



2019-2020 Graduates with Distinction in Biology

Molly Albright, Looking Skin Deep: Assessing Skin Lesion Presence in Short-Finned Pilot Whales (*Globicephala macrorhynchus*), (Dr. Andy Read, Duke University Marine Lab)

Evangelia Ann Alexopoulos, CD4-binding site antibodies as potential agents to promote CD4-induced antibody effector functions against HIV-1 infected cells, (Dr. Guido Ferrari, Department of Molecular Genetics and Microbiology)

Graham Blair, Effects of Combined and Isolated Dextromethorphan-Bupropion Therapy on Nicotine, Remifentanyl, Food Self-Administration and Locomotor Activity in Rats, (Dr. Edward Levin, Department of Pharmacology and Cancer Biology)

Elise Michelle Cai, Clathrin-mediated endocytosis of the TGF-beta superfamily receptor, ALK1, is necessary for TGF-beta superfamily signaling in endothelial cells, (Dr. Gerard Blobe, Department of Pharmacology and Cancer Biology)

***Amanda Lee Conti**, Identification of NADPH oxidase 4 protein-protein interactions, (Dr. Francis Miller, Department of Pharmacology and Cancer Biology)

Yannet Daniel, Let's Be Blunt: The effect of cannabis-associated DNA methylation on downstream transcription of multiple repeats in aryl hydrocarbon receptor repressor (AHRR) gene in sperm cells, (Dr. Susan Murphy, Department of Medicine)

Allison Lynn Dear, Humeral imaginal disc patterning and pupal transformation in *Drosophila* with Pebble knock-down, (Dr. Amy Bejsovec, Department of Biology)

Caroline T Del Real, Characterizing the Effect of Anthropogenic Stressors on the Diet and Physiology of Baleen Whales, (Dr. Andrew Read, Duke Marine Lab)

Avani Preyas Desai, Bmi1-expressing alveolar type II cells in lung homeostasis and regeneration, (Dr. Purushothama Rao Tata, Department of Cell Biology)

***Alexandra Eva DiGiacomo**, Coastal shark abundance and spatial dynamics respond to small-scale environmental fluctuations of the Rachel Carson Reserve estuary in Beaufort, North Carolina, (Dr. David Johnston, Duke Marine Lab)

Joy Duer, Monitoring Fatty Acid Uptake *in vivo* in a Murine Model Using Bodipy FL c16, (Dr. Nimmi Ramanujam, Department of Biomedical Engineering)

Taylor Jewel Fistel, First steps in understanding the modulation of statistical learning via the McGurk effect and event-related potentials, (Dr. Tobias Overath, Department of Psychology and Neuroscience)

Steven William Gaston, Strepsirrhine Hips Don't Lie: Pelvic Sexual Dimorphism in Extant and Fossil Primates, (Dr. Doug Boyer, Department of Evolutionary Anthropology)

***Matthew Maged Gayed**, The role of soluble E-selectin on acute myeloid leukemia, (Dr. Dorothy Sipkins, Department of Pharmacology and Cancer Biology)

***Madeline Cheng Go**, Associative learning in the brittle star *Ophioderma cinereum*, (Dr. Sonke Johnsen, Department of Biology)

Lucy Michelle Greenwald, Making scents: The relationship between microbial communities, reproductive hormones, and chemical compounds in lemur labial secretions, (*Dr. Christine Drea, Departments of Evolutionary Anthropology & Biology*)

***Paulina Guerra Schleske**, Chromatin based changes in courtship regulators by pheromone sensing gustatory neuron activity, (*Dr. Pelin Volkan, Department of Biology*)

***Jamie Blair Harris**, Zebrafish CYP1A expression in transgenic *Caenorhabditis elegans* protects from exposures to benzo[a]pyrene and a complex polycyclic aromatic hydrocarbon mixture, (*Dr. Joel Meyer, Nicholas School of the Environment*)

Lydia Anne Hendrick, The spatial and temporal distribution of symbionts on triploid farmed Eastern oysters, (*Dr. Daniel Rittschof, Duke Marine Lab*)

***Nathaniel Hernandez**, Sex differences in the conditioned nausea behaviors & neural circuitry of rats, (*Dr. Cynthia Kuhn, Department of Pharmacology and Cancer Biology*)

