

Razor's Edge Research Scholars Program: Reflective Portfolio

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### Abstract

The purpose of this portfolio is to document my experience in the Razor's Edge Research program. This will be a cumulative documentation of experiences and reflections in the program. This portfolio contains statements of goals, experiences, reflections, and artifacts to highlight this program and the personal impact behind it. The content of this portfolio will reflect my input to the program, and how it has benefited me overall.

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## Statement of Goals

### Winter 2017 Goals

Throughout this semester, I hope to successfully complete our university based research project while obtaining a vast amount of knowledge behind the methodology of research and how to design a study. Learning about the cause and effect relationship will help me understand the basis for all research studies. I hope to use our university based research project to learn about any correlation between attainment of mindfulness meditation and short term memory improvement so that the student body of NSU will be able to utilize new ways to achieve higher scores on college examinations.

A second goal is to be accepted to multiple research internships over the summer. One of the internships I've applied to is involved with the Blue Shield Health Insurance Company. This internship will involve research in healthcare while working with congressional members to improve legislation on the current healthcare system. Because I am the minority senator on NSU'S student government association, I have become familiar with the process of legislation; hence, I am able to experience legislation and combine it with healthcare, a career passion of mine, will be an opportunity I will be able to enjoy and take advantage of it. I have also applied for another research internship involved with the Cleveland Clinic Summer Scholar Program where undergraduate students are given the opportunity to shadow doctors and surgeons to gain experience in medicine/surgery.

A third goal is to be successfully be elected as a student member of the American Association for Cancer Research after being nominated for this position. Being a part of this research organization would allow me to collaborate with thousands of cancer researchers from around the world, conduct research on cancer genomics with them, and present our findings to the

annual conference at Washington D.C. Furthermore, I was nominated to be a part of one of their national constituencies. This constituency is known as “Women in Cancer Research” and it is known for recognizing women’s achievements in cancer research, and nationally advocating for more women in cancer research. Although I have been nominated for this constituency under the American Association for Cancer Research, I hope to be chosen as a member in the near future.

Fall 2016 Goals

I hope to further my philosophical insight into what science and research truly are. I am eager to learn and discuss more with Dr. Mills and Dr. Hecht about what science is and how humans have created multiple concepts in order to understand the way our reality functions. Being able to create a more detailed, efficient, and error-free method to targeting specific mutations and the progression of gastric cancer while collaborating with a mentor will be my ultimate goal in this program. Using the insights of research and its methods, I hope to apply them when researching my field of interest through the Razor's Edge Research Scholars program in order to gain a maximum, fulfilling experience. Furthermore, I hope to broaden my area of cancer research to colon cancer because of its similarity to gastric cancer. After exploring NSU's webpage for the Rumbaugh-Goodwin Institute for Cancer Research and reading their current project on targeting colon cancer by enhancing therapeutic potential via natural products, I hope to be able to shadow this team this year, analyze their research methods, and eventually become a part of the team to demolish colon cancer.

I have set a rather personal goal in which my suite mate and I will build strong connections with people like Dr. Travisano who plays a key role in the Royal Dames for Cancer Research. We have briefly met with her, and are currently planning to set more meetings with her in order to build a foundational connection with her. Furthermore, my suite mate and I plan to build more networking opportunities by having more communication with Dean Williams whom I have gotten to know to an extent through this Razor's Edge Scholars program. By building connections with Dr. Hanbury, Dr. Travisano, Dr. Williams, and others, I am able to further myself in networking opportunities.

Initial Thoughts:

Throughout the classes I have had so far, it has been an extremely insightful experience. I am currently enjoying reflecting on ethical practices based on meaningful field and clinical experiences-a part of this program. The professors truly lead us to engage in discussions and questions that have no correct answer because science and research are both unpredictable. I am learning about scientific paradigms that surround us as human beings and I thoroughly enjoy discussing foundational philosophical concepts that define what "good science" is. This program encourages me to question everything and to never be afraid to suggest an alternate rival, even if it goes against the norm. Research itself needs to be thoroughly questioned, analyzed, and evaluated before being accepted by scientists and the public in general. Reflection on these discussions after class with my suitemates reinforce the beauty of research; hence, communication regarding research and my understanding it has vastly broadened. I look forward to continuing these discussions, thinking outside the box, and applying my new way of thinking regarding science toward what I love researching most: gastric cancer. I look forward to participating in or, at the very least, exploring the Undergraduate Research Symposium to understand how NSU students present their research to the public and scientists. I am also looking forward to someday working with a mentor who specializes in using alternative medicine to target gastric cancer while learning different research methods and how they may influence society as a whole.

