A common mistake of first semester University freshmen is to think that they are going to “do it all” in the first semester, or even in the first year. If that were possible, a typical University undergraduate education wouldn’t be four years long! Plan to take your time in learning, experiencing, and doing all the many things it means to be a student at the University of Maryland.

That said, it doesn’t hurt to start thinking about things in advance. Here at SGC we have a focus on the understanding of Science and its various subcategories. We want to encourage you to think about what Science (and more specifically learning about Science) means to you at this stage in your education.

Towards that end, we are having you write an online reaction paper, using Hazen & Trefil’s *Science Matters: Achieving Scientific Literacy* as a focus. For this assignment, take any one (1) of the key basic ideas discussed in *Science Matters* that interests you. For your assistance, here is the complete list of basic ideas from *Science Matters*, listed by chapter.

1. Two ideas
   a. The universe is regular and predictable
   b. One set of laws describes all motion
2. Two ideas
   a. Energy is conserved
   b. Energy always goes from more useful to less useful forms
3. Electricity and magnetism are two aspects of the same force
4. All matter is made of atoms
5. Two ideas
   a. Everything—particles, energy, the rate of electron spin—comes in discrete units
   b. You can’t measure anything without changing it
6. Atoms are held together by electron glue
7. The way a material behaves depends on how its atoms are arranged
8. Nuclear energy comes from the conversion of mass
9. All matter is really just quarks and leptons
10. Stars experience a cycle of birth and death
11. The universe was born at a specific time in the past, and it has been expanding ever since
12. Every observer sees the same laws of nature
   a. For Newton, motion is along curved lines in a flat space
   b. For Einstein, motion is along straight lines in a curved space
13. Earth’s surface is constantly changing, and no feature on Earth is permanent
14. Earth operates in cycles
15. All living things are made from cells, the chemical factories of life
16. All life is based on the same genetic code
17. All life is based on the same chemistry and genetic code
18. All forms of life evolved by natural selection
19. Two ideas
   a. All life is connected
   b. You can’t change just one thing in an ecosystem
Pick any of these ideas that interests you. (Note: “interests”. That doesn’t mean that you know all about it already; or that it is part of your major; or it is something that you are dedicating your life to studying. [It’s fine if it is, but that is not a requirement!]).

Write an online reaction paper (see format and length at http://www.geol.umd.edu/sgc/resources/reactionpaper.html) with the following components:

- Which idea you chose
- Why it interests you (maybe it DOES apply to your major or life goal; maybe it is something that has intrigued you for years; maybe it’s something that you’ve never thought of before and it is only now sparking your interest; whatever, just state your reason)
- What you might do to learn more about it over the next four years. This could include courses you might take in future semesters, or readings you might do, or lectures or museums you might go to.
- How learning more about this topic might fit into your larger University education (i.e., as a major requirement; as an SGC supporting class; fulfilling CORE; simply fulfilling your personal interests; etc.)

Where/if possible, cite specific examples. Perhaps there was a news story, or a teacher, or a TV show you once saw that got your interested in a topic: mention what that was. Or maybe there is some specific item relevant to the basic item that is the reason you chose it (e.g., say you are really into volcanoes, so that is why you with the item from either chapter 13 or 14).

The point here is to be honest and to be thoughtful. In the end, your education is in your hands (and going into your head!): we encourage you to reflect on what that means and how thinking about it in advance (rather than simply reacting to requirements) can better expand your knowledge base and your understanding and appreciation of the learning process.