Sofia Hidalgo Perea, Understanding the interaction between mechanical loading and IL-1 on the healing of meniscal-derived matrix tissue-engineered scaffolds and meniscus tissue, (*Dr. Amy McNulty, Department of Pathology*)

Meghan Hu, Characterizing the binding behavior of a novel m6A reader, (*Dr. Kate Meyer, Department of Biochemistry*)

***Katherine Rose James**, An Exploration of the Genetic Basis of Flower Color Transition in *Penstemon*, (*Dr. Mark Rausher, Department of Biology*)

***Lingrong Jin**, Testing for Interactive Effects of Salinity and Plant-root proximity on Soil Microbial Communities in Coastal Freshwater Wetlands of North Carolina, (*Dr. Emily Bernhardt, Department of Biology*)

Shiyu Jing, Developmental Regulation of Wing Shape and Patterns in Lepidoptera, (*Dr. Fred Nijhout, Department of Biology*)

***Amanda Kahn**, The impact of Optineurin deficiency on respiratory motor neuron counts, (*Dr. Mai ElMallah, Department of Medicine*)

Phoebe Nduta Kiburi, Analysis of soil microbial communities before restoration (A baseline to compare post restoration conditions), (*Dr. Dana Hunt, Duke Marine Lab*)

Jason Kim, A step forward for knee injury recovery: markers of the meniscus dedifferentiation phenotype seen with cellular expansion, (*Dr. Amy McNulty, Department of Medicine*)

Kristie Kim, ABL kinases promote breast cancer brain metastasis: role of IGFBP3, (*Dr. Ann Marie Pendergast, Department of Pharmacology and Cancer Biology*)

***Connor King**, Identifying Extracellular Vesicle-Associated Biomarkers in DYT1 Dystonia, (*Dr. Nicole Calakos, Department of Neurology*)

Lindsey Kinsella, Categorical perception of beak color in songbirds, (*Dr. Stephen Nowicki, Department of Biology*)

Katja Helgeson Kochvar, Age-related changes in the song of a songbird, (*Dr. Stephen Nowicki, Department of Biology*)

Maria Eugenia Kovalik, A characterization of the effects of CRB2 deficiency in podocytes, *(Dr. Gentzon Hall, Department of Medicine)*

Elizabeth Grace Krogman, The role of epithelial membrane protein-2 in Mycobacterial neovascularization, *(Dr. David Tobin, Department of Molecular Genetics and Microbiology)*

Alexandra Megan Kunzle, Small molecule modulation of beta-arrestin and its allosteric activation of a MAP kinase, *(Dr. Robert Lefkowitz, Department of Biochemistry)*

Harrison Sean Labban, Subcellular localization and dynamics of Arabidopsis decapping-related proteins in plant defense, *(Dr. Xinnian Dong, Department of Biology)*

Michelle Elizabeth Larsen, Optimization of a vWF sequencing protocol in Cheirogaleus to assist in species delimitation in a forest in northeastern Madagascar, *(Dr. Anne Yoder, Department of Biology)*

Rebecca Frances Lee, Transcriptional control of cell fate specification and tissue patterning in exocrine glandular, *(Dr. Purushothama Rao Tata, Department of Cell Biology)*

***Jacob Ryan Levine**, Influence of forest edges on the distribution of a community of Sumatran animals: potential consequences for the establishment of wildlife corridors, *(Dr. Stuart Pimm, Nicholas School of the Environment)*

Katherine Li, Viral evolution in a SHIV rhesus macaque model of HIV vaccination and rebound, *(Dr. Sallie Permar, Department of Immunology)*

Jinjie Ling, The Role of SMARCAL1 in the Alternative Lengthening of Telomeres in Glioblastoma, *(Dr. Hai Yan, Department of Pathology)*

Holly M LoTurco, Analyzing the biological response to synthetic scaffolds and autologous fat grafts, *(Dr. Bruce Klitzman, Department of Cell Biology)*

Amanda Elise May, Development of a functional assay to determine if the antiproliferative drug, ETC-159, impacts nuclear receptor action in Wnt addicted pancreatic cell lines, *(Dr. Donald McDonnell, Department of Pharmacology and Cancer Biology)*

Aidan McGinnis, Negative calories and the cost of chewing, *(Dr. Herman Pontzer, Department of Evolutionary Anthropology)*

Samantha Morales, AAV vector mediated gene therapy for mitochondrial trifunctional protein deficiency, *(Dr. Dwight Koerberl, Department of Molecular Genetics and Microbiology)*

