

1. ESSAY:

I grew up on a tiny island. For anything beyond convenience store snacks we needed to go to another island, Martha's Vineyard. For the first 18 years of my life, to encounter anything resembling the outside world required a ride on a small ferry, basically a barge with a motor on it. Every morning at seven I would take this ferry to go to school. For us, the world was divided into two sections, "on-island," and "off-island," which was the rest of the world. When I meet people who have heard the tourist destination, they expect me to be a trust fund baby with preppy fashion sense, when my family lived out of a tent for periods of my childhood.

Coming from a place like that, Caltech was a culture shock. Suddenly, I was exposed to new people, new perspectives, new cuisines, and new ideas. But despite it being far more diverse and intellectually challenging than the place I was raised, Caltech is ultimately just another island. Academically, politically, and socially, members of the Caltech community tend to associate and relate more with each other than with people outside. In some ways this is valuable: it has allowed me to explore my identity, both personally and in terms of my academic prospects and goals, in a way that would not have been possible at a different institution. Owing to the small nature of the school, I have mostly been in classes with the same people, which has allowed me to form close relationships both professional and personal that I hope will continue after I leave Caltech. But as comfortable and safe as Caltech feels, it is important to reach outside of it and to encounter different perspectives. One of the most rewarding experiences I have had during college was a research project I did at the Microbial Diversity Course at the Marine Biology Lab in Woods Hole, Massachusetts. Participating in the course allowed me to interact with people in my field from a variety of institutions and backgrounds. The exchange of ideas was valuable, and I remain in contact with many of the people I met during this experience. A term abroad will allow me to expand my horizons in a way that would not be possible remaining at Caltech.

When I was in high school, I made the decision of which college I wanted to go to earlier than my classmates due to application process of my scholarship. Music and theatre have always been important parts of my life, so the decision to go to a small STEM school that didn't have a music major was a difficult one. I have luckily met many talented, creative people at Caltech through my work with a cappella performance, my exploration of my LGBTQ+ identity, and my interest in local art. In general however, for better or for worse, Caltech students are all some form of STEM students. While it took me a bit of time to recognize this, I have missed interacting with liberal arts majors. I hope that by studying abroad I will be able to meet and interact with people who think differently than me in a refreshing and intellectually stimulating way. In pursuit of that I intend to take classes outside my current academic focuses. I entered Caltech intending to pursue a degree in Biology, and further focused on microbiology and molecular biology. While microbiology is my passion and I would like to pursue it further in grad school, I haven't explored outside of that field, so I plan to take classes that focus more on subjects that I haven't focused as much on in the past. I plan to take courses that help me understand and relate to people from different backgrounds. In general, I believe that study abroad will help me by exposing me to ideas and perspectives that I have not been able to experience at Caltech.

2. PROGRAM FIT:

UCL:

At Caltech I am a member of the Biology department and work in the Newman lab. Because the focus of my research, and my interest in general, is microbiology, many of the classes I take are focused on microbiology and molecular biology. I joined a lab and chose a focus early on in my time at Caltech and for the most part have not deviated from that course. I'd like to use my time abroad as a chance to learn more about topics outside of my focus. I plan to take classes on larger organisms than the bacteria I work with through classes such as BIOL0012: Animal Biodiversity. It will be interesting to take a step back and looking at learn more about animals as a whole rather than the molecular underpinnings of biology. As Caltech is a STEM school, the humanities and social sciences departments are not as large or as developed as those at UCL. Classes in those departments at Caltech are often tailored to "appeal to STEM students," which tends to mean that professors come up with odd metaphors to relate concepts to math and science and go out of their way to make the classes resemble math classes. This practice, while sometimes interesting, can be reductive and is often disappointing because it makes humanities classes that would have otherwise made for an interesting change of mental pace blend in with the many STEM courses in the catalog. Going to UCL will let me explore non-STEM subjects in a way that I would not be able to at Caltech. I look forward to noting the differences in how the classes are taught from related courses at Caltech, both due to cultural differences and institutional differences. I especially look forward to HIST0288: Medieval History in London Collections, as the idea of learning medieval history by visiting locations and viewing artifacts seems interesting and rewarding.

