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EDUCATION

- Ph.D. 1998 Biological/Experimental Psychology, Duke University, Durham, North Carolina
B.A. 1990 Psychology/Biology, Grinnell College, Grinnell, Iowa

PROFESSIONAL AND RESEARCH EXPERIENCE

- 2011-present Associate Professor of Biobehavioral Health, The Pennsylvania State University
2005-present Affiliate of Neuroscience Program and Gerontology Center, Pennsylvania State University
2004-2011 Assistant Professor of Biobehavioral Health, The Pennsylvania State University
2001-2004 Research Scientist, Institute for Mind and Biology, University of Chicago
1999-2001 Research Fellow, Department of Psychology, University of Chicago
1992-1998 Research Assistant, Department of Psychology, Duke University
1990-1992 Senior Research Assistant, Department of Psychology, Brandeis University

AWARDS & HONORS

- 2011 The College of Health and Human Development Alumni Society Excellence in Teaching Award, The Pennsylvania State University, University Park, PA
2003 Trainee at Eleventh Annual Summer Training Course in Experimental Aging Research, Buck Institute for Aging, Novato, CA
2001 Recipient of NSF Travel Grant to attend 27th International Ethological Conference in Tübingen, Germany
2001 Participant in Pew Midstates Science and Mathematics Consortium, *Teaching at a Liberal Arts College*, Grinnell, IA

I. RESEARCH

PUBLICATIONS IN REFEREED JOURNALS & BOOKS (students marked with an asterisk)

- McMahon E.K., Farhan S., **Cavigelli S.A.** (2023). How do we characterize temperament?: Broad testing of temperament across time and contexts in low-variable conditions. *Animal Behaviour*, 195: 29-42. <https://doi.org/10.1016/j.anbehav.2022.10.007>
- Kamens H.M., Flarend G.*, Wickenheisser A.*, Horton W.J., **Cavigelli S.A.** (2022). The effect of stress on opioid addiction-related behaviors: A review of preclinical literature. *Experimental and Clinical Psychopharmacology*. <https://doi.org/10.1037/pha0000588>. Epub ahead of print. PMID: 35834183.
- Eacret D.*, Lemchi C.L.*, Caulfield J.I.*, **Cavigelli S.A.**, Veasey S.C.*, Blendy J.A. (2022). Chronic sleep deprivation blocks voluntary morphine consumption but not conditioned place preference in mice. *Frontiers in Neuroscience*, 16: 836693. <https://doi.org/10.3389/fnins.2022.836693>. PMID: 35250468; PMCID: PMC8892254.
- McMahon E.M.*, Youatt E.*, **Cavigelli S.A.** (2022). A physiological profile approach to animal temperament: How to understand the functional significance of individual differences in behaviour. *Proceedings of the Royal Society B*, 289: 20212379. <https://doi.org/10.1098/rspb.2021.2379>. PMID: 35016542; PMCID: PMC8753167.
- Mooney-Leber S.M.*, Caruso M.J.*, Gould T.J., **Cavigelli S.A.**, Kamens H.M. (2022). The impact of adolescent stress on nicotine use and affective disorders in rodent models. *European Journal of Neuroscience*. <https://doi.org/10.1111/ejn.15421>. PMID: 34402112.
- Cavigelli S.**, Leips J., Xiang Q-Y.J., Lemke D., Konow N. (2022). Next steps in integrative biology: Mapping interactive processes across levels of biological organization. *Integrative and Comparative Biology*, 61: 2066-2074. <https://doi.org/10.1093/icb/icab161>. PMID: 34259855.
- McMahon E.M.*, **Cavigelli S.A.** (2021). Gaps to address in ecological studies of temperament and physiology. *Integrative and Comparative Biology*, 61: 1917-1932. <https://doi.org/10.1093/icb/icab118>. PMID: 34097030.
- Caulfield J.I.*, Schopf K.J.*, **Cavigelli S.A.** (2021). Peri-adolescent asthma: Acute impacts on innate immune response, corticosterone, and microglia in mice. *Journal of Neuroimmunology*, 350: 577450. <https://doi.org/10.1016/j.jneuroim.2020.577450>. PMID: 33285450; PMCID: PMC7750285.
- Kamens H.M., Miller C.N.*, Caulfield J.I.*, Zeid D.*, Horton W.J., Silva C.P.*, Sebastian A., Albert I., Gould T.J., Fishbein D., Grigson P.S., **Cavigelli S.A.** (2021). Adolescent stress reduces adult morphine-induced behavioral sensitization in C57BL/6J mice. *Frontiers in Behavioral Neuroscience*, 15: 678102. <https://doi.org/10.3389/fnbeh.2021.678102>. PMID: 34149372; PMCID: PMC8209305
- Caulfield J.I.*, Ching A.M.*, Cover E.M.*, August, A., Craig, T. Kamens H.M., **Cavigelli S.A.** (2020). Inhaled corticosteroids as treatment for adolescent asthma: effects on adult anxiety-related outcomes in a murine model. *Psychopharmacology*, 238: 165-179. <https://doi.org/10.1007/s00213-020-05666-x>. PMID: 33011818; PMCID: PMC878745

- Caulfield J.I.*, **Cavigelli S.A.** (2020). Individual differences in glucocorticoid regulation: Does it relate to disease risk and resilience? *Frontiers in Neuroendocrinology*, 56: 100803. DOI: 10.1016/j.yfrne.2019.100803. PMID: 31697962; PMCID: PMC7189329.
- Michael K.C.*, Bonneau R.H., Bourne R.A., Godbolt L.*, Caruso M.J.*, Hohmann C., **Cavigelli S.A.** (2020). Divergent immune responses in behaviorally-inhibited vs. non-inhibited male rats. *Physiology & Behavior*, 213: 112693. DOI: 10.1016/j.physbeh.2019.112693. PMID: 31629765; PMCID: PMC6934092.
- Terenina E.E., **Cavigelli S.**, Mormède P., Zhao W., Parks C., Lu L., Jones B.C., Mulligan M.K. (2019). Genetic factors mediate the impact of chronic stress and subsequent response to novel acute stress. *Frontiers in Neuroscience*, 13: 438. DOI: 10.3389/fnins.2019.00438. PMID: 31164799; PMCID: PMC6536627.
- Mulligan M.K., Lu L., **Cavigelli, S.A.**, Mormède P., Terenina E., Zhao W., Williams R.W., Jones B.C. (2019). Impact of genetic variation on stress-related ethanol consumption. *Alcoholism: Clinical & Experimental Research*, 43: 1391-1402. DOI: 10.1111/acer.14073. PMID: 31034606; PMCID: PMC8287762.
- McCormick G.L.*, Robbins T.R., **Cavigelli S.A.**, Langkilde T. (2019). Population history with invasive predators predicts innate immune function response to early-life glucocorticoid exposure in lizards. *Journal of Experimental Biology*, 222: jeb188359. DOI: 10.1242/jeb.188359. PMID: 30659082.
- Cavigelli S.A.** (2018). Behavioral inhibition in rodents: a model to study causes and health consequences of temperament. In: *Behavioral Inhibition: Integrating Theory, Research, and Clinical Perspectives*. Editors: Koraly Perez-Edgar & Nathan A. Fox. Cham, Switzerland: Springer.
- Mulligan M.K., Zhao W., Dickerson M., Arends D., Prins P.*, **Cavigelli S.A.**, Terenina E., Mormède P., Lu L., Jones B.C. (2018). Genetic contribution to initial and progressive alcohol intake among recombinant inbred strains of mice. *Frontiers in Genetics*, 9: 370. DOI: 10.3389/fgene.2018.00370. PMID: 30319684; PMCID: PMC6167410.
- Caulfield J.I.*, Caruso M.J.*, Bourne R.A., Chirichella N.R.*, Klein L.C., Craig T., Bonneau R.H., August A., **Cavigelli S.A.** (2018). Asthma induction during development and adult lung function, behavior, and brain gene expression. *Frontiers in Behavioral Neuroscience*, 12: 188. DOI: 10.3389/fnbeh.2018.00188. PMID: 30214402; PMCID: PMC6125297.
- Caruso M.J.*, Seemiller L.R.*, Fetherston T.B.*, Miller C.N.*, Reiss D.E.*, **Cavigelli S.A.**, Kamens H.M. (2018). Adolescent social stress increases anxiety-like behavior and ethanol consumption in adult male and female C57BL/6J mice. *Scientific Reports*, 8: 10040. DOI: 10.1038/s41598-018-28381-2. PMID: 29968802; PMCID: PMC6030218.
- Cavigelli S.A.**, Bao A.*, Bourne R.A., Caruso M.J.*, Caulfield J.I.*, Chen M.*, Smyth J.M. (2018). Timing matters: the interval between acute stressors within chronic stress modifies behavioral and physiological stress responses in male rats. *Stress*, 21: 453-463. DOI: 10.1080/10253890.2018.1459557. PMID: 29648498; PMCID: PMC6562168.
- Caruso M.J.*, Crowley N.A., Reiss D.E.*, Caulfield J.I.*, Luscher B., **Cavigelli S.A.**, Kamens H.M. (2018). Adolescent social stress increases anxiety-like behavior and alters synaptic transmission, without influencing nicotine responses, in a sex-dependent manner. *Neuroscience*, 373: 182-198. PMID: 29343455; PMCID: PMC5816715.

