



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

**Summer Student  
Poster Day**

**Tuesday, August 4, 2015  
1:00 – 3:00 p.m.**

**BRC, Baltimore Maryland**

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



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**NIDA**

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**NATIONAL INSTITUTE**

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**ON DRUG ABUSE**

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## Behavioral Neuroscience Branch

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- 1**      **Jen Beidel**  
*George Mason University*  
*Bruce Hope, Ph.D.*

**Characterizing the Fos-expressing neuronal ensembles during acquisition of food self-administration in female rats**
- 2**      **Chengrui Fu**  
*Towson High School*  
*Bo Liang, Ph.D.*

**An ImageJ plugin to analyze data from the social behavior of mice experiment**
- 3**      **Roger Guitart**  
*Poolesville High School*  
*Michael Mendoza, B.S.*

**Assessing neuronal activation induced by extinction of palatable food seeking**
- 4**      **Godwin Igbinedion**  
*Elizabethtown College*  
*Leigh Panlilio, Ph.D.*

**Involvement of dopamine D4 receptors in the effects of THC on working memory in rats**
- 5**      **Paige Kallenberger**  
*Kansas State University*  
*Yavin Shaham, Ph.D.*

**Incubation of context-induced methamphetamine craving in rats**
- 6**      **Thao Khuc**  
*University of Maryland School of Medicine*  
*Satoshi Ikemoto, Ph.D.*

**Reversibility of food restriction-induced enhancement of incentive responding**
- 7**      **Robert Mason**  
*Salisbury University*  
*Zuzana Justinova, Ph.D.*

**Effect of negative allosteric modulator of cannabinoid CB1 receptors on discriminative-stimulus effects of THC in rats**
- 8**      **Laurence Spekterman**  
*University of Maryland, College Park*  
*Eugene Kiyatkin, Ph.D.*

**Behavioral patterns of glucose and fructose drinking in rats**

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## Cellular Neurobiology Branch

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- 9**      **Preethi Gopal**  
*Huron High School*  
*Lindsay De Biase, Ph.D.*  
**Changes in microglial density and intracellular accumulations in the basal ganglia during normal aging**
- 10**     **Jay Gupta**  
*Thomas Jefferson High School for Science and Technology*  
*Yexica Aponte, Ph.D.*  
**Localization and distribution of immunoreactive parvalbumin neurons in the mouse lateral hypothalamus**
- 11**     **Haja Kargbo**  
*Radford University*  
*Alex Hoffman, Ph.D.*  
**Regulation of the dopamine transporter by the sigma 1 receptor**
- 12**     **Melissa Liu**  
*University of California, Los Angeles*  
*Melissa Sharpe, Ph.D. and Joshua Jones, Ph.D.*  
**Building inference in a day: a pilot study on single day sensory preconditioning**
- 13**     **Zavier Pope**  
*University of Maryland, Baltimore County*  
*Yexica Aponte, Ph.D.*  
**Distribution of nitric oxide synthase-1 (NOS1) neurons in the supraoptic nucleus in mice**
- 14**     **Ray Rada**  
*Catonsville High School*  
*Thomas Stalnaker, Ph.D.*  
**Developing a task to dissociate value from salience**
- 15**     **Michael Shaham**  
*University of Maryland, College Park*  
*Geoffrey Schoenbaum, Ph.D.*  
**Blocking is unaffected by increasing unconditioned stimulus value via changes in satiety state**
- 16**     **Jocelyn Wu**  
*McGill University*  
*Hugo Tejada, Ph.D.*  
**Behavioral consequences of autocrine signaling in the dynorphin/kappa-opioid-receptor system**

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## **Integrative Neuroscience Branch**

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- 17**      **Keenan Caswell**  
*Johns Hopkins University*  
*David Root, Ph.D.*  
**Whole-brain mapping of VGluT2-GABA neurons**
- 18**      **Sagar Chapagain**  
*The Community College of Baltimore County*  
*David J. Barker, Ph.D.*  
**Basal forebrain inputs to specific cell types in the ventral tegmental area**
- 19**      **Lynn Cournoyer**  
*University of Maryland, College Park*  
*David Root, Ph.D. and Marisela Morales, Ph.D.*  
**Neuronal phenotypes of the human ventral tegmental area**
- 20**      **Kerry McFadden**  
*Northwestern University*  
*Brendan Tunstall, Ph.D.*  
**Effects of glucocorticoid receptor antagonism on alcohol-related behaviors in female rats**
- 21**      **Temitope Oyeleke**  
*Hampton University School of Pharmacy*  
*Carlos Mejias-Aponte, Ph.D.*  
**The mesocortical glutamate system**
- 22**      **Samuel Reid III**  
*Western School of Technology*  
*Amina Woods, Ph.D.*  
**Optimization of MALDI mass spectrometry imaging for neurotransmitters in the brain**
- 23**      **Dylan Smith**  
*St. Mary's College of Maryland*  
*Shang-Yi Tsai, Ph.D.*  
**Involvement of sigma-1 receptor chaperones in the formation of autophagosome**

