

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

Present

2008 Summer Student Poster Day

Tuesday, August 5, 2008

12:30 - 4:00 P.M.

**Biomedical Research Center
Atrium**

Baltimore, MD

Light Refreshments Will Be Served

National Institute on Aging

Brain Physiology and Metabolism Section

(1) Yunyoung C. Chang (Junior)
University of Pennsylvania - Philadelphia, PA
Effects of chronic NMDA administration on pro and anti-apoptotic factors in rat brain
Mentor: Jagadeesh Rao, Ph.D.

Clinical Research Branch

(2) Andreas H. Mitchell (Junior)
Centennial High School - Ellicott City, MD
Examining arthritis through narrow-based walking: biomechanics and beyond
Mentors: Luigi Ferrucci, M.D., Ph.D., and Jeffrey Metter, M.D.

(3) Hanci Zhang (Junior)
Dulaney High School - Timonium, MD
Familial aneurysm syndrome associated with a mutation in COL5A1
Mentor: Nazli McDonnell, M.D., Ph.D.

Laboratory of Cardiovascular Science

(4) Naren Nimmagadda (Senior)
Virginia Commonwealth University - Richmond, VA
 β -Arrestin-2 is necessary for β 2-adrenoceptor-Gi coupling in adult mouse cardiomyocytes
Mentors: Anthony Woo, Ph.D., and Rui-Ping Xiao, M.D., Ph.D.

(5) Rahul Kumar N. Patel (Sophomore)
University of Maryland Baltimore County - Baltimore, MD
Construction of recombinant adenoviral vector carrying MFG-E8 gene and its expression in cultured vascular smooth muscle cells
Mentors: Mingyi Wang, M.D., Ph.D., and Liqun Jiang, M.D., Ph.D.

(6) John Pang (Junior)
University of Florida - Gainesville, FL
Vectors take their Toll... to the cell surface: Designing, generating, and testing mammalian expression vectors that tag membrane proteins
Mentors: Li Lin, Ph.D., and Edward Lakatta, M.D.

(7) Christina S. Wu (Sophomore)
Centennial High School - Ellicott City, MD
The effects of Pak1 activation on survival signaling in vascular smooth muscle cells
Mentors: Rui-Ping Xiao, M.D., Ph.D., and William McGuire, B.S., B.A.

(8) Shweta Shukla (Sophomore)
Dulaney High School - Cockeysville, MD
A heart-rendering tail
Mentors: Edward Lakatta, M.D., Ph.D., and Jie Liu, M.D., Ph.D.

Laboratory of Cellular and Molecular Biology

(9) Christina T. Bohr (Junior)
University of Maryland - College Park, MD
Exploration of the genetic basis that regulate telomere length using inbred BXD mouse strains approaches
Mentor: Yie Liu, Ph.D.

(10) Jocelyn R. Lo (Junior)
Columbia University - New York, NY
The role of SIRT6 in DNA repair and Ig gene diversification in DT40 cells
Mentor: Sebastian Fugmann, Ph.D.

(11) Destiny S. Burroughs (Senior)
Coppin State University - Baltimore, MD
Molecular characterization of the RNA-binding protein Nucleolin
Mentors: Myriam Gorospe, Ph.D., and Kotb Abdelmohsen, Ph.D.

(12) Chandamany Arya (Sophomore)
University of Maryland - College Park, MD
Kinetics of NF- κ B signaling in immature B cells
Mentors: Bazarra Damdinsuren, Ph.D., and Ranjan Sen, Ph.D.

Laboratory of Clinical Investigation

(13) Ashley D. Morgenstern (Junior)
Virginia Tech - Blacksburg, VA
Multicomponent T2 relaxation rates in cartilage matrix constituents
Mentors: Richard Spencer, M.D., Ph.D., and David Reiter, Ph.D.

