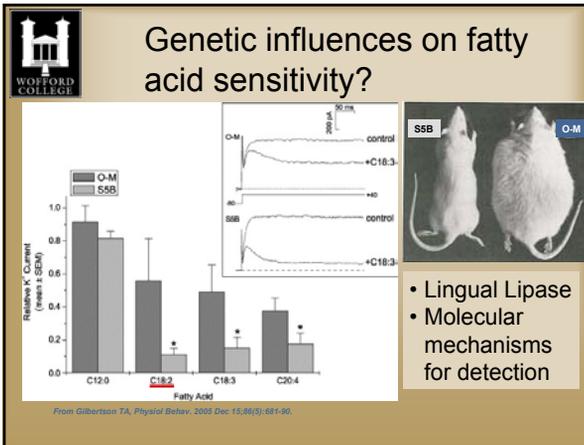
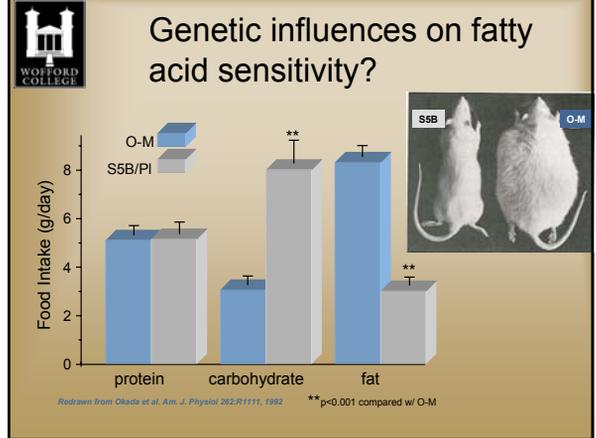


## Characterization of the afferent gustatory responsiveness of the Chorda Tympani nerve to tastants with and without linoleic acid in obesity-prone and obesity-resistant rat strains

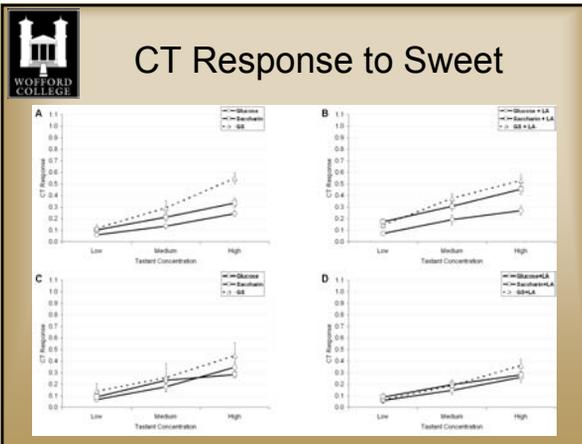
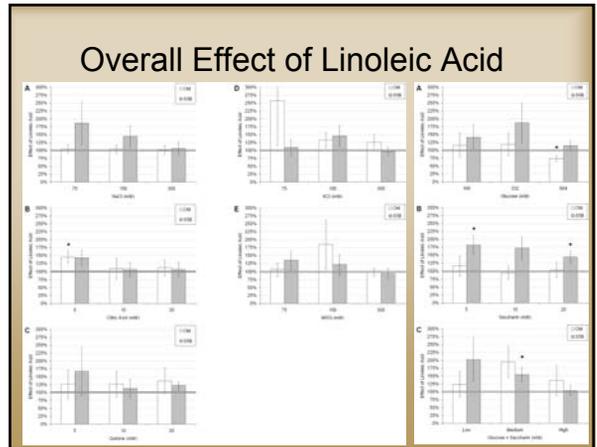
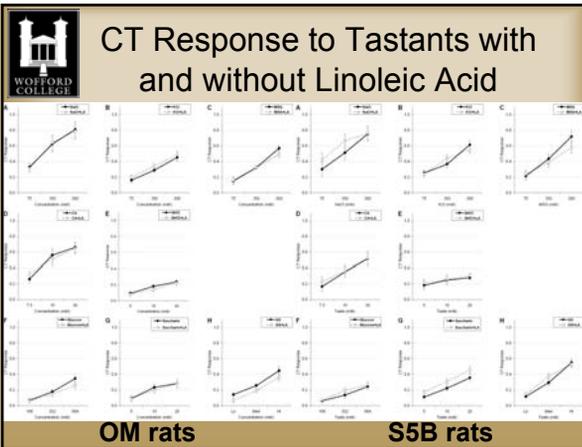
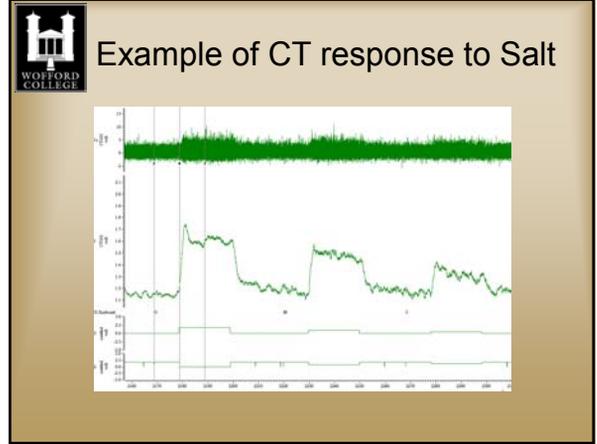
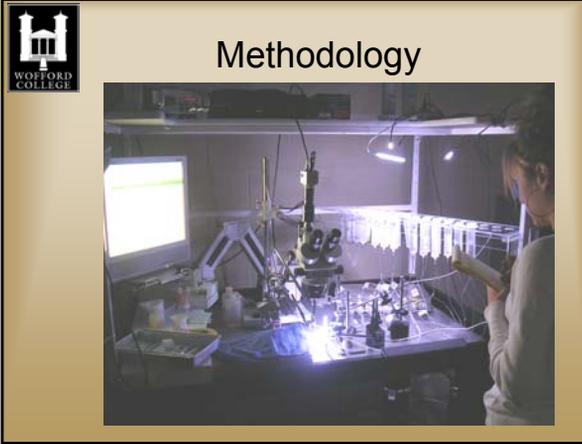
**Kimberly Smith**  
 Dr. David Pittman, Research Mentor  
 Wofford College  
 May 09, 2008



- ### 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



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