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## Molecular Neuropsychiatry Branch

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- 24**      **Jessica Brannock**  
*University of Sheffield*  
*Subramaniam Jayanthi, Ph.D.*  
**Effect of a single dose of methamphetamine on BDNF and FosB protein levels in the rat nucleus accumbens**
- 25**      **Maggie Cason**  
*University of Maryland, College Park*  
*Michael McCoy, M.S.*  
**Effect of methamphetamine self-administration on neurotropic factors in the rodent hippocampus**
- 26**      **Maxwell Lawson**  
*Paul Laurence Dunbar High School*  
*Michael McCoy, M.S.*  
**Hippocampal expression of GDNF and its receptors after methamphetamine self-administration**
- 27**      **Jacqueline Magaha**  
*Garrison Forest School*  
*Bruce Ladenheim, Ph.D.*  
**Effects of palatable food self-administration on the mRNA expression of CREB and related transcription factors in the rat nucleus accumbens.**
- 28**      **Sharron Moore**  
*Coppin State University*  
*Irina Krasnova, Ph.D.*  
**Effects of palatable food self-administration on urocortin peptides and their receptor in the rat nucleus accumbens**
- 29**      **Sarah Perumattam**  
*The Catholic High School of Baltimore*  
*Jana Drgonova, Ph.D.*  
**Behavioral characterization of Rbfox1 (A2BP1) knockout mice**
- 30**      **Vikram Ponnusamy**  
*Duke University*  
*Jana Drgonova, Ph.D.*  
**Development of cadherin 13 cell aggregation assay**
- 31**      **Crystal Trice**  
*Stevenson University*  
*Bruce Ladenheim, Ph.D.*  
**Effects of palatable food self-administration on the expression of CRH and its receptors in the rat nucleus accumbens**

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## Molecular Targets and Medications Discovery Branch

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32

**Michael Chojnacki**

*University of Maryland, College Park  
Michael Baumann, Ph.D.*

**Reserpine pretreatment discriminates the mechanism of action for the designer stimulants MDPV and mephedrone**

33

**Kevin Crombie**

*University of Wisconsin, Madison  
Gianluigi Tanda, Ph.D.*

**Effect of endogenous cannabinoid system manipulation on dopamine levels in the nucleus accumbens**

34

**Christopher Czarnecki**

*Hargrave Military Academy  
Gianluigi Tanda, Ph.D.*

**Effects of typical and atypical dopamine antagonist using fast-scan cyclic voltammetry**

35

**Samantha Hess**

*University of North Carolina, Wilmington  
Jonathan Katz, Ph.D.*

**Is the 5-choice serial reaction time task testing attention?**

36

**Joseph Hunter**

*University of Maryland, Baltimore County  
Jonathan Katz, Ph.D.*

**Effects of the benzotropine analogue AHN 2-005 compared to d-amphetamine on parameters of food reinforcement**

37

**Daniel Ovetsky**

*Poolesville High School  
Xavier Guitart, Ph.D.*

**Selective activation of MAPK signaling by a biased dopamine D1 receptor agonist does not produce locomotor activity in reserpinized mice**

38

**Helen Tang**

*Williams College  
Rachel Slack, Ph.D.*

**Novel paroxetine analogues for serotonin transporter structure-function studies**

39

**Nicholas Ten**

*Yale University  
Lei Shi, Ph.D.*

**Identifying biologically relevant intermediate conformational states in neurotransmitter:sodium symporters**

- 40**      **Gilbert Xue**  
*Carnegie Mellon University*  
*Zheng-Xiong Xi, M.D., Ph.D.*  
**The use of modafinil analogue JJC8-016 as a potential treatment for cocaine abuse**
- 41**      **Clare Zhu**  
*Northwood High School*  
*Lei Shi, Ph.D.*  
**Quantifying the complexity of conformational transitions in the partial and biased activation of G-protein coupled receptors**