- Caruso M.J.*, Reiss D.E.*, Caulfield J.I.*, Thomas J.L.*, Baker A.N.*, **Cavigelli S.A.**, Kamens H.M. (2018). Adolescent chronic variable social stress influences exploratory behavior and nicotine responses in male, but not female, BALB/cJ mice. *Brain Research Bulletin*, 138: 37-49. PMID: 28802900; PMCID: PMC5807246.
- Caulfield J.I.*, Caruso M.J.*, Michael K.C., Bourne R.A., Chirichella N.R.*, Klein L.C., Craig T., Bonneau R.H., August, A., **Cavigelli, S.A.** (2017). Peri-adolescent asthma symptoms cause adult anxiety-related behavior and neurobiological processes in mice. *Behavioural Brain Research* 326: 244-255. PMID: 28284954; PMCID: PMC5497519.
- Caruso M.J.*, Kamens H.M., **Cavigelli S.A.** (2017). Exposure to chronic variable social stress during adolescence alters affective-related behaviors and adrenocortical activity in adult male and female inbred mice. *Developmental Psychobiology* 59: 679-687. PMID: 28678409; PMCID: PMC5600506.
- McCormick G.L.*, Robbins T.R., **Cavigelli S.A.**, Langkilde T.L. (2017). Ancestry trumps experience: Transgenerational but not early life stress affects the adult physiological stress response. *Hormones and Behavior* 87: 115-121. PMID: 27864050.
- Chaby L.E.*, Sheriff M.J., **Cavigelli S.A.**, Hirrlinger A.M.*, Lim J.*, Braithwaite V.A. (2016). Stress during adolescence shapes performance in adulthood: context-dependent effects on foraging and vigilance. *Ethology* 122: 1-14.
- Chaby L.E.*, **Cavigelli S.A.**, Hirrlinger, A.M., Lim, J.*, Wang, K.M.*, Braithwaite, V.A. (2015). Chronic stress during adolescence impairs and improves learning and memory in adulthood. *Frontiers in Behavioral Neuroscience* 9: 327. PMID: 26696849; PMCID: PMC4675857.
- Cavigelli S.A.**, Caruso M.J.* (2015). Sex, social status, and physiological stress in primates: the importance of social and glucocorticoid dynamics. *Philosophical Transactions Royal Society B* 26: 370(1669). PMID: 25870390; PMCID: PMC4410370.
- Chaby L.E.*, **Cavigelli S.A.**, Hirrlinger A.M., Caruso M.J.*, Braithwaite V.A. (2015). Chronic unpredictable stress during adolescence causes long-term anxiety. *Behavioural Brain Research*, 278: 492-495. PMID: 25448433.
- Caruso M.J.*, McClintock M.K., **Cavigelli S.A.** (2014). Temperament moderates the influence of periadolescent social experience on adult behavior and adrenocortical activity. *Hormones and Behavior*, 66: 517-524. PMID: 25066485; PMCID: PMC4498393.
- Chaby L.E.*, **Cavigelli S.A.**, White A.*, Wang K.*, Braithwaite V.A. (2013). Long-term changes in cognitive bias and coping response as a result of chronic unpredictable stress during adolescence. *Frontiers in Human Neuroscience* 7: 328. PMID: 23847501; PMCID: PMC3701140.
- Cavigelli S.A.**, Michael K.C.*, Ragan C.M.* (2013). Behavioral, physiological, and health biases in laboratory rodents: a basis for understanding mechanistic links between human personality and health. In: *Animal Personalities: Behavior, Physiology and Evolution* (Ed. by C. Carere and D. Maestripieri), Chicago: University of Chicago Press.
- Cavigelli S.A.**, Chaudhry, H.S.* (2012). Social status, glucocorticoids, immune function, and health: Can animal studies help us understand human socioeconomic-status-related health disparities? (Special Issue on 'The Neuroendocrine-Immune Axis in Health and Disease') *Hormones and Behavior* 62: 295-313. PMID: 22841799.

- Michael K.C.*, **Cavigelli S.A.** (2012). Temperament / Animal Personality. In: *The Oxford Handbook of Psychoneuroimmunology* (Ed. by S. Segerstrom). Oxford: Oxford University Press.
- Ragan C.M.*, Loken E., Stifter C.A., **Cavigelli S.A.** (2012). Within-litter variance in early rat pup-mother interactions and adult offspring responses to novelty. *Developmental Psychobiology*, 54: 199-206. PMID: 21761406.
- Cavigelli S.A.**, Michael K.C.*, West S.G., Klein L.C. (2011). Behavioral responses to physical vs. social novelty in male and female laboratory rats. *Behavioural Processes*, 88: 56-59. PMID: 21726606; PMCID: PMC5598156.
- Cavigelli S.A.**, Ragan, C.M.*, Barrett C.E.*, Michael K.C.* (2010). Within-litter variance in maternal behavior. *Behavioural Processes*, 84: 696-704. PMID: 20403416.
- Kapelewski C.H.*, Bennett J.M.*, **Cavigelli S.A.**, Klein L.C. (2010). Application of a naturalistic psychogenic stressor in periadolescent mice: effect on serum corticosterone levels differs by strain but not sex. *BMC Research Notes*, 3, 170. PMID: 20565762; PMCID: PMC2896369.
- Cavigelli S.A.**, Ragan C.M.*, Michael K.C.*, Kovacsics C.E.*, Bruscke A.P.* (2009). Stable behavioral inhibition and glucocorticoid production as predictors of longevity. *Physiology & Behavior*, 98: 205-214. PMID: 19477191; PMCID: PMC2756444.
- Hermes G.L., Delgado B., Tretiakova M., **Cavigelli S.A.**, Krausz T., Conzen S.D., McClintock M.K. (2009). Social isolation dysregulates endocrine and behavioral stress while increasing malignant burden of spontaneous mammary tumors. *Proceedings of the National Academy of Sciences*, 106: 22393-22398. PMID: 20018726; PMCID: PMC2799783.
- Thanos P.K., **Cavigelli S.A.**, Michaelides M.*, Olvet D.M.*, Patel U.*, Diep M.N.*, Volkow N.D. (2009). Non-invasive method for detecting the metabolic stress response in rodents: Characterization and disruption of the circadian corticosterone rhythm. *Physiological Research*, 58: 219-228. PMID: 18380537; PMCID: PMC2681077.
- Cavigelli S.A.**, Bennett J.M.*, Michael K.C.*, Klein L.C. (2008). Female temperament, tumor development and life span: Relation to glucocorticoid and tumor necrosis factor alpha in rats. *Brain, Behavior, and Immunity* (Special Issue on Personality and Disease), 22: 727-735. PMID: 18155400; PMCID: PMC2505339.
- Yee J.R.*, **Cavigelli S.A.**, Delgado B., McClintock M.K. (2008). Reciprocal affiliation among adolescent rats during a mild group stressor predicts mammary tumors and lifespan. *Psychosomatic Medicine*, 70: 1050-1059. PMID: 18842748; PMCID: PMC5767077.
- Boggiano M.M., **Cavigelli S.A.**, Dorsey J.R.*, Kelley C.E.P.*, Ragan C.M.*, Chandler-Laney P.C.* (2008). Effect of a cage divider permitting social stimuli on stress and food intake in rats. *Physiology & Behavior*, 95: 222-228. PMID: 18565550; PMCID: PMC2562762.
- Cavigelli S.A.**, Stine M.M.*, Kovacsics C.E.*, Jefferson A.*, Diep M.N.*, Barrett C.E.* (2007). Behavioral inhibition and glucocorticoid dynamics in a rodent model. *Physiology & Behavior*, 92: 897-905. PMID: 17673266; PMCID: PMC2151849.

