

Razor's Edge Research Scholars Program: Reflective Portfolio

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Abstract

This Reflective Portfolio embodies my journey as an undergraduate student researcher at Nova Southeastern University. The contents of this portfolio are organized chronologically from most recent entries to least recent. I've shared various experiences throughout all eight semesters which contain information about research, school activities, and goals that I've created for myself. I've also placed honesty as the most important aspect of each journal entry, because I'd like to be able to reflect on any struggles or successes that I've had in the past that might help me in the future. My evolution as a student researcher will influence my future career path and research topics, so this journal will be a helpful reflection of that.

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Personal Goals: Semester One

Summary of Initial Thoughts: Since this is my first semester in college, I am expecting this to be a major adjustment period. The structure of college classes is obviously much different than high school, and it is important to figure out the best way to accomplish goals. I'm expecting the pace of learning to be much faster, and for discussions or lectures to be more in depth rather than general topics. I'm also thinking that testing will be a lot different, and I'm predicting that tests will focus more on scenario and application problems as opposed to definition questions. Some events that I am looking forward to include exercise classes at the RecPlex, Friday Night Light events every weekend, and karaoke nights on Thursdays. Some academic events I hope to take part in are a Physician Assistant Club, tours of the new research center, and various volunteer opportunities. Overall, I believe that this semester will be fun, informative, and a great new experience.

Goal One: One goal that I have for the Razor's Research program this semester is to better understand the safety protocol and steps that go behind all good research. In my opinion, one can not become a scientific researcher without understanding the safe and proper way to do this. Knowing what is best for the people your researching, for the researchers, and for the topic of research is very important to know. I believe that the Collaborative Institutional Training

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Initiative, CITI, required for this class during the semester will help with this goal, along with the different lectures we receive in class.

Did I accomplish this goal?: Yes, the Razor's Edge course really taught me important protocols for running an experiment. The professors emphasized protection of research subjects, and using an Institutional Review Board form.

Goal Two: One goal that I have for all of my classes is establish better reading habits. I'm so used to quickly reading whatever is assigned which results in a low amount of information retained. All of my classes have readings that are important to understand, particularly for daily lectures. It would be best to read the required text slowly, then take notes, and possibly take the end of the chapter quiz/overview, if there is one provided. This would help me better retain information the first time, and prepare me for class each day.

Did I accomplish this goal?: My ability to read scientific articles got much better over the course of the semester, but I did slack off a bit for small classes like University Seminar and Composition. I hope to work on this more next semester.

Goal Three: Another goal I have is to get involved in an assortment of activities across campus. After going to Sharkapalooza, I saw that there are so many amazing opportunities that NSU has to offer. I signed up for various clubs, and look forward to the many on campus events that happen each week. I also was hoping to get a job on campus for the office of orientation. I applied for the position, and would love to be a part of NSU staff!

Did I accomplish this goal?: I took part in a lot of events around campus, and this made for a more enjoyable first semester.

Highlighted Experiences: Semester One

1: Razor's Edge Course Highlight: The most important lesson that I learned this semester in Razor 1000R class was to distinguish what is "good science". The first month of class heavily featured the characteristics of true science, and how an official experiment should be run. I will be focusing on lecture 3 of the class, which featured a lot of in class discussion on what we thought science was. Another important topic we covered during this lecture was ethics in research. Some important factors of true science that I learned included the use of valid/reliable data, verification of findings, and the proper use of statistics. Professor Hecht and Professor Mills also led a really interesting class discussion on potentially unethical situations found in science, and discussed many real life examples of studies that exploited their subjects. One particular example is how major companies use biased forms of statistics to convince the general populace to be swayed towards a particular product. I will use this valuable learned information to conduct an experiment that is ethical for all subjects involved, and is characterized as "good science"

2. Seminar, Vince Van Hasselt Highlight: The presentation occurred on November 12, 2016 in Rosenthal 200, and was about two hours long. Dr. Hasselt described many hostage situations that he personally connected with, and how each one played out for the victims and shooters. He really connected with each of the research students by asking us different psychological questions about each case such as what race, gender, or age should a negotiator be for a specific

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type of shooter. It made me realize how important psychology is for all of these life and death situations he was describing. I also learned that active shooters don't just suddenly snap, because many of them are under multiple stressors such as loss of a job, loss of a significant other, sickness, or even death. Lastly, I learned that bad situations can happen at any time and in any place. Big cities and small local towns should always be prepared for psychological negotiations in crisis and hostage situations. Being underprepared will result in higher amounts of preventable deaths. The entire presentation allowed me to use scientific analysis for different situations, and I enjoyed the inclusive conversations with Dr. Hasselt. This seminar got me interested in psychological research, and could possibly influence what I choose to research in the coming years.

