Razor's Edge Research Scholars Program: Reflective Portfolio

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Abstract:

This portfolio is a reflection of my college experience. By the time I graduate, four years of information will be added to this portfolio. Included in this document to date are three artifacts to represent my favorite and representative experiences and assignments for fall 2016. These artifacts range from pictures to essays to show a wide variety of my experiences. Also included are my statement of goals by semester.

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Statement of Goals:

Fall 2016

1. **I would like to find a research focus in one of the areas of psychology, neuroscience, or social sciences.**

My goal for this semester is to begin networking with faculty and researchers in this field. I feel that these areas are ones in which I would greatly enjoy research. I feel as if I would thrive among that particular scientific community. All my life, I have found interest in the way people work, including the "whos", the "whats", the "whys", and the "hows". I am very passionate about physical brain functions, the mind, human behavior, social formations and relationships, mental processes, and personality disorders. I also have interests in the subconscious, sleep cycles, dream sequences, and other related areas of study.

In addition to this, I find myself extremely connected to people and able to understand the way they think. I enjoy interacting with many different kinds of people, particularly those who come from cultures different from my own. I enjoy learning about social structures and customs as they vary between races and cultures. I feel that by reaching out to NSU faculty and researchers involved in psychology, neuroscience, and social sciences, I can start considering which specific areas I would like to pursue during my time here.

2. **It is my goal to maintain a 3.5 GPA this semester (thus to remain in the Honors program) and also improve my studying and time-management skills.**

Throughout my high school career, I have found that it has been difficult for me to manage my time. I am involved in many things such as sports, music, and

academically-based activities. While academics is the most important thing to me during my college experience, I feel it is important for me to also continue with my artistic and sports-related interests. I am continuing my competitive figure skating career in college, and it is important that I find time to train as well as complete my course work.

As I am in the Honors College, the dual admission program, and the Research Scholars Program, it is important for me to thrive in the classroom environment. Since I've been homeschooled since second grade, I fear that it will be difficult for me to acclimate. I hope to learn how to study this semester, as I did not have to study the same way in high school as I have to now. I hope to do well in my classes. I want to prove to myself that I can thrive in a scientific environment. I have never done classwork before as I was homeschooled throughout my entire life before college, nor have I ever participated in labs. It is my goal to find strategies to help me survive these first few months.

3. **Recuperate from my injury, return to full health, and compete to the best of my ability this season.**

As I am a competitive figure skater, it is important for me to do well this season. I have been recovering from an Achilles tendon injury since the end of summer. I am only now beginning to come back from it. With the qualifying season approaching, I hope to heal completely and return to full strength. I had a very successful season last year, and I hope to move forward with my progress this year.

My goal is to be able to qualify for the US Figure Skating Championships this January. While I have never competed at Nationals before, I came very close to making it

last year. I hope to be able to maintain my physical strength and conditioning so I can compete to the best of my ability at the upcoming qualifying competitions.

Winter 2017

1. I aim to keep my GPA for this semester above a 3.5. Last semester I had a hard time with one of my classes, thus resulting in my grades dropping below the required GPA of 3.0. This semester I am taking Chemistry 1 again to bring my grades back up. My goal is to get back to above a 3.5 so I can not only remain in the Razors Edge Scholars Program but also maintain my status in the Honors College. Academics are my number one priority at NSU, and I hope that by putting my studies before anything else I can bring my GPA up to my personal goal of a 3.5
2. My second goal is to determine my area of research for the up-coming semesters. I would like to secure a place to do lab work in one of my areas of interest. I hope that by the end of this semester I am able to find a faculty member willing to work with me and that I will be able to discuss my involvement into future projects, and/or begin a project of my own to extend in the future.
3. I hope to feel more at home at NSU this semester. My first semester consisted of me struggling with classes as well as physical and personal problems. Since that experience, this semester I hope to address any issues I might have from the source. Since I am now accustomed and better prepared for any obstacles that may arise, it is my hope I will be able to predict the onset of such difficulties and deal with them before the have an effect on my schoolwork and on my physical and emotional health. Through this, I hope I will be able to feel more at home at NSU and be overall more satisfied with my experiences here.

4. Lastly, I hope to become closer with my fellow Razors Edge participants as well as with the many different types of people at NSU. I feel that, while the Research group is very close there is little opportunity to engage with other types of people in other Razors Edge Programs and also people outside our academic circle. I hope to meet a wider variety of students this semester in an attempt to improve my skills in dealing with and getting to know different types of people. I hope to also assist in integrating the Razors Edge groups with each other.

