



USC University of
Southern California

Keck School of
Medicine of USC



USC DORI'S 8TH ANNUAL MINI RESEARCH SYMPOSIA ON DIABETES & OBESITY

March 9, 2021 (12:00 PM – 2:00 PM PST)

Theme: Taste/Flavor



Keynote Speaker

Monica Dus, PhD

Assistant Professor
University of Michigan, Ann Arbor

Epigenetic Reprogramming of Sweet Taste by Diet Abstract

Diets rich in sugar, salt, and fat alter taste perception and food preference, contributing to obesity and metabolic disorders, but the molecular mechanisms through which this occurs are unknown. Here, we show that in response to a high sugar diet, the epigenetic regulator Polycomb Repressive Complex 2.1 (PRC2.1) persistently reprograms the sensory neurons of *Drosophila melanogaster* flies to reduce sweet sensation and promote obesity. In animals fed high sugar, the binding of PRC2.1 to the chromatin of the sweet

gustatory neurons is redistributed to repress a developmental transcriptional network that modulates the responsiveness of these cells to sweet stimuli, reducing sweet sensation. Half of these transcriptional changes persist despite returning the animals to a control diet, causing a permanent decrease in sweet taste. Our results uncover a new epigenetic mechanism that, in response to the dietary environment, regulates neural plasticity and feeding behavior to promote obesity.

4 Trainee Oral Presentations

Linda Tsan, BS
(University of Southern California)

Sandrine Chometton, PhD
(University of Southern California)

Elizabeth Loxterkamp, BA
(University of Southern California)

Taylor Dal Bon, BS
(University of Southern California)

Zoom Registration Link

https://usc.zoom.us/webinar/register/WN_49F2nJrTT9eRLaHQB8LiBw

1 CME will be offered. Please contact Roxanne Odom at
rododom@med.usc.edu after the session.

This session will be recorded.



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DORI
Diabetes & Obesity
Research Institute

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Schedule

12:00 PM – Introduction & Moderator by Lindsey Schier, PhD (USC Assistant Professor of Biological Sciences)

12:05 PM – Linda Tsan, BS (Neuroscience PhD Student; mentor: Scott Kanoski, PhD)

Early Life Consumption of Low-Calorie Sweeteners in Rats Impacts Dietary and Metabolic Outcomes Later in Adulthood

Authors: Linda Tsan, Logan T. Tierno, Rae Lan, Sandrine Chometton, Emily E. Noble, Lindsey A. Schier*, Scott E. Kanoski* (*co-corresponding authors)

12:17 PM – Sandrine Chometton, PhD (Postdoctoral Research Fellow; mentor: Lindsey Schier, PhD)

A Role for Glucokinase in the Arcuate Nucleus in Glucose Appetition

Authors: Sandrine Chometton, Elizabeth Winnicki, Lindsey Schier

12:29 PM – Elizabeth Loxterkamp, BA (Neuroscience PhD Student; mentor: Lindsey Schier, PhD)

The Role of the Vagus Nerve in Glucose-specific Appetition

Authors: Elizabeth Loxterkamp, Elizabeth Davis, Scott Kanoski, Lindsey Schier

12:41 PM – Taylor Dal Bon, BS (Integrative & Evolutionary Biology PhD Student; mentor: Lindsey Schier, PhD)

A Role for Glucokinase in Glucose Taste in Rodent Models

Authors: Taylor Dal Bon, Sandrine Chometton, Lindsey Schier

12:53 PM – Introduction by Lindsey Schier, PhD

1:00 PM – Keynote speaker: Monica Dus, PhD

2:00 PM – Adjourn

Next session: Tuesday, April 13 (10 AM – 12 PM) with Stephanie Kullmann, PhD (University of Tübingen, Germany)
Theme: Neural/Brain