- Cavigelli S.A.**, Guhad F.A., Ceballos R.M.*, Whetzel C.A.*, Nevalainen T., Lang C.M., Klein L.C. (2006). Fecal corticoid metabolites in aged male and female rats after husbandry-related disturbances in the colony room. *Journal of the American Association for Laboratory Animal Science*, 45: 42-46. PMID: 17089986.
- Cavigelli S.A.**, Yee J.R.*, McClintock M.K. (2006). Infant temperament predicts life span in female rats that develop spontaneous tumors. *Hormones and Behavior*, 50: 454-462. PMID: 16836996.
- Cavigelli S.A.** (2005). Animal personality and health. *Behaviour*, 142: 1223-1244.
- Mateo J.M., **Cavigelli S.A.** (2005). A validation of extraction methods for non-invasive sampling of glucocorticoids in free-living ground squirrels. *Physiological & Biochemical Zoology*, 78: 1069-1084. PMID: 16228945; PMCID: PMC2562585.
- Cavigelli S.A.**, Monfort S.L., Whitney T.W.*, Mechref Y.S., Novotny M., McClintock M.K. (2005). Frequent serial rat fecal corticoid measures reflect circadian and ovarian corticosterone rhythms. *Journal of Endocrinology*, 184: 153-163. PMID: 15642792.
- Cavigelli S.A.**, McClintock M.K. (2003). Fear of novelty in infant rats predicts adult corticosterone dynamics and an early death. *Proceedings of the National Academy of Sciences*, 100: 16131-16136. PMID: 14673078; PMCID: PMC307704.
- Cavigelli S.A.**, Levash W.*, Dubovick T.*, Jolly A., Pitts A.* (2003). Female dominance status and fecal corticoids in a cooperative breeder with low reproductive skew: ring-tailed lemurs (*Lemur catta*). *Hormones and Behavior*, 43: 166-179. PMID: 12614647.
- Cavigelli S.A.**, Pereira M.E. (2000). Mating season aggression and fecal testosterone levels in male ring-tailed lemurs (*Lemur catta*). *Hormones and Behavior*, 37: 246-255. PMID: 10868488.
- Jolly A., Caless S.*, **Cavigelli S.A.**, Gould L., Pereira M.E., Pitts A.*, Pride R.E.*, Rabenandrasana H.D., Walker J.D.*, Zafison T.* (2000). Infant killing, wounding and predation in *Eulemur* and *Lemur*. *International Journal of Primatology*, 21: 21-40.
- Cavigelli S.A.** (1999). Behavioural patterns associated with faecal cortisol levels in free-ranging female ringtailed lemurs (*Lemur catta*). *Animal Behaviour*, 57: 935-944. PMID: 10202101.
- Pereira M.E., Strohecker R., **Cavigelli S.A.**, Hughes C., Pearson D. (1999). Metabolic tactics in Lemuridae and implications for social behavior. In: *New Directions in Lemur Studies* (Ed. by H. Rasaminanana, B. Rakotosamimanana, J. Ganzhorn and S. Goodman), New York: Plenum Press.
- Wingfield A., Alexander A.H.*, **Cavigelli S.A.** (1994). Does memory constrain utilization of top-down information in spoken word recognition? Evidence from normal aging. *Language and Speech*, 37(3), 221-235. PMID: 7861911.

OTHER PUBLICATIONS

- Cavigelli S.A.** (2014). Physiological stress as a mechanism linking social status and health/aging: the importance of social context and temporal dynamics. Manuscript commissioned by National Institute on Aging.

INVITED PRESENTATIONS

- Cavigelli S.A., McMahon E.K., Farhan S. Identifying consistent behavioral phenotypes in a rodent model of temperamental fear. Symposium on “Capturing heterogeneity in rodent and human social behavior in ‘real world’ settings” at *International Society for Developmental Psychobiology*, Chicago, IL. October 2021.
- Cavigelli S.A. Mechanisms of social behavior: Bridging disciplines to understand complex processes. Keynote for Social Neuroendocrinology Preconference at *Human Behavior and Evolution Society*, Boise, ID. May 2017
- Cavigelli S.A. Does asthma during development change brain and behavior? *Brain Awareness Week*, Pennsylvania State University, Altoona. March 2016.
- Cavigelli S.A. Causes and consequences of temperament. *Developmental Proseminar Series*, Pennsylvania State University. February 2015.
- Cavigelli S.A. Causes and consequences of temperament. *Mechanisms of Mind Series*, Pennsylvania State University. November 2014.
- Cavigelli S.A. Primate social status and glucocorticoid production: costs and benefits of physiological stress. *Symposium on Captive and Wild Primate Models of Human Sociality*, NIA organized symposium at the *American Society of Primatologists* meeting, Decatur, GA. September 2014.
- Cavigelli S.A. Stress physiology as the mechanism linking social status and health. *Socioeconomic Determinants of Health*, Edinburgh University, UK. September 2014.
- Cavigelli S.A. Social status and stress. *International Göttinger Freilandtage* meeting on *Sociality, Health, and Fitness*, University of Göttingen, Germany. December 2013.
- Cavigelli S.A. Social status, stress physiology, and health. Université Paul Sabatier, Toulouse III. Toulouse, France. December 2013.
- Cavigelli S.A. Modeling behavioral inhibition in rodents: behavioral and physiological parallels between humans and rodents. *International Conference on Individual Differences*, Groningen, Netherlands. November 2013.
- Cavigelli S.A. The physiology of temperament: mechanisms to account for health variability? INRA. Toulouse, France. October 2013.
- Cavigelli S.A. Personality in Health and Disease: Integrative research to identify consistent complex traits and causal mechanisms that link personality and health. *Personality: causes and consequences of consistent behavioral variation Symposium*, Hannover, Germany. September 2013.
- Cavigelli S.A., Caruso M.J., Crouse R.A. Causes and consequences of a fearful temperament. *Center for Brain, Behavior, and Cognition*, University Park, PA. March 2013.
- Cavigelli S.A. An animal model of behavioral inhibition. *Colby College Psychology Department*, Waterville, ME. March 2008.
- Cavigelli S.A. Individual differences in behavioral inhibition in rats. *CNRS (Centre National de la Recherche Scientifique)*, Bordeaux, France. December 2007.

- Cavigelli S.A. Individual differences in stress reactivity: Causes and consequences. *Behavioral Neuroendocrinology Laboratory* at Duke University, Durham, NC. April 2006.
- Cavigelli S.A. Behavioral inhibition in an animal model. *Neuroscience Journal Club*, University Park, PA. October 2006.
- Cavigelli S.A. Biological mechanisms underlying personality as a predictor of life span. *Gerontology Center Colloquium*, University Park, PA. September 2005.
- Cavigelli S.A. Development of neophobia. *European Conference on Behavioral Biology*. Animal Personalities Symposium, Gröningen, Netherlands. August 2004.
- Cavigelli S.A. Individual differences in stress: What are the consequences? *Animal Behavior Brownbag Seminar Series*, University of Chicago, Chicago, IL. January 2003.
- Cavigelli S.A. Health disparities in aging female rats after peri-pubertal social isolation. *Institute for Mind & Biology Proseminar*, University of Chicago, Chicago, IL. November 2002.
- Cavigelli S.A. Sources of stress in a free-ranging primate. *Animal Behavior Brownbag Seminar Series*, University of Chicago, Chicago, IL. October 2001.

