

**CIMR - A CORE FOR INTEGRATED MICROBIOTA RESEARCH**  
[\(https://www.medicine.tamhsc.edu/cimr/\)](https://www.medicine.tamhsc.edu/cimr/)

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**Key Participating units:**

Texas A&M Health Science Center (TAMHSC)	College of Veterinary Medicine (CVM)
College of Engineering (COE)	AgriLife/COALS

**Total amount requested:** ~\$1,000,000

**Executive summary:**

The plan for this RDF proposal is to expand the **Core for Integrated Microbiota Research (CIMR)** - a cutting-edge and *new-to-campus* research facility – to a level that meets current investigator microbiota research needs at TAMU. Research on the **microbiota** - *the community of beneficial microbes that symbiotically inhabit host or environmental ecosystems* - is an area with undeniable impact and astronomical growth in the natural, biomedical, agricultural, genomic, and clinical sciences. The importance of the microbiota as a critical factor in agricultural and environmental ecosystems and host health is now indisputable, and **the last 10 years has witnessed exponential growth in microbiota research, funding, and publications.** The importance for increased microbiota research has been specifically noted by the National Academy of Sciences, National Institutes of Health, and World Economic Forum, and funded by the recent White House creation of the \$121 million National Microbiome Initiative (NMI) in early 2016 to support enhanced microbiota research, develop interdisciplinary platform technologies, and expand the microbiome workforce with federal agencies dedicating an additional \$400 million to the NMI; this all on top of the ~\$1 billion federal investment to-date that is to be matched/expanded over the next decade(s). Even with all this, *microbiota research will continue to grow at a furious pace encompassing a wide-range of disciplines in the coming decades. For these reasons, “microbiota research” is predicted to make a larger impact on the future of science, agriculture, and human and veterinary medicine than did genomics decades ago.* Without a doubt, TAMU needs a place at this lucrative and critical research table.

A 2014 campus-wide survey indicated **>50 highly productive and well-funded investigators from 5 colleges require a “microbiota core” to remain competitive for funding.** In addition, in the Fall of 2016 the Microbiota Research Interest Group (<https://vpr.tamu.edu/resources/research-interest-groups/microbiota-research-interest-group> ) convened **over 80 TAMU multi-disciplinary investigators who expressed the immediate need for microbiota research infrastructure at TAMU.** However, at the moment, it is impossible for TAMU investigators to perform comprehensive microbiota research because the very specialized research instrumentation/equipment to do this does not exist at TAMU and microbiota cores are limited in Texas. In response to this immediate need at TAMU, the CIMR was initially created in 2015 as a small core with seed-funds from the HSC, COM and CVM, providing a self-contained, operational germ-free mouse core and a microbiology lab to conduct advanced microbiota studies. **Right now,** the CIMR is successful and has a queue of over 15 investigator-initiated studies averaging \$10,000 per experiment (each study needs 3-5 experiments); however at current size, the CIMR cannot accommodate the current TAMU investigator needs (only ~3-4 investigator-experiments/year at current size). **This proposal requests funds to expand the CIMR to a size that accommodates the current need at TAMU and enables a self-sustaining revenue model.** This will include (1) renovations for a larger germ-free mouse facility that accommodates ~10-25 studies/year, (2) additional microbiota laboratory capabilities (3) a research management structure and system to link the CIMR to other scientific cores on campus (IMAC, TIGSS). Thus with the requested RDF support, the CIMR will immediately augment campus-wide research and enable single and multi-investigator microbiota research grant success, thus providing a robust return-on-investment. In addition, *the CIMR will propel TAMU research in this new, innovative, and burgeoning field for decades to come, thus creating regional and national prominence for TAMU.*