

Select Theses from rFLA 300 Capstone Course: Tilt and Spin

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Students spent approximately 10 weeks researching and developing a link between the Earth's tilt and spin and an aspect of our environment or society. Their projects needed to include the perspectives of at least two of Rollins's general education system divisions (Science, Social Science, Humanities, Expressive Arts). Below are examples of students' theses and their proposed general education discipline perspectives. Most students in the class selected Science and Social Science as their two lenses of analysis.

The Future of Sugar

The combined effects of climate change and the Earth's tilt and spin will create severe challenges for the production and supply of sugar cane in Brazil over the next century, while at the same time leading to elevated demand for this incredibly versatile commodity

I will explore the scientific causes that lead to areas which are suitable for sugar growth as well as global warming's impact on these ecosystems. For the Social Sciences I will examine the economic consequences that a decreased supply of sugar will have, as well as the economic impacts of global warming that are likely to increase the demand for sugar.

Skin Pigmentation and Medical Device Bias

Skin tone biased medical devices perpetuate current racial health disparities and prevent the standardization of equitable health care. We should take quick and immediate action to prevent current and future bias by implementing medical device equity standards.

This project will involve both science and social science perspectives. The science aspects will stem from background discussion of how and why different skin tones evolve. Further science discussion will involve explaining how current medical devices (specifically those that use PPG technology) are inherently biased towards darker skinned tones because of how these technologies were created. The social science aspect of this project will stem from discussion of the perpetuating global racial health disparities and what plan of action should be taken to best fix these devices and prevent further skin tone bias in medical devices, and in turn offer more globally standardized and equitable care. Specifically implementing new policy (equity standards) to prevent bias in these devices.

Seasonal Impact on Mental Health: Pregnancy and Postpartum

How the Earth tilts and spins creates seasons that affect mental health in many ways, most of which can be viewed negatively. Mental health is a big part of life that becomes overlooked or underdiagnosed for many people, especially in women. This makes the possibilities of mental illnesses during pregnancy and postpartum to be facetious. Unfortunately, during pregnancy and postpartum, there is a seasonal impact that increases seasonal affective disorder and eating disorders in most pregnancies.

This project involves Social Science and Science. Science discusses the seasonal changes throughout the year. Seasons are a huge impact in everyone's lives by determining lifestyle and schedules throughout the year. Seasons are also responsible for certain mental health illnesses, which can be even more dangerous for those experiencing pregnancy and postpartum. Social Science discusses pregnancy and postpartum, as well as mental health. Social science focuses on lifespan development, which is the human development through all stages

of life. The effects of mental health illnesses that is more extreme during the time of pregnancy and postpartum cause changes in a cultural aspect, with the responses cultures have on mental health in general.

Solar Energy and It's Feasibility to Power the World

Climate change and fossil fuel scarcity present a growing global challenge for innovation toward renewable energy sources. Given the growing social awareness of sustainability and the ever-increasing demand for emission-free energy, I ask to what extent solar energy will be part of this energy transition, which global localities have particularly high energy efficiency, and what specific challenges foresee the need for a broad diversification of renewable energy sources.

My paper will be addressing aspects of science as well as the social science. This will manifest in the way of communicating the environmental necessity for driving innovation further toward emission-free renewable energy sources. Various other scientific aspects that are linked to this will also be mentioned. Regarding the social science aspect of my paper, I will be highlighting the economic challenges and overall feasibility associated with a solar project build near the equator where one would experience, for instance, high energy efficiency but also various challenges of storing and transporting energy. There are solutions to some of these challenges, yet most of them are not economically feasible on a big scale, which I will be mentioning.

The Correlation Between Sun Deities and Latitude

It was incredibly rare for sun worship to be the entirety of <a> religion, but it was very prominent in Egyptian, Meso-American, and Indo-European cultures. These cultures, Egyptian and Meso-American more so than Indo-European, are all located close to the equator, prompting the question of whether latitude has an effect on the strength and presence of a culture's sun deity. This paper is designed to prove that there is a correlation between the latitude and the power of the associated sun deity. The correlation is believed to be because annual sun presence decreases the further you are from the equator and the strength of the deity should decrease accordingly.

I will use science and history to approach this problem. Science in that different latitudes receive different amounts of sunlight, and history to track different cultures and to what degree they worshipped the sun/sun deities.