

**Proposal Title: Determining the Physiological Health Benefits of Work and Leisure Activities**

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**Key Participating Units:** Department of RPTS, College of Agriculture and Life Sciences  
Dept. of Environmental & Occupational Health, School of Public Health  
Department of Health and Kinesiology, Education & Human Development  
Dept. of Nutrition & Food Sciences, College of Agriculture and Life Sciences  
Dept. of Industrial & Systems Engineering, College of Engineering

**Anticipated Requested Amount:** \$65,387

**Executive Summary of the Intended Proposal:**

Understanding the physiological effects various behaviors have on one's body is integral to understanding benefits received and risks associated with participation. Until recently, the majority of studies in this area have had to use perceived effects as the primary dependent variable, as actual effects have been too difficult or cumbersome to attain in real-world settings. New technologies related to mobile human monitoring (MHM) have made it possible to gather valid, accurate data on a multitude of physiological measures. With the use of these monitors, multiple fields could gain competitive advantage for obtaining external funding.

The primary researchers for this study will be Dr. James Petrick and his Tourism Marketing Lab in the Department of RPTS, Ranjana Mehta and her NeuroErgonomics Lab in the Department of Environmental and Occupational Health, Dr. J. Timothy Lightfoot and the Huffines Institute for Sports Medicine and Human Performance, Dr. Susanne Talcott in the Department of Nutrition Sciences and Dr. Farzan Sasangohar in Industrial and Systems Engineering. Multiple other researchers on campus would also likely greatly benefit from access to the equipment that will be requested in this proposal.

In order to aid in the understanding of actual health benefits and risks related to multiple various activities (i.e., work environments, travel, sports, PTSD of war veterans, and nutritional supplements) and to give Texas A&M researchers the upper hand in procuring future research in this area, we are requesting funding for 25 Equivital™ physiological health monitors. These monitors allow one to: continuously assess vital signs, give activity and energy expenditure data, determine core temperature, track sleep and biorhythmicity and monitor thermoregularity. The monitors, can be worn by subjects with only nominal inconveniences and can be used for a multitude of types of research including, but not limited to: clinical research, military training research, sports research, protection for industrial workers and pharma innovation and clinical trials.

The primary anticipated outcomes from this study is that physiological benefits/risks will be discovered for a multitude of different activities and groups of people. These outcomes will allow for pilot data to be collected, to aid in applying for larger grants from federal agencies (i.e., the National Institute of Health, National Science Foundation the United States Travel Association, etc.) to more fully determine what benefits and risks exist, and to determine best practices for individuals and companies.

Additionally, these monitors can be used for a plethora of studies across the Texas A&M campus. These monitors are extremely innovative and have been shown by recent studies to be a valid and reliable means for collecting physiological data across a multitude of applications (e.g., industrial applications, emergency response, healthcare applications, community-based research). Thus, the purchase of these monitors would give Texas A&M researchers comparative advantage when pursuing external grants from numerous disciplines, and for attracting researchers wishing to work in these areas.