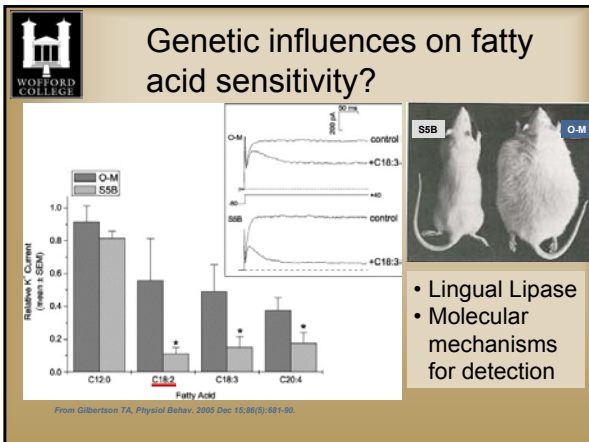
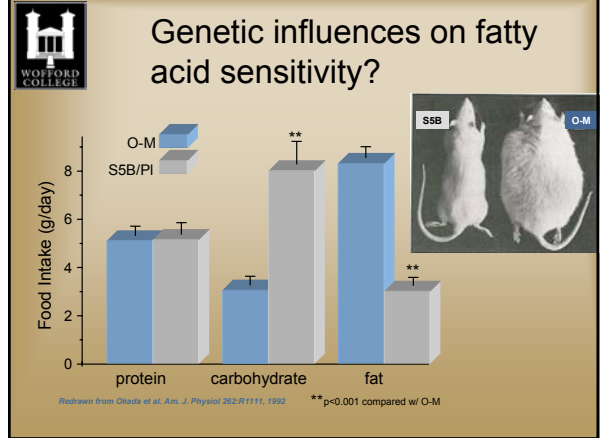


Characterization of the afferent gustatory responsiveness of the Chorda Tympani nerve to tastants with and without linoleic acid in obesity-prone and obesity-resistant rat strains

