

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

Present

2009 Summer Student Poster Day

Tuesday, August 4, 2009

12:30 - 4:00 P.M.

**Biomedical Research Center
Atrium**

Baltimore, MD

Light Refreshments Will Be Served

National Institute on Aging

Clinical Research Branch

(1) Hanci Zhang (2009 Graduate)
Dulaney High School – Timonium, MD
Surgical complications in patients with vascular Ehlers-Danlos syndrome
Mentor: Nazli McDonnell, M.D., Ph.D., and Dimitrios Kapogiannis, M.D.

Laboratory of Cardiovascular Science

(2) Bhavana S. Vangara (Sophomore)
University of Florida - Gainesville, FL
Green with RAGE: using split GFP to monitor RAGE oligomerization in living cells
Mentor: Li Lin, Ph.D., and Edward Lakatta, M.D.

(3) Dervla N. McDonnell (Sophomore)
St. Paul's School for Girls - Brooklandville, MD
Microtomography and 3-D reconstruction of murine vascular pathology
Mentor: Mark Talan, M.D., Ph.D., and Shannon Marshall

(4) Shweta Shukla (Junior)
Dulaney High School - Timonium, MD
Can inhibition of the degradation of intracellular cAMP rescue the old tired heart's pacemaker? Phosphodiesterase activity and calcium cycling in mouse Sinoatrial node aging
Mentor: Jie Liu, M.D., Ph.D., and Edward Lakatta, M.D.

(5) Albert T. Lwin (Sophomore)
Johns Hopkins University - Baltimore, MD
Calcium at the heart of matching contraction and respiratory drive in cardiomyocytes
Mentor: Steven Sollott, M.D., and Yael Yaniv, Ph.D.

(6) Rahul Kumar N. Patel (Sophomore)
University of Maryland Baltimore County - Baltimore, MD
MFG-E8: good or bad?
Mentor: Li-Qun Jiang, M.D., Ph.D., and Mingyi Wang, M.D., Ph.D.

(7) Daniel B. Yaeger (2009 Graduate)
Willamette University - Salem, OR
The heart's pacemaker cells in the glove of the fox
Mentor: Edward Lakatta, M.D.

(8) Joe X. Xei (1st Year)
University of Toledo College of Medicine - Toledo, OH
Biosynthesis of marinobufagenin: moving beyond CYP27A1's role in bile acid production
Mentor: Alexei Bagrov, M.D., Ph.D., and Olga Fedorova, Ph.D.

Laboratory of Cellular and Molecular Biology

(9) Omozusi E. Andrews (2009 Graduate)
University of Maryland Eastern Shore - Princess Anne, MD
Evolutionary conservation of RAG1/RAG2 recombinase activity
Mentor: Sebastian Fugmann, Ph.D.

(10) Akihiro C. Ko (Junior)
Dulaney High School - Timonium, MD
The quantitative analysis of the effect of methionine restriction on claudin mRNA in rat tissues
Mentor: Patrice Morin, Ph.D., and Cheryl Sherman-Baust, B.S.

(11) Chandamany Arya (Junior)
University of Maryland - College Park, MD
Kinetics of c-Rel activation in B cells
Mentor: Bazarragchaa Damdinsuren, Ph.D., and Ranjan Sen, Ph.D.

(12) Adefunke Adeyeye (Sophomore)
University of Maryland Eastern Shore - Princess Anne, MD
Mapping the region that PARP binds to OGG1
Mentor: Nicole Noren Hooten, Ph.D., and Michele K. Evans, M.D.

(13) Louis Gutin (Junior)
Community College of Baltimore County - Catonsville, MD
Chromatin remodeling during neuronal precursor cell formation
Mentor: Michael Pazin, Ph.D.

Laboratory of Clinical Investigation

(14) Ndong N. Azang-Njaah (Junior)
University of Maryland - College Park, MD
The effect of the duration of ultrasound treatment on chondrocyte metabolism
Mentor: Richard Spencer, M.D., Ph.D., and Onyinyechi Irrechukwu, Ph.D.

(15) Marie D. Anderson (Freshman)
Spelman College - Atlanta, GA
Targeting estrogen-related receptors alpha and gamma with tamoxifen derivatives
Mentor: Chester Frazier and Irving Wainer, Ph.D.