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## **Neuroimaging Branch**

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- 42**      **Devona Quasie-Woode**  
*University of Maryland, Baltimore County*  
*Elliot Stein, Ph.D.*  
**Dose effects of nicotine on precipitated withdrawal symptoms**
- 43**      **Jason Smucny**  
*University of Colorado*  
*Elliot Stein, Ph.D.*  
**Complex network analysis of the resting rat brain at 9.4T**
- 44**      **Jamei Wang**  
*Carnegie Mellon University*  
*Xiaoyu Ding, Ph.D.*  
**Clustering smokers into subgroups using clinical scores**

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## **Optogenetics & Transgenic Technology Core**

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- 45**      **Leonard Baza**  
*Skyline College*  
*Brandon Harvey, Ph.D.*  
**BDNF-SERCαMP, a novel method to regulate secretion of brain-derived neurotrophic factor (BDNF) in rat neurons**
- 46**      **Molly Lutrey**  
*University of Maryland, College Park*  
*Brandon Harvey, Ph.D.*  
**Developing a dual reporter DNA to monitor ER calcium homeostasis and ER stress response**
- 47**      **Ifeanyichukwu Ozobu**  
*Towson University*  
*Emily Simons Wires, B.S.*  
**Longitudinal monitoring of hepatic endoplasmic reticulum calcium changes in rats as a result of dietary intake**

48

**Emily Park**

*Long Reach High School  
Lee Campbell, Ph.D.*

**Using CRISPR to modulate the TLR4-mediated pro-inflammatory pathway in microglia**

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## **Animal Care Section**

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49

**Bettie Payne**

*University of Edinburgh School of Veterinary Studies  
Francois Vautier, Ph.D.*

**The cre-lox system: a recombinase technology for site-specific gene targeting in transgenic mice**

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## **Administrative Management Branch**

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50

**Nicole Haggerty**

*University of Maryland, College Park  
Kelli Russell*

**Sustainability practices of NIDA AMB: a focus on compliance and green purchasing**

51

**Jason Zou**

*Centennial High School  
Jia-Ling Lin, Ph.D. and Massoud Vahabzadeh, Ph.D.*

**Chemical informatics application to the management and visualization of pharmacotherapeutic agents**







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## Comparative Medicine Section (CMS)

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- 1**      **Aine I. Schanche (Junior)**  
*Swarthmore College - Swarthmore, PA*  
*Mentor: Theresa Meade, DVM and Kathy Perdue, DVM*  
**Is water gel a suitable option for hydration of aged mice?**

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## Laboratory of Behavioral Neuroscience (LBN)

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- 2**      **Danielle I. Fournier (Junior)**  
*Wheaton College - Norton, MA*  
*Mentor: Lori Beason-Held, Ph.D.*  
**Disease burden affects brain function in aging**
- 3**      **Christie Okoye (Freshman)**  
*Johns Hopkins University - Baltimore, MD*  
*Mentor: Anna McCarrey, Ph.D.*  
**Decision making in older adults: An fMRI study**
- 4**      **Matthew P. Vetere (Graduate Student – 1st Year)**  
*Syracuse University - Syracuse, NY*  
*Mentor: Hachi Manzur Valdivia, M.D., Ph.D. and Shih-Chieh Lin, M.D., Ph.D.*  
**Open Behavior: An open source, inexpensive, modular, scalable and automated behavioral control system**

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## Laboratory of Cardiovascular Science (LCS)

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- 5**      **Naftali R. Horwitz (Sophomore)**  
*Johns Hopkins University - Baltimore, MD*  
*Mentor: Li Lin, Ph.D.*  
**Key Acidic Component in RAGE Dictates Its Processing & Cellular Localization**
- 6**      **Ashley Wirth (Sophomore)**  
*Williams College – Williamstown, MA*  
*Mentor: Kenta Tsutsui, M.D., Ph.D.*  
**Dawn of the Dead: Understanding the Excitation of Dormant Pacemaker Cells in Response to Environmental Stimuli**

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## Laboratory of Clinical Investigation (LCI)

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- 7**      **Erin J. Hercules (2015 Graduate)**  
*The College of William and Mary - Williamsburg, VA*  
*Mentor: Isabel Gonzalez Mariscal, Ph.D. and Michael Rouse, Ph.D.*  
**Cannabinoid 1 receptor knockout mice have reduced fat accumulation in the liver during the process of aging.**
- 8**      **Rodrigo A. Montoro (Junior)**  
*Towson University - Towson, MD*  
*Mentor: Isabel Gonzalez Mariscal, Ph.D.*  
**Specific knockout of beta cell cannabinoid 1 receptor lessens hyperglycemia in insulin-resistant mice.**
- 9**      **Adria N. Summers (Senior)**  
*Howard University - Washington, DC*  
*Mentor: Michael Rouse, Ph.D.*  
**The Role of FoxO1 in Pancreatic Beta-Cell Function During Insulin Resistance in Mice**
- 10**     **Olouwakemi D. Biaou (Junior)**  
*Milford Mill Academy - Baltimore, MD*  
*Mentor: Moaddel Ruin, Ph.D. and Lukasz Ciesla, Ph.D.*  
**The identification of novel ligands for the Alpha3Beta4Alpha5 nicotinic receptor**

