

Astrobiology News November 2015: NASA's Strategic Plan for Astrobiology in the Next Decade

NASA recently released a 2015 Strategic Plan for Astrobiology, which can be accessed and downloaded from their web page.¹ From its inception, NASA's Astrobiology program has focused on three basic questions: How does life begin and evolve? Does life exist elsewhere in the Universe? What is the future of life on Earth and beyond? If the current goals and objectives can be summed up in one word, that word would be "habitability". The six thematic areas that have been identified run the gamut from establishing an inventory of ingredients from which life originated on Earth to exploring the question of whether our limited experience of habitability on Earth has distorted our understanding of the basic set of requirements for a habitable world.

Since I can't possibly summarize the 256-page document in a few paragraphs, I will focus on some of the challenges and opportunities that are outlined in the last section. More specifically, there is growing interest in developing interdisciplinary studies within the "astrobiological humanities" and in how to face challenges that arise in interactions across different disciplines – challenges such as different technical standards, terminology, sets of expectations for behavior, and conflicting stakeholder interests. The Strategic Plan recognizes that developing successful strategies for communicating across disciplinary boundaries can position astrobiologists at the forefront of a growing, and crucial, trend in the sciences.

Lucas Mix and Connie Bertka, who is a former director of the AAAS Dialogue on Science, Ethics, and Religion, note that the results of astrobiology research will have broad societal impact, affecting the way we think about life in the context of ethics, law, philosophy, theology, and many other human endeavors. A few examples of the profound and provocative questions they raise include: What are the hallmarks of a successful definition of life? What role do definitions of life play in cultural and religious cosmologies? What resources are available within various cultural and religious traditions for the incorporation of non-Terran life into worldviews? To what extent is human exceptionalism and/or Terran exceptionalism necessary or desirable? Do humans have non-Terran ethical obligations and can they be agreed upon in a socially plural fashion? Does astrobiology have implications for Terran environmental ethics? Who has speculated on non-Terran life historically? What methods have they used and what theories have they proposed? How do discoveries in astrobiology impact the formation and implementation of laws?

I think the concluding remarks of Mix and Bertka are particularly important. Rather than calling for a particular "voice" to dominate the conversation, they emphasize the importance of dialog between disciplines *and* the independence of each

¹ <https://astrobiology.nasa.gov>

discipline to pursue its own work: "...as astrobiology continues to play an ever-larger role in the broader scientific, academic, and public discussion, it will be important to regularly assess the impact of that discussion on the science and the import of the science for the discussion. Encouragement of independent work in the humanities and social sciences on these topics will aid astrobiology immensely. Opportunities for junior and senior scientists to engage with that work will also be important."

Now all we need to do is find funding for these worthy efforts!

Until next month,

Grace

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