(14) Hejia Wang (Junior)
Dulaney High School - Timonium, MD
Development of tools to generate transgenic mouse models of atherosclerotic calcium channel splicing defect and its correction
Mentors: Nikolai Soldatov, Ph.D., and Qi Zong Lao, Ph.D.

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

(16) Charlene C. Bashore (Junior)
Arizona State University - Tempe, AZ
Identification and characterization of histamine receptors in human astrocytoma cells via cell membrane affinity chromatography
Mentor: Ruin Moaddel, Ph.D.

Laboratory of Epidemiology, Demography and Biometry

(17) Nancy S. Chiles (Junior)
University of Maryland Baltimore County - Baltimore, MD
Nerve function as a possible mediator between diabetes and lower extremity function
Mentors: Caroline Phillips, M.S., and Kushang Patel, Ph.D.

(18) Ekaterina A. Eliseeva (2008 Graduate)
University of Chicago - Chicago, IL
Adjustment for missing data due to death and dropout in modeling the trajectory of weights
Mentor: Binbing Yu, Ph.D.

(19) Lydia E. Beasley (Senior)
Washington University - St. Louis, MO
Use of accelerometer data to measure physical activity: toward a comprehensive new analysis
Mentor: Tamara Harris, M.D.

(20) Nisha D. Varadarajan (Senior)
George Washington University - Washington, DC
Brain volume and carotid plaques: The AGES-RS Study
Mentor: Lenore Launer, Ph.D.

Laboratory of Experimental Gerontology

(21) Bennett H. Kelley-Bell (Senior)
Towson University - Baltimore, MD
Age related learning impairment in a complex maze paradigm for mice
Mentor: Edward Spangler, M.A.

(22) Alex M. Sossong (Junior)
St. Francis University - Loretto, PA
Maternal dietary effects on offspring in mice
Mentor: Sige Zou, Ph.D.

(23) Annie X. Wang (Freshman)
Boston University - Boston, MA
The effect of cytochrome B5 reductase on lifespan of drosophila melanogaster under dietary restriction
Mentor: Rafael de Cabo, Ph.D.

(24) Priscilla J. Castillo (Senior)
University of Texas at El Paso - El Paso, TX
A screen for longevity interventions in the fruit fly *Drosophila melanogaster*
Mentor: Sige Zou, Ph.D.

Laboratory of Genetics

(25) Salim Rahimi (Senior)
State University of New York - Farmingdale - Farmingdale, NY
Correlation of observed physiological markers with machine based pattern recognition in X-rays of human knees
Mentors: Lior Shamir, Ph.D., and Ilya Goldberg, Ph.D.

(26) Prince K. Awuah (2008 Graduate)
University of Maryland Eastern Shore - Princess Anne, MD
Generating *Whsc2*^{-/-} mouse by using BAC-recombineering strategy
Mentors: Minoru Ko, Ph.D., Akira Nishiyama, Ph.D., and Uwem Bassey, M.S.

(27) Fehlin Stone (Junior)
Columbia University - New York, NY
Identification of a novel Topoisomerase III β -Associated Protein (TopAP)
Mentor: Rong Guo, Ph.D.

(28) Sopo C. Lin (1st Year)
University of Maryland School of Medicine - Baltimore, MD
Phenotype analysis of gene overexpression in mouse ES cell clones for 46 genes
Mentors: Minoru Ko, M.D., Ph.D., and Akira Nishiyama, Ph.D.

Laboratory of Immunology

(29) Emily K. Kershner (Sophomore)
St. Mary's College of Maryland - St. Mary's City, MD
Elucidating the role of HSPGs in metastatic melanoma
Mentors: Ashani Weeraratna, Ph.D., and Michael O'Connell, Ph.D.

(30) Bonnie Y. Chien (Sophomore)
Stanford University - Stanford, CA
Klotho: The common thread between cancer and aging
Mentors: Ashani Weeraratna, Ph.D., and Tura Camili, Ph.D.

