## Astrobiology News September 2021: Beyond Astrobiology

When I started writing Astrobiology News for the Clergy Letter Project more than eight years ago, part of the reason I chose an astrobiology theme, beyond its general public appeal and relevance to many theological and ethical discussions, was to underscore the importance of engaging expertise in many areas to address some of the big questions humanity has asked during our relatively short history on Earth. Certainly, "Does life exist beyond Earth" qualifies as one such question; however, beyond the questions of astrobiology are many other questions that pose critical and urgent challenges today. Questions like, How can we solve the climate crisis? How can we deal with COVID-19 and prepare for future pandemics? How can we solve world hunger? How can we better understand people who think differently than ourselves? How can we help young people find meaning and purpose in a world of seemingly increasing despair?

I don't think I need to go on – you get the idea! Addressing these questions will require engaging minds across many fields of research, and instilling young people with a sense of purpose and confidence, while equipping them with tools to navigate an increasingly complex, pluralistic world that includes many perspectives and priorities. One of the motivations behind my pilot *Engaging Faith-based Communities in Citizen Science through Zooniverse*<sup>1</sup> initiative was to help diverse groups and individuals learn to see themselves as fellow contributors to human knowledge across whatever disciplines sparked their imaginations and interests, not just science.

I want to thank the many CLP members who filled out *Zooniverse* surveys.<sup>2</sup> From these, I learned that many of you are "not young" and are terribly over-extended in your pre- or post-retirement activities. Since this also describes me to a tee, I have an enormous amount of empathy for anyone and everyone who is reluctant to incur any further time commitments! So I thought I'd use my column this month to report on a few ways *Zooniverse* has been used during my initiative in the hopes of sparking the imaginations of those of you who continue to work with students, families, or youth groups.

Professor Sharon Grant<sup>3</sup> has been using *Zooniverse* with students in her *History of Christianity* classes at Hood Theological Seminary. Spring 2020 students formed small teams to work on different projects and relate what they were learning to material covered in her course. Students produced excellent papers reflecting on the relationship between their *Zooniverse* projects<sup>4</sup> and course material. For example, students working on *Hubble Asteroid Hunter* reflected on religious implications of the potential threat of asteroids to life on Earth; students working on *Notes from Nature* reflected on the relationship of plant and animal habitat loss to human health; and students working on *Parasite Safari* reflected on the church's ecological responsibility. Particularly creative papers by students who worked on *Snapshot Elephants for Africa* contained reflections relating social behaviors of male elephants to structures in the black church.

*Zooniverse* has also been used with youth and family programs, including *Penguin Watch* in a confirmation class exploring faith and science at St. Peter's Lutheran Church in Marble Falls, Texas; *Galaxy Zoo* with middle- and high-school youth groups at Sunnyvale Presbyterian Church in

<sup>&</sup>lt;sup>1</sup>https://sciencereligiondialogue.org/projects/zooniverse/

<sup>&</sup>lt;sup>2</sup>http://www.theclergyletterproject.org/Resources/Zooniverse.html

<sup>&</sup>lt;sup>3</sup>https://www.scienceforseminaries.org/school/hood-theological-seminary/

<sup>&</sup>lt;sup>4</sup>https://www.zooniverse.org/projects

Sunnyvale, California; and during predominantly African-American intergenerational summer camps sponsored by Hood Theological Seminary's International Center of Faith, Science, and History (ICFSH) in partnership with the community organization Families and Communities Together (F.A.C.T.).<sup>5</sup> The summer 2021 camp theme included the climate crisis, and in one of the activities, I introduced families to *Fossil Atmospheres*,<sup>6</sup> where everyone can help track how Earth's atmosphere has changed through time.

So as not to completely neglect the "astrobiology" part of this column, I'd like to mention that *Planet Hunters TESS*<sup>7</sup> recently uploaded a new batch of data for citizen scientists to explore. This marks the start of the fourth year of TESS observations, and the latest batch of uploaded data come from a wide swath of stars located in the Northern hemisphere, with the spacecraft's boresight centered on coordinates in the constellation Draco.

In closing, I want to thank my good friend (whom I've yet to meet in person) Michael Zimmerman for helping to promote my initiative through the Clergy Letter Project, and for working so hard to build bridges across scientific and religious communities!

Until next month,

Grace

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<sup>&</sup>lt;sup>5</sup>https://www.hoodseminary.edu/Initiatives/international-center-of-faith-science-and-histo ry/events

<sup>&</sup>lt;sup>6</sup>https://www.zooniverse.org/projects/laurasoul/fossil-atmospheres

<sup>&</sup>lt;sup>7</sup>https://www.zooniverse.org/projects/nora-dot-eisner/planet-hunters-tess