(16) Sean D. Chester (Sophomore)
New Mexico Institute of Mining and Technology - Socorro, NM
Microarray analysis of the genes affected by the histamine H4 receptor in the 1321N1 astrocytoma cell line
Mentor: Ruin Moaddel, Ph.D., Chester Frazier, and Irving Wainer, Ph.D.

(17) Natalie L. Commins (Junior)
Denison University - Granville, OH
Bone density, hormone levels and spinal abnormalities in vascular Ehlers-Danlos syndrome and Marfan syndrome
Mentor: Nazli McDonnell, M.D., Ph.D., and Wuyan Chen, Ph.D.

Laboratory of Epidemiology, Demography and Biometry

(18) Andrea J. Bankoski (Graduate Student - 3rd Year)
George Mason University - Fairfax, VA
Sedentary behavior and metabolic risk in older adults
Mentor: Annemarie Koster, Ph.D., and Tamara Harris, M.D.

(19) Shauna T. Linn (Freshman)
Johns Hopkins University - Baltimore, MD
Persistent racial/ethnic disparities in influenza vaccination coverage among adults over age 50
Mentor: Kushang Patel, Ph.D., and Jack Guralnik, M.D., Ph.D.

Laboratory of Experimental Gerontology

(20) Jennifer Timothee-Oliveras (3rd Year)
Ponce School of Medicine - Ponce, PR
Induction of Nrf2 in vitro by a novel sirtuin activator
Mentor: Rafael de Cabo, Ph.D.

(21) Peter J. Weng (Sophomore)
Centennial High School - Ellicott City, MD
The effect of nectarine on the life span of drosophila melanogaster
Mentor: Sige Zou, Ph.D., Min Zhu, Ph.D., and Xiaoping Sun, Ph.D.

Laboratory of Genetics

(22) Timothy S. Pillsbury (Junior)
Archbishop Curley High School - Baltimore, MD
Promoter regulation of placenta specific gene, PLAC1
Mentor: Ramaiah Nagaraja, Ph.D., and Yaohui Chen, Ph.D.

(23) Christopher Chen (Freshman)

Cornell University - Ithaca, NY

Discovering the link between knee X-rays and gait using computer image analysis

Mentor: Lior Shamir, Ph.D., and Ilya Goldberg, Ph.D.

(24) Vinod Nimmagadda (Junior)

River Hill High School - Clarksville, MD

Using a computer vision approach to determine the phenotypic variance in a gene-knockdown screen

Mentor: Ilya Goldberg, Ph.D., Lior Shamir, Ph.D., and David Eckley, Ph.D.

(25) Alcinda E. Flowers (1st Year)

Indiana University School of Medicine - Indianapolis, IN

Comparative study of epidermal stem cell markers in hair follicles and sweat glands

Mentor: David Schlessinger, Ph.D., and Chang-Yi Cui, M.D., Ph.D.

(26) Hejia Wang (2009 Graduate)

Dulaney High School - Timonium, MD

Development of a method to quantify the copy number of shRNA expression in stable mouse ES cell transfectants

Mentor: Minoru Ko, M.D., Ph.D., and Akira Nishiyama, Ph.D.

Laboratory of Immunology

(27) Erin L. Gunter (Graduate Student – 1st Year)

American University - Washington, DC

The effects of variable ghrelin expression on melanoma cell motility and signaling

Mentor: Ashani Weeraratna, Ph.D., Erika Barr, Ph.D., and Dennis Taub, Ph.D.

(28) Ferdinand M. Rivera (Senior)

New Mexico State University - Las Cruces, NM

Leptin modulates CD4+ T helper cell function and differentiation

Mentor: Kalpesh Patel, M.D., and Dennis Taub, Ph.D.

(29) Miranda R. Gordon-Zigel (Freshman)

Bryn Mawr College – Bryn Mawr, PA

Production and activity testing of RNA-binding chemokines from pichia pastoris

Mentor: Arya Biragyn, Ph.D.

