

Graduates with Distinction in Biology

Natalie Asmus*, First Steps Towards a Disease-Modifying Treatment for Late-Onset Alzheimer's Disease: Epigenetic Downregulation of APOE4 Using DMNT3A and Lentiviral Vectors, (Dr. Boris Kantor, Department of Neurobiology)

Jackson Cathey, Characterizing the Important Virulence Factors for Granuloma Persistence in *Cryptococcus neoformans* Clinical Isolates, (Dr. Andrew Alspaugh, Department of Molecular Genetics and Microbiology)

Julia I. Choi*, Effects of Ground Angle on Human Vertical Jump Performance, (Dr. Daniel Schmitt, Department of Evolutionary Anthropology)

Shivangi Choudhary, Increased sCD14 Levels from Microbial Translocation Associated with HIV Infection in Mothers Could Account for the Adverse Outcomes of HIV-Exposed Uninfected Infants, (Dr. John Sleasman, Department of Pediatrics)

Tyler Edwards*, Adult Insects and a Baby Record: Assessing Aquatic Insect Emergence at the Hubbard Brook Experimental Forest, (Dr. Emily Bernhardt, Department of Biology)

Elizabeth Avery Fiepke, The Ontogeny of Scent Marking in Young Meerkats (*Suricata suricatta*) in Relation to Maternal Status and Androgens, (Dr. Christine Drea, Department of Evolutionary Anthropology)

Trevor Gannalo*, Efficient Multiplex Gene Activation: A CRISPR Toolkit for Streamlining Gene Characterization in Plants, (Dr. Philip Benfey, Department of Biology)

Jalen Gibbs, Prevalence of Disease in *Acropora cervicornis* Through Sediment Exposure in a Nursery Environment, (Dr. Brian Silliman, Nicholas School of the Environment)

Anas Gondal, Neurobehavioral Effects of Long-Term Paternal THC Exposure in Offspring, (Dr. Edward D. Levin, Department of Psychiatry and Behavioral Sciences)

Delaney Graham, The Spatiotemporal Variability of Electron Transport Chain Complex Composition Throughout Embryogenesis, (Dr. David Sherwood, Department of Biology)

Jillian Taylor Grassia, Improved Malaria Modeling: Simulating Neutral Genetic Diversity in *Plasmodium vivax* Parasite Populations, (Dr. Amy Goldberg, Department of Evolutionary Anthropology)

Matthew A Greenwald*, Decoding the Evolutionary Dynamics of DCIS Growth and Invasion, (Dr. Marc Ryser, Department of Mathematics)

Angela Caroline Guan*, Designing Priming Immunogens for HIV-1 Vaccine Development, (Dr. Mihai Azoitei, Duke Human Vaccine Institute)

Sophie Elise Hanson, Connecting Populations Across Ocean Basins: Genomics of Short-finned Pilot Whales (*Globicephala macrorhynchus*) in the Western North Atlantic, (Dr. Andy Read, Duke Marine Lab)

Matthew Herbst*, Molecular Regulation of *Arabidopsis* Root Pericycle Identity and Patterning, (Dr. Philip Benfey, Department of Biology)

Max Hofstetter, Floating Oyster Aquaculture as Fish Aggregation Devices: Case Study at the Duke University Aquafarm, (Dr. Dan Rittschof, Duke Marine Lab)

Juan Antonio Jaramillo-Chico, *Sphagnum subnitens* Complex: a Genetic Analyses of Closely Related Moss Species, (Dr. Jonathan Shaw, Department of Biology)

Matthew Isaac Jogodnik, Evidence of Viral Mimicry and Functional Epistasis in Nephrotic Syndrome, (Dr. Cliburn Chan, Department of Biostatistics/Bioinformatics & Dr. Annette Jackson, Department of Immunology)

Prateek Khandelwal, Effects of Human Disease-Causing Mutations on Piezo1 Cell Membrane Expression Levels and Channel Function, (Dr. Jorg Grandl, Department of Neurobiology)

Taylor T. Kohlmann*, Uncovering Receptor and β -arrestin Determinants for Noncanonical G α i: β -arrestin Signaling at G Protein-Coupled Receptors, (Dr. Sudarshan Rajagopal, Department of Biochemistry)

