

Clarkson Discovery Challenge - *What will you discover?*

The discovery and creation of new knowledge or information is at the heart of scientific research. As part of the IMPETUS School Year Program this year we will be hosting a new competition called the **Clarkson Discovery Challenge**. IMPETUS students will be investigating solutions to real-world issues and showcasing their findings at a Poster Reception at the February Campus Visit at Clarkson University. ALL research projects will receive *prizes for participation* and the best in show will *win a Kindle!*

Below is a list of open-ended questions corresponding to topics in the Social Sciences, Sustainability, and Biodiversity. You and your team may either pick from the list below or formulate your own ideas that you would like to discover more about. Some of these questions have multiple parts—you may choose to dig deeper into just one of those parts as your discovery challenge. The idea is that you uncover some new knowledge about these emerging and important real-world issues.

More detailed information about checkpoints for your challenge will be coming soon! For now—just jump in and see what you can discover! *Good luck!*

Social Sciences (The scientific study of human society and social relationships)

- 1.) Tobacco products have zero health benefits and have many negative side effects to the user and those around. If those products were removed from stores, what would the effect be on the economy? You may want to not only consider the production and purchasing of those products but also the impact smoking has on the cost of health care.
- 2.) How sustainable are peoples clothing habits? In your analysis, you may want to consider the following questions as well; How often do people buy new clothes? How common are hand-me-down clothes? What level of wear is acceptable? Do people trash, thrift store or donate old clothes? With all this in mind, what is a sustainable plan for having a set of clothes over the span of your school years?
- 3.) Energy drinks and caffeinated beverages have gained popularity with students over the last years. How prominent is the use of these products in your school and why? Is there a certain type of person or social group that is more likely to consume these? How can we determine if there is any relationship between academic or athletic performance and the use of these drinks? Should the use of these products be regulated?

Sustainability (Capable of being continued with minimal long-term effect on the environment)

- 1.) Paper or plastic? Which has a better economic impact and which has a better environmental impact?

- 2.) How much waste is generated by your school? Choose a specific type of waste and propose a method to decrease the amount. Assess the cost of implementation and outcomes from your plan.
- 3.) Should rock salt be used to help make icy roads safer or should a substitute such as dirt be used instead?

Biodiversity (The variety of life in the world or in a particular habitat or ecosystem)

- 1.) What animals and breeds of those animals are most likely to end up in an animal shelter? What can be done to lower this number? Support your answer with a plan and assess the challenges and benefits of your approach.
- 2.) Will the Bassmaster Fishing Tournament as well as other fishing that happens locally affect the area's bass population or the rest of the aquatic ecosystem in the area?
- 3.) Much controversy surrounds the idea of genetically modified foods (both animal and plant products). Explain the trade-offs (pros and cons) in modifying natural foods. Devise a way to assess whether a food product is better or worse if it is genetically modified and demonstrate your plan on a set of common food items.

Have a different topic you would like to explore instead? No problem—talk with your Clarkson Student Mentor, your teacher, or email your ideas to Katie at kfowler@clarkson.edu and we can discuss possible discovery questions.

YOU SHOULD DO THIS→looks AMAZING on a college application!

Getting Started!

To help get you started with your research project we have put together the IMPETUS Guide to Research Experimentation and Poster Presentations. (Your teacher has a copy for you!) In this guide you will find information on how to choose a research topic, compose a good research question, formulate a hypothesis, analyze data and draw conclusions. We also will have Clarkson Faculty, Graduate and Undergraduate students to help you along your path of discovery through a review process that can help modify and improve your research questions, process for data collection, analysis, and the conclusions that you draw from your findings.

High school participants will be eligible to submit their abstracts to the Statewide Student STEP conference held in Albany. Clarkson's IMPETUS program will fund the winning students' trip to the conference.