(30) Sean M. Zohorsky (Junior)

University of Dallas - Irving, TX

Role of p70S6K1 in mitochondrial respiration

Mentor: Paritosh Ghosh, Ph.D., and Indrani Mitra

(31) Janelle L. Nelson (Sophomore)
University of Tampa - Tampa, FL
Interdependent signaling cascades involving ROR1 and Wnt5A illustrate targets for melanoma therapy
Mentor: Michael O'Connell, Ph.D., and Ashani Weeraratna, Ph.D.

(32) Christina S. Wu (Junior)
Centennial High School - Ellicott City, MD
Telomere, telomerase, and human T cell function
Mentor: Nan-ping Weng, M.D., Ph.D., and Jie An, Ph.D.

Laboratory of Molecular Gerontology

(33) Rhonda L. McClure (2009 Graduate)
University of North Carolina at Pembroke - Pembroke, NC
Effects of multiple B-cell stimulators on class switch recombination and AIDS expression
Mentor: Patricia Gearhart, Ph.D., and Robert Maul, Ph.D.

(34) Jason A. Loiland (Junior)
University of Maryland Baltimore County - Baltimore, MD
Biochemical characterization of FANCD1 helicase mutations that cause Fanconi anemia and breast cancer
Mentor: Robert Brosh, Ph.D., and Yuliang Wu, Ph.D.

(35) Jakita D. Baldwin (Sophomore)
Hampton University - Hampton, VA
Base excision repair proteins' function and intracellular localization dynamics
Mentor: David Wilson, Ph.D.

(36) Shakima St. Clair (Sophomore)
Barry University - Miami Shores, FL
Measurement for oxidative-base lesions in aging mice
Mentor: Yie Liu, Ph.D.

Laboratory of Neurogenetics

(37) Donna W. Gilchrist (Junior)
University of North Carolina at Pembroke - Pembroke, NC
Characterization of a novel transgenic mouse model that overexpresses the Parkinson's related LRRK2 and the microtubule associated tau
Mentor: Loukia Parisiadou, Ph.D.

Laboratory of Neurosciences

(38) Avi B. Silber (Sophomore)

Washington University in St. Louis - Saint Louis, MO

Two stress, three stress, ROS stress, heat stress... are cellular responses to heat and oxidative stress integrated or insulated?

Mentor: Catherine Wolkow, Ph.D.

(39) Meghan Brown (Sophomore)

University of Southern California - Los Angeles, CA

Changes in synaptic proteins in aging and Alzheimer's disease

Mentor: Uri Ashery, Ph.D., and Mark P. Mattson, Ph.D.

(40) Peter H. Yang (Freshman)

Johns Hopkins University - Baltimore, MD

Benefits of electroconvulsive shock therapy on an Alzheimer's disease model

Mentor: Mohamed Mughal and Mark P. Mattson, Ph.D.

(41) Grace M. Demehin (2009 Graduate)

Towson University - Towson, MD

Expression profile of vitellogenin: a molecular marker for the trade-off between reproductive fitness and lifespan

Mentor: Catherine Wolkow, Ph.D., and Ana Depina, Ph.D.

(42) Joseph T. Berko (Junior)

University of Maryland Eastern Shore - Princess Anne, MD

TLR2 activation affects central nervous system plasticity and behavior

Mentor: Eitan Okun, Ph.D., and Mark P. Mattson, Ph.D.

(43) Nicholas P. Pantaleo (Junior)

Johns Hopkins University - Baltimore, MD

Cellular bioscreen technology for biological fluid biomarker analysis

Mentor: Stuart Maudsley, Ph.D., Mohamed Mughal

(44) Kriti D. Gandhi (Sophomore)

McGill University - Montreal, Canada

A comparison of the effects of running and environmental enrichment on neurogenesis and behavior

Mentor: Henriette van Praag, Ph.D., and Tali Kobilov-Moav, Ph.D.

Laboratory of Personality and Cognition

(45) Timothy J. Hohman (Graduate Student - 2nd Year)
American University - Washington, DC
Subjective memory complaints and changes in regional brain volume
Mentor: Susan Resnick, Ph.D.

(46) Andrew C. Fioravanti (Senior)
Towson University - Towson, MD
The association of material hardship on cognitive performance in the HANDLS
epidemiological study
Mentor: Melissa Kitner-Triolo, Ph.D., and Alan B. Zonderman, Ph.D.

