



Cultivating Student Learning Through Undergraduate Interdisciplinary Research: Creative Inquiry

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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



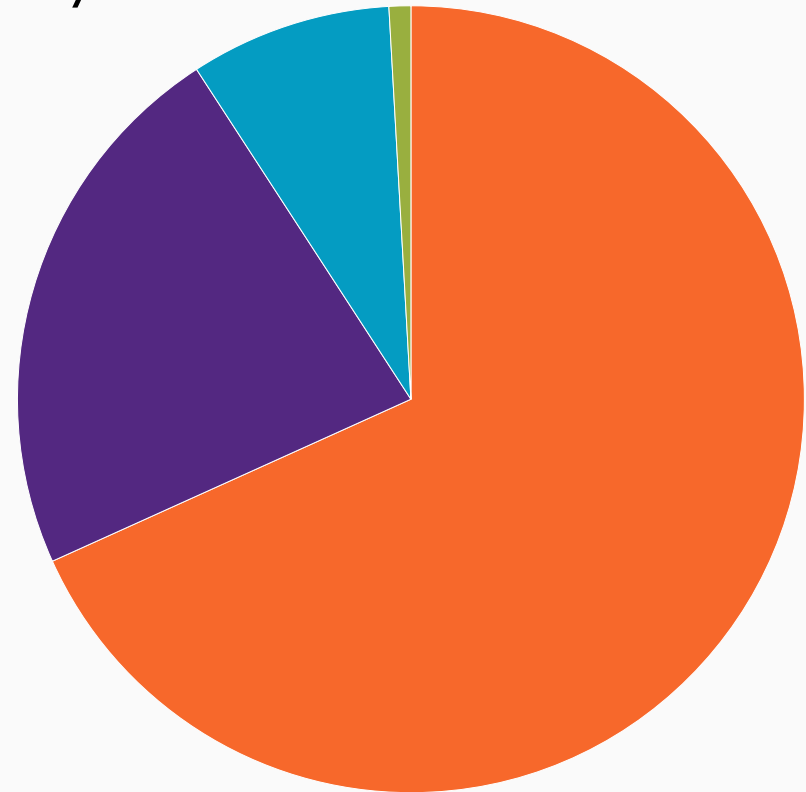
Creative Inquiry



CI Students by Class

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

Total Students: 2573

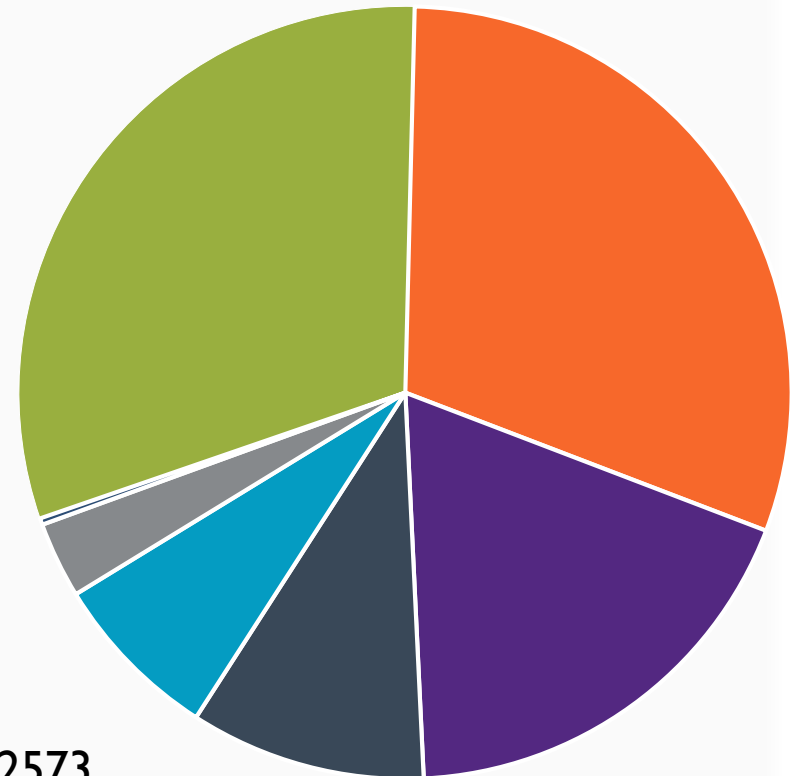


Creative Inquiry



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



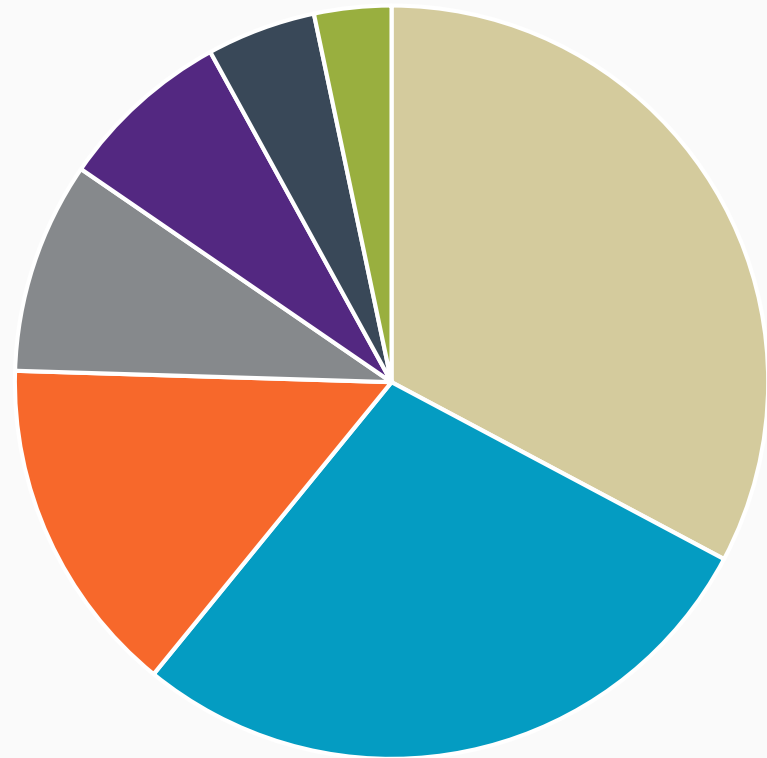
Total Students: 2573

Creative Inquiry



CI Projects

- 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



Total Projects: 363

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

Animal and Veterinary Sciences:

Alice Winter

Agricultural Education:

Jesse Blount
Mallory Dailey

Food, Nutrition, and Packaging Science:

Chris Johnson

Agricultural Mechanization and Business:

Blake Brown
Jonathan Fox
Nicholas Rogers

Article on CI



From Farm to Table A Detailed Analysis

By Betsy Boggs

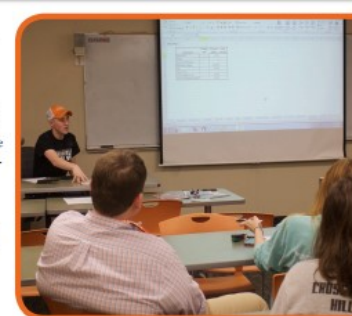
Have you ever wondered how much work actually goes into preparing that bacon cheeseburger that you order from your favorite restaurant? Think about everything you like on that burger: cheese, tomato, lettuce, ketchup, mustard, mayonnaise, onion, and bacon all topped on a juicy hamburger patty enclosed in a fluffy bun. Now, think about how much time and effort it takes to produce all of those burger toppings and condiments. Ms. Christi Leard, a student services program coordinator in the College of Agriculture, Forestry, and Life Sciences, and a team of undergraduate and graduate students formed a Creative Inquiry project called "Bacon Cheeseburger: From Farm to Table—A Detailed Analysis" to better understand and to help others better understand how much work goes into making the food, specifically the bacon cheeseburgers. Leard explained, "By analyzing the bacon cheeseburger we are able to break down each component and show how many different aspects of agriculture went in to 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, and Food Science students. Nick Rogers, 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." When they began this project, the goal was to discover and learn about everything involved—from farm to table—in making a bacon cheeseburger. As the project progressed, the team quickly realized that thoroughly exploring every step that goes into making this burger is a huge process because every step can always be taken a step further. Now, the team's goals are to be able to explain through agriculture where each product comes from and calculate the average cost of a bacon cheeseburger. This will allow the average person to understand agriculture better and how it relates through a real world example.

