

# SEMINAR SERIES

Supported by The Department of Biomechanics and  
The Center for Research in Human Movement Variability (MOVCENTR)



## Neuromolecular and Cognitive Mechanisms of Alternative Stress Coping Styles in Zebrafish

Featuring Dr. Ryan Wong  
University of Nebraska at Omaha



Friday, Aug. 25 | 10 A.M. – 11 A.M. | BRB 167

### PRESENTATION ABSTRACT

Animals experience a variety of challenges throughout their lives and often employ behavioral displays and physiological responses to successfully cope with stressors. These stress coping mechanisms are a result of complex interactions between neural activity and the individual's genome. Two qualitatively different coping styles have been documented in a wide range of animal taxa: proactive and reactive. The displays of these alternative responses are thought to be due to biases in cognitive processes. Research in the Wong Lab takes an integrative approach to understanding the mechanisms underlying stress coping styles and its impact on learning and memory processes. The Wong lab has established zebrafish as a model to studying alternative stress coping styles through investigation of normative processes. In our studies we draw on principles and methodologies ranging from behavior, neurobiology, genome engineering, transcriptome profiling, neuroendocrinology, pharmacology, to redox reactions. We have identified proximate mechanisms that may be key in promoting traits of alternative stress coping styles. Understanding how the behavioral and neuromolecular mechanisms across the brain leads to successful stress coping strategies can give important insights into the etiology of stress-related mental health disorders by identifying key pathways that are disrupted.

### ABOUT DR. WONG

Dr. Ryan Wong is an Associate Professor of Biology at the University of Nebraska at Omaha (UNO). Dr. Wong's lab, funded by the National Science Foundation and National Institutes of Health, studies the causes and consequences of variation of complex animal behaviors. More specifically his current research efforts focus on understanding the behavioral, neural, molecular, and neurotranscriptomic mechanisms that underlie variation in how animals cope with stress. Wong is also interested in understanding how an individual's stress coping style influences their learning and memory.

more info at [cobre.unomaha.edu](http://cobre.unomaha.edu)

\*This seminar was supported by the National Institutes of General Medical Sciences of the National Institutes of Health under Award Number P20GM109090  
Center for Research in Human Movement Variability. | The University of Nebraska at Omaha shall not discriminate based upon age, race, ethnicity, color,  
national origin, gender identity, sex, pregnancy, disability, sexual orientation, genetic information, veteran's status, marital status, religion, or political affiliation.

UNIVERSITY OF  
**Nebraska**  
Omaha