Molecular Dynamics Section

(47) Dana Lee K. Daley (2009 Graduate)
Oakwood University - Huntsville, AL
The role of membrane-bound nitrite-reacted hemoglobin in the release of nitric oxide
Mentor: Joseph Rifkind, Ph.D.

Research Resources Branch

(48) Sarah E. Gearhart (Junior)
University of Pennsylvania - Philadelphia, PA
The relationship between home environment, migration, education and literacy
Mentor: Melissa Kitner-Triolo, Ph.D., and Alan Zonderman, Ph.D.

(49) Grace A. Blair (Sophomore)
Towson High School - Towson, MD
DNA methylation patterns in mouse aging
Mentor: Kevin Becker, Ph.D.

National Institute on Drug Abuse

Administrative Management Branch

(50) Sebastian Maple (Junior)

Park School of Baltimore - Baltimore, MD

Accessibility in MS-Word documents: a guide to achieving section 508 compliance throughout the document life cycle

Mentor: Jia-Ling Lin, Ph.D., and Andras Frenyo, B.S.

Behavioral Neuroscience Research Branch

(51) Sean S. Mansoor (Sophomore)

Trinity College - Hartford, CT

The role of neuronal pentraxin I in Parkinson's disease

Mentor: Toni Shippenberg, Ph.D.

(52) Deionna Hill (Junior)

The Baldwin School - Bryn Mawr, PA

Studies on nicotine conditioned place preference

Mentor: Charles Schindler, Ph.D.

(53) Nicolette A. Riley (Senior)

Germantown Friends School - Philadelphia, PA

Identifying the striatal projection from the orofacial motor cortex using electrical cortical stimulation and ERK1/2 phosphorylation

Mentor: Sergi Ferre, M.D., Ph.D., and Cesar Quiroz, Ph.D.

(54) Kiara Benson (Junior)

Union County Magnet High School - Scotch Plains, NJ

Role of food type in the preference to palatable foods in rats

Mentor: Yavin Shaham, Ph.D., and Sunila Nair, M.D.

(55) Ekaterina Ivanova (Senior)

University of Maryland - College Park, MD

Potential role of neuronal pentraxin-1 in nigrostriatal dopaminergic system degeneration

Mentor: Silvia Pontis, Ph.D., and Irina Krasnova, Ph.D.

(56) Shahnise Alexa McKnight (Sophomore)

Elizabeth Seton - Greenbelt, MD

Effects of a sigma receptor agonist, PRE-084, on mesolimbic dopamine transmission

Mentor: Jonathan Katz, Ph.D.

(57) Madeleine M. Mateo (Senior)
Glenelg Country School - Ellicott City, MD
Context-specific regulation of haloperidol-fos in rat brains
Mentor: Bruce Hope, Ph.D.

(58) Julian L. Spearman (Senior)
Whitney Young High School - Chicago, IL
Cocaine induced fos in mice sensitized in a novel environment
Mentor: Bruce Hope, Ph.D.

(59) Evan Goldart (Junior)
University of Pennsylvania - Philadelphia, PA
Effect of systemic injections of the selective adenosine A2A antagonist, SCH 442416, on context-induced reinstatement of heroin seeking
Mentor: Jennifer Bossert, Ph.D.

Cellular Neurobiology Research Branch

(60) Urennaya Okoro (Senior)
Colony High School - Ontario, CA
Glutamatergic neurons in the lateral subdivisions of the ventral tegmental area
Mentor: Marisela Morales, Ph.D.

(61) Betsir G. Zemen (Sophomore)
University of Maryland Baltimore County - Baltimore, MD
Glutamatergic neurons in the medial subdivisions of the ventral tegmental area
Mentor: Marisela Morales, Ph.D., and Hui-ling Wang, Ph.D.

Chemical Biology Research Branch

(62) Daniel Li (Senior)
River Hill High School - Clarksville, MD
CTDP 32476 addictive properties - potential cocaine treatment
Mentor: Zheng-Xiong Xi, M.D., Ph.D., and Xia Li, M.D., Ph.D.

(63) Ross Bittman (Sophomore)
Johns Hopkins University - Baltimore, MD
Pharmacological evaluation of novel opioid mu receptor inverse agonists
Mentor: Richard Rothman, M.D., Ph.D., and Christina Dersch, M.S.