(31) Grace I. Guido (Senior)
Roanoke College - Salem, VA
Cholesterol levels in ghrelin and leptin transgenic mice
Mentors: Ashani Weeraratna, Ph.D., and Ana Lustig, M.S.

(32) Jie Deng (Senior)
University of Florida - Gainesville, FL
The role of chemokine receptor CCR4 in Treg recruitment into the metastatic lungs
Mentors: Arya Biragyn, Ph.D., and Purevdorj Olkhanud, M.D.

(33) Sean M. Zohorsky (Junior)
University of Dallas - Irving, TX
Effect of different oxygen concentration on cell growth and proliferation
Mentor: Paritosh Ghosh, Ph.D.

(34) Renee L. Benallie (Senior)
New Mexico State University - Las Cruces, NM
Effects of hypoxia on Wnt-chemokine interactions during melanoma metastasis
Mentor: Ashani Weeraratna, Ph.D.

Laboratory of Molecular Gerontology

(35) Kimberly R. Jennings (2008 Graduate)
University of Maryland Eastern Shore - Princess Anne, MD
Maintenance of genomic stability by Fanconi Anemia Group J (FANCI) and Werner Syndrome (WRN) helicases
Mentor: Robert Brosh, Ph.D.

(36) Julia T. Bryant (Sophomore)
McDaniel College - Westminster, MD
Effect of estrogen on diversifying antibodies by gene conversion
Mentor: Patricia Gearhart, Ph.D.

(37) Sylvia K. Dasi (2008 Graduate)
University of Maryland Eastern Shore - Princess Anne, MD
Bio-informatics analysis of RecQ5 reveals several potential protein:protein interaction motifs
Mentors: Deborah Croteau, Ph.D., and Vilhelm Bohr, M.D., Ph.D.

(38) Kevin K. Yang (Sophomore)
University of Maryland - College Park, MD
DNA repair capacity associated with undifferentiated and differentiated model neural cells
Mentor: David Wilson, Ph.D.

Laboratory of Neurosciences

(39) Ryan G. Short (2008 Graduate)
Cedarville University - Cedarville, OH
Thalidomide analogs as potential anti-TNF- α therapeutics
Mentor: David Tweedie, Ph.D.

- (40) Adithya Sundar (Junior)
University of Maryland Baltimore County - Baltimore, MD
Role of toll-like receptors in neural differentiation
Mentor: Kathleen Griffioen, Ph.D.
- (41) Dylan L. Galos (Senior)
New Mexico State University - Las Cruces, NM
Regulation of glucocorticoid and mineralocorticoid receptors in the db/db mouse
Mentor: Alexis Stranahan, Ph.D.
- (42) Angela M. DeRidder (1st Year)
University of Maryland School of Medicine - Baltimore, MD
Exendin-4: A potential novel therapeutic agent for the treatment of Huntington's disease
Mentors: Stuart Maudsley, Ph.D., and Wayne Chadwick, Ph.D.
- (43) Grace M. Demehin (Junior)
Towson University - Baltimore, MD
Easing the impact of aging: opportunities in technology development to improve human healthspan
Mentor: Catherine Wolkow, Ph.D.
- (44) Gloria N. Laryea (2008 Graduate)
University of Maryland Eastern Shore - Princess Anne, MD
Activation of toll-like receptors in neurons
Mentors: Mark Mattson, Ph.D., and Eitan Okune, Ph.D.
- (45) Edmund B. Chen (2008 Graduate)
Johns Hopkins University - Baltimore, MD
The effects of electroconvulsive therapy on Huntington's disease
Mentor: Mohamed Mughal, Ph.D.
- (46) Fangbai Wu (1st Year)
Quillen College of Medicine - Johnson City, TN
A role for AP180 in APP trafficking
Mentor: Pamela Yao, Ph.D.
- (47) Sunggoan Ji (Sophomore)
Johns Hopkins University - Baltimore, MD
Taste assessment in GLP-1 receptor knock-out mice using a Davis Rig gustometer
Mentor: Bronwen Martin, Ph.D.

