UAB Civitan International Research Center Name Emerging Scholars and the Chesapeake Civitan McNulty Scientist Awards for 2020

Each year the UAB Civitan International Research Center in association with the Civitan International and the Foundation for Children with Intellectual and Developmental Disabilities provide research awards to young scientists working in the field of developmental disabilities. The Civitan Center recently announced awards for three outstanding young scientists as recipients of the 2020 Civitan Emerging Scholar awards. Austin Svancaran, M.A., Reagan Pennock, Ph.D., and Norimichi Ito, Ph.D., are all conducting new research that promises to impact the study and treatment of neurodevelopmental disabilities as well as the social well-being of persons with intellectual disorders.

Austin Svancara, M.A., works in UAB's Translational Research for Injury Prevention injury Prevention Laboratory (UAB TRIP Lab) where he studies how to improve the driving safety of teens, individuals with autism, and persons with attention-deficit/hyperactivity disorder. One the important tools he uses in this research is the Lab's high resolution driving simulator. Featured in the 2019 Civitan Center Video Report, the TRIP Lab also plans to use the Civitan International Neuroimaging Lab to provide unique neural data in association with their driving simulator studies. Svancara will use the award to fund his studies on research to improve driving safety for teens and persons with intellectual disabilities.

Reagan Pennock, Ph.D., works in the lab of Dr. Jacques Wadiche in the UAB Department of Neurobiology where he uses the cerebellum to serve as a model to study the mechanisms of neurotransmission in the mammalian brain. He uses electrical and high resolution optical recordings to study a non-standard form of transmission in the cerebellum. Using these techniques he has been able to determine the identity and precise location of the receptors mediating this form of transmission on inhibitory neurons of the cerebellar cortex. His Emerging Scholars Award will fund experiments that test the hypothesis that an interplay between non-standard and standard forms of transmission drive plasticity on these inhibitory neurons. This award will provide a bridge between the end of his current NIH fellowship and future fellowships that will allow him to move towards becoming an independent investigator.

Norimichi Ito (left) with other members of the Shin-ichi Kano lab

Norimichi Ito, Ph.D. works in the lab of of Shin-ichi Kano, M.D., Ph.D. (https://www.skano-lab.org) where they are addressing the mechanism underlying how our immune system impacts brain function, especially social behavior. Social behaviors are affected by neurodevelopmental disorders such as autism spectrum disorders, but it remains unclear how social behaviors are developmentally regulated. In order to clarify the mechanism, Ito aims to investigate the role of immune signaling on the development of social behaviors and underlying neuronal activities of astrocyte-microglia (highly specialized non-neuronal brain cells). To accomplish this Ito will use a complex variety of techniques including a combination of spatiotemporal modulation of astrocyte function and *in vivo* calcium imaging. The intriguing goal of this research is to understand the role of immune mechanisms in brain health and disease, and to develop new preventive/interventional treatments for chronic brain disorders such as mental illness and somatic disorders impairing brain function.

Chesapeake Civitan McNulty Scientist Award for 2020

Matthew Alexander, Ph.D., assistant professor of pediatric neurology and genetics at the University of Alabama at Birmingham, is the recipient of the Chesapeake Civitan McNulty Scientist Award for 2020. The Chesapeake Civitan McNulty Scientist Award is given each year in honor of Tommy McNulty and his family, who pioneered research efforts for developmental disabilities. Tom and Mary McNultyand their son Tommy were the driving force behind the creation of the Civitan International Research Center, housed in the UAB School of Medicine and the research focus of Civitan International.

Alexander's research focus is on identifying new ways to understand the disease pathology and identifying new treatments for childhood neuromuscular disorders. A major component of his laboratory research focuses on the generation of novel, human disease-relevant zebrafish and mouse models of various forms of muscular dystrophy, with a goal to improve the lives of patients with neuromuscular diseases through basic science and translational research. He joined UAB and Children's of Alabama in 2016. He currently serves as the UAB Center for Exercise Medicine education chair and was named a 2019 UAB Pittman Scholar. His laboratory focuses on identifying novel epigenetic and genetic regulators of human Neuromuscular diseases and generating novel zebrafish models of disease for drug screening purposes.

Civitans tour the UAB Zebra Fish facility with Dr. Alexander.