SYMPOSIA ORGANIZED AT SCIENTIFIC MEETINGS

- Cavigelli, S.A. & Ragan, C.M.* Early Experiences and Later Mental Health, *International Society for Developmental Psychobiology* meeting, San Diego, California. November 2010. (Speakers: Sonia Cavigelli, Nathan Fox, Christine Heim, Christina Ragan, Amy Salisbury)
- Cavigelli, S.A. & Capitanio, J.P. Individual Differences in Immunity and Health Symposium, *Psychoneuroimmunology Research Society* meeting, Madison, Wisconsin. May 2008. (Speakers: John Capitanio, Sonia Cavigelli, Anna Marsland, Nicolas Rohleder, Suzanne Segerstrom)
- Cavigelli, S.A. & Michael, K.C.* Stability/Instability of Individual Glucocorticoid Production and Health Consequences, *International Society for Psychoneuroendocrinology* meeting, Madison, Wisconsin. August 2007. (Speakers: Emma Adam, David Almeida, Antonia Armario, Sonia Cavigelli, Brigitte Kudielka, Jens Pruessner)

PRESENTATIONS AT SCIENTIFIC MEETINGS (students marked with an asterisk)

- Cavigelli, S.A., McMahon, E.K.*, Farhan, S.* Consistency of behavioral phenotypes and underlying physiology. *Society for Integrative and Comparative Biology*, Virtual. January 2021
- McMahon, E.K.*, Youatt, E.A.*, Cavigelli, S.A. Associations between multiple physiological mechanisms within an individual. *Society for Integrative and Comparative Biology*, Virtual. January 2021
- Youatt, E.A.*, McMahon, E.K.*, Cavigelli, S.A. Baseline corticosterone moderates the relation between baseline heart rate and exploratory behavior in young adult male rats. *International Society for Developmental Psychobiology*, Virtual. October 2020
- McMahon EK*, Youatt EA*, Cavigelli SA. Consistency of behavioral phenotypes and related physiological mechanisms. *Animal Behavior Society*, Virtual. July 2020

- McMahon, E.K.*, Youatt, E.A.*, Braithwaite, V.A., Cavigelli, S.A. 2020. Stability of behavioral traits and associated physiology. *Society for Integrative and Comparative Biology*. Austin, TX. January 2020
- Caulfield, J.I.*, Kamens, H.M., Cavigelli, S.A. The impact of developmental chronic variable social stress and asthma on anxiety-like brain gene expression, anxiety-like behavior, and stress response. *Society for Neuroscience*, Chicago, IL. October 2019
- Cavigelli, S.A., Caulfield, J.I.*, Ching, A.M.*, Studer, S.C.*, Craig, T., Kamens, H.M., August, A. Chronic inhaled corticosteroids during development minimize allergic asthma symptoms but exacerbate comorbid anxiety symptoms. *Society for Neuroscience*, Chicago, IL. October 2019
- Pipkin, M.A.*, Braithwaite, V.A., Caulfield, J.I.*, Cavigelli, S.A. Underneath it all: mapping gene expression of neuronal, endocrine, and immune systems onto exploratory behavior in zebrafish. *Animal Behavior Society joint with the International Ethological Conference*, Chicago, IL. July 2019
- Caulfield, J.I.*, Schopf, K.J.*, Cavigelli, S.A. Adolescent asthma during development and its impact on the physiological stress response and the brain: a mouse model. *German-Endocrine-Brain-Immune-Network and Psychoneuroimmunology Research Society*, Berlin, Germany. June 2019
- Cavigelli, S.A., Caulfield, J.I.*, Ching, A.M.*, Studer, S.C.*, Craig, T., Kamens, H.M., August, A. Chronic inhaled corticosteroids during development minimize allergic asthma symptoms but exacerbate comorbid anxiety symptoms. *Psychoneuroimmunology Research Society joint with the German-Endocrine-Brain-Immune-Network*, Berlin, Germany. June 2019
- Kamens H.M., Caruso M.J.*, Cavigelli S.A. Adolescent social stress influences later ethanol and nicotine behaviors and microRNA expression. *Society for Research on Nicotine and Tobacco*, San Francisco, California. February 2019
- Caulfield, J.I.*, Cavigelli, S.A. Peri-adolescent asthma: changes to the stress response and immune regulation. *Penn State Health Allergy Conference*, Hershey, PA. June 2018
- Caulfield, J.I.*, Cavigelli, S.A. Peri-adolescent asthma: changes to the stress response and immune regulation. *Founder's Endowment for Excellence and Innovation Research Day* in the Department of Biobehavioral Health, University Park, PA. April 2018
- Caulfield, J.I.*, Cavigelli, S.A. The role of microglia in comorbidity between adolescent asthma and anxiety. *Society for Neuroscience*, Washington, DC. November 2017
- Caruso, M.J.*, Reiss, D.E.*, Thomas, J.L.*, Caulfield, J.I.*, Crowley, N.A., Baker, A.N.*, Cavigelli, S.A., Kamens, H.M. Adolescent social stress differentially impacts affective behaviors and nicotine sensitivity in C57BL/6J and BALB/cJ mice. *International Behavioural and Neural Genetics Society*, Madrid, Spain. May 2017
- Caulfield J.I.*, Caruso, M.J.*, Crouse, R.A., Cavigelli, S.A. Asthma during adolescence contributes to adult anxiety behavior and neurobiological phenotype. *Society for Neuroscience*, San Diego, California. November 2016.
- Cavigelli, S.A., Bao, A.D.*, Caruso, M.J.*, Caulfield J.I.*, Chen, M.*, Bourne, R.A., Smyth, J. Timing matters: time interval between acute stressors within chronic stress affects

- behavioral and physiological outcomes. *International Society for Developmental Psychobiology*, San Diego, California. November 2016.
- Caruso M.J.*, Kamens H.M., Horton W.J., Bourne R.A., August A., Klein L.C., Bonneau R.H., Craig T., Cavigelli S.A. Hippocampal gene networks associated with anxiety- and depression-like behavior caused by adolescent asthma symptoms in mice. *Neurobiology of Stress Workshop*, Newport Beach, California. April 2016.
- Caruso M.J.*, Crouse R.A., Cavigelli S.A. Corticosteroid receptor expression is linearly related to individual differences in novelty exploration. *International Society for Developmental Psychobiology*, San Sebastian, SPAIN. October 2015.
- Cavigelli S.A., August A., Klein L.C., Bonneau R.H., Craig T., Michael K.C.*, Crouse R.A., Caruso M.J.* Experimentally-induced asthma symptoms during adolescence cause adult anxiety-like behavior and decreased serotonin transporter expression in a mouse model. *International Society for Development Psychobiology*, Washington, DC. November 2014.
- Caruso M.J.*, Crouse R.A., Cavigelli S.A. Generalized fear of novelty predicts glucocorticoid mRNA expression in adult male Sprague-Dawley rats. *Society for Neuroscience meeting*, Washington DC. November 2014.
- Caruso M.J.*, Crouse R.A., Cavigelli S.A. Glucocorticoid receptor mRNA expression is associated with generalized fear of novelty in adult male Sprague-Dawley rats. *Neurobiology of Stress Workshop*, Cincinnati, Ohio. June 2014.
- Caruso M.J.*, You H.*, McClintock M.K. Cavigelli, S.A. Does a ‘match’ or ‘mismatch’ between temperament and environment differentially influence behavior and HPA axis development? *International Society for Developmental Psychobiology*, San Diego, California. November 2013.
- Godbolt L.*, Michael K.C.*, Crouse R.A., Cavigelli S.A. Temperament-associated immune differences in neophobic versus neophilic rats. *Annual Biomedical Research Conference for Minority Students (ABRCMS)*, Nashville, Tennessee. November 2013.
- Clement R.S., Unger E.L., Cavigelli S.A., Sheehan R.M., Bagwell R.B., Kellogg V.A., Mulvihill M.L. Vibrating needle during venipuncture reduces insertion force and yields lower and less variable average corticosterone levels in rodents. *American Association for Laboratory Animal Science (AALAS) meeting* Baltimore, Maryland. October 2013.
- Cavigelli S.A., Ragan, C.M.* Modeling behavioral inhibition in rodents: Behavioral and physiological parallels between humans and rodents. *Association for Psychological Science meeting, Social Temperament: A Comparative Approach* symposium, Washington D.C. May 2013.
- Cavigelli S.A., Ragan, C.M.* A rodent model of human behavioral inhibition: Developmental precursors and adult neuronal correlates of peri-weaning inhibition. *International Behavioral Neuroscience Society meeting, Neurobiology of Resilience: Implications for Adaptive Functions and Mental Health* symposium. Kona, Hawaii. June 2012.
- Ragan C.M.*, Gyekis J.*, Vandenberg D.J., Cavigelli S.A. Early life experiences and behavior are related to adult GR and SERT mRNA expression in a sex specific manner. Poster at *Society for Neuroscience meeting*, Washington, DC. November 2011.