(64) Emily C. Dabe (Sophomore)
University of Illinois-Urbana-Champaign - Urbana, IL
The role of CB receptors in place conditioning effects of delta(9)-tetrahydrocannabinol
Mentor: Zheng Xi, M.D., Ph.D., and Xiao Peng, M.D., Ph.D.

(65) Matthew L. Davis (Senior)
Montana State University - Bozeman, MT
Identification of novel allosteric modulators of the dopamine transporter II
Mentor: Richard Rothman, M.D., Ph.D.

(66) Emily I. Gerry (Junior)
River Hill High School - Clarksville, MD
Identification of novel allosteric modulators of the dopamine transporter I
Mentor: Richard Rothman, M.D., Ph.D.

Clinical Pharmacology and Therapeutics Research Branch

(67) Rebecca H. Lange (Senior)
Bates College - Lewiston, ME
Breath carbon monoxide and cotinine as biomarkers to distinguish smokers from nonsmokers
Mentor: Stephen Heishman, Ph.D.

(68) Peter J. Riley (Senior)
University of Maryland - College Park, MD
The impact of methadone maintenance on Body Mass Index (BMI) and lipid profile in a cocaine and heroin using population
Mentor: Karran Phillips, M.D.

Medications Discovery Research Branch

(69) Sarah C. Ney (Senior)
University of Mary Washington - Fredericksburg, VA
A comparison of bupropion analogs with drugs used in treatment of ADHD: a study of impulsivity in rats
Mentor: Jonathan Katz, Ph.D.

(70) Matthew J. Shook (Senior)
West Virginia Wesleyan College - Buckhannon, WV
Cocaine-like behavioral affects of modafinil: a drug proposed as a treatment for cocaine abuse
Mentor: Jonathan Katz, Ph.D.

(71) Benjamin Levy (Senior)
Pomona College - Claremont, CA
Design and synthesis of novel dopamine D3 receptor-selective ligands
Mentor: Amy Newman, Ph.D., and Ashwini Banala, Ph.D.

(72) Anna Kharaz (2009 Graduate)
Brandeis University - Waltham, MA
Behavioral sensitization after a single administration of cocaine
Mentor: Gianluigi Tanda, Ph.D.

(73) Samara A. Morris Bobzean (2009 Graduate)
University of Texas at Arlington - Arlington, TX
Effects of rimcazole on nucleus accumbens shell dopamine transmission
Mentor: Gianluigi Tanda, Ph.D.

Molecular Neurobiology Research Branch

(74) Peter Trinh (Senior)
Seton Hall Preparatory School - West Orange, NJ
Promoters of human smoking cessation success genes: functional enrichment analyses
Mentor: Tomas Drgon, Ph.D., and George Uhl, M.D., Ph.D.

(75) Abhinav Datti (Senior)
Palm Beach Gardens High School - Palm Beach Gardens, FL
The role of the dopamine, serotonin and norepinephrine transporters in the aversive effects of cocaine
Mentor: Frank Hall, Ph.D., and George Uhl, M.D., Ph.D.

(76) Asha A. Poles (Senior)
Abington Senior High School - Abington, PA
Involvement of the amino acid transporter V73 in food consumption as assessed with V73 knockout mice
Mentor: Jana Drgonova, Ph.D.

Molecular Neuropsychiatry Research Branch

(77) Michael J. Loo (Senior)
Temescal Canyon High School - Lake Elsinore, CA
The Effects of Mesencephalic Astrocyte-derived Neurotrophic Factor (MANF) on Methamphetamine Induced Toxicity
Mentor: Brandon Harvey, Ph.D.

(78) April P. Zhu (Senior)
Centennial High School - Ellicott City, MD
The effects of low-dose amphetamine on neuronal plasticity markers in post-stroke rat brain
Mentor: Yun Wang, M.D., Ph.D.

(79) Rebecca Nichols (Junior)
Anne Arundel Community College - Arnold, MD
The effects of bone morphogenetic protein-7 on cortical neuron morphology in vitro
Mentor: Brandon Harvey, Ph.D.

