

Sample Marshall Scholarship Personal Statement—Student #1

In the sixth grade, I took a test to see if I was left- or right-brained. To my elementary eyes, the result of that quiz would be the truth from on high—a resolute word that would define the man to come as either analytic or artistic. Unfortunately, the oracle I sought gave me a perplexing answer. Much to my disbelief, my tallied score yielded a perfect split down the middle. Was I mentally ambidextrous or mentally challenged? I preferred to think the former; either way, I have never felt at home thinking in just one hemisphere.

When I tell people that I study biological anthropology and philosophy, they often curiously raise an eyebrow. “What an odd combination,” they remark. Even though I have come to expect this, I understand their bewilderment. Though the sciences and the humanities were once braided into one holistic education, today, the two behave like estranged lovers settling a bitter divorce, resulting in separate academic quarters. One hundred years ago, every student at Mythic University—humanist, scientist, and farmer alike—was required to read Plato in the original Ancient Greek. Receiving a broad education was seen as part of becoming a true scholar. Despite their differences, when I look at the current interaction between the humanities and the exact sciences—specifically between philosophy and evolutionary biology—I see cause for hope, perchance even reconciliation, through philosophy of science. In this pursuit, I have tailored my undergraduate education to lay a foundation in both philosophy and science.

Biological anthropologist by day. Many of my days are spent at the Mythic University paleoanthropology lab, where I am fortunate to work as Dr. John Teacher’s undergraduate research assistant, casting the semicircular canals of small mammals to study their morphology as it relates to movement. The semicircular canals house the organs of balance, and their morphology is inherently tied to locomotion. Through the analysis of these casts, we can analyze variation within readily available populations. High-resolution computed tomography (CT) scans allow for the non-invasive reconstruction of this tiny region of the inner ear in the minutest detail. This exciting approach is providing new insights into the locomotion of hominids and other ancient, extinct primates without damaging rare fossils. Studying the variation in canal morphology helps us assess the reliability of this technique.

The experience of this assistantship, along with two summers of standing in a waist-deep Costa Rican swamp, culminated in my honor’s thesis, which investigates the agility of three species of New World monkeys through both observations of positional behavior and analysis of semicircular canal morphology. Agility is a rather nebulous concept. It is my hope that this comparative examination will yield an effective means of quantifying relative levels of agility among primates.

Understanding how primates move requires a functional understanding of mammalian anatomy—a passion of mine for the past three years. The opportunity to assistant-teach three undergraduate anatomy courses has been among the most fulfilling parts of my education. When I taught gross anatomy I had the opportunity to work with two cadavers.

A person can learn a great deal about human anatomy from texts, but there is an eye-opening degree of realism that sinks in during cadaver study. Furthering my own knowledge of anatomy would be reward enough for teaching these classes. What really propels me to teach, though, is the possibility of helping my students germinate a genuine curiosity in a subject that I love.

Philosopher by night. While fascinated by my anthropological pursuits, I take tremendous pleasure from reading philosophy into the early morning hours, sitting in the back of the dimly lit Mythic University Diner, famously open 24 hours a day. Camaraderie is high at the Diner as a good number of philosophy graduate students study there every night, conversing over coffee. It was there where much of my interest in philosophy blossomed as I listened to many late-night debates about the virtues and failings of Aristotle and the nature of mind. For a while, I was seen as the token scientist, but after studying there for two years and taking a two graduate-level philosophy courses in ethics and the philosophy of mind, philosophy students are beginning to recognize me among their ranks. My experiences have led me to form a biweekly study group where undergraduate philosophy majors can interact and discuss their readings with the graduate students.

I became particularly interested in the interaction of philosophy and biology when I read Nietzsche's *On the Genealogy of Morals* for the first time. Seeing a unity of ideas between some of what Nietzsche wrote in *Genealogy* and aspects of contemporary evolutionary biology made me realize that a more fruitful exchange of ideas between biologists and philosophers could precipitate advances in both fields. When I read *Genealogy* again last year in my ethics seminar, I wrote a paper about a consilience between Nietzsche and the theoretical work of Amotz Zahavi—the ornithologist and author of *The Handicap Principle*—which I will submit for publication this fall.

This idea came as an epiphany—one shining moment of clarity that allowed me to unite seemingly disparate fields of knowledge for the first time. As I continue to investigate the relationship between philosophy and biology, I sense that more epiphanies are on the horizon. For me, continuing to bring the two fields together will not only require both sides of my mind, but also a mentor with the experience and breadth of knowledge to guide me in such an endeavor. Studying with Dr. Jonathan Hodge at the University of Leeds' History and Philosophy of Science program will put my mental ambidexterity to good use.