- Michael K.C.*, Cardell D.D.*, Cavigelli S.A. Sensation-seeking and gender in the link between C-reactive protein and depression. Poster at *Psychoneuroimmunology Research Society* meeting, Chicago, IL. June 2011.
- Ragan C.M.*, Loken E., Cavigelli S.A. Within-litter variance in rat maternal and neonate behavior predicts adult offspring behavioral variance. Poster at *Animal Behavior Society* meeting, Williamsburg, VA. July 2010.
- Ragan C.M.*, Bressler A.J.*, Belegundu S.A.*, Lewis A.R.*, Jones B.C., Vasudevan N., Andrews A.M., Cavigelli S.A. Is neophobia or behavioral inhibition related to anxiety-related behavior in mice? Poster at *Society for Neuroscience* meeting, Chicago, IL. October 2009.
- Slupski R.*, Kim D.J.*, Ragan C.M.*, Cavigelli S.A., Thanos P.K., Anderson, B.J. A new model of psychogenic stress: corticosterone elevations. Poster at *Society for Neuroscience* meeting, Chicago, IL. October 2009.
- Bressler A.J.*, Ragan C.M.*, Belegundu S.A.*, Lewis A.R., Jones B.C., Vasudevan N., Cavigelli S.A., Andrews A.M. Segregating contextual versus social neophobia in two strains of BXD recombinant inbred mice. Poster at *Society for Neuroscience* meeting, Chicago, IL. October 2009.
- Michael K.C.*, Cavigelli, S.A. The role of hormones and social roles in the expression of a sex-specific behavioral trait. Talk at *International Society for Psychoneuroendocrinology* meeting, San Francisco, CA. July 2009.
- Michael K.C.*, Bonneau R.H., Cavigelli S.A. Temperament-associated differences in immune responses between neophobic and neophilic rats. Poster at *Psychoneuroimmunology Research Society* meeting, Breckenridge, CO. June 2009.
- Ragan C.M.*, Michael K.C.*, Cavigelli S.A. Within-litter variance in pup/mother interactions in Sprague-Dawley rats. Poster at *Society for Neuroscience* meeting, Washington, DC. November 2008.
- Belegundu S.A.*, Bressler A.J.*, Ragan C.M.*, Lewis A.R.*, Jones B.C., Vasudevan N., Cavigelli S.A., Andrews A.M. Strain 11 B×D recombinant inbred mice display a complex phenotype characterized by increased anxiety-related behavior and hypolocomotion compared to strain 31. Poster at *Society for Neuroscience* meeting, Washington, DC. November 2008.
- Cavigelli S.A., Bennett J.M.*, Michael K.C.*, Klein L.C. Female temperament and life span: Relation to glucocorticoid and tumor necrosis factor alpha in rats. Talk at *Psychoneuroimmunology Research Society* meeting, Madison, WI. May 2008.
- Ragan C.M.*, Fomalont K.J.*, Bruscke A.P.*, Anolik R.A.*, Earnheart J.C.*, Luscher B., Cavigelli S.A. Behavioral inhibition and GABA_A receptor density. Poster at *Society for Neuroscience* meeting, San Diego, California. November 2007.
- Lewis A.R.*, Bressler A.J.*, Kovacsics C.E.*, Jones B.C., Vasudevan N., Cavigelli S.A., Andrews, A.M. Recombinant inbred mouse strains as tools to identify new genes underlying anxiety. Poster at *Society for Neuroscience* meeting, San Diego, California. November 2007.

- Cavigelli S.A., Michael K.C.* Stability/instability of individual glucocorticoid production and health consequences. Talk at the *International Society for Psychoneuroendocrinology* meeting, Madison, Wisconsin. August 2007.
- Cavigelli S.A., Michael K.C.*, Ragan C.M.*, Kovacsics C.E.* Stable behavioral and glucocorticoid profiles in young adulthood predict life span. Poster at *Society for Behavioral Neuroendocrinology* meeting, Pacific Grove, California. June 2007.
- Chuzi S.*, Williamson L., Crabtree G., Cavigelli S.A., Sandstrom N. Early life exploratory behavior predicts anxiety and corticosterone stress response, but not spatial learning, in adulthood. Poster at *Society for Behavioral Neuroendocrinology* meeting, Pacific Grove, California. June 2007.
- Vasudevan N., Kovacsics C.E.*, Cavigelli S.A., Bressler A.J.*, Andrews A.M., Jones B.C. Behavioral inhibition in a novel physical environment is unrelated to social investigation. Poster at *Society for Behavioral Neuroendocrinology* meeting, Pacific Grove, California. June 2007.
- Yee J.R.*, Cavigelli S.A., Delgado B., Conzen S.D., McClintock M.K. Individual variation in the glucocorticoid response to a stressor predicts the development of spontaneous tumors in rats. Poster at *Society for Behavioral Neuroendocrinology* meeting, Pacific Grove, California. June 2007.
- Cavigelli S.A., Michael K.C.* Sex difference in physiology underlying novelty-seeking behavior. Poster at *Association of Psychological Sciences* meeting, Washington, D.C. May 2007.
- Cavigelli S.A., Barrett C.E.* Within-family variance in maternal and weanling behavior. Poster at the *International Society for Developmental Psychobiology* meeting, Atlanta, Georgia. November 2006.
- Olvet D.M.*, Michaelides M.*, Patel U., Cavigelli S.A., Volkow N.D., Thanos P.K. A non-invasive method for detecting the metabolic stress response in rodents: Characterization and disruption of the circadian corticosterone rhythm. Poster at the *Society for Neuroscience* meeting, Atlanta, GA. November 2006.
- Cavigelli S.A., Stine M.M.*, Jefferson A.L., Diep M.N.* Behavioral response to novelty predicts glucocorticoid levels one day later. Poster at the *Society for Behavioral Neuroendocrinology* meeting, Pittsburgh, Pennsylvania. June 2006.
- Cavigelli S.A. Fecal steroid metabolite measures in laboratory animals. Poster at the *Society for Behavioral Neuroendocrinology* meeting, Pittsburgh, Pennsylvania. June 2006.
- Cavigelli S.A., Yee J.R.*, McClintock M.K. Exploratory tendency during infancy and survival in female rats with spontaneous tumors. Talk at the *American Psychosomatic Society* meeting, Vancouver, Canada. March 2005.
- Cavigelli S.A., Yee, J.R.*, McClintock, M.K. Survival times in older rats with spontaneous mammary tumors: differential trajectories predicted by weanling behavior. Poster at the *Psychoneuroimmunology Research Society* meeting, Amelia Island, Florida. June 2003.
- Cavigelli S.A., McClintock M.K. Behavioral inhibition in infancy predicts adult adrenal activity and early death. Hot Topic talk at the *American Psychological Society* meeting, Atlanta, Georgia. May 2003.

