



## Climate Change: What Does it Look Like?

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IAS student Ron Carnell's article, "Climate Change: What Does it Look Like?," has been accepted for publication by the National Center for Case Study Teaching in Science, University at Buffalo.



What began nearly three years ago as a group project proposition for added credit hours became a team effort between Ron and IAS Assistant Professor, Rebecca Price. Ron comments that, "Discoveries along the way included added awareness of the complexities and anthropogenic contributions to global warming and climate change, and the basic necessities for researching an effective learning unit. The concept of the case and the story itself was naturally for me the simpler task, however the rest could not have happened without Becca's creativity, research, and high standards for excellence."

In this imaginary case study, paleoclimatologist turned TV meteorologist Sara Fahrenheit finds herself projected into a future climate that reminds her of the Early Eocene: it is hot, humid, and tropical. The story is a vehicle for teaching students how to distinguish between climate and weather by exploring the difference between average conditions and one-time anomalies. Students explore how to minimize the impact of their own carbon footprint and how small changes can scale up to make a large reduction in greenhouse gas emissions. Quantitative literacy improves as students find, graph, and interpret data about global climate change. Students also learn why a shift in just one degree Celsius can impact the Earth's climate dramatically.

Ron notes that he considers this work, "Much like the proverbial pot of stew that remains on the stove throughout the week. Once a ladle or two are taken from the pot, it's replenished with fresher ingredients, still simmering and continuing to provide sustenance. For future students, I left much character development open for future twists and turns in the story. As the debate and science of climate change will most likely reveal added discoveries and become clearer in the future, my longer-term idea for the project is to keep it alive for sequels, maybe a prequel. Lots of possibilities!"

It is Ron's hope that this piece generates interest among science students who have yet to consider the consequences of average surface temperature increases, and that it serves as a resource for students already experienced with this complex phenomenon.

Carnell concludes, "Many thanks to Becca for her expertise in research and co-authorship, and the IAS and UW Bothell for making an otherwise routine nontraditional undergraduate experience much more enriching and rewarding."

To directly access the case, teaching notes, and key, go to the case record at:

[http://sciencecases.lib.buffalo.edu/cs/collection/detail.asp?case\\_id=624&id=624](http://sciencecases.lib.buffalo.edu/cs/collection/detail.asp?case_id=624&id=624).