The team takes one component of the burger at a time and analyzes the cost of raising, producing, and developing that component. For example, for the bacon, the team starts with hogs. They have to calculate the cost for the hogs. Someone has to purchase the hogs and/or raise the hogs, and the hogs have to eat, so the cost of the feed also has to be accounted for. In order to get the feed, a farmer has to grow a mixture of barley, corn, and soybeans. This could involve multiple farms, and it usually takes months for these crops to grow. The crops then have to be harvested and sent to the companies who mix feed. 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 mid-section is made into bacon. Then, the hog

has to be sliced, cured, packaged, and sent out. 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 factories to the stores, whether or not a drought was occurring during the time that the hog feed was grown, whether or not the hogs had any diseases, water waste, water prices, chemical prices, and medical bills from the hogs. All of these costs and work are 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 visiting farms and grocery stores to do cost analyses. Aside from cost, the team is aiming for 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."



The team's work emphasizes the importance of horticultural knowledge to grow grains and feed, the integration of animal sciences into food production, and technical or engineering in agricultural mechanics or agribusiness for marketing. Though the team's focus is on economic impact at each level, these numbers not only signify the impact on a consumers pocketbook, but also they represent hundreds of jobs and critical levels of growth and development for the American economy. Once they finish their research and compile all of the data, the team's goal is to come up with a binder that describes each ingredient to make a bacon cheeseburger to use as an educational tool for the average person.



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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