Highlighted Experiences:

1. In the RAZR 1000 class this year we were assigned to read a book by Godfrey-Smith

titled “Theory and Reality”. This book, which made little sense to much of the Razors Edge Research class, highlighted some of the theories surrounding the idea of science. Basically, it attempted to answer the question: What is science? For our midterm, we were asked to write an essay on our view of what science is, which I will use as my first artifact. We also were asked to use one idea from the book to support our claims. While the book didn’t make much sense to me while I was reading it, writing the essay opened my eyes a little more. It helped me develop a more lucid idea about what constitutes as science, thus allowing me a more solid foundation to begin my research. The essay will be attached to this document, and the use of my essay as an artifact will be noted here for future reference.

2. One event that had a large impact on me regarding research was the External Funding

Recognition Reception for university researchers receiving funding from outside the university. Here, I was able to meet and hear about many researchers in a variety of fields. During this reception, I was able to speak with Dr. Tartar, who is the director of my major. She helped me

get set up to take the Introduction to Neuroscience class she teaches. I also spoke with her about potential possibilities for jobs in the field of neuroscience and neuropsychology. I am grateful that I was able to speak with her. I also had the opportunity to talk to the Dean of the College of Psychology, as well as another professor who also teaches some of the neuroscience classes. My roommates and I attended this reception. I will be using a picture of the Razors Research contingent at the reception as my artifact for this section.

3. For my third experience, I will use my university class final assignment. This will be my third artifact. For my university freshman seminar, we were assigned a final paper in which we wrote a letter to a freshman in the same shoes we were in at the start of the semester. While this assignment seemed trivial at the time, it helped me improve my writing skills and made me feel a little more comfortable about going into next semester. Despite many pitfalls, I made it through a truly difficult semester, and I look forward to continuing on to the next.

Artifacts:

Science: Black, White, or Grey

Science is the intellectual practice of actively studying the nature of the universe and known world through observation, experimentation, and data collection. There are often animated debates over what "true science" is. Science is an objective practice; you can't fabricate information and call it science. If that were possible, most common knowledge would simply be based off random beliefs presented by wily individuals calling themselves accurate. There are grey areas, however, when it comes to the validity of scientific findings. It can sometimes be difficult to decide whether the methods used to record certain data sets are "scientific" enough to be able to accept the results. In the scientific world, only results found using the scientific method and calculated in a recordable, testable, repeatable context can be considered for possible acceptance by the scientific community.

Science is not how we know the truth about the world; it is how we attempt to understand the truth. As scientists, we do not simply seek to know the "What?". We try and find the "Why?", "How?", "In what context?", "When?", "If", "If not?", "What then?", etc. In our journey to discover every aspect of the universe, it is quite possible to stray from the scientific path. Science is to be based strictly off results obtained in a "scientific vacuum". I am not using this term literally, as a vacuum is a space void of matter, and that would not make sense in the context of this essay. A scientific vacuum in this case would be considered an area void of subjectivity and emotional

interpretation. It is simply not possible to accept results that have been skewed in any way by opinion. Opinion cannot exist in science, as there are too many out there for any one belief to be 100% accurate.

At the same time, results are results, and the data as presented can sometimes be open-ended and somewhat difficult to interpret. There are two types of data: quantitative and qualitative. Quantitative data is extremely straightforward. After conducting an experiment for quantitative data, you simply crunch the numbers, compare results, calculate percent error, standard deviation, and other technical qualities the data may possess. It is different, however, when you are looking at qualitative data, particularly when it comes to a subject as diverse as an organic life force. In a case where qualitative data is present, it can be difficult to determine the measurements used to conclude the findings. For example, if one were to conduct an experiment on the effects of chocolate chip cookies on overall happiness, how could the scientist determine the definition of "happy"? Would they measure the neurochemicals present in the body before and after the consumption of the cookie? It would be easier to simply ask the subject how they felt after, however, this would leave the results more open to deviation of personal feeling. In a case where one is attempting to measure emotions, how can accuracy be maintained? Everyone feels happiness differently, and one person's extreme happiness could be simple contentment in another. It's a grey area.

