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# SETI BOOKSHELF

## Review

## *Science, Society, and the Search for Life in the Universe* by Bruce Jakosky

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Bruce Jakosky's new book entitled "Science, Society, and the Search for Life in the Universe" masterfully addresses the fundamental issues at the heart of astrobiology. Astrobiology has been avoided by many scientists, scorned and even mocked because they define it as the search for life off the planet earth, where life cannot possibly exist. Thus, astrobiology is dismissed as a waste of time. Very few take the time to form an intelligent opinion or seek to understand the motivations behind the study of astrobiology.

This clear and well-written book engages all, from a scientist in the field of astrobiology, to an uninformed undergraduate student, and the public as a whole. The book reflects society and the influence science has on it. Jakosky manages to lucidly discuss and reason with all.

Jakosky's book successfully merges astrobiology, the philosophical and societal issues that accompany it, the purposes of science, and a well-formulated discussion of the fundamentals that are the basis for astrobiology. He also seeks to draw his colleagues in the scientific world into an understanding and involvement of how science can influence our society.

In the introduction Jakosky brings to light the reality that science is and should be driven as public service. Often, however, there is a disconnect between scientists and the public, and even a greater disconnect between scientists of different fields. Jakosky reveals that astrobiology is especially prone to misunderstandings between the different scientific disciplines in regard to methods and the inability to integrate separate results from different fields. Isolation of disciplines leads to the isolating of astrobiology not only from other scientific fields, but from public understanding as well. He follows that train of thought not only as it applies to the science of astrobiology but also the potential impact that it could have on society as a whole if scientists do not seek to involve, discuss, and interact with the public.

At the beginning of his book Jakosky addresses the question of whether astrobiology, the search for life elsewhere, is a valid one. He discusses relevant topics such as the building blocks of life, their commonality throughout the universe, the timeline and origin of life on earth, and the environment needed for life to evolve. He then clearly shows the potential of life to spawn and succeed elsewhere in the universe.

Jakosky then exposes the truth and error in the discussion of what exactly is the definition of life. The problems he shows are based on real life examples and he explains the different opinions that have been offered over the years. He enlightens the reader to the confusion, and to the impossibility of uniquely defining life and its characteristics with the information currently available.

With those two topics thoroughly covered, Jakosky enters into the debate of whether astrobiology is a legitimate science and what kind of science it is. His eye opening arguments defining science and the concepts behind it reveal that astrobiology does indeed fall within the realm of science. It must be understood, from the past and present, that certain ideas and present wisdom come and go as each passing discovery refines and

changes the currently accepted truth. The philosophy of science itself demands hypotheses based on observations, and these stand until new hypotheses are proven or modify the original. Astrobiology certainly falls within the scope of the scientific method. The fact that life beyond earth has not been proven to exist does not obviate study of how planets and life form and interact. These questions are exactly the questions that astrobiology seeks to understand and explore.

In his closing chapters, Jakosky discusses the why of science, particularly how astrobiology fits into the public eye. He enlightens his audience with topics ranging from previous viewpoints, science as the endless frontier, science as a way of understanding the world, science as exploration and why exploration is valued in our society, and finally impact that life elsewhere in the universe would have on our world.

Jakosky converses about religion and science, the interaction and struggles that they face with each other, covering mostly Western Christianity. He brings to the table different points of view on science and religion by prominent Christian theologians.

The publication's closing remarks touch on the impact of astrobiology on society today. It encourages the search for life as a valid focus and research opportunity that much of the public today embrace. Bruce Jakosky completes his remarks with a call to scientists not just in astrobiology but also in all fields, to reevaluate and change their thinking with regard to engaging and educating the public and each other, so the value and opportunity of science continues to increase.