Cavigelli S.A., Whitney T.K.*, McClintock M.K. Fecal measure of the rat corticoid circadian rhythm. Poster at the *Society for Behavioral Neuroendocrinology* meeting, Amherst, Massachusetts. June 2002.

Cavigelli S.A., Whitney T.K.*, McClintock M.K. Fecal corticoids provide a measure of acute and chronic adrenal function. Poster at the *Psychoneuroimmunology Research Society* meeting, Wisconsin, Madison. May 2002.

GRANTS & CONTRACTS

- 2019 - 23 *Systems approaches for understanding individuality: A UK-US nexus.* Role: PSU PI. Funding Agency: Biotechnology and Biological Sciences Research Council (BBSRC). Project Number: BB/R021317/1. (£50,764)
- 2018 *Developmental asthma: How do common, chronic steroid treatments affect the developing brain?* Role: PI. Funding Agency: Biobehavioral Health Department Seed Grants. (\$7,240)
- 2016 - 19 *Piezoelectric ring mounted oscillated syringe system for lower distress, lower force, laboratory animal vascular access and injection to improve data quality and laboratory animal welfare.* Role: Subaward PI. (Business PI: Olga Ocon-Grove). Funding Agency: NIH. Project Number: R44OD023024-01. (\$31,455)
- 2015 - 16 *Hippocampal transcriptional response to chronic adolescent social stress.* Role: PI. Funding Agency: College Health and Human Development and Huck Institutes of the Life Sciences. (\$5,000)
- 2014 - 18 *Genetics of chronic mild stress and alcohol consumption.* Role: Consortium PI. Funding Agency: NIH. Project Number: R01AA021951. (\$176,925)
- 2012 - 15 *Mechanisms behind asthma-internalizing disorder co-morbidity: a novel mouse model.* Role: PI. Funding Agency: NIH. Project Number: R21MH092667. (\$396,786)
- 2012 - 15 *Phase II SBIR: RAIL System reduces variability and concentration of corticosterone in blood sampling.* Role: Academic PI (Business PI: Ryan Clement). Funding Agency: NIH. Project Number: R44AG037214. (\$246,354)
- 2012 - 13 *Glucocorticoid programming as a mechanism to fine-tune brain and behavior in a changing world.* Role: Co-PI. Funding Agency: Center for Brain, Behavior, and Cognition/Social Sciences Research Institute. (\$10,941)
- 2011 - 14 *LiT – Sublethal impacts of non-native species invasion.* Role: Co-I. Funding Agency: NSF. (\$500,548)
- 2010 - 12 *Mechanisms underlying the co-morbidity of asthma and anxiety.* Role: PI. Funding Agency: Pennsylvania State Institute for Neuroscience. (\$40,535)
- 2010 - 12 *Developing an animal model of cognitive bias to study the impact of emotion on health and behavior.* Role: Co-I. Funding Agency: Pennsylvania State Institute for Neuroscience. (\$37,420)

- 2007 - 09 *Behavioral inhibition and differential maternal treatment: an animal model.* Role: PI.
Funding Agency: Pennsylvania State University Children, Youth and Families
Consortium (\$29,696)
- 2005 - 06 *Neural mechanism for increased risk of anxiety among shy individuals.* Role: PI.
Funding Agency: College of Health & Human Development (\$15,000)
- 2005 - 06 *Maternal behavior influences on offspring alcohol consumption in an animal model of
adolescent binge drinking.* Role: Co-PI. Funding Agency: Pennsylvania State
University Children Youth and Family Consortium (\$14,224)
- 2004 - 05 *A rodent model of behavioral inhibition.* Role: PI. Funding Agency: NIH. Project
Number: 1R03MH071406. (\$72,500)
- 2001 - 04 *Peri-pubertal adrenal & immune function development.* Role: PI (M.K.
McClintock mentor). Funding Agency: NIH. Project Number: 1F32HD008693.
(\$134,250)
- 1997 - 98 Animal Behavior Society Graduate Student Research Award. Role: PI. (\$300)
- 1996 - 97 Aleane Webb Dissertation Award. Role: PI. (\$1,000)
- 1995 - 96 Sigma Xi, Sally Hughes-Schrader Travel Award. Role: PI. (\$1,000)
- 1995 - 96 Center for International Studies Graduate Award. Role: PI. (\$1,500)
- 1993 Duke University Dean's Summer Travel Award. Role: PI. (\$800)
- 1993 Sigma Xi, Grants-in-Aid of Research Award. Role: PI. (\$300)

II. TEACHING

DOCTORAL DISSERTATIONS SUPERVISED

Kerry C. Michael, 2006-2011. Ph.D. in Biobehavioral Health. Thesis Title: *Social and physiological processes underlying sensation-seeking and behavioral inhibition: Potential mechanisms linking personality to health.*

Independent Funding: Pennsylvania Space Grant Fellowship 2010 (\$5,000), Hintz Research Awards 2007, 2008, 2009 (\$7,000).

Christina M. Ragan, 2007-2011. Ph.D. in Neuroscience. Thesis Title: *Within-family variance in maternal-neonate interactions and subsequent adult offspring behavior and physiology.*

Independent Funding: Sigma-Xi The Scientific Research Society Grants-in-Aid of Research (\$1,000), Penn State Alumni Award (\$400).

Michael J. Caruso, 2012-2017. Ph.D. in Biobehavioral Health. Thesis Title: *The impact of adolescent social experiences on adult adrenocortical activity, affect-related behavior, and nicotine responses.*

Independent Funding: Hintz Research Awards 2015, 2016 (\$7,000), Huck Seed Grant Funding (\$5,000).

Jasmine I. Caulfield, 2015-2020. Ph.D. in Neuroscience. Thesis Title: *An investigation of mechanisms underlying asthma and anxiety comorbidity using a mouse model.*

Independent Funding: Huck Graduate Research Innovation Grant 2017 (\$5,000), NIGMS T32 Training Grant Awardee (*Physiological Adaptations to Stress*: two years stipend, tuition, and summer support), Biobehavioral Dissertation Improvement Award (\$5,000), Penn State Alumni Association Dissertation Award (\$5,000).

Elyse McMahon, 2018-2022. Ph.D. in Ecology. Thesis Title: *Connectivity and plasticity of physiological mechanisms and temperament.*

Independent Funding: Charlotte Mangum Travel Award to attend Society for Integrative and Comparative Biology annual meeting 2020 (\$700), Biomedical Big Data to Knowledge NIH Training Grant Awardee (one year stipend, tuition, and summer support), Animal Behavior Graduate Student Research Award (\$1,500), Biobehavioral Health Department Dissertation Research Award (\$4,786).

UNDERGRADUATE HONORS THESES SUPERVISED

- 2020 Piper Jones (General Science major, Biology minor). *Understanding HPA axis regulation and ARG-1 expression in a young mouse model of developmental asthma.* Department of Biobehavioral Health, PSU.
- 2019 Allison Ching (Pre-Medicine major). *Influence of inhaled corticosteroids on asthma-related symptoms.* Department of Biobehavioral Health, PSU.
- 2019 Kerri Schopf (Biology major). *An examination of hippocampal microglia and anxiety behavior after chronic peri-adolescent asthma.* Department of Biology, PSU.

