

Final Group Project

To wrap up the course, you are expected to work in teams of 2-3 for the purposes of carrying out a research study. The culmination of your research study will involve making a short presentation to the class to share your findings. During your efforts to prepare for your final presentation you may find it useful to delegate roles and assign tasks to individual group members. Scientists do the same sorts of things within their collaborations. I will also be available to help guide your projects and answer questions.

With your team, you are expected to complete the following:

1) Use the topic assigned to your team based on responses from the survey or, if you're collectively more interested in something else you can choose another topic. If you want to choose another topic, you must get approval first. Here are the ideas that came up in class:

- Black holes
- Neutron stars (e.g. pulsars, magnetars, etc)
- Relativity
- Minor planets (e.g. dwarf planets, asteroids, kuiper belt objects, etc.)
- Stellar death (e.g. supernovae, planetary nebulae, white dwarfs, neutron stars, black holes)
- Dark matter and/or dark energy
- Habitable planets and/or possibility of life on other planets
- Solar system space travel (e.g. traveling to Mars or recreational travel)
- Multiple star systems (e.g. binary or triple star system)
- Near Earth asteroids
- The Big Bang

2) Using resources available on the internet, find at least 5 unique sources that provide you with the following information:

- Background information and history of your chosen topic
- The current state of research on your topic
- Unanswered questions that exist about your topic

One of your five sources can be Wikipedia, but **at least two** of them must be other scholarly sources and **at least one** of them should be a "popular science" article from some time in the last 2-3 years.

3) Once you've found and reviewed your sources, you will be expected to decide as a group something new you'd like to learn about your selected topic. Once you've decided what it is like you'd to learn, you will need to define how you would go about learning it. What sort of observations would you make or what kind of experimental data would you want to collect? What sort of laboratory or observatory would you use to collect the data? In some cases, you may be able to identify a laboratory/observatory that already exists or in other cases you might have to propose a new observatory that would be needed. (continued on next page)

4) Having completed the above task, you are now responsible for collaboratively presenting your results. To do so, you are expected to generate a **5 minute** presentation that is supported by a set of slides that you will share with me so that I can put them on the projector for the class to see. To simplify the sharing process, I expect you to use Google Slides (<http://slides.google.com>). This will allow me access your slides and will allow you to share them with each other. Please share your slides with devin.silvia@gmail.com.

Each member of your team must speak for a portion of your presentation. Your slides should includes:

- Background information and the current state of research on your topic
- The part of your topic you wanted to know more about
- Your proposed plan for learning more about your topic

In addition, your slides must include at least two visual components that help convey the information you acquired or the investigation you performed. You should make sure to include a list of the sources your used for this project.