## Highlighted Experiences

### Fall 2016 Experiences

Over the course of this semester, I have had multiple experiences that shaped my outlook on what research truly is while enhancing myself as an individual.

RAZR100R Experience: Dr. Mills and Dr. Hecht broadened my knowledge on passionately exploring components of the universe through multiple variations. They encouraged questioning everything by applying different theories and practices from the “Theory and Reality” book to our everyday lives. By constantly questioning everything that we think truly exists, I quickly learned that there is no true answer to a question in research. Hence, I applied this new outlook on research on my midterm paper where I had to determine whether or not the ancient alien theory was true science or non-science. Although both don't really have a true definition in terms of science, I determined that the ancient alien theory can be considered as a true science based on rationalism, because even though there is not enough evidence to support it, there is not enough evidence to deny it.

On-Campus Experience: Over the course of this semester, I have had the wonderful opportunity in volunteering for multiple events in the name of research. For example, volunteering for the grand opening of the Center for Collaborative Research as a representative for the Razor's Edge Research Scholars program was an honor. Helping with the grand opening provided a sense of belonging to the research community and a gateway to the future of research at NSU. I am extremely privileged to say that I assisted in the opening of rapid growth of research that will be coming to NSU in the coming years. Furthermore, volunteering for the External Funding Recognition Reception helped me learn more about the researchers at NSU that make research exciting and extraordinary. I was able to connect with Dr. Jean Latimer,

Director of the Automation Breast Cancer Institute, and she has said that it would be a possibility for my suite-mate and I to start on insilico research for breast cancer so that we can expand our interests in cancer research. I was also able to volunteer as a representative for the Research Program at NSU Open House and it was eye-opening to see high school students show their passion for college and interests in expanding their knowledge in research. I loved sharing my experiences with these students so that they may someday be able to experience the wonderful opportunities that NSU's Razor's Edge Scholars program has to offer.

Other Experience: For the past couple of months, my suite-mate and I have been making connections with faculty throughout campus. Some of these individuals whom we have had the opportunity to meet with and discuss ideas regarding experiences as a college student are Dr. Hanbury, Dr. Travisano, Dr. Williams, Dr. Lippman, and Dr. Sztam. We have also had the privilege to meet Dr. Purvis who is the anatomy professor for medical students at Health Professions Division. She invited us to help volunteer with the Human Anatomy and Physiology Conference at Health Professions Division by greeting and helping guests that were attending the conference. She also invited my suite-mate and I to attend Dr. Dribin's histology lecture and lab for medical students so that we understand the perspective of what it is like to study medicine. Dr. Purvis has also invited us to help her with future events at Health Professions Division and even facilitate leadership/personality workshops for the medical students. Hence making these connections and volunteering at these medical events have broadened my horizons and understand that in order to be a "true researcher", one must be a well-rounded individual.

## Artifact Collection

Fall 2016 Artifacts

Mid-term paper:

“Understanding the Purpose of Rationalism in order to Distinguish True Science from Non-Science and the Conceptualize the Ancient Alien Theory

**Discussion**

Science will most likely never give us the absolute truth that exists in nature (Railsback, 2016). However, it allows for scientists to take steps to reach as close to that truth as possible. True science provides theories that presents the most detailed, knowledgeable, and evidence-backed explanations of how our world, universe, etc. work (Railsback, 2016). These theories may still be falsified or improved in order to reach closer to the truth we may never receive. In true science, it is acceptable for theories to be completely discarded in exchange for a better theory that best explains a truth we are trying to reach (Railsback, 2016). Within true science, these theories are accepted to understand the world. True science involves skepticism of certain methods, theories, and/or laws that currently explain the natural world. Furthermore, it involves observations of nature that validate theories and generalizations we have made of this world. Hence this aligns with the theory of rationalism in which reason has access to reality as it really is. Rationalism uses knowledge within the mind and not simply experiences because the senses of the human species are limited. Therefore, rationalism assists in using knowledge to understand the way phenomena work using reason.