Science combines two ways of thinking to ensure the maximum retention of validity of results. The first of these theories is Empiricism. Empiricism states that all knowledge is derived from experience. This is a much more complicated version of the "seeing is believing" quote from the Polar Express. However, just because Santa Claus is sitting in front of the fountain at the mall does not mean that he's real. Empiricism would state that yes, Santa Claus is sitting in front of the fountain at the mall, yet this still does not mean he gives out all the presents on Christmas, lives in the North Pole, and drives a sleigh with flying reindeer. Nor does it mean that that Santa Claus is not

the local librarian wearing a beard and a fat suit. The point of this analogy is that seeing is not necessarily believing in a world where error is quite possible in scientific experimentation. Empiricism would say that the only truth is that which we experience ourselves, however this way of thinking often causes scientists to close their minds off to potential results that can only be found by thinking far from personal experience.

The second theory found commonly in science is Rationalism. This theory states that beliefs should be based off reason and knowledge gained through study, collaboration, and experience rather than emotions or idle thought. This theory I do not believe to be fully and definitively science as opinions are still involved. The use of rationalism, however, when combined with the scientific method can speed along the process. By basing hypotheses off questions and beliefs composed using rational thought, one can explore areas that might have truth to them. Without this open and creative way of thinking, progress would not be made in the scientific community. If used in the right way, rationalism can help make great strides in regards to initiating testing of new and innovative ideas. At the same time, one cannot simply accept a theory because it was proposed using rationalism. Rational thought only makes the chances of a good idea more likely; it doesn't ensure it. Anyone who attempts to accept a simple opinion or belief as truth is not staying true to science. Any area of study in which the scientific method is not followed cannot be considered science. Any data found using methods that are not repeatable, testable, or recordable is also not science. Science follows a very specific set of rules that cannot be broken for fear of surrendering the truth.

I have tried time and time again to decide which theory my understanding of science falls under, however both empiricism and rationalism only partially fit the bill. Both theories have flaws when it comes to the way science should be approached. I have a very distinct belief that while there is no creative interpretation of results, creativity must be utilized in an initial sense. There can be no

progress without new ideas, and in this way, creative thinking is a crucial part of the scientific process.

Philosophy is the study of the nature of knowledge, reality, existence; pretty much everything we attempt to understand. I do not see philosophy as a science in any way. For the most part, philosophy is based purely off observation and personal interpretation. This is not science. I find philosophy to be a very important form of study in that it attempts to understand that which is not always testable in a scientific setting. It gives us hope, and opens our minds to areas that we wouldn't otherwise think about. Philosophy can aid in the formation of new scientific, testable questions by narrowing down those unexplainable topics that we so crave to understand. And while there is a clear separation between the two, neither philosophy nor science could exist without the other. In this way, the lines can be blurred, with philosophical thought occasionally being accepted as true.

It is not difficult to understand what science is, however it can be tricky to separate out what is not science. Herein lies many of the problems faced by the scientific community. The question, "Is it really true?" is often asked, even when results are found consistently. The reality is that we don't yet understand enough about the universe to know if anything is true. All we can do is decide what to accept. Science gives us our best bet of learning the truth, however as I said earlier in this paper; science is not how we can know the truth. Science helps us attempt to understand different aspects of fragments of the truth. Through the paradigms produced though the scientific method, we can narrow down our choices and eliminate beliefs that are most likely false.

When it comes down to the lines separating science from non-science, there is quite a bit of confusion. It is hard enough to decide what to accept as science even when all scientific protocols are followed. This, however, is a perfect example of how valuable true scientific information is. If results and procedures are so clearly carried out that they are accepted as science, they most likely have some level of truth to them. In regards to science, if results are frequently repeated with startling

accuracy and extremely low percent error, this can be considered true per the empiricist view. Yet still, even results that seem completely accurate can be misinterpreted; it's a grey area.

Works Cited:

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External Funding Recognition Reception:

Letter to a Freshman:

Dear Freshman,

My name is Cailey Weaver and I grew up on a small barrier island on the West coast of Florida called St. Pete Beach. I was homeschooled for 80% of my education, only going to school for three years total my entire life. Growing up on the water, I developed a love of the ocean and its inhabitants very early on. I was an adventurer as a kid; always wandering off and exploring the nature around me. I loved playing with bugs and creatures that lived outside, often digging through the dirt to explore the organisms that lived there.