Ashwin Kulshrestha, Getting Funky with CRISPR-Cas9: Engineering a METTL3 Catalytic-Dead Mutant, (Dr. Kate Meyer, Department of Biochemistry)

Erica Langan*, Elucidating the Role of Submucosal Gland-derived Reserve Stem Cells in Long-term Airway Repair, (Dr. Purushothama Rao Tata & Dr. Aleksandra Tata, Department of Cell Biology)

Michael Shen Lee, Sexual Dimorphism in Pain: A Male-Biased TGF- β Receptor 1 Dependent Pathway, (Dr. Christopher Donnelly, Department of Anesthesiology)

Seayoung Lee, Targeting XIAP Suppresses Formation of Inflammatory Breast Cancer Tumor Organoids, (Dr. Gayathri Devi, Departments of Surgery and Pathology)

Siyun Lee, Upstream and Downstream Factors of RNA Pol II in Zebrafish Heart Regeneration, (Dr. Kenneth D. Poss, Department of Cell Biology)

Bryce Liao, T cell signaling pathways: Studying Diacylglycerol Kinase Z function and Regulation Using a Proteomics Approach, (Dr. Xiaoping Zhong, Department of Immunology)

Margaret Lim, Bladder Fibrosis is not Induced by IL-1 β -mediated Pathways in Mice, an *in vitro* Study (Dr. Monty Hughes, Department of Surgery)

Adam Lin, Investigation of BMP Signaling During Notochord Segmentation, (Dr. Michel Bagnat, Department of Cell Biology)

Tiffany Amber Liu, Role of Angptl4 in Microbiota-Mediated Lipid Metabolism in the Zebrafish Intestine, (Dr. John F. Rawls, Department of Molecular Genetics and Microbiology)

Edward Llinas, Understanding Olfactory Neurogenesis: the Roles of Two Critical Subunits of the PRC2 Complex, EZH2 and EED, (Dr. Bradley J. Goldstein, Department of Head and Neck Surgery & Communication Sciences)

Ezra Loeb*, Project birdman: Engineering an AAV hybrid with enhanced immune evasion, (Dr. Aravind Asokan, Department of Biomedical Engineering)

Alexandra Marie Markunas*, Modeling Cardiac Arrhythmogenesis: Developing and Applying a Lentiviral Delivery System of Voltage and Calcium Fluorescent Biosensors to Patient-derived Cardiomyocytes, (Dr. Andrew Landstrom, Department of Pediatrics, Division of Cardiology)

Abbey Milwicz*, Hazards in the Water: Cellular Mechanisms of Environmentally Persistent Compounds GenX and PFOA, (Dr. Tom Schultz, Duke Marine Lab & Dr. Jason Somarelli, Duke Cancer Institute)

John Modarres, Analyzing the Effects of Chemical Treatments on Calcium Signaling During Effector-triggered Immunity at an Elevated Temperature, (Dr. Sheng-Yang He, Department of Biology)

Ryan Thomas Mullan*, An Investigation into the Mechanism Behind Myctophid Counterillumination Control, (Dr. Sönke Johnsen, Department of Biology)

Thomas E. Murphy, Non-Genetic *Littoraria* Fitness: How Size, Environment, and Health Affect Survivorship of Predator Interactions, (Dr. Brian Silliman, Nicholas School of the Environment)

Andrew Nguyen, Characterization of SCA48-linked CHIP mutants, (Dr. Kenneth Matt Scaglione, Department of Molecular Genetics and Microbiology)

Madeleine Paris, Understanding Variance in Marsh Predator Disturbance Patterns in Pacific Estuaries, (Dr. Brian Silliman, Nicholas School of the Environment)

Connor Charles Park, A Key Step in Understanding Neural Circuits and the Associated Brain Diseases: Interneuron Diversity in the Nonhuman Primate Visual Cortex, (Dr. Anita Disney, Department of Neurobiology)

Melanie Pearce, Implications of Anatomical Variation in Neck Structure on Subconcussive Loading, (Dr. Jason Luck, Department of Biomedical Engineering)

Matthew Pierpoint*, Evidence of Alternative Lengthening of Telomeres in CAST/EiJ Mouse Model of Sarcoma, (Dr. David Kirsch, Department of Pharmacology and Cancer Biology)

