

2023F_17_DIXON_RIECHMAN_&_YENTES

Research Development Fund – Fall 2023 Application

Submission Deadline: **12:00PM CDT Monday – October 23, 2023**, to rdf@tamu.edu

Application Title: **Tactical Human Performance Laboratory**

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Key Participating Units at Texas A&M:

Department of Kinesiology and Sport Management
Sydney and JL Huffines Institute for Sports Medicine and Human Performance
Department of Aerospace Engineering
Department of Electrical Engineering
Department of Nutrition
Department of Food Science
Department of Animal Science
Department of Landscape Architecture and Urban Planning
Texas A&M Engineering Extension Service
School of Public Health
Texas A&M Athletics

RDF Amount Requested (\$): \$1,578,401

Executive Summary

Many people are challenged to their performance limits with physically demanding work requirements and extreme environments, including military, astronauts, fire, police, and certain industrial occupations with the unique distinction that performance failure in these “tactical athletes” can be fatal. The Department of Kinesiology and Sport Management has been accruing a critical mass of content experts devoted to research involving Tactical Human Performance. In addition, the Sydney and JL Huffines Institute for Sports Medicine and Human Performance has had ongoing testing in tactical athletics since 1996. Huffines has supported active research projects and developed multidisciplinary teams for the purpose of tactical athletic research and community projects. There is a strong consensus that a Tactical Human Performance Laboratory, under the management of Huffines, including an environmental chamber, will provide those experts with a critical testing capability and infrastructure to engage scholars from a wide range of disciplines across Texas A&M University. The goal of the Tactical Human Performance Laboratory will be to perform high fidelity thermoregulatory and performance research designed to systematically monitor, predict, mitigate, and optimize human performance during extreme physical and environmental challenges. A minimum of seven departments across 4 colleges including more than 15 faculty are currently engaged with this initiative, and the benefit of availability of this resource would attract more engagement once the resource is available. Additionally, external stakeholders and interested parties would draw regional and national resources to Texas A&M. There are currently no human environmental chambers on the Texas A&M campus or the region. This proposal includes renovation of 1521 sf of laboratory space in the Reynolds Building, install a 3,353 cu. ft environmental chamber capable of -22° F to 185° F precision temperature and humidity control, and equip and staff the space with state of the art performance testing capabilities. Outcomes will include enhanced competitiveness of investigator-initiated grant applications to DoD, NSF, USDA, NIH, FEMA and NIOSH focused on thermoregulatory effects on physiology and performance, and enhance contract services with elite athletics such as the USOPC.