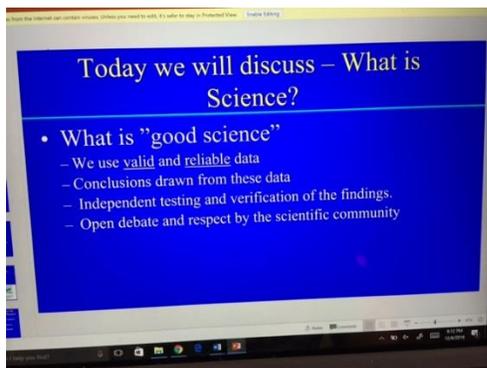
3. Biology Class Highlight: This semester I took Biology I, and had many experiences that changed my outlook on scientific research. The biggest influence probably came from the enzyme lab we did, which was a full lab report. It was around 23 pages with the title of "Optimal Conditions for the Enzyme Alkaline Phosphatase". This lab taught me how to utilize databases and analyze articles to use as sources for my discussion and introduction. It takes a lot of work to find good articles that fit in with the topic that your researching. Overall, this skill will help me greatly in all future research projects, because using outside resources is vital for research.

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Artifacts- Fall 2016

Artifact Experience 1:

This is a picture of one of the slides during Lecture 3, and was a guideline for one of our discussions.



Artifact 2:

Here is a picture of the Razor's Edge Research students in Rosenthal prior to the start of the presentation.



Artifact 3: Below is the abstract from my completed lab report.

Enzymes are one of the most important biological factors that contribute to the production of cellular energy. Many biological processes in the human body such as digestion and regeneration of cells rely on the lowering of activation energy from enzymes in order to function. This is why it's important to understand the optimal conditions a particular enzyme, such as Alkaline Phosphatase, can have the highest catalytic rate. This lab aims to understand the optimal conditions for temperature, environmental pH, and enzyme concentration of Alkaline Phosphatase. The enzyme activity for Alkaline Phosphatase in each of these conditions can be measured by using a spectrophotometer to collect absorbance readings over a span of time. After calculating the enzyme activity during each part of the lab we have concluded that Alkaline Phosphatase has the highest catalytic activity in neutral environments, at a temperature of around 32 degrees Celsius, and at the highest enzyme concentration rate.

Reflection: Semester 1

My first semester at Nova Southeastern truly has been a roller coaster of emotions, and I wouldn't have traded it for the world. College is an experience that has its ups and downs, but it has actually been really fun over all. I have grown as an individual, I have grown as a student, and perhaps more importantly I have grown as a researcher. I have to thank all my amazing

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professors for this growth, particularly Dr. Mills and Dr. Hecht. They have helped to teach me better learning strategies, to have an appreciation for class reading material, and how to apply learned content to the real world.

Prior to the start of the semester, I had a lot of unanswered questions regarding my future that needed to be answered. I was initially uncertain on what I wanted to research, and how I could look for research opportunities on or around campus. Luckily this semester in the Razor's Edge course and monthly conclaves, this was answered. I've found out through the conclaves how the mentor program will work, and I really enjoyed meeting the faculty members that help run the research program. I've also found an interest in research with genetics, particularly with trisomy 21 known as the disorder Down Syndrome. Learning the basics of research this semester will really help with this potential future research project.

Lastly, I have become a more successful student this semester because I'm learning about topics that truly interest me. Finding something I'm passionate about to research would be a great future goal over the coming years, because I believe it's very important to love what you do each and every day. Overall, I hope the future semesters go as well as this one did both academically and emotionally.

