

# PIONEERS IN BIOMEDICAL RESEARCH SEMINAR

Presented by the Fralin Biomedical Research Institute and co-sponsored by the institute's Center for Human Neuroscience Research



**NILS KROEMER, Ph.D.**

Junior Group Leader  
Computational Psychiatry  
Department of Psychiatry and Psychotherapy  
University of Tübingen

## *Running on Dopamine: Metabolic Regulation of Reward Seeking*

Dopamine plays an important role in the regulation of goal-directed behavior. To ensure energy homeostasis, goal-directed behavior has to be tuned according to physiological needs of the organism. However, despite the wealth of preclinical evidence on the link between disturbed energy homeostasis and altered dopamine signaling, this correspondence is not well understood in humans. In the talk, I will provide an integrative perspective on goal-directed behavior that incorporates energetic demands. Crucially, the emerging evidence on vagal afferent signals in regulating allostasis via changes in monoaminergic signaling suggests that non-invasive electrical stimulation of the vagus nerve may provide a means to perturb homeostatic and motivational circuits in the human brain. Thus, by emulating vagal afferent signals concurrently to fMRI, we can better elucidate the role of interoceptive feedback in regulating goal-directed behavior. Ultimately, this mechanism might help us explain why metabolic and motivational symptoms often co-occur in mental and metabolic disorders.

**FRIDAY, NOV. 20 at 11:00 a.m.**

This seminar will be webcast live at [fbri.vtc.vt.edu/events/live-webcast](http://fbri.vtc.vt.edu/events/live-webcast). In addition, students, faculty, and staff at Virginia Tech and Carilion Clinic who are invited to attend this lecture will receive Zoom access via email.



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