Collaboration & Multidisciplinary Team Science

Major Results and Key Outcomes

During the past year, each of the eight ARCs secured extramural funding from sources such as the American Heart Association and Bill Gates Foundation, a center grant (VAPERACE) from the American Heart Association, and from different NIH institutions. Among those, noted is a **$26M** grant for a U19 institution program awarded to leaders and members of the **Precision Medicine for Alzheimer Disease and Related Disorders** ARC. In the past funding year, the ARCs published in total nearly 70 papers co-authored by at least two ARC members, describing discoveries in each related field.

Newly established ARC in response to the emergence of the COVID-19 virus	
Respiratory Viruses: a focus on COVID-19 ARC	Rapidly responding to Covid-19 epidemic crisis by developing this ARC includes over 25 investigators with expertise in various disciplines with the goals to (1) generate tools for the investigation of COVID-19, (2) delineate the molecular mechanisms that underlie the COVID-19 pathophysiology, and (3) to develop therapeutic options for the treatment of COVID-19
We have continued to develop the following ARCs and goals:	
Tobacco Regulatory Science (TRS) ARC	This ARC brings together a multidisciplinary investigative team with the mission of understanding complex tobacco use patterns and health impacts in vulnerable populations across the life-course
Fibrosis ARC: Connecting Tissues and Investigators	This ARC investigates shared and tissue-specific factors in organ fibrosis that can be utilized to develop improved diagnostics and therapies
Systems Biology Approaches to Microbiome Research ARC program	This ARC program includes engineers and biomedical researchers who develop new, multi-level mechanistic understanding of how microbe-microbe, microbe-environment, and microbe-host interactions determine microbial community dynamics in human disease
Mobile and Electronic (ME)-Health ARC program	This ARC program develops digital platforms, such as Virtual Reality, mobile apps, web, social media, text messaging, connected devices, that have been deployed in real-world clinical and public health settings
Thrombosis and Hemostasis ARC program	This ARC program has developed techniques based on machine-learning to study propensity of thrombosis in various organ pathologies in different human cohorts
Protein Trafficking and Neurodegenerative Disease ARC program	This ARC program explores the role of genes involved in protein trafficking in the etiology and pathophysiology of Alzheimer Disease and other neurodegenerative disorders
Precision Medicine for Alzheimer Disease and Related Disorders ARC program	This ARC program uses diverse expertise to investigate personalized biological underpinnings disorder subtypes, and identifies new therapeutic targets specific for these subtypes