Rayleigh Palmer, Morphological Murals: The Scaling and Allometry of Butterfly Wing Patterns, *(Dr. Fred Nijhout, Department of Biology)*

***Yiwei Pan**, Analyzing Lower Extremity Kinetics and Kinematics for Distinct Deceleration Phases in a Single-Leg Landing Task, *(Dr. Tim Sell, Department of Physical Therapy; Dr. Daniel Schmitt, Department of Evolutionary Anthropology)*

Kieu Tien Angela Thi Pham, Effects of PFBS and PFOS, compounds in consumer goods such as non-stick pans, on the syncytiotrophoblast of the placenta and pregnancies, *(Dr. Liping Feng, Department of Medicine)*

Christina Wynne Pipkin, Metamorphosis of blue crab Callinectes sapidus megalopae: Effects of external cues (habitat, conspecific, light) on timing and development, *(Dr. Richard Forward, Duke Marine Lab)*

***Blair Kathryn Rikard**, Exploring the molecular mechanisms of neonatal sepsis-induced subventricular zone brain injury in mice, *(Dr. Noelle Younge, Department of Medicine)*

***Sabina Savelyeva**, The role of Isoform B in NUT carcinoma radiosensitization, (Dr. Scott Floyd, Department of Pharmacology and Cancer Biology)

***Nathan Christopher Shaul**, Wnt signaling promotes gonad abnormality formation in *C. elegans* following early-life starvation, (Dr. Ryan Baugh, Department of Biology)

Grace Shen, Characterization of gene regulatory sequences during spinal cord regeneration in zebrafish, (Dr. Kenneth Poss, Department of Cell Biology)

***Hannah Shepard**, Phenotypic analysis elucidates novel components of pH sensing processes in a human fungal pathogen, (Dr. Andrew Alspaugh, Department of Molecular Genetics and Microbiology)

Anna Leigh Slingerland, Evolutionary fitness bottlenecks of doxorubicin resistance in osteosarcoma, (Dr. Jason Somarelli, Duke Cancer Institute)

***Akib Islam Sohel**, The role of oxidative stress in red blood cells in thrombosis in aging, (Dr. Rahima Zennadi, Department of Medicine)

Giselle Lorena Vargas, How bottlenose dolphins can help us find new interventions for low-oxygen conditions, (Dr. Jason Somarelli, Duke Cancer Institute)

***Tanmayi Deepak Vashist**, Assessing the disruption of key residues in a *C. neoformans* trehalose biosynthesis enzyme, (Dr. John Perfect, Department of Molecular Genetics and Microbiology)

Mallissa Lee Vuong, Inferring cancer protective p53 mutations in large cetaceans, (Dr. Jason Somarelli, Duke Cancer Institute)

Paul Zhaoxun Wang, Exploring astrocyte-specific toxicity of O,O-diisopropylfluorophosphate using CCF-STTG1 human astrocytoma cells, (Dr. Mohamed Abou-Donia, Department of Pharmacology and Cancer Biology)

***Yuxuan Wang**, Identification and characterization of aggressive strains of *Cryptococcus neoformans*, (Dr. John Perfect, Department of Molecular Genetics and Microbiology)

Pranav Ishaan Warman, Identifying the quiescent neural stem cell in the adult mammalian brain, (Dr. Chay Kuo, Department of Cell Biology)

Patree Witoonchart, The Effects of Ingesting HDPE II Microplastics on Japanese Medaka (*Oryzias latipes*): A Focus on Heavy Metals, (Dr. Daniel Rittschof, Duke Marine Lab)

Brad Robert Woodie, The role of enteroendocrine cells in infection-induced anorexia, (Dr. John Rawls, Department of Molecular Genetics and Microbiology)

***Frederick Max Xu**, Size doesn't matter: single and double-mated *Drosophila simulans* females display no preference for male sex comb size, (Dr. Mohamed Noor, Department of Biology)

Georgia Kalla Young, Rainfall and Puberty Status Predict Energy Balance in Amboseli Baboons, (Dr. Susan Alberts, Department of Biology)

Jeffrey Yinhong Zhong, Manipulation of zebrafish enhancer elements in murine cardiac tissue in vivo, (Dr. Kenneth Poss, Department of Cell Biology)

***High Distinction**