

Biosketch
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Background and Training

I earned M.A. in Experimental Psychology at Florida Atlantic University (FAU) with a specialization in Behavioral Neuroscience. My thesis work examined neurological consequences of HIV infection. My Ph.D. was earned in the Behavioral Neuroscience program at the University of Florida (UF) where the focus of my research involved discovering long term changes that can occur in neurobiological pathways involved in stress responses and developing animal models of chronic stress. I also completed Postdoctoral Training at Harvard Medical School, where I studied neurological consequences of sleep perturbations using *in vitro* electrophysiological recording techniques. During my postdoctoral studies, I also earned a certificate in Sleep Medicine from Harvard Medical School Division of Sleep Medicine. I am widely published in many areas of neuroscience with topics ranging from clinical neurological impairments to basic cell physiology. Moreover, these publications are all in highly respected, peer reviewed journals.

Current Research Summary

My current research involves two main avenues of investigation (with student researchers) using psychophysiological and genomic techniques.

1. The first research area explores mechanisms and consequences of acute and chronic stress in humans.

This research is significant because there is a fundamental gap in our understanding of how the global concept of “stress” alters psychological and immune functioning; however, stress has clearly been shown to play a significant role in many disease and psychological processes. Accordingly, the overall goal of this series of experiments is to show the biological pathways through which psychological stress results in altered immune and psychological functioning in humans. The rationale for this research is that most research currently looking at the role of stress on health uses animal (primarily rodents) models and employs physical stress. However, we find that human stress research is critical to uncovering the effects of stress on health; we find that many of the rodent findings are not supported in our work with humans. Our data suggest this is possibly for two reasons 1) the complex psychological processing that is unique to humans (e.g. rumination) and 2) that acute and chronic physical stress have different effects on health compared to psychological stress. Beyond describing the biological pathways involved in the effects of stress on health in humans, our genetic individual differences findings (in the serotonin and dopamine systems) can set the stage for novel approaches in understanding differences in stress resilience between people.

2. The second line of investigation examines the physiological and psychological consequences of sleep loss on human

My work with Drs. Latimer and Grant is within this research program and the goal of this research is to use an interdisciplinary approach to study the effects of chronic sleep restriction (CSR) on biomarkers and psychological markers of breast cancer risk. This line of investigation complements my previous and ongoing work that shows increases in biomarkers of inflammation with a concomitant decrease in emotional processing abilities due to sleep loss. Changes in emotion processing are particularly problematic for individuals who need to integrate emotionally relevant information in careers that commonly experience long shifts/reduced sleep (such as the military, police force, shift-workers, and healthcare workers). Accordingly, the overall goal of this research is to 1) show novel approaches for the treatment of affective disorders through targeting affective pathways involved in sleep loss 2) provide a testing battery (pen and paper and biological) that can indicate when individuals are at risk for making poor emotionally-laden decisions or increased risk

taking behavior 3) apply a systems biology approach to integrate the extended neuro-immune changes that occur with sleep loss in order to improve physical and psychological health.