At the age of two, my mom put me on the ice for the first time. I have been a competitive figure skater for the past 16 years. It has been a sizeable part of my life and persona ever since, and one of the reasons I switched to homeschooling after 2nd grade. I also am very passionate about music. I was "forced" into piano lessons when I was relatively young. After a few years of learning how to read music, I quit because I did not enjoy this mandatory study. I picked it back up again when I was 12, this time on my terms. It is now a huge part of my daily existence, and one of my main ways to purge my emotions. I also grew up singing in my local Jewish choir, and taught myself to play guitar during my high school years. Music has always been a big part of my life.

When I was fourteen, my mom was diagnosed with breast cancer. I had also attained a chronic overuse injury from skating, and was not allowed to compete for two seasons. As a homeschool student, I had very few friends during this time, and the one close friend I talked to had a powerful influence on me. My only friend at the time had clinical depression and occasional hallucinations. She was borderline suicidal, and I spent a lot of time talking to her late at night, attempting to convince her not to end her life. These situations coincided, and I found myself alone at home with nothing but my anger, fear, and loneliness to keep me company. During this time, I began writing. I wrote fiction, thoughts, anything that came to mind. It became yet another interest that I was passionate about, thus making it even more difficult when it came time to think about my future.

When looking for colleges, I wasn't sure where I wanted to go or what I wanted to study. I had a wide mix of interests and was very conflicted as to what major I wanted to pursue. During high school, I became very involved in an internship at a Marine Science Laboratory. I spent three years assisting with and conducting marine animal care and research projects alongside the researchers at the lab. After positive experiences working in the marine field, I decided to look for schools with good Marine Biology programs. Nova was known for its oceanographic center, thus putting it high on my list. This was one of the reasons why I eventually came here. Other reasons include Dual Admission, Razors Edge Research, and various other scholarships that I got to make it possible for me to come here.

Upon coming here, I was excited to participate in the Marine Biology major, however upon further consideration as well as interactions with faculty members in other disciplines, I decided to switch over to Behavioral Neuroscience. I decided that I was much more passionate about psychology, philosophy, and anatomy than marine biology, and the Behavioral Neuroscience major would let me study these topics. In the past few months, I also discovered that I have a hard time managing my time on my own. Throughout my first semester, I continued full time skating for the competitions I qualified

for, which made time much tighter than if I hadn't. I also joined an acapella group, which sometimes proved to be too much of a time commitment, albeit an extremely enjoyable activity.

Coming into college, I had no experience going to school in-person. My entire high school education was through online school, and everything; classes, assignments, exams; were conducted over the internet. I had also rarely needed to study before coming to NSU, nor had I ever had to worry about going to and paying attention in class. I found that paying attention in class was not a problem for me. In fact, I found nearly every single lecture of my first semester interesting and engaging. I was very happy with each one of my professors in my first semester, and this made my interest in my classes much easier to keep. My issue, however, was studying and managing my time while on my own. I have a relatively bad case of ADHD. I've lived with it without the help of any sort of medication for my entire life. It has always given me problems, however now that I'm on my own, it is even harder to stay on task. I hope that in my next semester I can manage it better, and hopefully find ways to keep myself focused when not in class.

This semester has been tough due to my time restraints along with my lack of ability to stay focused. Along with my ADHD, I also have difficulty with my short-term memory. In an attempt to remind myself of upcoming assignments, I'll often make a list or write things down on my hand or another place I might see it. Unfortunately, with my memory issues, I'll usually forget that I wrote anything down at all, and even if I see it, it doesn't register and I don't remember what or why I wrote it down. This can cause issues when it comes to remembering due dates, important meetings, changes in class location, or special NSU events. Luckily, I am able to get the majority of my work done as I'll write down my list in several different places so even if I forget about one, it might pop up somewhere else.

The week before midterms, I managed to come down with a stomach virus that caused me to miss a couple of classes. After the virus went away, I was unable to eat for over a week. I ended up

nearly passing out in class and had to go to the hospital that day to get treatment for dehydration and malnourishment. I blame myself partially for the condition I fell into as I did not seek help sooner. I also let the stress of my exams get to me, taking my appetite away ever further and causing me to lose weight and experience low blood sugar. This affected my health greatly, and I often found myself with chronic headaches and difficulty orienting myself after getting up. The lack of sleep I had wasn't helping either as I was staying up most nights to get assignments done. Essentially; I was a mess. From this experience, I learned that it is important to get help for any sort of issue early and often. It's cliché, but "you're better safe than sorry". It took a while, but I was eventually able to get my health and my appetite back. While I struggled with my academics because of this, I plan on using my newfound health to finish the semester as strong as I can.