(80) Isabela Negrin (Junior)

University of Pittsburgh - Pittsburgh, PA

Comparison of adeno-associated viral (AAV) vector serotypes for transduction after intracisternal injection

Mentor: Brandon Harvey, Ph.D., and Yun Wang, M.D., Ph.D.

(81) Anthony L. Rooks (Senior)

Gilman School - Baltimore, MD

Methamphetamine preconditioning: differential effects on signal transduction genes in the striatum and SN/VTA areas of the rat brain

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

(82) Angie Kao (Sophomore)

University of Illinois at Urbana Champaign - Urbana, IL

Methamphetamine (METH)-induced delayed regulation of the expression of snail genes in the rat cortex

Mentor: Ning Sheng Cai, Ph.D., and Jean Lud Cadet, M.D.

(83) Onica L. Washington (2nd Year)

Medical University of South Carolina - Charleston, SC

Methamphetamine preconditioning: protective effects on monoaminergic systems in the brain

Mentor: Irina Krasnova, Ph.D.

(84) Trisha St-Fleur (Senior)

Lake Worth High School - Lake Worth, FL

Methamphetamine preconditioning: effects on the expression of antioxidant and stress response transcripts in the cortex

Mentor: Jean Lud Cadet, M.D., and Bruce Ladenheim, B.A.

(85) Marcelo R. Llanos (Senior)

Abington Senior High School - Abington, PA

Methamphetamine preconditioning: protective effects on monoaminergic systems in the brain

Mentor: Irina Krasnova, Ph.D.

(86) Munanchu Poudel (Senior)

Towson High School - Towson, MD

Methamphetamine preconditioning: effects on the expression of antioxidants and stress response transcripts in the cortex

Mentor: Jean Lud Cadet, M.D., and Bruce Ladenheim, B.A.

(87) Jessica Brannock (Junior)

Patapsco High and Center for the Arts - Baltimore, MD

Detection of histone modifications in the nucleus accumbens after methamphetamine administration

Mentor: Subramaniam Jayanthi, Ph.D.

(88) Sharell Bryant (Senior)
Germantown Friends School - Philadelphia, PA
Detection of histone modifications in the nucleus accumbens after methamphetamine administration
Mentor: Subramaniam Jayanthi, Ph.D.

(89) Jennifer Bai (Senior)
Dulaney High School - Timonium, MD
Epigenetic regulation of histones by methamphetamine in the striatum
Mentor: Subramaniam Jayanthi, Ph.D.

(90) Benjamin S. Schuebel (Junior)
Patapsco High School Center for the Arts - Baltimore, MD
Methamphetamine induces upregulation of multiple transcription factors in the rat nucleus accumbens
Mentor: Christie Brannock, M.S.

(91) Tom Liang (Sophomore)
Johns Hopkins University - Baltimore, MD
Dopamine clearance in rats receiving high dose methamphetamine
Mentor: Yun Wang, M.D., Ph.D.

Neuroimaging Research Branch

(92) Helen T. Queenan (Senior)
Dedham Country Day School - Dedham, MA
Effects of chronic ethanol on glutamate concentrations in prefrontal cortex and hippocampus measured by Magnetic Resonance Spectroscopy (MRS) in rats
Mentor: Yihong Yang, Ph.D., and Svetlana Chefer, Ph.D.

(93) Rehan U. Muhammad (Junior)
Albertus Magnus High School - Bardonia, NY
Utilizing functional MRI in conscious rats: developing behavioral habituation and head-body restraint procedures
Mentor: Bruce Vaupel, Ph.D.

(94) Rachel A. Flygare (Senior)
Brigham Young University - Provo, UT
Changes in cardiovascular response to acute methamphetamine challenge during abstinence after long-term drug exposure in non-human primates
Mentor: Svetlana Chefer, Ph.D., and Bruce Vaupel, Ph.D.

(95) Aaron C. Abajian (Graduate Student - 1st Year)
University of California, Irvine - Irvine, CA
Diffusion MRI visualization and registration tool
Mentor: Yihong Yang, Ph.D., and Xiujuan Geng, Ph.D.

Office of the Clinical Director

(96) Maggie A. Allen (Pharmacy Student - 5th Year)
Ohio Northern University - Ada, OH
Therapeutic strategies for smoking cessation
Mentor: Paul Na, Pharm.D.