**Sample Marshall Scholarship Proposed
Academic Programme Essay—Student #1**

At the University of Leeds I propose to pursue a research MPhil in the history and philosophy of science, with a focus on the philosophy of evolutionary biology under Dr. Jonathan Hodge. I also wish to seek out the mentorship of several members of the philosophy department in this endeavor.

My broad interest is in philosophy of biology. I am especially interested in the interaction between philosophy and evolutionary biology, insofar as I want to study the historical repetition and unity of ideas between philosophy and biology in an attempt precipitate advances in both fields. In other words, I study the consilience between specific philosophers' ideas and aspects of evolutionary theory (e.g., Nietzsche or Buddhism, and natural selection, or the relationship between the works of ethical philosophers and the ethical implications of evolutionary psychology). Such a program of study requires both a working knowledge of evolutionary theory and history in addition to discussion and understanding of relevant philosophers (Aristotle, Nietzsche, Darwin, and others).

Simply put, the History and Philosophy of Science program at The University of Leeds offers me opportunities not afforded by other universities. Its greatest asset is the presence of Dr. Hodge, who for the past several decades has been one of the world's foremost philosophers and historians of biology. Reading his article, "The notebook programmes and the projects of Darwin's London years" in *The Cambridge Companion to Darwin*, which he co-edited with Gregory Radick (also at Leeds), I immediately became aware of the remarkable breadth and depth of his knowledge about Darwin and the history of evolutionary theory. Dr. Hodge possesses the qualities I am looking for in an advisor—he has the capability to recognize and further my insightful hypotheses relating biology to philosophy and to help me fine-tune those that are too grandiose.

One of Leeds strongest attractions is the breadth of its departments. Not only will I be able to study philosophy of biology with professor Hodge, but I will also have the opportunity to study Nietzsche and Buddhist philosophy with Seiriol Morgan and Nik Jewell in the philosophy department, as well as Aristotle with Nafsika Athanassoulis. Thus, The University of Leeds can provide me with an opportunity to study philosophy outside of the biological realm, just as I desire.

Should the University of Leeds not be an option, I propose to pursue a MPhil in the History and Philosophy of Science Department at the University of Cambridge under the direction of Dr. Timothy Lewens. My project would remain the same; however, Cambridge lacks a philosopher of biology of equal merit to Dr. Jonathan Hodge, making The University of Leeds preferable.

Sample Marshall Scholarship Personal Statement—Student #2

The driving influence in my life has always been to grasp the nature of the universe. Growing up as the son of two Presbyterian ministers, questions concerning the creation of the universe and the principles upon which it runs were staples in my home life. More than that, my parents always pushed me not to be content with merely understanding how the world works, but always to strive for the basic principles explaining why it works that way. I recall asking my father a simple question about a car and getting a three-hour lecture on the physics behind the internal combustion engine. This experience in and need to dig deeper into the workings of the world has brought me to the place that I am now, and I feel it guiding my future.

I have been doing physics research in varied fields since the summer after my freshman year, yet I have never been able to answer a question that has nagged me for years. How do we know that our systems of measurement are truly definitive? In my lab, I would be taking a temperature measurement with a thermocouple gauge and comparing it with a measurement by a standard thermometer, and the whole time I asked myself how I could know that I was really measuring the same thing—temperature—with both.

The basic problem is involved with the foundations of the scientific system of measurement. Traditionally, temperature would be measured by the height of a mercury column in a glass tube—a basic thermometer. Yet, the meter was defined as the length of a certain platinum rod at a specified temperature. Thus, there is circularity in our basic units of measurement. This is the basic problem in the philosophy of measurement to which I want to apply myself.

As is evident from the example of the thermometer used above, I see this question as a very historical one. But at the same time I feel that it is pertinent to modern physics. One of the underpinnings of quantum mechanics is that matter behaves like a wave until a measurement is taken, at which time the “particle” is made to choose a position, or velocity. This begs the question: What constitutes a measurement? Given that quantum theory is the essence of modern physics, this question cannot be ignored.

After my work in particle physics at the Deutsches Elektronen-Synchrotron (DESY) in Hamburg, Germany, I want to do research in theoretical particle physics. Yet, I feel that if I don’t take time out now to carefully study the philosophy of measurement, I will not be able to address the issues facing modern physics theory as well as I could. My undergraduate studies have been interdisciplinary—I major in physics, math, and philosophy—and I feel that an interdisciplinary approach in my graduate studies will be the most fruitful. I say this because I have always felt that a well-rounded person is better able to tackle the complex problems of life. This is why I do not work only in academics, but also spend considerable time in athletics and community service.

