Before your Trip at ASRC IlluminationSpace

Thanks for signing up for a trip at the ASRC IlluminationSpace
Here is some information to help better prepare your class

During your trip we will:
1. Learn about CUNY and the ASRC
2. Learn about the 5 Research Initiatives at ASRC
3. Explore our Interactive IlluminationSpace
4. Have a discussion about research careers and the importance of interdisciplinary work
5. Meet a guest scientist who will present about their career path and research area
6. Go on a tour of different laboratories and learn about the instruments used at the ASRC
What is the Advanced Science Research Center all about?
The ASRC is all about collaborative interdisciplinary science and research. This means we are exchanging information for multiple disciplines such as physics, chemistry and biology to find solutions to real-life problems. The ASRC is a core-research facility for all of CUNY. This means we do not have classrooms, but labs and instruments that students and faculty all over CUNY can use.

*Here is a video you can watch with your students*
https://youtu.be/DVVBCTib9jY

What are the 5 Initiatives?
Research at ASRC is split into five different initiatives that observe natural systems from different scales.

- **Nanoscience:** *The study of objects, structures and phenomena on the nanoscale* \(10^{-9} \text{m}\)
- **Photonics:** *The study of light, its interaction with matter and using it to make different electronic devices*
- **Structural Biology:** *The study of molecular structures and their shape and how their shape determine their function*
- **Neuroscience:** *The study of the structure and function of the nervous system and how it is affected by diseases*
- **Environmental Science:** *The study of the ecosystem with purpose of finding solutions to environmental problems*

What will we experience in the IlluminationSpace?
There is an interactive game space for all five initiatives and a collaborative wall that gives fun facts in response to shadows. So, to accommodate for our growing technological advances each initiative is unique in displaying information with touch-screen puzzles, motion detection, bluetooth headsets, etc.

*Here is a video about the space you can show your students: https://youtu.be/WOODIx8NsqE*
• Nanoscience: This exhibit forms nanostructures by interacting with nanoparticles and give materials that are being built here at the ASRC using these nanostructures.

• Photonics: This exhibit uses motion sensing to make light, detect light and send light. This represents the real-world use of applications of photonics.

• Structural Biology: This exhibit displays the biological structure of a protein and its relationship with molecules that either block the active site, causing a mutation and change the shape of the protein.

• Neuroscience: This exhibit measures your brainwave activity, measures focus level and shoots energy balls at your opponent. It also measures how relaxed you are to reform images.

• Environmental Science: This exhibit is a hurricane simulation that provides real-life data taken from Hurricane Sandy affecting NYC; this gives room for making predictions on what's the next step on remapping NYC so that we are more prepared from other natural disasters.
The Collaborative Wall: This exhibit uses shadow sensing to give fun facts about the occurrence of science in our everyday lives and how the five initiatives at the ASRC are exploring these to improve life.

Discussion questions we will facilitate:
- What is research and how can it be a career?
- What are different degree programs like? (Bachelor’s, Master’s, PhD, Post Doc)
- What is interdisciplinary and why is it important?

Pre-Trip Activity

Other Resources
Directions
https://asrc.gc.cuny.edu/about/visitor-information/

From ACBD 125th Street Station:

IlluminationSpace Info
https://asrc.gc.cuny.edu/illumination-space/

CUNY Undergraduate Admission
https://www.cuny.edu/admissions/undergraduate/