Laboratory of Personality & Cognition

(48) Sarah E. Kokinos (Junior)

University of Virginia - Charlottesville, VA

Anxiety-related personality traits are not associated with serotonin transporter polymorphism in a large Sardinian sample

Mentor: Antonio Terracciano, Ph.D.

(49) David M. Greenberg (Junior)

Rutgers, The State University of New Jersey - New Brunswick, NJ

Climatic warmth and national wealth predict stereotypes of Americans: data from 48 cultures

Mentor: Robert McCrae, Ph.D.

(50) Timothy J. Hohman (Graduate Student - 1st Year)

American University - Washington, DC

Subjective memory complaints and longitudinal changes in cognitive and brain function

Mentor: Susan Resnick, Ph.D.

Molecular Dynamics Section

(51) Oyindamola Oladosu (2008 Graduate)

University of Maryland Eastern Shore - Princess Anne, MD

The effects of red cell reaction with nitrite on the vasculature

Mentor: Joy Mohanty, Ph.D.

Research Resources Branch

(52) Amanda G. Carr (Graduate Student - 4th Year)

Lehigh University - Bethlehem, PA

Disparities in coping across the lifespan: an examination of race, socioeconomic status, and sex as moderators of coping in HANDLS

Mentor: Alan Zonderman, Ph.D.

(53) Michael N. Brodeur (Junior)

University of Maryland - College Park, MD

Labeling, isolation, and microarray analysis of nascent versus steady state RNA via bromouridine following serum deprivation

Mentor: Kevin Becker, Ph.D.

National Institute on Drug Abuse

Administrative Management Branch

(54) Matthew J. Shook (Junior)
West Virginia Wesleyan College - Buckhannon, WV
Inconvenient truth! Get informed protection against Malware
Mentors: Jia-Ling Lin, Ph.D., and Peili Chao, M.S.

Behavioral Neuroscience Research Branch

(55) Makeda A. Carroll (Junior)
Long Reach High School - Columbia, MD
Functional connectivity of dorsolateral striatum and nucleus accumbens shell in
context-induced reinstatement of heroin seeking in a rat model of drug relapse
Mentors: Jennifer Bossert, Ph.D., and Kristina Wihbey, B.A.

(56) Bella Shah (Junior)
University of Michigan - Ann Arbor, MI
Repeated haloperidol administration in a novel environment sensitizes haloperidol-induced
Fos expression in rat brain
Mentor: Bruce Hope, Ph.D.

(57) Peter J. Riley (Sophomore)
University of Maryland - College Park, MD
The detection limit of glutamate in microdialysis samples using fluorometric detection
Mentor: Charles Schindler, Ph.D.

(58) Daniel Li (Sophomore)
River Hill High School - Clarksville, MD
Intravenous self-administration of CTDP32476, a slow-onset long-acting dopamine
transporter inhibitor, in rats: implications for anti-cocaine medication
Mentors: Zheng-Xiong Xi, M.D., Ph.D., and Xia Li, M.D., Ph.D.

(59) Reeva C. Morton (Junior)
Glenelg Country School - Ellicott City, MD
Self-administration of cocaine: discrimination of infusion duration
Mentor: Charles Schindler, Ph.D.

(60) Chelsea E. Landa (Senior)
University of Delaware - Newark, DE
Ventral tegmental area afferent activation during food expectancy: behavioral results and
preparatory immunocytochemistry
Mentors: Roy Wise, Ph.D., and Stefanie Geisler, M.D., Ph.D.

(61) Beverly O. Aiyanyor (Junior)
Westtown School - Westtown, PA
Role of neuronal pentraxin in Parkinson's disease
Mentor: Toni Shippenberg, Ph.D.

(62) Hunter T. Holloway (Junior)
University of North Carolina - Chapel Hill, NC
Reinstatement of cocaine-seeking by cocaine HCl and cocaine methiodide
Mentor: Roy Wise, Ph.D.