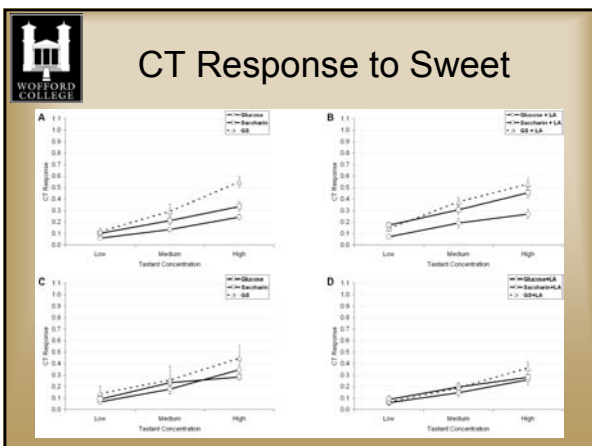
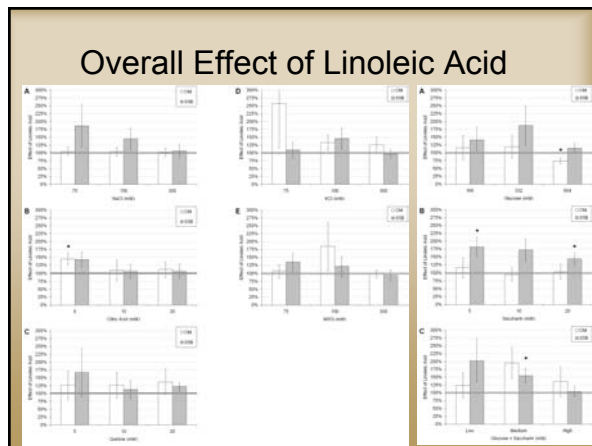
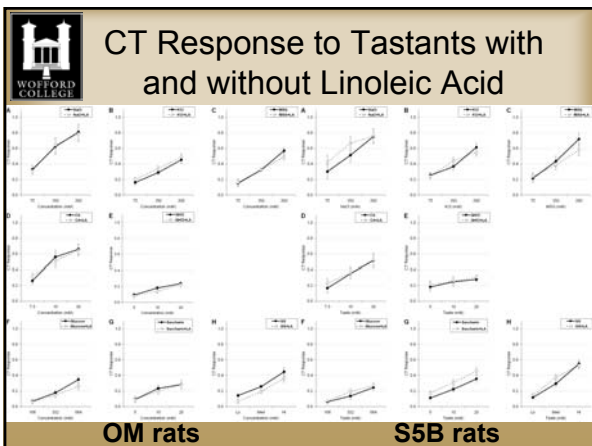
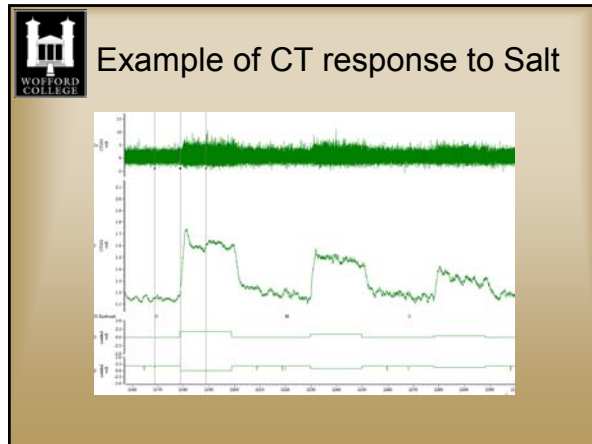
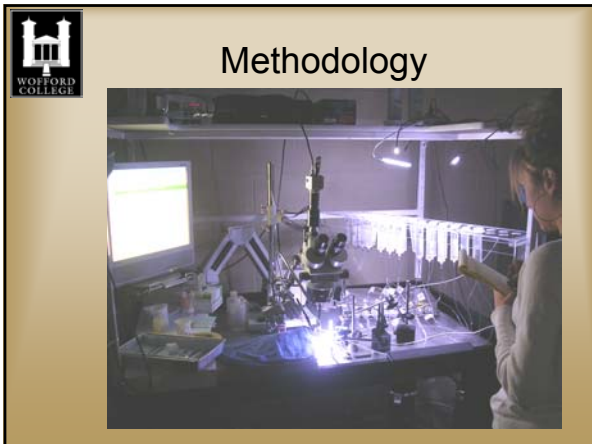
Kimberly Smith
Dr. David Pittman, Research Mentor
Wofford College
May 09, 2008



- ### Fatty-Acids and the Gustatory System
- Behavioral Research
 - Detection: Conditioned Taste Aversions
 - Innately Prefer: 2 bottle preference tests
 - A role for the taste system?
 - Eliminating the chorda tympani or glossopharyngeal taste nerves impairs the detection of fatty-acids

- ### CT Responses in OM & S5B Rats
- Purpose
 - Characterize the afferent neural responses to a variety of taste stimuli including the effect of linoleic acid on taste responses in the two strains
 - Expectations based on behavioral research
 - S5B rats would demonstrate a greater responsiveness to the sweet stimuli
 - Linoleic acid would produce increased chorda tympani responses when added to the tastants
 - OM rats would demonstrate a greater responsiveness to the tastants when mixed with 200 uM linoleic acid

- ### Methodology
- Surgery
 - Stimuli
 - NaCl, KCl, Citric Acid, MSG, Quinine-HCl, Glucose, Saccharin, G+S
 - 200 uM linoleic acid
 - Stimulus Delivery System
-



- Summary of Findings
- First study to measure taste responses in OM and S5B rats found similar concentration-dependent responses for all taste categories
 - Unexpectedly, linoleic acid **did not** produce robust increases in taste responses
 - Linoleic acid **did** produce subtle enhanced responses in some stimuli



Acknowledgements

- Tim Gilbertson at Utah State University for providing the OM and S5B rats
- Wofford College
- Psychology Department
- My research mentor, Dr. David Pittman