Danielle Pitchon*, Understanding the Loading and Release Mechanisms of Polyketide Synthase Enzyme Complexes in the Apicomplexan Parasite *Toxoplasma gondii*, (Dr. Emily Derbyshire, Departments of Chemistry & Molecular Genetics and Microbiology)

Ian Pyne, G-Protein Coupled Receptors: How the Retromer Protein Complex and Adapter Protein SNX27 Mediate Receptor Recycling, (Dr. Robert Lefkowitz, Department of Biochemistry)

Alexandra Repp*, Understanding Cellular Adaptation to Hypoxia in Deep Diving Cetaceans, (Dr. Jason Somarelli, Department of Medicine)

Jackson Riffée, Comparing Parasite Prevalence Between Humans and Wild Primates, (Dr. Charles Nunn, Department of Evolutionary Anthropology)

Ryan Rogers*, Parasite Density Mediates Consumer Regulation of Oyster Reef Disease Ecology and Foundation Species Function, (Dr. Brian Silliman, Nicholas School of the Environment)

Daniel Ryan, Characterizing the Mosquito Microbiome's Role in Regulating the Aryl Hydrocarbon Receptor, (Dr. Emily Derbyshire, Departments of Chemistry & Molecular Genetics and Microbiology)

Beatrice Schlepner, Hidden Dangers of Plastic: Reviewing Carcinogenicity of Plastic Additives and the Role Microplastics Play as Vectors for Toxins, (Dr. Jason Somarelli, Department of Medicine)

Lauren Sheu*, Assessing anti-B7-H3 Antibody and gp70 Cancer Vaccine Therapy for TNBC, (Dr. Smita Nair, Department of Surgery)

Brennan Geti Simon, The Roles of Integrin Alpha 6 and NCAM1 in Breast Cancer Metastasis and Survival in the Leptomeninges, (Dr. Dorothy Sipkins, Department of Medicine)

Karen Mei Song, Comparative analysis of podocyte and fibroblast transcriptomic profiles using network construction and computational methods, (Dr. Samira Musah, Department of Biomedical Engineering)

Jeevan Tewari, Investigating the Role of the Toggle Switch Motif in Odorant Receptor Proteins, (Dr. Hiroaki Matsunami, Department of Molecular Genetics and Microbiology)

Arthi Vaidyanathan, Characterizing Innate Immune Defense Mechanisms Against Intracellular Bacteria, (Dr. Edward A. Miao, Department of Immunology)

Angela Wei, Characterizing the Role a TOMM40 Poly-T Variant in APOE and TOMM40 Transcriptional Regulation in a Humanized Mouse Model, (Dr. Ornit Chiba-Falek, Department of Neurology)

Jennifer Yan, Sensitizing Chemo-resistant Breast Cancer to Chemotherapy with a Precursor N-cadherin Antibody, (Dr. Robin Bachelder, Department of Surgery)

Anna Yang, *In Vivo* Validation of a Mouse Model of Parkinson's Disease Gene Therapy: Biosafety Evaluation, (Dr. Ornit Chiba-Falek, Department of Neurology)

Catherine S Yao, Exploring the Tumor Immune Microenvironment in Murine Obesity-Associated Colorectal Cancer, (Dr. Jatin Roper, Department of Pharmacology and Cancer Biology)

Claire Yin, Investigating Cadh-6 as an Effector Gene in Morphogenesis of the Sea Urchin *L. variegatus*, (Dr. David McClay, Department of Biology)

Michelle Zhang, Alternative Pathways to Cancer: Dissecting the Functional Consequences of Genomic Repetitive Elements in Tumorigenesis, (Dr. David Kirsch, Department of Pharmacology and Cancer Biology)

Alice Zhou, The Effect of Camk2 on Colorectal Cancer Radiation Sensitivity, (Dr. Jatin Roper, Department of Pharmacology and Cancer Biology)

Xuanyu Zhou, How Non-coding RNAs Facilitate the Creation of Various Gene Forms: Verifying How Changes in snoRNA-guided Nm Modifications Impact Alternative Splicing in Cardiac Cells, (Dr. Christopher Holley, Department of Medicine, Cardiology & Dr. Hala Abou Assi, Department of Biochemistry)

***High Distinction**