

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

**Present**

***Summer Student Poster Day 2013***

**Tuesday, August 6, 2013**

**12:30 p.m. - 3:00 p.m.**

**NIH Biomedical Research Center**

**Baltimore, MD**

***Light Refreshments Will be Served***  
***(light refreshments are donated by Drs. Bonci and Ferrucci)***

## NIA

### **Laboratory of Behavioral Neuroscience (LBN)**

(1) Ashley V. Lawrence (Senior)

University of Notre Dame - Notre Dame, IN

Cortisol Exposure Mediation of Age Related Changes in Brain Volume and Function

Mentor: Susan Resnick, Ph.D. and Yang An, M.S.

(2) Kaivalya S. Deshpande (Senior)

University of Michigan - Ann Arbor, MI

Dissociating Perceptual Decision from Motor Response using a Delayed Response Task in Mice

Mentor: Alessandro Scaglione, Ph.D. and Shih-Chieh Lin, M.D., Ph.D.

(3) Nwamaka Ejiogu (Junior)

Marriotts Ridge High School - Marriottsville, MD

Brain Activity in People with Genetic Risk for Alzheimer's Disease

Mentor: Lori Beason-Held, Ph.D.

### **Laboratory of Cardiovascular Science (LCS)**

(4) Celia S. Islam (Senior)

George C. Marshall High School - Falls Church, VA

Study RAGE ligand-induced NF $\kappa$ -B p65 post-translational modifications and implications on arterial aging

Mentor: Li Lin, Ph.D. and Ji Min Kim, Ph.D.

(5) Srisha R. Kotlo (Senior)

Illinois Mathematics and Science Academy - Aurora, IL

The Effect of Calcium on Age-Associated Changes in Rate and Rhythm Variability in Pacemaker Cells Isolated from Young and Old Mice

Mentor: Syevda Sirenko, Ph.D. and Michael Stern, Ph.D.

(6) Henry S. Wu (Senior)

Friends School of Baltimore - Baltimore, MD

The Effect of MFGE8 and Its Fragments on the Proliferation of Vascular Smooth Muscle Cells

Mentor: Mingyi Wang, M.D., Ph.D. and Kimberly Raginski, Ph.D.

(7) Kathy T. Wang (Junior)

Mount Hebron High School - Ellicott City, MD

The Involvement of MFG-E8/MedIn in the Secretory Phenotype of Vascular Smooth Muscle Cells

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

## **Laboratory of Clinical Investigation (LCI)**

(8) Mathavi G. Sankar (Junior)

Centennial High School - Ellicott City, MD

Investigating the Potential Interaction of GIT2 and Stratifin in a Novel Model of Aging

Mentor: Sana Siddiqui, Ph.D. and Stuart Maudsley, Ph.D.

(9) Benjamin D. Cortese (Graduate School – 2<sup>nd</sup> year)

Syracuse University - Syracuse, NY

The Benefit of More Information: Improvement in Sensitivity and Specificity of Tissue Classification by MRI through Sequential Addition of Variables

Mentor: Richard Spencer, M.D., Ph.D.

(10) Aneesh Chandramouli (Sophomore)

University of California Berkeley - Berkeley, CA

Effect of (R,S)-Ketamine, (R,S)-Norketamine and (2S,6S)-Hydroxynorketamine on in vitro phosphorylation of Akt, ERK and mTOR

Mentor: Irving Wainer, Ph.D. and Rajib Paul, Ph.D.

(11) Julianne M. Boyle (Junior)

Oakland University - Rochester, MI

Characterization of Cartilage in Osteoarthritis Using Imaging and Pattern Recognition

Mentor: Richard Spencer, M.D., Ph.D. and Ilya Goldberg, Ph.D.

## **Laboratory of Epidemiology and Population Sciences (LEPS)**

(12) Christopher A. Collins (Senior)

Delaware State University - Dover, DE

Regulation of C-Reactive Protein by RNA-binding Proteins

Mentor: Nicole Noren Hooten, Ph.D. and Michele Evans, M.D.

(13) Ashley K. Hagaman (Graduate School – 3<sup>rd</sup> year)

Arizona State University - Tempe, AZ

Capturing longitudinal trajectories of depression and associated mortality late in life: Findings from the Health, Aging, and Body Composition Study

Mentor: Rachel Murphy, Ph.D. and Tamara Harris, M.D.

(14) Semaj D. Wallace (Senior)

Elizabeth City State University - Elizabeth City, NC

The Influence of Poverty Status and Race on Depressive Symptoms among Urban-Dwelling Adults

Mentor: Alan Zonderman, Ph.D. and Michele Evans, M.D.