**Analysis**

Rationalism takes a hold of things as they are hence they accept current theories in true science until evidence or another theory falsifies the once believed theories (Smith, 2003). Rationalism uses reason as the source of knowledge rather than experience (Smith, 2003). Hence reason can be used within true science to work out truths we as a human species do not grasp yet. Simple experience may not suffice to understand true science hence rationalism goes beyond what experiences gives the human being. True science is understood and contingent upon the fact that we accept there may be a reality independent of our minds (Smith, 2003).

Reason within rationalism assists in eliminating bias and opinion in true science. For the time being, in order to currently understand the world, we take measurements, make observations, and theories with the belief that the reality we are experiencing is dependent of our minds (Railsback, 2016). Hence true science takes

the necessary steps to make generalizations based on observed evidence with degrees of skepticism to reach the truth that is infinitely within our reach. We do not know if we are growing closer or farther from the truth but true science is rather eternal until the methods, observations, and theories we use to explain the steps we are taking on this path come to a complete stop. A complete stop will not end with the methods, observations, and theories; it will end when the species of those who use true science come to a complete end. True science in nature will most likely infinitely exist, similarly to the eternal truth that true science pursues.

Non-science is a never-changing generalization based on human-centered logic in order to settle the debate of how the natural world works (Railsback, 2016). The general steps used in true science are not applied in non-science. Instead, ancient theories, religion, art, and certain forms of astrology are used to define the absolute truth that exists in nature without evidence, falsification, or skepticism. Because non-science is generally opinionated and biased, rationalism cannot truly be used. Non-science generally is not doubted and is simply accepted as the absolute truth. Rationalism questions reality, and involves reason in which theories are accepted and falsified using observations of the natural world until one feels he is closer to the truth. Reason is used to grasp things as they are while acknowledging that what is grasped today may become false tomorrow and can no longer be held. Non-science does not use this method. People often confuse true science with non-science because there is a constant belief that both can be intertwined. Personally, I do not think that they can be weaved together because true science and non-science have a vast difference in reaching and viewing the infinite truth, if there is one in the reality independent of our minds. We do not know if we are growing closer to the truth, but true science constantly observes evidence in an attempt to grow closer to it. In a sense, as this unknown truth is infinite, so is true science and its methods. Non-science has a rather finite end in my perspective purely because there is less questioning and rationalism regarding the truth that non-science believes it has already reached.

## **Conclusion**

Rationalism as a theory uses reason as a source of knowledge and connects well with true science rather than non-science simply because non-science has a set source of knowledge that refuses to be refuted at any time. True science requires more than just experience in order to use certain methods to reach the absolute truth in nature. It requires reason to justify and deny once held beliefs. On the other hand, non-science tends to have beliefs that are infinitely held. No amount of rationalism may be used because reason within rationalism cannot truly change non-science. Furthermore, people tend to confuse true science and non-science because there is a belief that the methods used in true science, such as data collecting and observations, can be used in non-science to observe a phenomenon seen only in beliefs thus far.

However, it is rather difficult to do so considering that non-science does not have a foundation in investigation because non-science holds human-centered logic without much consideration for other possibilities. Non-science does not change a theory if it even contains one, while the duty of true science actually changes a theory if an older one is falsified and a new one comes to light with stronger evidence and observations.

## **Discussion**

Because rationalism is centered around the theory that some innate concepts exist in humans and that reason is a source of knowledge, rationalism can be assembled in a way to understand theories that aren't thoroughly studied simply because the human species has a difficult time understanding them. Using the theory of rationalism, the ancient alien theory is considered to be a true science because there is not enough evidence to falsify the theory. Rationalism takes a hold of things as they truly are and accepts current theories until a new one falsifies the preceding theory.