(63) Yaw B. Asante (Junior)
Regis High School - New York City, NY
Within-subject dose-response curves for cocaine's locomotor-stimulating effects
Mentors: Jonathan Katz, Ph.D., and Paul Soto, Ph.D.

(64) Mikel A. Etchegaray (Junior)
Hamilton College - Clinton, NY
Modulation of persistent pain by neuronal pentraxins
Mentor: Toni Shippenberg, Ph.D.

Cellular Neurobiology Research Branch

(65) Erin E. Heap (Sophomore)
Southern Nazarene University - Bethany, OK
Glutamatergic neurons in the dopamine midbrain system
Mentors: Tsuyoshi Yamaguchi, Ph.D., and Marisela Morales, Ph.D.

(66) Imikomobong E. Ibia (Junior)
South Lakes High School - Reston, VA
Antiapoptotic protein Bcl-2 targets mitochondria-associated endoplasmic reticulum membranes (MAM)
Mentor: Teruo Hayashi, M.D., Ph.D.

(67) Wendy Zhang (Junior)
Marriotts Ridge High School - Marriottsville, MD
Cocaine induces alternations in the developing neocortex
Mentor: Jia Chen, M.D.

(68) John N. Soltys (Senior)
University of Vermont - Burlington, VT
Regulation of dopamine in the nucleus accumbens following targeted deletion of NMDA receptors in midbrain dopamine neurons
Mentor: Alex Hoffman, Ph.D.

(69) Brett A. Leibowitz (Junior)
Meadows School - Las Vegas, NV
Cholinergic neurons of the rat mesopontine tegmentum do not have either glutamatergic or GABAergic phenotypes
Mentors: Hui-Ling Wang, Ph.D., and Marisela Morales, Ph.D.

(70) Kyoung Huh (Junior)
Roberts Wesleyan College - Rochester, NY
Generalized and inducible Cre expression in ROSA26 recombinant mice
Mentor: Cristina Backman, Ph.D.

Chemical Biology Research Branch

(71) Akash Goyal (Junior)
Miami Valley School - Dayton, OH
In vitro evaluation of potential imaging agents for the dopamine transporter. II
Mentors: Christina Dersch, M.S., and Mario Ayestas, M.S.

Medications Discovery Research Branch

(72) Benjamin E. Liss (Senior)
St. John's University - Queens, NY
Design and synthesis of novel tropine-based ligands for dopamine D2-like receptors
Mentors: Amy Newman, Ph.D., and Noel Paul, Ph.D.

(73) Elyse M. Cornett (Senior)
Western Michigan University - Kalamazoo, MI
Effects of cocaine on dopamine release: a two day microdialysis study in rats
Mentors: Gianluigi Tanda, Ph.D., and Jonathan Katz, Ph.D.

(74) Emily I. Gerry (Sophomore)
River Hill High School - Clarksville, MD
In vitro evaluation of potential imaging agents for the dopamine transporter. I
Mentors: Richard Rothman, M.D., Ph.D., and Christina Dersch, M.S.

Molecular Neurobiology Research Branch

(75) Cavario S. Jackson (Junior)
Palm Beach Gardens High School - Palm Beach Gardens, FL
Novel anxiolytic effects of cocaine in dopamine transporter knockout mice
Mentors: George Uhl, M.D., Ph.D., and Frank Hall, Ph.D.

(76) Jamison M. Leid (Junior)
New Rochelle High School - New Rochelle, NY
Cortical molecular network of addiction-related genes
Mentors: George Uhl, M.D., Ph.D., and Chuan-Yun Li, B.S.

Molecular Neuropsychiatry Research Branch

(77) William Q. Brown, Jr. (Sophomore)
University of Maryland Eastern Shore - Princess Anne, MD
The effects of methamphetamine on the expression of the EPH receptors in the rat striatum
Mentors: Mike McCoy, M.S., and Jean Lud Cadet, Ph.D.