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## Laboratory of Epidemiology and Population Sciences (LEPS)

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- 11**     **Arielle A. Sloan (Graduate Student – 2nd Year)**  
*Brigham Young University - Provo, UT*  
*Mentor: Alan Zonderman, Ph.D. and Michele Evans, M.D.*  
**Sociodemographic variation in a Generalized Anxiety Disorder (GAD) screening test**
- 12**     **Frank E. Glover 2015 Graduate)**  
*Boston College - Chestnut Hill, MA*  
*Mentor: Douglas Dluzen, Ph.D. and Michele Evans, M.D.*  
**Overexpression of hypertension-related miRNA in aortic endothelial cells and their effects on target gene expression**
- 13**     **Uyen N. Hoang (Graduate Student - 1st Year)**  
*San Diego State University - San Diego, CA*  
*Mentor: Tamara Harris, M.D.*  
**Statistical shape and density modeling in relation to hip fracture risk in women**

- 14 Ian T. Ferguson (Medical Student - 1st Year)**  
*University College Dublin - Dublin, VI*  
*Mentor: Lenore Launer, Ph.D. and Martine el Bejjani, Ph.D.*  
**Association of Brain Natriuretic Peptide with MRI outcomes in the CARDIA study**

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## Laboratory of Genetics (LG)

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- 15 Riley K. Driscoll (Freshman)**  
*Southern Oregon University - Ashland, OR*  
*Mentor: Ioannis Grammatikakis, Ph.D. and Kotb Abdelmohsen, Ph.D.*  
**Characterization of AUF1-Associated Circular RNAs**
- 16 Krista L. Opsahl-Ong (Freshman)**  
*Duke University - Durham, NC*  
*Mentor: Jun Ding, Ph.D.*  
**Estimating mitochondrial DNA copy number from whole-genome sequencing data**
- 17 Bilguunzaya Battogtokh (Sophomore)**  
*Yorktown High School - Arlington, VA*  
*Mentor: Ilya Goldberg, Ph.D. and Christopher Coletta, B.S.*  
**Using Machine Learning on Fundus Images to Diagnose Age-Related Macular Degeneration**

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## Laboratory of Molecular Biology and Immunology (LMBI)

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- 18 Savannah C. Roy (Junior)**  
*University of Notre Dame - South Bend, IN*  
*Mentor: Robert Maul, Ph.D. and Patricia Gearhart, Ph.D.*  
**Role of Splicing in AID Targeting and Somatic Hypermutation of the Immunoglobulin Loci**
- 19 Haleigh T. Larson (Freshman)**  
*Yale University - New Haven, CT*  
*Mentor: Lisa Russell, Ph.D. and Patricia Gearhart, Ph.D.*  
**Making the Pieces Fit: How does age decrease antibody secretion?**
- 20 Kevin Liu (Sophomore)**  
*The Ohio State University - Columbus, OH*  
*Mentor: Ranjan Sen, Ph.D. and Jaimy Joy, B.S.*  
**A Global Analysis of mRNA Decay Patterns in Mouse Primary B Cells**

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## Laboratory of Molecular Gerontology (LMG)