(15) Wilmarie Fuentes Payan (Graduate School – 1<sup>st</sup> year)  
University of Puerto Rico, Medical Science Campus - San Juan, PR  
Neighborhood disorder and selection of healthcare facilities: is there a link between them?  
Mentor: Alan Zonderman, Ph.D. and Michele Evans, M.D.

### **Laboratory of Genetics (LG)**

(16) Allegra G. Hawkins (Senior)  
Massachusetts Institute of Technology – Cambridge, MA  
Thrombospondin 1 and 2 Downregulate Connective Tissue Growth Factor (CTGF) and Endothelin-1 and Affect Ovarian Follicle Development and Survival  
Mentor: Emanuele Pelosi, Ph.D. and David Schlessinger, Ph.D.

(17) Joaquin R. Gallegos (Senior)  
University of Colorado Denver - Denver, CO  
Effect of oxygen concentration on the activation of primary human T-cells  
Mentor: Paritosh Ghosh, Ph.D. and Rachel Munk, B.S.

(18) Thomas J. Butler (Senior)  
University of Michigan - Ann Arbor, MI  
Estimating mitochondrial DNA copy number in silico from whole-genome sequencing data  
Mentor: Jun Ding, Ph.D.

(19) Zakaraya T. Ashour (Sophomore)  
The University of Texas at Dallas - Dallas, TX  
Exploring Gene-Disease/Phenotype Relationships through Network Analysis  
Mentor: Kevin Becker, Ph.D. and Elin Lehrmann, Ph.D.

### **Laboratory of Molecular Biology and Immunology (LMBI)**

(20) Bryan S. Monroe (Senior)  
College of William and Mary - Williamsburg, VA  
A novel assay to discern the role of B cells in atherosclerosis  
Mentor: Kimberly Zanotti, Ph.D. and Patricia Gearhart, Ph.D.

(21) Hubert Z. Huang (Senior)  
University of Maryland, College Park - College Park, MD  
Development of BLC-Arp, a chemokine-based siRNA carrier: Optimization & Functionalization  
Mentor: Arya Biragyn, Ph.D.

(22) Haleigh T. Larson (Senior)  
Fargo South High School - Fargo, ND  
Is Age Really But a Number? A Look into the Degenerative Function of B-cells with Age  
Mentor: Lisa Russell, Ph.D. and Patricia Gearhart, Ph.D.

(23) Xiaofan Mi (Senior)  
Wayne State University - Detroit, MI  
Role of histone lysine methyltransferase Ezh2 in CD8 T cell activation-induced proliferation  
Mentor: Guobing Chen, Ph.D. and Nan Ping Weng, M.D., Ph.D.

(24) Diego A. Rodriguez (Senior)  
University of Puerto Rico - Vega Alta, PR  
BCR-induced down regulation of genes; kinetics + mechanism  
Mentor: Ranjan Sen, Ph.D. and Amit Singh, Ph.D.

### **Laboratory of Molecular Gerontology (LMG)**

(25) Emily R. Zagorski (Graduate School – 2<sup>nd</sup> year)  
Drexel College of Medicine - Philadelphia, PA  
Inventing Novel Fluorescent Compounds which Induce Mitochondrial DNA Cross-Links  
Mentor: Morten Scheibye-Knudsen, M.D.

(26) Nnejiuwa U. Ibe (Senior)  
California State University, Long Beach - Long Beach, CA  
Pathogenic missense mutations in Cockayne syndrome B gene cause mislocalization and reduced stability of the encoded protein  
Mentor: Teruaki Iyama, Ph.D. and David Wilson III, Ph.D.

(27) Jessie M. Levin (Junior)  
William Penn Charter High School - Philadelphia, PA  
Analysis of Twinkle DNA Helicase to Resolve Mitochondrial G-Quadruplexes Associated with Genetic Diseases and Cancer  
Mentor: Joshua Sommers, M.S. and Robert Brosh, Jr., Ph.D.

(28) Irfan S. Khan (Senior)  
University of Maryland College Park - College Park, MD  
Age-Associated Cyclopurine Lesions Corrected by Nucleotide Excision Repair Block DNA Unwinding by the Xeroderma Pigmentosum Group D Helicase (XPD) in a Unique Manner Distinct from other DNA Helicases  
Mentor: Taraswi Banarjee, Ph.D. and Robert Brosh, Ph.D.

