Cultivating Student Learning Though Undergraduate Interdisciplinary Research: Creative Inquiry

Jesse Blount
Overview

• Introduction of CI
• Example: Analysis of a Bacon Cheeseburger
• Benefits of CI to students
• Benefits of CI to faculty
Creative Inquiry

- Undergraduate Research
- Unique idea
  - Student or Professor
- Advisor
- Course Credit
- Engages in
  - Higher-order thinking
  - Reflect on learning
  - Connect experiences to their traditional course work
Creative Inquiry

CI Students by Class

- Senior: 1756
- Junior: 581
- Sophomore: 213
- Freshman: 23

Total Students: 2573

http://ci.clemson.edu/today/
Creative Inquiry

CI Students by College

- Agriculture, Forestry & Life Sciences: 789
- Engineering & Science: 783
- Business & Behavioral Science: 474
- Health, Education & Human Development: 254
- Architecture, Arts & Humanities: 184
- Eugene T. Moore School of Education: 82
- Interdisciplinary Programs: 7

Total Students: 2573
Creative Inquiry

Total Projects: 363

- Engineering and Science: 119
- Agriculture, Forestry and Life Sciences: 102
- Business and Behavioral Science: 53
- Health, Education and Human Development: 33
- Architecture, Arts and Humanities: 27
- School of Education: 17
- Interdisciplinary Programs: 12
Analysis of a Bacon Cheeseburger

• Designed by Dr. George Askew
• Analyze all of the factors that contribute to producing a Bacon Cheeseburger
• Focus is economic impact at each level
  • End cost for the consumer
  • Cost to the farmer for growing and producing
• Facts and numbers from farmers in South Carolina in 2015
Analysis of a Bacon Cheeseburger

- Bun
- Bacon
- Hamburger Meat
- Cheese
- Condiments
  - Mayonnaise
  - Mustard
  - Ketchup
- Tomato
- Lettuce
- Pickles
Analysis of Bacon Cheeseburger

• Relation to classes
  – Agribusiness
  – Agricultural Mechanics
  – Agronomy
  – Animal Science
  – Food Science
  – Horticulture
  – Soils
Interdisciplinary Students

Agribusiness:  
Meaghan Shaughnessy  
Carl Womble

Agricultural Education:  
Jesse Blount  
Mallory Dailey

Animal and Veterinary Sciences:  
Alice Winter

Agricultural Mechanization and Business:  
Blake Brown  
Jonathan Fox  
Nicholas Rogers

Food, Nutrition, and Packaging Science:  
Chris Johnson
From Farm to Table
A Detailed Analysis

Have you ever wondered how much work actually goes into preparing that bacon cheeseburger that you order from your favorite restaurant? Think about everything you like on that burger: cheese, tomato, lettuce, ketchup, mustard, mayonnaise, onion, and bacon all seared on a juicy hamburger patty enclosed in a fluffy bun. Now, think about how much time and effort it takes to produce all of those burger toppings and condiments. Mr. Clinton Leard, a student services program coordinator in the College of Agriculture, Forestry, and Life Sciences, and a team of undergraduates and graduate students formed a Clemson Inquiry project called "Bacon Cheeseburger: From Farm to Table: Detailed Analysis," to better understand how much work goes into making the food, specifically the bacon cheeseburger. Leard explained, "By analyzing the bacon cheeseburger, we are able to break down each component and show how many different aspects of agriculture went into creating each part and attempt to determine the cost all the way back to the farmer."

Leard’s team is made up of Agribusiness Agricultural Education, Agricultural Mechanization and Business, Animal and Veterinary Science, Food Science students. Nick Rogens, graduate student in Agricultural Mechanization and Business explained, "You think from your own experience and background, so it is necessary and important to have students from a variety of majors working on this project."

The team takes one component of the burger at a time and analyzes the cost of raising, producing, and developing the components. For example, for the bacon, the team starts with hogs. They have to calculate the cost for the hogs. If the hogs are raised on the farm, the hogs have to eat, so the cost of the feed also has to be accounted for. In order to get the bacon, a farmer has to grow a mixture of barley, corn, and sweetcorn. This could involve multiple farmers, and it usually takes months for these crops to grow. The hogs then have to be harvested and sent to the companies who make the bacon. As the hogs grow up, they begin to eat more food, and once they reach a certain weight, they are ready to be processed. When the hog is processed, only a certain percentage from the meat section is made into bacon. Then, the hogs have to be sliced, cured, packaged, and seasoned. All of these things must be factored into the cost. On top of all of that, the price at which the bacon is sold will be affected by the cost of gas to ship the bacon from the processor to the store, whether or not the slaughter was killed during the time that the herd was raised, whether or not the herd had any diseases, water usage, water prices, chemical prices, and medical bills from the hogs. All of these costs add up to be just for the bacon. Leard’s team is doing this kind of analysis for every component of the bacon cheeseburger by researching, interviewing experts, and writing farm and grocery stores to do cost analysis. Aside from cost, the team is aiming to evaluate the project to highlight the various sciences and disciplines required at each of these steps.

"You think from your own experience and background, so it is necessary and important to have students from a variety of majors working on this project."
Benefits of CI to Students

• Provides real-world experience
• Allows students to work with faculty
• Develops mentored relationships
• Builds team skills
• Provides opportunities for peer networking and leadership
• Develops problem-solving skills
Benefits of CI to Students

• Develops critical-thinking skills
• Differs than traditional classroom
• Develops communication skills
• Develops skills valued in postgraduate work
• Allows student ownership of ideas
• Bridges general education courses and major specific courses
Benefits of CI to Faculty

- Provides new teaching environments
- Provides interactions with undergraduate students
- Provides mentoring opportunities
- Allows for interdisciplinary scholarship
  - Work with students and faculty in other areas
- Offers real-world and community-based projects
Benefits of CI to Faculty

- Encourages postgraduate study
- Brings new concepts and topics to include in classes
- Gives students a chance to further skills
- Uses general education classes
Thank you!
Questions??

For more information on the Bacon Cheeseburger or Clemson University’s Creative Inquiry please contact:
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