Andrew S. Fox, PhD
CNPRC Core Scientist, Neuroscience and Behavior Unit

Affective neuroscience
Our emotions motivate our actions and define our interactions with others. In this way, emotional tendencies define much of who we are now and who we are going to be in the future. Dr. Fox aims to understand the neurobiology of “emotional style.”

Why do some people callously abuse other people, while some become overwhelmed with empathy? Why are some people afraid to leave their house, while others enjoy the feeling of danger? Understanding the biology that underlies dispositional anxiety could allow for specific interventions to relieve anxiety disorders and reduce suffering of anxious individuals.

To answer these questions, the Fox lab uses a translational affective neuroscience approach, and embraces principles of innovation, integration, and collaboration.

A Translational Neuroscience Approach to Understanding the Development of Social Anxiety Disorder and Its Pathophysiology
Fox AS & Kalin NH (2014)
American Journal of Psychiatry. 171(11):1162-1173

Contributions of the central extended amygdala to fear and anxiety
Shackman AJ*, Fox AS* (2016)
Journal of Neuroscience. 36(31):8050-8063

Brain imaging data reveal that natural variation in an anxious temperament is associated with greater brain metabolism in the “extended amygdala” including the highly heritable bed nucleus of stria terminalis (BST), as well as parts of the prefrontal cortex, including the orbital frontal cortex (OFC). Here, we show the uncinate fasciculus, which carries information from the OFC to regions of the extended amygdala. By understanding the connections between the prefrontal cortex and the extended amygdala, we hope to better understand the capacity to regulate our emotions, and develop new techniques that can help decrease the suffering of patients with anxiety and depressive disorders.

Understanding the biology of “emotional style” can guide the development of new treatments aimed at preventing the worldwide human suffering that results from stress-related psychopathology.

To contact Dr. Fox email him at: dfox@ucdavis.edu

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