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- 21**      **Bradley N. Wollman (Junior)**  
*Washington College - Chestertown, MD*  
*Mentor: Evandro Fang, Ph.D. and Vilhelm Bohr, M.D., Ph.D.*  
**The NAD+/SIRT1 signaling activators increase lifespan and health span in the premature aging ATM and wild-type models**
- 22**      **Alireza Maghsadi 2015 Graduate)**  
*Community College of Baltimore County - Catonsville, MD*  
*Mentor: Sanjay Bharti, Ph.D. and Robert Brosh, Ph.D.*  
**Acetylation of the Warsaw Breakage Syndrome Helicase implicated in Sister Chromatid Cohesion and DNA Repair**
- 23**      **Morgan E. Sulzbach (Sophomore)**  
*University of Maryland College Park - College Park, MD*  
*Mentor: Robert Brosh, Ph.D. and Taraswi Banerjee, Ph.D.*  
**FANCI regulates transcription by targeting promoter-associated G-quadruplex DNA structures**
- 24**      **Priscella P. Holland (Freshman)**  
*Howard University - Washington, DC*  
*Mentor: Huiming Lu, Ph.D. and Vilhelm Bohr, M.D., Ph.D.*  
**Probing the role of phosphorylation on RECQL4 in homologous recombination repair**
- 25**      **Aishwarya Raja (Junior)**  
*Columbia University - New York, NY*  
*Mentor: Teruaki Iyama, Ph.D. and David Wilson, III, M.D.*  
**Identifying the Nucleolar Function of Cockayne Syndrome Proteins**
- 26**      **Ashleigh F. Manuelito (Sophomore)**  
*Stanford University - Stanford, CA*  
*Mentor: Raghavendra Shamanna, Ph.D. and Vilhelm Bohr, M.D., Ph.D.*  
**Camptothecin-induced replication stress in breast cancer cells is associated with WRN degradation**

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## Laboratory of Neurogenetics (LNG)

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- 27**      **Xian H. Chang (Junior)**  
*Carnegie Mellon University - Pittsburgh, PA*  
*Mentor: Dena Hernandez, Ph.D. and Noah Nichols, B.S.*  
 **$\beta$ -Glucocerebrosidase Gene Sequencing in a Parkinson's Progression Markers Initiative Cohort**

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## Laboratory of Neurosciences (LNS)

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- 28**      **Emily L. Giddings (Junior)**  
*Castleton State College - Castleton, VT*  
*Mentor: Chinmoyee Maharana, Ph.D. and Mark Mattson, Ph.D.*  
**Investigating the Modulatory Role of B Cells in Alzheimer's Disease**
- 29**      **Kailey M. Held (Senior)**  
*Eleanor Roosevelt High School - Greenbelt, MD*  
*Mentor: Henriette van Praag, Ph.D.*  
**Long-term Use of an Exercise Endurance Enhancing Compound and Microglia in the Brain**
- 30**      **Rebecca J. Wellman (Junior)**  
*University of Maryland Baltimore County - Baltimore, MD*  
*Mentor: Simonetta Camandola, Ph.D.*  
**The Urate Transporter SLC2A9 is Expressed in Neurons**
- 31**      **Caitlin N. Suire 2015 Graduate)**  
*Wake Forest University - Winston Salem, NC*  
*Mentor: Erez Eitan, Ph.D. and Mark Mattson, Ph.D.*  
**The response of blood-derived extracellular vesicles to caloric restriction and intermittent fasting in overweight women**
- 32**      **Collins D. Wang (Senior)**  
*UCLA - Los Angeles, CA*  
*Mentor: Ryan Wu, Ph.D. and Mark Mattson, Ph.D.*  
**Intermittent 2-Deoxyglucose Administration Rescues Motor Function Deficits in a Parkinson's Disease Animal Model.**

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## Translational Gerontology Branch (TGB)

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- 33**      **Darisbeth Rosario Lugo (Senior)**  
*University of Puerto Rico - Bayaman, PR*  
*Mentor: Irene Alfaras, Ph.D. and Rafael de Cabo, Ph.D.*  
**Effect of on-and-off feeding protocols with 1% metformin on mouse liver**
- 34**      **Marlene Sobrino-Almanzar 2015 Graduate)**  
*University of Puerto Rico, Rio Piedras Campus - San Juan, PR*  
*Mentor: Rafael de Cabo, Ph.D. and Alberto Diaz-Ruiz, Ph.D.*  
**Molecular characterization of NQO1 in muscle C2C12 cell line.**

**35**

**Benjamin S. Aronson (Senior)**

*George Washington University - Washington, DC*

*Mentor: Eleanor Simonsick, Ph.D.*

**The Energetic Cost of Low Back Pain**

**36**

**Marissa E. Louis (Graduate Student - 1st Year)**

*University at Albany, State University of NY - Albany, NY*

*Mentor: Rafael de Cabo, Ph.D. and Sarah Mitchell, Ph.D.*

**A tale of two diets: How caloric restriction can improve lifespan and health span ?**

**37**

**Priscilla L. Carpenter (Junior)**

*Howard University - Washington, DC*

*Mentor: Rafael deCabo, Ph.D. and Koji Fukui, Ph.D.*

**Metformin influences high-fat diet-induced intracellular stress response-related signal pathways and neurotrophic factors in mRNA expression**