I have had the opportunity to explore what NSU has to offer, and I have found the Performance and Visual Arts wing in the University Center to be one of the most useful areas for me. There are rehearsal spaces with pianos in (relatively) sound-proof rooms in which I often go and work on my music. The Rifftides, NSU's only acapella group, has also been a greatly enriching activity for me. I really enjoy working with the many talented and friendly people involved. The library, having a very nice and quiet café and several study rooms, has also proven to be a useful resource. I have not gone there as much as I would have liked nor as much as I probably should have, however it is a good place to study without distractions. The online resource tools are also very useful as I am in the Razors Research program and often need to find articles relating to my research topics.

Next semester, I plan on starting from the very beginning by keeping my notes and deadlines more organized. I also hope that I can find strategies that can keep me from procrastinating. I am notorious for this, and it seems nearly impossible to crack this habit. Next semester, I hope I will be less busy and that I will be able to utilize more of NSU's services such as Student Success, Tutoring, Counseling, and other services paid for through tuition. I also scheduled my classes in a way that I have

most mornings free. I hope this will allow me to get more sleep as well as have more time to get done what I need to.

Since I have found myself to be more of a night owl, I decided to try taking most of my classes at night or in the late afternoon. This will be my first time taking nighttime classes. I hope this new schedule will increase my efficiency. I also hope that the flow of my activities will be easier to handle. Since it will not be skating competition season, I will have less to worry about in that aspect and will not be traveling nearly as much.

To any freshman coming to NSU for the first time, I would recommend that you let yourself settle into your schedule before making additional commitments. Many people would say to get involved as early as possible in as many things you can handle. I feel that it is better to know where you are as far as time before committing to clubs and recreational activities. If you are the type of person who has an easy schedule, I would say get involved in a lot of activities to keep yourself busy. Just like too little time can be destructive, too much time can have a similar effect. Keep yourself busy, but not too busy. You want to find a “sweet spot”, a place where you can have a fun and enjoyable college experience, without feeling too overwhelmed. Also, if you ever feel like you have too much going on, don’t be afraid to pick and choose between your activities.

Two weeks before Thanksgiving break, I had several assignments due, two tests, a lab makeup, and I was also leaving for a competition in North Carolina for half a week. Being so overwhelmed, I felt that I needed a break from my acapella group. I went to the e-board and explained my situation and asked for some time away from the group. They granted me this, and I am grateful that I can continue participating in Rifftides while still knowing that I can ask for a break if it all gets to be too much. Most people are understanding and know how it feels to be overwhelmed. Never be afraid to speak up, as it can be a life (and grade) saver later on down the road.

If you are planning on attending NSU, I wish you best of luck in your first semester here. This is truly a great place filled with wonderful people and a wide variety of opportunities to take advantage of. Enjoy your first semester of college. It will be a new experience, it will be scary, there will be a steep learning curve, but at the end of the day, it is a great and important life experience to have. It gets easier from here, I promise. I hope you manage to have an exciting and insightful first semester here.

Best regards,

Cailey Weaver

Reflection:

This semester has been one of the hardest transitions I have ever made. Not only did I spend much of my time in this first segment of my college experience shoving activities into an already extremely packed schedule, but I also struggled with many physical and emotional difficulties as well. I was homeschooled my entire life, thus making it quite difficult to be immediately thrown into classroom work, tests, teachers, and classmates. It is something I have never experienced before, at least at this level of difficulty and intensity.

Before getting my grades back, I thought I was doing very well. Unfortunately I did not reach my goals as far as grades, however I did learn a lot about what I expect from myself in the future. This semester has taught me that although I might be having a hard time adjusting, science is the field I am truly interested in. I have faced a lot of cynicism from the people I am close to regarding my aptitude for science. While this semester wasn't as successful for me as I would have liked, I feel determined to push forward and overcome this challenge. I have never been one to give up despite the risk of possible failure. I will not fail; I won't let this slip away.

The research design class we took this semester has taught me more about science than I expected. After this semester, I feel much more comfortable brainstorming ideas of research topics. It feels good to know that every question is a possibility. Any idea can be developed into an experiment, and assuming the experiment is valid, it can be made into a project for future research opportunities.

There were plenty of pitfalls this semester including an overly-packed schedule, travel, illness, injury, and other more internal struggles, I feel more prepared for the upcoming experiences that await. I am looking forward to righting myself next semester so I can push forward towards achieving my academic goals.