Anatomical Clay Modeling (Active Learning) in Human Biology and the STEM MyTime Program

- Students in a General Education Science course, Human Biology had the experience of learning anatomical structures of the human body by clay modeling. Students working in groups used clay to make a cell, brain, and the heart. In reference to the STEM MyTime Program, middle school students sculptured the digestive system from clay. The active learning concept was developed by attending workshops at National Conferences of the Human Anatomy & Physiology Society. The construction of anatomical structures from clay (hands-on exercise) is an alternative method to wet dissection.
Dr. Lloyd Working with Clay at a HAPS Conference Workshop
Dr. Lloyd’s Handy Work
A Star is Born
Human Biology Students Exhibiting their creation the Human Heart
Human Biology Students Using Clay to Make a Cell
Human Biology Students Finishing the Clay Cell Model
The Oral Surface Anatomy & Physiology Exam was an effective way to learn the subject  4.63    n=19

The Clay Modeling was an effective way to learn the subject  4.68    n=19

The Demonstration of the Cat Dissection was an effective way to learn the subject  4.00    n=18

The Bone/Muscle Poster Assignment was an effective tool in learning the material  4.63    n=19
Involved AU Students and Faculty interacting with middle school students after school at three local middle schools in the West and East Aurora School Districts.

The Theme of the Program for Spring, 2013 was Health and Nutrition.

Middle School Students were provided with various hands-on activities to promote the learning of science.

Clay Modeling of the Human Digestive System was conducted.

Students appeared engaged with the subject and the best clay model exhibit was photographed and printed on a T-Shirt for students.
AU Student Helping Waldo Middle School Students with Clay Modeling
AU Student Lending a Helping Hand with the Clay
Digestive System from Waldo Middle School

MOUTH: Where the digestive tract begins. Enzymes released into the mouth start the process of digestion.

PHAGUS: A muscular tube that moves food from the mouth to the stomach.

INX: Both food and air move through it (esophagus is part of the respiratory system).

STOMACH: Has a hold up in the highly acidic environment needed to break down food.

SMALL INTESTINES: Primary function of absorption of nutrients and minerals found in food. "Small" due to its length.

RECTUM: Feces until the body.
Clay Modeling of Digestion from Waldo Middle School

PHARYNX—both food and air move through it so the pharynx is part of both the respiratory and digestive systems.

STOMACH—has a lining that is tough enough to hold up in the highly acidic environment needed to break down food.

LARGE INTESTINES—absorb water from the remaining indigestible food matter and transmit the useless waste material out of the body.

SMALL INTESTINES—primary function is the absorption of nutrients and minerals found in food. “Small” due to width not length.
The Digestive System in Clay by the Waldo Middle School Students
May be an alternative to wet tissue dissection

A way for students to learn anatomy by doing (hands-on).

The possibility for students taking an on-line course to have an exercise at home and submit photos for grading.