In the last two decades, the prevalence of obesity among adults in the U.S. has increased from 30.5% to 42.4% according to the Centers for Disease Control. Because obesity leads to various life-threatening health conditions, including as heart disease, diabetes, and certain cancers, it is critical to understand its neurobiological underpinnings and develop more effective interventions. Simple sugars are an essential source of energy for the body. However, these molecules are now abundant in our modern food environment, and promote the development of obesity when consumed in excess. Sugars engage multiple sensory and/or metabolic processors along the gut-brain axis to ultimately guide the ingestive behaviors. However, recent data from our lab and that of others’ suggests that one sugar in particular, glucose, is the ultimate reinforcer of consumption. But how glucose is detected and discriminated from other nutrients at these various sites of action is not well understood. In this presentation, I will talk about the role of glucokinase, a previously unrecognized taste sensor for glucose, in taste-driven consummatory behaviors for glucose-containing sugars. Then I will describe how glucokinase functioning in the brain, specifically in the arcuate nucleus of the hypothalamus, further contributes to glucose appetite. Together, these studies highlight the preponderance of metabolic sensory mechanisms from the periphery to the brain that reinforce glucose intake, above and beyond that of other sugars.

HEB Seminar Series
November 29, 2021 | 12:00 – 1:00 PM
Via Zoom (presentation will not be recorded):
https://usc.zoom.us/j/93962540995?pwd=cXhDM2paZENIQWhhQUJVNFp1bmc4Zz09
Passcode: 031375