



Undergraduate Research Symposium May 17, 2019 Mary Gates Hall

Online Proceedings

POSTER SESSION 3

MGH 241, Easel 134

2:30 PM to 4:00 PM

Eco-nomy GO: An Augmented Reality App that Focuses on Environmental Education

Andrew Lutrell (Andrew) Mc Donald, Senior, Interactive Media Design (Bothell)

Reginald D. King, Sophomore, Pre-Major, UW Bothell

Mentor: Dargan Frierson, Atmospheric Sciences

Climate change is misunderstood and largely ignored because people imagine its impacts as far away and they lack education on how to effectively combat it long term. We built this mobile game to shatter various misconceptions by educating users in a fun and engaging way. We allow players to explore environmental concepts by incorporating story, science and community into a single experience that blends real world images taken from the user's mobile device with 3D graphics. This is done by including various mechanics such as collecting, combat, puzzles and exploration in a way that is easily accessible to everyone. With this game we hope to inspire users to not only be more environmentally conscious but also become more financially supportive of sustainable businesses. We built this application from scratch using the power of Unity3D game engine, augmented reality technology and mobile GPS location. With this technology we can immerse users by placing a fantastical world into the real one and incorporating environmental narratives.

numerical climate model simulations. The Community Earth System Model (CESM) was run for a hundred years under three different scenarios: the removal of all mountain ranges, the removal of the Rockies, and the removal of the Tibetan and Mongolian Plateaus. When mountains are removed it results in changes to ocean and atmospheric circulation. This begins with warmer surface temperatures where the mountains were removed (without the elevation-induced cooling) and changes in both vertical and horizontal air motion in the vicinity of the mountains (as the topographic-induced circulations are disrupted). Consequently, rainfall is altered due to changes in temperature and air motion. Our research aims to better understand how mountain ranges affect rainfall, particularly in the tropics, and how this in turn affects local climatology in tropical regions.

POSTER SESSION 4

Commons East, Easel 59

4:00 PM to 6:00 PM

How Mountain Ranges Influence Tropical Rainfall

Rikki Leah Parent, Senior, Atmospheric Sciences: Climate

Haley Margaret Staudmyer, Sophomore, Atmospheric Sciences: Climate

UW Honors Program

Mentor: Dargan Frierson, Atmospheric Sciences

Mentor: Oliver Watt-Meyer, Atmospheric Sciences,

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This project aims to better understand the effects of removing global topography on atmospheric and oceanic circulation in