## **Analysis**

According to the ancient alien theory, it is said that "life exists on other planets" and "humans and extraterrestrials have crossed paths before" (History, 2016). Ancient structures built on certain latitude and longitude intersections in a pinpointing manner, minerals found on Earth that are usually found outside of this planet, and other events have led to the construction of the ancient alien theory. Rationalism does not refute the ancient alien theory just because many believe these unusual events are simply coincidences. This theory may lack enough supporting evidence but it does not have enough evidence against it. Rationalism has access to the mind's knowledge in which reality is questioned. Hence it does not use simply the senses because there are certain incidents in the universe that we cannot experience because our senses are limited. Theories are thoroughly questioned in rationalism but are not simply refuted and discarded until full analysis has been completed. Rationalism contains the belief that we possess "some innate concepts" and that our minds are not a "blank slate" that needs to be filled with experience in order to understand the world (Theory of Knowledge, 2016). Unlike empiricism, rationalism does not require purely experience in order to gain knowledge. In rationalism, the knowledge we innately do not possess can be "worked out independent of experience of the world" whether it be "logic" or "ethical truth" (Theory of Knowledge, 2016). Hence the ancient alien theory can be worked out separate from just humans' experiences of the world. Rationalism states that knowledge "cannot be derived from experiences alone" and reason needs to be collaborated with exploration of the unknown in order for the human mind to comprehend certain things it has not considered before. By acknowledging that there are truths in the natural world humans don't know simply because we have not experienced it, the ancient alien theory can be considered a true science because it is a

working investigation with little evidence supporting it but not enough observations to deny it.

## **Conclusion**

The ancient alien theory may actually be true. It is the minds that provide the human species with information, not the natural world. We may be seeing a reality based upon our minds. It is unknown. Hence it is understandable as to why some only view the world they are experiencing based upon the reality they are creating. It has not occurred to many that there may be a reality we are not aware of. However, rationalism allows reason to be the source of knowledge in order to view, analyze, and evaluate evidence in order to confirm or deny a theory. The information we use may simply be a projection of our mind rather than what the world is providing us. It is possible that ancient alien theory is fully true science simply because we have not existed for a sufficient period of time to gather and analyze data we possibly have missed that could have given an answer as to whether or not the ancient alien theory exists. True science can be used by rationalism to give reason and grow closer to the truth that exists in nature regarding ancient aliens. Because it is a theory with little evidence, the ancient alien theory is a true science because evidence from the past and present can be gathered to evaluate whether or not the theory is a reality. It is a true science because it is unknown; there may be a truth in nature to it, and little evidence has actually refuted this theory. Things in the natural world have had unusual occurrences that have led to the creation of the ancient alien theory; it is not a random creation of a biased human belief. Hence it exists today and continues to be questioned in the form of rationalism and true science.

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Picture from Human Anatomy and Physiology Conference



Picture from Grand Opening of the Center for Collaborative Research Center



## Reflection

### Fall 2016 Reflection

Overall, I have been pleased with the opportunities that I have been able to make through this program. It is wonderful when opportunities are given to us as individuals in this program, but it is more special if one makes the opportunities himself/herself. Dr. Mills and Dr. Hecht completely expanded my knowledge on what research truly is and without their guidance, I never would have become the more open-minded person that I am today. With what I have learned about research so far, my group and I are prepared to conduct our university based research project in which we are testing the effect of stage 1 mindfulness meditation on short term memory. No matter what field I would have chosen to do this research project on, I am excited to apply my knowledge of research into this project.

I do wish that we had even more opportunities to possibly conduct research based on our interests. However, I completely understand that we are freshman and that this is the first year of Razor's Edge Research. This being said, the opportunities that we are offered throughout this semester to volunteer at numerous research events have excited my thirst for exploring research. Being able to meet new people at these events and hearing their experiences enriches my mindset of what it is like to be a researcher; hence, I am grateful that the Research Program has given us these opportunities throughout the semester. One cannot be a true researcher if one is not well-rounded and has listened to other researchers who are the people who have spent a great number of years dedicated to solving problems and perfecting the practice of research. If there is one thing that this semester has taught me about research, it is that we really do not know exactly what we are doing which is why it is called "research." The beauty of research is that it is a never-ending puzzle that will always fascinate me in the infinite number of methods to try and solve a problem that needs examination.

The people that I live with in Commons and my neighbors have all become my family. We truly are like brothers and sisters that look out for each other and help each other out. When I first moved in to Commons, I was wary about sharing a floor with the male population. However, I quickly learned that this was for the better because we are all looking out for each other like siblings. I am grateful that I have my suite-mates and neighbors in the Razor's Edge Research Scholars Program because we can all bond over research in the same proximity and have intense discussions about what research truly is. If one of us ever has an issue with something, all we really have to do is knock on our neighbors' doors. The beauty of this is that because we are one family, we are always willing to help each other out. At the beginning of the year, we did not truly connect much. However, after adding bonding activities and suffering through difficult times together, we have become closer. I hope to get to know more about my peers over the next semester and I truly wish that we will get to share more experiences in this program together.