- 2018 Tim Boyle (Biobehavioral Health major). *Mind the gap: assessing patterns of preparation for health care careers among undergraduate Biobehavioral Health students.* Department of Biobehavioral Health, PSU.
- 2017 Diana Chang (Biology, and Veterinary and Biomedical Sciences majors). *Behavioral retainability and stability in inbred mice vs. outbred mice.* Department of Biobehavioral Health, PSU.
- 2016 Mary Chen (Biology major). *Effects of adolescent labored breathing on anxiety-like behaviors and neuroendocrine function in adult mice.* Department of Biobehavioral Health, PSU.
- 2015 Alexander Bao (Pre-Medicine major). *Temporal patterns of repeated acute stress affect stress severity.* Department of Biobehavioral Health, PSU.
- 2014 Olivia Francois (Toxicology major). *State and trait anxiety and its relationship to peripheral cytokine production in a healthy human sample.* Department of Biobehavioral Health, PSU.
- 2014 Samantha Cooperstein (Biobehavioral Health major). *Effects of temperament and adolescent social experiences on adult exploratory behavior.* Department of Biobehavioral Health, PSU.
- 2013 Chris Firely (Biology major). *The effects of bronchoconstriction and anxiety on lung function.* Department of Biobehavioral Health, PSU.
- 2012 Elise Mercier (Biobehavioral Health major). *The effects of allergen and bronchoconstrictor exposure on mucus build-up in the lungs of mice.* Department of Biobehavioral Health, PSU.
- 2011 Mollie Woehling (Biobehavioral Health major). *Agouti viable yellow maternal behavior, neonate behavior, and later offspring behavior.* Department of Biobehavioral Health, PSU.
- 2011 Danielle Cardell (Biobehavioral Health major). *C-reactive protein, depression, and sensation seeking.* Department of Biobehavioral Health, PSU.
- 2010 Jason Gillon (Pre-Medicine and International Studies major). *Examining a novel method for long-term low-dose exogenous corticosterone supplementation in neophilic rats.* Department of Biobehavioral Health, PSU.
- 2009 Samantha Leathers (Animal Bioscience major). *Temperament and immunity in a rat model.* Department of Biobehavioral Health, PSU.
- 2008 Kevin Fomalont (Science and Psychology major). *GABA receptor density, early behavioral inhibition, and corticosterone in rats: toward a biopsychological model for trait anxiety.* Department of Biobehavioral Health, PSU.
- 2008 Ryan Moser (Biobehavioral Health major). *Behavioral inhibition and cardiovascular function in an animal model,* Department of Biobehavioral Health, PSU.
- 2007 Catherine Barrett (Biology major). *The effects of within-family differences in rat maternal behavior of offspring stress responses.* Department of Biobehavioral Health, PSU.

UNDERGRADUATE RESEARCH AWARDS MENTORED

- 2020 Piper Jones (General Science major, Honors in Biobehavioral Health), 1st Place Award in Health and Life Science category at the Penn State Undergraduate Exhibition.
- 2019 Kelly Vanden (State College Area High School Health Professions Research Fellow), 1st Place Award in Health and Life Science category at the Penn State Undergraduate Exhibition.
- 2016 Gabrielle Gavitt (Biobehavioral Health and Psychology majors), PSU Undergraduate Summer Discovery Grant. *Adolescent social stress and adult anxiety and drug use: What factors are involved in susceptibility vs. resilience?* (\$2,500)
- 2012 Olivia Francois (Toxicology major), PSU Undergraduate Summer Discovery Grant & College of Agricultural Sciences Undergraduate Student Research Award. *Influence of allergic asthma lung inflammation on anxiety and depression related neurotransmitter function.* (\$5,500)
- 2011 Stephanie Allen (Psychology major), PSU Undergraduate Summer Discovery Grant. *Anterior cingulate cortex activity in an animal model of optimism and pessimism – a validity test.* (\$2,500)
- 2010 Brian Coleman (Biology major), PSU Undergraduate Summer Discovery Grant. *The effect of maternal behavior on within-litter variance of glucocorticoid receptors in the prefrontal cortex and hippocampus of rats.* (\$2,500)
- 2007 Catherine Barrett (Biology major), Honors Thesis Grant. *The effects of within-family differences in rat maternal behavior of offspring stress responses.* (\$1,000)

COURSE INSTRUCTION

Graduate Course Instruction, Penn State University

- Course:** *Biobehavioral Systems (BBH 503, 3 credit hours)*
- Role:** Course instructor (100% responsibility), 45 lecture hrs per semester
- Semesters Taught:** Spring 2005-2023
- Enrollment:** Approximately 7 students per semester
- Course Description:** Designed to provide first-year graduate students with a multidisciplinary understanding of complex interactions among physiological systems and among the organism, environment, development, and health. The course includes modules on neurobiology, pharmacology, endocrinology, and immunology.
- Course:** *Systems Neuroscience (NEURO 521, 3 credit hours)*
- Role:** Course instructor (15% responsibility), 6 lecture hrs per semester
- Semesters Taught:** Spring 2015-2022
- Enrollment:** Approximately 8 students per semester
- Course Description:** Seminar/survey course on integrative and functional neuroscience. Faculty members provide background and historical information on specific domains and students read and review primary literature and review articles

in class. Course section: “Fear, Anxiety & Hypothalamic-Pituitary-Adrenal Function”.

Undergraduate Course Instruction, Penn State University

- Course:** *Introduction to Biobehavioral Health – Honors (BBH 101H, 3 credit hrs)*
Role: Course instructor (100% responsibility), 45 lecture hours per semester
Semesters Taught: Fall 2009, 2011, 2016, 2021
Enrollment: Approximately 20 students per semester
Course Description: Introduction to the interdisciplinary study of health by examining interactions among biological, psychological and sociocultural processes. The functions of physiological systems are reviewed as they relate to specific behaviors, environments, genetics, and disease processes. Students learn to integrate information from a variety of sources: lectures, reading and discussion of current literature, and faculty speakers discussing their current research.
- Course:** *Neurobiological Basis of Human Behavior (BBH 203/PSYCH 260, 3 credit hrs)*
Role: Course instructor (100% responsibility), 45 lecture hours per semester
Semesters Taught: Spring 2005-2013, Fall 2022
Enrollment: Approximately 60 students per semester
Course Description: Provides basic knowledge about the nervous system and its relationship to common behavioral phenomena. The class covers biological anatomy and physiology necessary to understand the complexity and limitations of the human brain. Students learn the anatomy and function of different brain areas, how neurons transmit information, how intrinsic and extrinsic chemicals affect brain function, how human brains evolved and develop, and the role of the nervous system in perception, behavior, emotions, stress, memory and learning.
- Course:** *Biobehavioral Aspects of Stress (BBH 432, 3 credit hours)*
Role: Course instructor (100% responsibility), 45 lecture hours per semester
Semesters Taught: Fall 2004-2007, 2010-2012, Fall & Spring 2021-2023
Enrollment: Approximately 60 students per semester
Course Description: The goal of this course is to review the scientific literature on how stress influences physical and psychological health. The focus is on how psychological stressors affect physiological systems and health. This is primarily a science course that involves reading and synthesis of scientific journal articles.
- Course:** *Functional and Integrative Neuroscience (BBH 470, 3 credit hours)*
Role: Course instructor (100% responsibility), 45 lecture hours per semester
Semesters Taught: Fall 2014-2015
Enrollment: Approximately 30 students per semester
Course Description: Review neurobiological processes involved in motivated behaviors, motor and sensory function, learning and memory, development, sexual differentiation, and pathology.
- Course:** *Personality and Health (BBH 497, 3 credit hours)*
Role: Course instructor (100% responsibility), 45 lecture hours per semester
Semesters Taught: Fall 2019
Enrollment: Approximately 20 students per semester
Course Description: Writing-intensive course in which student learn about personality traits, how they are quantified, and their relationship to health outcomes. Students develop independent models to explain behavioral and biological processes that may

account for relationships between personality and health. Iterative writing assignments are used in which students explore and summarize primary scientific literature on this topic.

Undergraduate Course Instruction, Department of Psychology, Guilford College

Course: *Sensory Systems (PSY/BIOL 343, 3 credit hours)*
Semesters Taught: Fall 1997
Enrollment: Approximately 30 students
Course Description: Detailed study of each of the major sensory systems, including the anatomy and physiology of each system as well as analysis of the stimuli and measurements involved in scientific testing of sensory ability. The course included a weekly laboratory session to conduct hands-on experimentation of the sensitivity and relative accuracy of different sensory systems.

Undergraduate Course Instruction, Department of Psychology, Duke University

Course: *Physiology of Stress and Coping (3 credit hours)*
Semesters Taught: Spring 1997
Enrollment: 5 students
Course Description: An upper level special-topic course in which students review the biology of stress and coping and analyze current scientific research in the field. The course includes student-designed independent research projects and individual data collection and analysis of their own psychological and physiological stress levels as measured with current biological and psychological instruments.

