

Introducing the Concept and the Content All at Once – Lessons from Cranbrook Institute of Science for Effective Astrobiology Outreach and Education

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Abstract

Astrobiology as a field is not well known by the public, and is a difficult topic to introduce to the those who have never heard of it before. This presentation will showcase projects and experiences from a museum setting to explore how to best bring up such a complex field of science, and how astrobiologists can make their work as digestible as possible to the general public.

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Introduction: Despite substantial growth as a field and increasing media presence, astrobiology has not yet reached “household name” status. Many are still unfamiliar with what exactly astrobiology is and entails, associating the search for alien life more with science-fiction than academic research. Adding to this problem is the fact that astrobiology is an extraordinarily interdisciplinary science, addressing monumental questions such as 1) how does life begin and evolve, 2) does life exist elsewhere in the universe, and 3) what is the future of life on Earth and beyond (Des Marais et al., 2008)? To answer these varied and complex questions, astrobiology necessarily includes topics related to nearly every major branch of science, including social and medical sciences as human space travel and prospects of colonizing other planets emerge as topics of serious discussion (e.g., Pass 2006).

Museums and Astrobiology: Museums largely exist to educate the public and offer a unique way to introduce the concept of astrobiology through exhibit displays, school programming, outreach events, volunteer opportunities, and more.

Exhibits are the most common way for the public to engage with museums but present a unique challenge: they must provide an educational experience to a wide audience that introduces a topic in a captivating, informative, and easily digestible way, all without the necessity of a presenter and using limited real estate.

Formal astrobiology exhibits are still not commonplace in museums but offer a unique opportunity to introduce this field of science to the public who may not yet know the search for life outside of Earth is an ongoing pursuit by researchers around the world. This presentation will highlight recent efforts by Cranbrook Institute of Science to implement museum-based astrobiology exhibits and programs, the lessons learned along the way, and how this information can be used to inform outreach efforts in the greater astrobiology community.

Making an Exhibit of your Own Research: While most researchers are not affiliated with museums or exhibit development, all scientists can still translate their unique research and specialties in the astrobiology field into education and outreach experiences for the public. This presentation will also explore how researchers can present their own work in an exhibit-like fashion to function as easily understood displays, as well as encourage discussion on how to best introduce a topic as all-encompassing as astrobiology to general audiences.



Figure 1: An example of an interactive “Timeline of Life on Earth” display at an astrobiology-themed event held at Cranbrook Institute of Science. This display introduced the concept of ancient microbial fossils alongside more familiar fossil evidence of life to help bridge gaps in understanding and convey the scale of the history of life on Earth.

References:

- Des Marais et al. (2008) *Astrobiology*, 8(4), 715-730.
Pass, J. (2006). *AIP Conference Proceedings*, 813(1), 1153-1161.