3. PROPOSED COURSE LIST:

UCL Proposed Course List

Total ECTS/UCL Credits (30 ECTS /2 UCL Units): 2

Total ECTS/UCL Credits in Admitting Dept. (50% of coursework): 1

Total CIT Units: 36

Course by Correspondence/Units: 0

1. BIOL0010: Intro to Human Genetics

Level/Normal year taken: 2

Faculty: Prof Nikolas Maniatis

Department: Admitting Department, Biology

Term: Fall

UCL credits: .5

Caltech units: 9

Type of Caltech credit: Option

Caltech evaluator: Professor Bruce Hay

Course description: This module introduces the subject of human genetics, to enable students to appreciate the implications of genetic research for society and also to provide a basis for more advanced studies. The unifying topic of this course is how genes and their interactions, either with other genes or with the environment, make us what we are. When these interactions break down genetic disease may result, and it is often through these genetic mistakes that we are able to work out what happens in the normal situation. First comes a reminder that Mendelian rules of inheritance can be applied to human families but that this is not always straightforward to interpret. Not all traits are inherited in a simple Mendelian fashion and the methods by which quantitative and multifactorial traits are studied are introduced. These methods are followed by a section on molecular genetics which continues into genetic mapping techniques which culminated in the multi billion dollar human genome project. Within this section we examine some of the better known human genetic diseases which are interesting both for their own sake but also as examples of the results obtained using the molecular methods discussed earlier. One week is spent considering chromosomes. The human genome project has now moved on from the study of human DNA sequence to the study of variation between individuals and populations. The existence of genetic variation, polymorphism, has been known for many years and we look at this both from a historical perspective as well as considering how this is of interest to medicine and to the pharmaceutical industry. The fourth week of the course considers the nature and origin of genetic variation and gives a historical outline of the human genome project. In the fifth week we consider cancer, the biggest problem of genetic disease and finally we look at the study of human populations.

2. BIOL0012: Animal Biodiversity

Level/Normal year taken: 2

Faculty: Dr Julia Day

Department: Admitting Department, Biology

Term: Fall

UCL credits: .5

Caltech units: 9

Type of Caltech credit: Option

Caltech evaluator: Professor Bruce Hay

Course description: The animal kingdom (Metazoa) is a vast grouping that encompasses organisms as diverse as corals, worms and whales. This course focuses on animal systematics and biology. As such we will focus on the evolutionary relationships (phylogeny) and biological diversity of animals, and how they are adapted to different environments. Due to the sheer size of the Metazoa we will focus on selected phyla, in order to obtain a broad understanding of the group.

3. HIST0288: Medieval History in London Collections

Level/Normal year taken: 2

Faculty: Dr. Marie-Pierre Gelin

Department: History

Term: Fall

UCL credits (.5): .5

Caltech units: 9

Type of Caltech credit (option, general, etc.): General

State CIT equivalent course, if applicable:

Caltech evaluator: Professor Christopher Hitchcock

Course description: This module is intended for students without a background in history and will provide an exploration of medieval history through the study of material culture, both artefacts in museum collections (such as the British Museum and the Wellcome Collection) and surviving medieval buildings in London (such as St Bartholomew the Great). Taking a thematic approach, it will consider the principal social, political and cultural characteristics of the late Middle Ages (c.1000-1500). For example, medieval church architecture will be investigated as evidence of faith and belief, while objects associated with medieval kings will be studied as examples of political identity. In an age when literacy was not widespread, objects can provide an insight into the varied ways people expressed ideas and experienced the world around them. Primary source texts will be studied alongside material sources to demonstrate how objects can both support and at times undermine ideas articulated in texts. Students will be introduced to methods of analysing objects as a source for medieval history, as well as the problems and issues of studying material culture within a museum or library environment. Weekly sessions will be taught through a combination of lectures and seminars at UCL and gallery talks at museum collections, including the BM, Victoria and Albert Museum, and the Museum of London. Students will also participate in object handling sessions. Topics discussed will include political life, religion, daily life, science, magic and medicine and art and design.

4. SOCS0045: Social Inequality and Mobility

Level/Normal year taken: 2

Faculty: Professor Tak Wing Chan

Department: Social Sciences

Term: Fall

UCL credits (.5): .5

Caltech units: 9

Type of Caltech credit (option, general, etc.): General

Caltech evaluator: Professor Colin Camerer

Course description: This module introduces students to the key debates on social inequality and mobility in contemporary societies, covering a wide range of topics, including social class and its impact on life chances and life choices; income inequality, mobility and top income; education, meritocracy and the heritability of intelligence (the Flynn effect); poverty and the underclass; discrimination and segregation; inequality across the world, and the very long run dynamics of social inequality, inequality and mobility in different forms of society.