence Dunbar High School – Baltimore, MD  
Nicotine Consumption in Cadherin 13 Knockout Mice  
Mentor: George Uhl, M.D., Ph.D. and F. Scott Hall, Ph.D.

(83) Bryson Lochte (Junior)  
Dartmouth College – Hanover, NH  
Behavioral Characterization of PTPRD Knockout Mice  
Mentor: Jana Drgonova, Ph.D.

(84) Elizabeth Arnold (Senior)  
University of Maryland, College Park – College Park, MD  
The Effects of Cadherin 13 Knockout on Behavior Relevant to Attention-Deficit Hyperactivity Disorder  
Mentor: George Uhl, M.D., Ph.D. and Frank Hall, Ph.D.

(85) Nailah C. Barry (Junior)  
Charlotte Amalie High School – St. Thomas, VI  
Cocaine Conditioned Place Preference in NrCAM Knockout Mice  
Mentor: George Uhl, M.D., Ph.D. and F. Scott Hall, Ph.D.

(86) Alexandra Houston-Ludlam (Senior)  
University of Maryland, College Park – College Park, MD  
The Effects of Gene Knockout of the Vesicular Monoamine Transporter 2 (VMAT2; SLC18A2) and the Dopamine Transporter (DAT; SLC3A6) on Ethanol Consumption and Escalation in Mice  
Mentor: F. Scott Hall, Ph.D., and George R. Uhl, M.D., Ph.D.

(87) Stephanie Golub (Senior)  
University of Maryland, College Park – College Park, MD  
The Effects of Gene Knockout of the Vesicular Monoamine Transporter 2 (VMAT2; SLC18A2) and the Dopamine Transporter (DAT; SLC3A6) on Taste Sensitivity  
Mentor: F. Scott Hall, Ph.D., and George R. Uhl, M.D., Ph.D.

(88) Nathan McDonald (Senior)  
Johns Hopkins University – Baltimore, MD  
The Effects of NrCAM Knockout and Cocaine Conditioned Place Preference on Spinogenesis in Anterior Cingulate Cortex  
Mentor: George Uhl, M.D., Ph.D. and F. Scott Hall, Ph.D.

### **Molecular Neuropsychiatry Research Branch**

(89) Shibani Chettri (Freshman)  
The Ohio State University – Columbus, OH  
Epigenetic Basis of Methamphetamine-induced Changes in Avp and Crh mRNA Expression  
Mentor: Bruce Ladenheim, B.A. and Jean Lud Cadet, M.D.

(90) Angela A. Udofa (Senior)  
McKinley Senior High School – Baton Rouge, LA  
Neurotensin and Neuropeptide B mRNA Expression in the Nucleus Accumbens of Methamphetamine Self-Administering Rats  
Mentor: Subramaniam Jayanthi, Ph.D.

(91) Juliet C. Arcila Rojas (Junior)

Randolph- Macon Academy – Front Royal, VA

Role of Neuronal Pentraxin-1 in METH-induced Toxicity in the Mouse Brain

Mentor: Irina Krasnova, Ph.D.

(92) Zhuoheng Deng (Junior)

Vanderbilt University – Nashville, TN

Epigenetic Basis of Methamphetamine-Induced Changes in the Expression of Glutamate NMDA Receptor Subunits

Mentor: Mike McCoy, M.S. and Jean Lud Cadet, M.D.

(93) Joshua D. Newman (Sophomore)

University of Virginia – Charlottesville, VA

Combining Focused Ultrasound and Microbubbles for Localized BBB Disruption in Rat Striatum

Mentor: Brandon Harvey, Ph.D.

(94) Anthony Gonzaga (Junior)

Lakeside High School – Seattle, WA

The effects of BMP-7 on the extracellular matrix in primary neuron cultures

Mentor: Brandon Harvey, Ph.D., and Doug Howard

(95) Rodden J. Reyes (Junior)

Patterson High School – Baltimore, MD

The c-terminus of Mesencephalic Astrocyte-derived Neurotrophic Factor and ER Stress-induced Protein Secretion

Mentor: Mark Henderson, Ph.D. and Brandon Harvey, Ph.D.

(96) Bernard Boateng (Senior)

Florida A&M University – Tallahassee, FL

Effects of Methamphetamine-Self Administration on Avp, Avpr1b, and CRF mRNA Levels in the Rat Nucleus Accumbens

Mentor: Subramaniam Jayanthi, Ph.D.

(97) Adele J. Fu (Junior)

Marriotts Ridge High School – Marriottsville, MD

The Protective Effect of Incretin in Cell Culture

Mentor: Yun Wang, M.D., Ph.D. and Yi He, Ph.D.

(98) Christine Y. Shen (Sophomore)

Marriotts Ridge High School – Marriottsville, MD

Modifications on Voltammetric Sensors for Dopamine Detection

Mentor: Yun Wang, M.D., Ph.D.

## Neuroimaging Research Branch

(99) Saheedat O. Sulaimon (Junior)

The Hun School of Princeton – Princeton, NJ

How Does Rat Whisker Stimulation Modulate Ongoing Brain Activity? An fMRI Study

Mentor: Elliot Stein, Ph.D. and Hanbing Lu, Ph.D.

(100) Kayla Harley (Senior)

Charles H. Flowers High School – Springdale, MD

The Effect of Prenatal Drug Exposure on the Adolescent Brain

Mentor: Betty Jo Salmeron, M.D. and Yihong Yang, Ph.D.

(101) Gazi M. Rashid (Junior)

Georgia Institute of Technology – Atlanta, GA

A Functional Imaging Study of Risk-Taking Behaviors in MDMA Users

Mentor: Elliot Stein, Ph.D. and Vani Pariyadath, Ph.D.

(102) Guang Yang (Graduate School – 1st Year)

University of California: San Diego – San Diego, CA

Predicting Cocaine Dependency from Brain Circuitry using SVM Classification

Mentor: Elliot Stein, Ph.D.

(103) Rachel Feinberg (4th Year)

University of Denver – Denver, CO

Effect of BDNF Val66Met and Childhood Trauma on Brain Volume and Resting-State Functional Connectivity in Healthy Volunteers

Mentor: Mary Lee, M.D.

(104) Connor Shope (Junior)

University of Virginia – Charlottesville, VA

Using Arterial Spin Labeling to Predict Relapse in Cocaine Dependent Individuals

Mentor: Hong Gu, Ph.D.

(105) Katriana M. Simmon (Senior)

Holy Innocents' Episcopal School – Atlanta, GA

Correlation of Resting State Functional Connectivity (rsFC) with Symptoms of Trauma, Dissociation and Difficulties in Emotional Regulation in Healthy Controls and Drug Users

Mentor: Mary Lee, M.D.