(29) Royce J. Hamilton (Senior)  
Clark Atlanta University - Atlanta, GA  
DNA Repair Deficiency Increases Alzheimer's Related Neurodegeneration  
Mentor: Peter Sykora, Ph.D. and Vilhelm Bohr, M.D., Ph.D.

(30) Matthew P. Martindale (Senior)  
Bel Air High School - Bel Air, MD  
Discovering Transcriptional Alterations in Mitochondrial Diseases  
Mentor: Morten Scheibye-Knudsen, M.D.

## **Laboratory of Neurogenetics (LNG)**

(31) Noah Nichols (Junior)  
Wesleyan University - Middletown, CT  
LRRK2 G2019S Mutations Screening Using Neurox Array: A Quality Control Study  
Mentor: Andrew Singleton, Ph.D.

(32) Cesar Suarez  
Gaithersburg High School – Gaithersburg, MD  
Investigating the effects of the NIA and WIS restriction diets on Liver Physiology and Function  
Mentor: Andrew Singleton, Ph.D. and Dena Hernandez

## **Laboratory of Neurosciences (LNS)**

(33) Nina G. Modanlo (Freshman)  
Johns Hopkins University - Baltimore, MD  
Associations of Insulin Resistance and Regional Glucose Uptake in Cognitively Normal Elderly, and patients with MCI or AD  
Mentor: Auriel Willette, Ph.D. and Mark Mattson, Ph.D.

(34) Monica V. Tong (Junior)  
University of Maryland Baltimore County - Baltimore, MD  
Altered mTOR Signaling in the Postmortem Frontal Cortex of Alzheimer's Disease Patients  
Mentor: Jagadeesh Rao, Ph.D.

(35) Sabrina D. Gross (Sophomore)  
McDaniel College - Westminster, MD  
Requirements of SKN-1 isoforms for AIY neuron morphology in C.elegans  
Mentor: Simonetta Camandola, Ph.D. and Mark Wilson, M.S.

(36) Emily Clark (Junior)  
University of California, Davis - Davis, CA  
Time-course of AMPK levels in running mice  
Mentor: Davide Guerrieri, Ph.D. and Henriette van Praag, Ph.D.

(37) Paapa K. Nyanin (Freshman)  
Brown University - Providence, RI  
Development of Septal Inputs to The Dentate Gyrus of Adult Brains  
Mentor: Henriette van Praag, Ph.D. and Ben Peterson, B.S.

(38) Rebeca E. Vergara Greeno (Junior)  
Johns Hopkins University - Baltimore, MD  
DNA Polymerase Beta Regulates Neurogenesis and Neuronal Energy Metabolism  
Mentor: Magdalena Misiak, Ph.D. and Mark Mattson, Ph.D.

(39) James L. Comotto (Senior)  
Washington College - Chestertown, MD  
Exosome secretion: Sending messages or garbage into the neighborhood?  
Mentor: Erez Eitan, Ph.D.

### **Translation Gerontology Branch (TGB)**

(40) Jacqueline V. Nguyen (Junior)  
University of California, Berkeley - Berkeley, CA  
Therapeutic potential of DPP-4 inhibitors in a rat model of Parkinson's disease induced by 6-hydroxydopamine  
Mentor: Yazhou Li, Ph.D.

(41) Nancy R. Zhang (Sophomore)  
Glenelg Country School - Ellicott City, MD  
Complex spatial and non-spacial maze learning in the APP/PS1xNrf2KO mouse model of Alzheimer's disease  
Mentor: Rafael de Cabo, Ph.D. and Edward Spangler, M.A.

(42) Hailey Zie Evans (Junior)  
Barnard College of Columbia University - New York City, NY  
Neurological Function and Physical Performance: Insights from the BLSA  
Mentor: Eleanor Simonsick, Ph.D.

(43) Shay L. Behrens (Senior)  
University of Rochester - Rochester, NY  
Effect of Diet on Myogenic Stem Cell Abundance  
Mentor: Jessica Curtis, Ph.D. and Rafa deCabo, Ph.D.

(44) Giorgio Caturegli (Senior)  
Friends School of Baltimore - Baltimore, MD  
Manual Validation of Automated Segmentation from Abdomen CT Images  
Mentor: Sokratis Makrogiannis, Ph.D. and Luigi Ferrucci, M.D., Ph.D.

(45) Clarence R. Manuel (Graduate – 2<sup>nd</sup> year)  
Saint John's University - Queens, NY  
Investigating the effects of the NIA and WIS restriction diets on Liver Physiology and Function  
Mentor: Sarah Mitchell, Ph.D. and Michel Bernier, Ph.D.