(78) Ping T. Yeh (Senior)
Centennial High School - Ellicott City, MD
Effects of glutamate transporter (GLT-1) overexpression on glutamate excitotoxicity
Mentors: Brandon Harvey, Ph.D., and Yun Wang, M.D., Ph.D.

(79) Kyle J. Williams (Senior)
Middle Tennessee State University - Murfreesboro, TN
Stress-induced reorganization of ARMET-mCherry fusion protein in *Caenorhabditis elegans*
Mentors: Brandon Harvey, Ph.D., and Yun Wang, M.D., Ph.D.

(80) Julia J. Liu (2008 Graduate)
Perry Hall High School - Perry Hall, MD
Effects of neurotrophic factors, MANF and CDNF, on 6-Hydroxydopamine toxicity in PC12 cells
Mentor: Matthew Chiocco, Ph.D.

(81) Zhuoheng Deng (Junior)
Dulaney High School - Timonium, MD
The effects of methamphetamine on ephrin expression in the rat striatum
Mentors: Michael McCoy, M.S., and Jean Lud Cadet, M.D.

(82) Sunny Kumar (Junior)
Saint Andrew's School - Boca Raton, FL
Methamphetamine self-administration causes changes in gene expression and induces neurotoxic effects in the rat striatum
Mentor: Irina Krasnova, Ph.D.

(83) Patrick A. Salazar (Junior)
Taft School - Watertown, CT
Methamphetamine regulation of *scrt* gene expression in the rat cortex
Mentors: Jean Lud Cadet, M.D., and Ning Sheng Cai, Ph.D.

(84) Chad M. Mintz (Junior)

Battlefield High School - Haymarket, VA

Methamphetamine regulates snail gene expression in rat cortex

Mentors: Jean Lud Cadet, M.D., and Ning sheng Cai, Ph.D.

(85) Jennifer Bai (Junior)

Dulaney High School - Timonium, MD

Methamphetamine enhances endoplasmic reticulum (ER) stress related protein, BiP (Binding immunoglobulin protein)

Mentor: Subramaniam Jayanthi, Ph.D.

(86) Danny Wu (Sophomore)

University of Washington - Seattle, WA

Detection of nitric oxide using o-phenylenediamine/porphyrin electrochemical sensors

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

(87) Fadhi Ali (Junior)

Preuss School UCSD - La Jolla, CA

Escalating dose methamphetamine pretreatment causes partial protection against neurotoxic effects of high dose drug injections in the cortex and hippocampus

Mentors: Jean Lud Cadet, M.D., and Irina Krasnova, Ph.D.

(88) Kirsti R. Gilmore (Junior)

Morgan Park High School - Chicago, IL

Expression of Heme oxygenase (Hmox-1) in the striatum of methamphetamine administered rats

Mentors: Subramaniam Jayanthi, Ph.D., and Jean Cadet, M.D.

(89) Crystal G. Phillip (Senior)

Morgan State University - Baltimore, MD

Investigation of amph-induced cell death in the brains of wild type and superoxide dismutase transgenic mice

Mentor: Irina Krasnova, Ph.D.

Neuroimaging Research Branch

(90) Likun Xi (Junior)

Marriotts Ridge High School - Marriottsville, MD

DTI Stochastic Tractography:

An analysis on white matter integrity of chronic cocaine users

Mentors: Yihong Yang, Ph.D., and Xiujuan Geng, Ph.D.

(91) Meghan E. Graham (2008 Graduate)

University of Maryland - College Park, MD

Examining associations between functional brain activation and behavior in adolescents with a history of prenatal drug exposure

Mentors: Tracy Riggins, Ph.D., and Betty Jo Salmeron, M.D.

(92) Kevin F. Brown (Freshman)

University of Virginia - Charlottesville, VA

Proof of principle studies to validate non-invasive magnetic resonance spectroscopy measurement of in vivo glutamate release

Mentors: Bruce Vaupel, Ph.D., and Yantao Zuo, Ph.D.