Undergraduate Guest Teaching Lectures (1 lecture hour each):

Neuroinflammation, Course: Functional and Integrative Neuroscience (BIOL/BBH 470), Penn State University. 2016, 2017.

Adolescent Asthma and Adult Brain & Behavior, Course: Biobehavioral Aspects of Stress (BBH 432), Penn State University. 2016, 2017.

Sexual Differentiation of the Central Nervous System, Course: Functional and Integrative Neuroscience (BIOL/BBH 470), Penn State University. 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015.

Animal Models of Prenatal Stress, Course: Introduction to Biobehavioral Health - Honors (BBH 101 Honors), Penn State University. 2006, 2007, 2010. Course: Biobehavioral Aspects of Stress (BBH 432), Penn State University. 2016.

Behavioral Inhibition and Health: Animal Model Studies, Course: Introduction to Biobehavioral Health (BBH 101), Penn State University. 2007.

Stress: physiology, individual differences and longevity, Course: Biological Bases of Behavior: Introduction and Survey (PSY 91), Duke University. 2006.

Autonomics, Course: Functional Neuroscience (BIOL/BBH 470), Penn State University. 2006.

Graduate Guest Teaching Lectures (1 lecture hour each):

Personality, Immune Function, and Health, Course: Biobehavioral Systems in Health and Development: Theory and Processes (BBH 501), Penn State University. 2011, 2012, 2014, 2016.

III. SERVICE

PROFESSIONAL GRANT REVIEWING ACTIVITIES

National

National Institute of Health (NIH), Biobehavioral Mechanisms of Emotion, Stress and Health (MESH) Study Section (June 2022)

National Institute of Health (NIH), Biobehavioral and Behavioral Processes IRG (BBBP) Study Section (June 2019)

National Science Foundation (NSF), Integrative Organismal Systems, Preliminary Proposal Advisory Panel (March 2013, April 2015, April 2017)

National Institute of Health (NIH), Biobehavioral Regulation, Learning and Ethology (BRLE) Study Section (October 2012, October 2013, June 2014, February 2015)

National Institute of Health (NIH), Behavioral Neuroscience Fellowship (F02A) Study Section (June 2012, March 2013)

National Science Foundation (NSF), Ad Hoc Reviewer for Animal Behavior Panel (April 19-21, 2010)

National Institute of Mental Health (NIMH), Special Emphasis Panel: "Identification and Characterization of Sensitive Periods for Neurodevelopment in Studies of Mental Illnesses" (February 22-23, 2010)

National Cancer Institute (NCI), Special Emphasis Panel: "Small Grants for Behavioral Research in Cancer Control" (July 7, 2009)

International

Austrian Science Fund (FWF)

Earthwatch Institute

L.S.B. Leakey Foundation

National Natural Science Foundation of China (NSFC)

Netherlands Organisation for Scientific Research

SCIENTIFIC JOURNAL REVIEWING ACTIVITIES

Ad hoc Manuscript Reviewer

Animal Behaviour, Behavioural Brain Research, Behavioral Ecology and Sociobiology, Biological Psychiatry, Biology Letters, Brain Behavior and Immunity, Developmental Psychobiology, Journal of the American Association of Laboratory Animal Sciences, Journal of Neuroimmunology, Hormones and Behavior, Laboratory Animals, Physiology and Behavior, PlosOne, Molecular Neurobiology, Neurobiology of Stress, Stress

OTHER PROFESSIONAL SERVICE-RELATED ACTIVITIES

Committees

2021-present ISDP representative on STAR Coalition (Supporting Truth about Animal Research)

2016-2019 International Society for Developmental Psychobiology, Conference Coordinator

- 2014, 2022 Animal Behavior Society, Student Research Grant Review Committee
- 2010-2016 Board of Trustees for Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC International)
- 2010-2019 International Society for Developmental Psychobiology, Officer
- 2005 Society for Behavioral Neuroendocrinology, Poster Competition Review Committee

Scientific/Professional Training

Summer research training experience for student participating in NIGMS-funded Minority Biomedical Research Support – Research Initiative for Scientific Enhancement (MBRS-RISE) Program at Morgan State University, Summer 2013.

Train visiting scholars in Behavioral Neuroendocrinology Laboratory on non-invasive endocrine analysis.

Member of the Faculty Panel on “How to Search for Post-doctoral Training” Discussion in the Biobehavioral Health Colloquium.

PROFESSIONAL MEMBERSHIPS

Animal Behavior Society, International Society for Developmental Psychobiology, Psychoneuroimmunology Research Society, Society for Behavioral Neuroendocrinology, Society for Neuroscience

OUTREACH

Faculty Mentor for State College Area School District High School Health Professions Research Fellows program. Provide intensive, year-long hands-on laboratory research experience for local high school students, 2014 - present.

Faculty Round-table Participant for *Health People Penn State*. Discuss and answer questions about Biobehavioral Health Department to under-represented students interested in pursuing graduate training. University Park, PA, 2014 & 2015.

Faculty Presenter at Opening Session for *Healthy People Penn State*. Present research to under-represented students interested in graduate training. University Park, PA, 2014.

Faculty Presenter at Annual Graduate Career Workshop hosted by MBRS-RISE Program and Center for Career Development at Morgan State University, Baltimore, Maryland, 2012.

SERVICE TO THE UNIVERSITY

University-Level

- 2022-present Chair, Intercollege Graduate Degree Program in Neuroscience
- 2019-present Co-Director, Center for Brain, Behavior, and Cognition
- 2017 Member, Search Committee for Director of the Huck Institutes of the Life Sciences
- 2015-2020 Faculty Examiner, Huck Institutes of the Life Sciences Intercollege Graduate Program in Neuroscience Candidacy Examination Committee
- 2014 Reviewer, Huck Institutes of the Life Sciences Dissertation Research Award
- 2013-present Member, Pennsylvania State Institute for Neuroscience Steering Committee
- 2011-present Coordinator, Intercollegiate Minor in Neuroscience
- 2010-2013 Member, Huck Institutes of the Life Sciences Intercollege Graduate Program in

Neuroscience Evaluation and Recruitment Committee

- 2010-2011 Member, Neuroscience Faculty Committee
 2010 Reviewer, Schreyer Honors College Applications
 2009 Member, Recognition Awards Committee for the Women in Sciences and Engineering (WISE) Institute
 2008 Participant, Commission for Women Research Panel on Work-Family Balance

College-Level

- 2021 Member, Working Group on Diversity, Equity, and Inclusion in Hiring Practices
 2016 Reviewer, Teaching Excellence Award Committee
 2014-2016 Member, Biological and Life Sciences Interest Group, Subcommittee on Undergraduate and Graduate Teaching and Training
 2014 Reviewer, Sabbatical Review Committee
 2007 Member, Dean's Strategic Theme Focus Group: *Understanding basic developmental processes across the life span*
 2005-present Faculty Advisor, College of Health & Human Development Honor Society

Department-Level

- 2016-2020 Chair/Professor in Charge, Undergraduate Program
 2019, 2020 Chair, Faculty Search Committees (Co-Hire w/Biomedical Engineering)
 2015-2017, 2022-2025 Member, Promotion & Tenure Committee
 2015-2018 Member, Graduate Admissions Committee
 2014-2015 Chair, Faculty Search Committee (Physiology of Child Maltreatment)
 2013-2016 Member, Research Infrastructure Committee
 2012-2013 Chair, Faculty Search Committee (Sequelae of Child Maltreatment)
 2012-2013 Chair, Awards Committee
 2010-2013 Member, BBH Handbook Committee
 2009-2012, 2021-present Member, Awards Committee
 2008-10, 2011-12 Member, Faculty Search Committee (Genetics)
 2005-2007 Co-chair, Colloquium Committee
 2007 Member, Ethics Committee
 2004-2007 Member, Curriculum Development Committee
 2004-6, 2011-12 Member, Graduate Admissions Committee
 2004-present Director, Behavioral Neuroendocrinology Laboratory