Physically I am endlessly active. I have used college to explore a large variety of new activities. Freshman year, I was a member of the Mythic University Racquetball

Club and competed in intercollegiate tournaments. As a sophomore, I joined the university's Crew Team and rowed in the first squad in men's novice lightweights. Last year, I joined the Shotokan Karate Club, earning a green belt in two semesters instead of the normal three. I also started long-distance running and am currently training for a marathon in the spring. If am not doing one of these things I am playing pick-up games of soccer, volleyball, or basketball with friends. I bike, sail, hike, and hang-glide.

The same energy that I have in sports I carry into my community service activities. I have helped with voter registration for the upcoming election, Adopt-A-Highway in my local area, and a local campaign to revive a dilapidated movie theater. My primary affiliation is with Habitat for Humanity. This year I am the fundraising director, in charge of raising enough money so that the Mythic University chapter of Habitat can build its second house for a deserving family. In Habitat, I have spent countless hours doing jobs such as drywalling, insulating, and painting. This past spring break I went to Winter Haven, Florida, to help paint a house with 15 other students.

It will also take great energy and versatility to be successful as a professor of physics. One must not only understand physics, but also be able to pass on one's knowledge of physics to others. A good background in the history of physics and the underpinnings of its principles will serve me well in passing on my physics knowledge in an exciting and helpful way. By working in examples from the history of physics, students will be more engaged with the impact of science on society and feel the human side of physics.

My undergraduate thesis at Mythic University will also help to prepare me for writing and research in my future career. The beginning of the historical work mentioned above will take the form of my honors undergraduate thesis. I will be examining four experiments in the history of optics, and showing how the experiments can be more effectively used in undergraduate classrooms to illustrate the principles of physics. I will study experiments of Newton, Fresnel, Faraday, and Einstein to address fundamental principles of light. We experience light every day; however, comprehending its nature has puzzled even the greatest of scientists. Einstein is quoted as saying: "Every physicist thinks that he knows what a photon is. I spent my life to find out what a photon is, and I still don't know it." I want to bring myself and my future students to try to tackle such issues.

This summer I visited Cambridge, and after much thought throughout my time in Europe, I have come to the conclusion that it would be the ideal place for my studies in the history and philosophy of science. Cambridge has a department that combines both historians and philosophers of science with an excellent museum carrying original pieces of scientific equipment. Moreover, Dr. Simon Schaffer is renowned for his work in the philosophy of measurement, and I would gain greatly by learning directly from him. For these reasons, I would like to complete the third year of undergraduate studies in the history and philosophy of science at Cambridge and then continue study in the MPhil one-year research course with funding from the Marshall Scholarship.

**Sample Marshall Scholarship Proposed
Academic Programme Essay—Student #2**

If I receive the Marshall Scholarship I will study the history and philosophy of science at Cambridge University. Spending two years at Cambridge would improve the quality of the teaching and research that I plan on doing as a professor of physics. It would give me the knowledge and expertise to make my teaching interesting to students from a wide range of backgrounds by incorporating historical information. It would also gain me the background necessary to face the problems of modern theoretical physics.

While at Cambridge I would complete the third year of the undergraduate program and then the one-year research MPhil in the Department of History and Philosophy of Science and Medicine. The first year would broaden my knowledge and understanding of both the history and philosophy of physics. I already have a strong base in the subject. I have taken four classes in the philosophy of science and related topics at Mythic University and my undergraduate honors thesis is concerned with the history and philosophy of science as it applies to physics education. I have also done independent reading in the subject. My first year at Cambridge would be an extension of these studies, under some of the most prominent researchers in their respective fields.

My second year at Cambridge would serve to consider questions in the philosophy of measurement more deeply. I wish to focus primarily on the measurement of temperature in the nineteenth century, from both historical and philosophical perspectives. In considering history, I am concerned with the discussions within scientific circles during the nineteenth century about controversial principles of measurement. In addition, I would investigate the methods undertaken by instrument makers to ensure that temperatures measured with different types of devices could be reliably compared. I would focus on the transition during the century away from the traditional mercury thermometers to more modern thermocouple devices, and how these two devices were compared at the time. Philosophically, I am interested in our definitions of fundamental units, such as length and mass. I want to address questions of fundamental importance to quantum mechanics, which will have bearing on my future work in physics.

Given my aspirations described above, the program at Cambridge is an excellent fit for me. It is unique in allowing one year of intensive study followed by an independent research course. The department of interest to me is the largest of its kind in the UK, and combines both historians and philosophers together. In addition, the department is built around the Whipple Museum, which houses a fine collection of original scientific instruments for study, including thermometers from the nineteenth century. I have read and admire the work of Dr. Simon Schaffer and would love the opportunity to work with him. Spending two years at Cambridge would allow me to pursue a balance between history and philosophy that is difficult if not impossible elsewhere. Finally, I feel it is necessary for my development as a researcher and teacher.