



# Welcome to IMPETUS Roller Coaster Camp 2022



# Check Out Your Bags!



# Schedule

## Wednesday

8:30-9:30

Intro (MR) /Formation of Research Groups (SC360)  
Drawing Activity

9:30-10:30

Fundamentals of Research Clarkson Microcredential  
Snack!  
Introduce 5 Research Questions

10:30-11:15

How Do Roller Coasters Work?  
Overview of velocity and g's

11:15-12:15

LUNCH: Choose your question!

12:15-2:30

WHAT WILL YOU DISCOVER?  
Learn what sensors we have/what data you can collect  
Outline your research experiment  
Sign up for Data Collection  
Ride the VRC!

2:30-3:15

Great Escape Trip Overview  
Hand out Tshirts

## Thursday

7:30 AM

Bus Departs to Great Escape in Queensbury, NY (Meet in front of Snell Hall)

9:00-10:00 PM

Bus Returns from Great Escape (Parent and school bus pick-up Science Center)

## Friday

10:00-11:15

Data Analysis

11:15-12:15

LUNCH

3:30-5:00

Presentation Judging  
9-12 first then 78  
Multipurpose Rooms

5:00-6:30

Awards Reception (Food and family!)  
Awards Ceremony

# Code of Conduct and Rules

We want everyone to feel comfortable, included, and safe at camp.

Failure to follow camp rules may result in you being asked to not come back for the remainder of ca

- No bullying. Respect yourself and others.
- No disruptive behavior.
- No public displays of affection, for example: kissing, holding hands, cuddling.
- Clean up after yourself, especially at the cafeteria!
- Always stay with the group, NEVER wander around campus without a Clarkson person. If you get separated, call (or have someone call) one of the numbers on the back of your name tag.
- Cell phone use should be kept to a minimum, and cell phones are not allowed when you leave a camp activity for the bathroom.
- Inappropriate use of photos/social media will not be tolerated.
- No laser pointers, or prank/electric shock toys are permitted.
- If you see something, say something to a Clarkson person.

# Great Escape Day!



Spend the day exploring Great Escape! Collect data to answer a question you have about the park!  
It's up to you!

Some sensors you can use:



POLAR H9 Heart Rate Sensor

- Heart rate, calories burned



PHYPHOX IOS / ANDROID APP

- Acceleration, velocity, gyroscope, pressure, GPS



Fitbit Charge 4

- Breathing rate, heart rate variability, and skin temperature

Others: Blood pressure cuff, stopwatch

# What makes a great amusement park?

What will be your first stop?



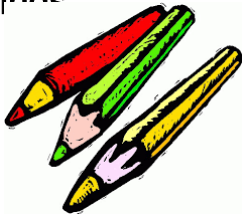
What will be your last?

# Drawing Activity Reflection

Think about what makes an amusement park great. How can we tell?

Think about the question written on your groups paper:

1. What are the park visitors doing?
2. What are the park visitors riding?
3. Who are the park visitors with?
4. Which senses are depicted in the drawings? Touch, taste, smell, sight, sounds? Describe the senses shown in the drawings.



*Remember to be respectful of other people's drawings, not everyone is an artist*

# Choose Your Research Question!

What will YOU discover at Great Escape?

1. What is the BEST coaster at the Great Escape?
2. What is the BEST ride (not a roller coaster) at Great Escape?
3. Given the layout of the park, what is the optimal way to spend an hour?
4. What is the best way to spend the day at Great Escape with only \$10?
5. What region of the park is the BEST?

*Explore Physics in Action!*







The VRC isn't just for fun...

*It's for research.*

A combination of state-of-the-art sensors and a full-body arcade machine/flight simulator makes for a research experience like no other.

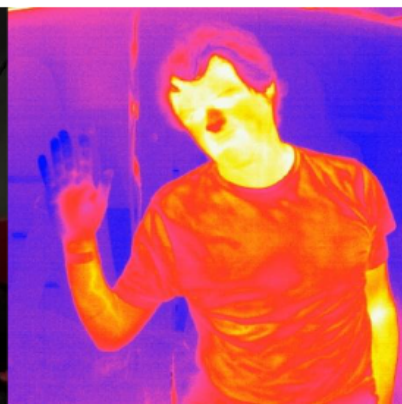
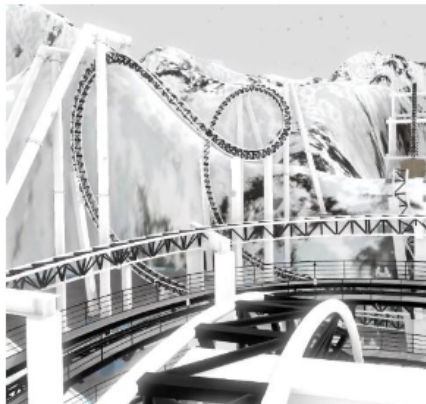
The VRC gives a unique opportunity to give people full-body motion experiences that can be controlled in ways that real experiences can't, while still being safe.



Clarkson™



Funded by NY State Education Department



*Psst.* Looking for a research project for this year's **Clarkson Discovery Challenge**?

Message [judgejc@clarkson.edu](mailto:judgejc@clarkson.edu) to learn more.