

SPACE LIFE SCIENCES SYMPOSIUM (A1)
Astrobiology and Exploration (6)Author: Prof. John D. Rummel
SETI Institute, United StatesPOTENTIAL SCIENTIFIC, PRACTICAL, AND CULTURAL IMPLICATIONS OF DISCOVERING
LIFE IN OUR SOLAR SYSTEM**Abstract**

Astrobiologists are dedicated to the discovery of extraterrestrial life, while others may be happy to let the “life” brand speak for them when it is time to attract funding, without seriously contemplated the result of a successful search. A case can be made that indirect space science results should be of interest to the overall potential for life elsewhere in the universe, but it is clear that neither microbial or macro-life will have much to say about them. Nonetheless, it should be no surprise that many space scientists — and a surprising proportion of astrobiologists — have not fully weighed the next steps if they are successful in discovering life in our own neighborhood. It would be a real shock if the work of a human-tended Mars surface laboratory were to prove that life on Mars discovered in the mid-2040s had actually been identified but misplaced in the late 2020s as a result of the first robotically returned Mars sample return mission. Given the practical difficulties of excluding round-trip contaminants, Mars life in the form of a small lichen could easily be seen, but misidentified by the sample analysis/biohazard team as one of the numerous contaminating organisms making the round-trip journey from Earth. It could very well be that Mars life shares DNA, RNA, and proteins with modern Earth organisms, as well. Conversely, experience gained with degraded organics and organisms studied by a lunar-surface laboratory might allow scientists to conclusively prove that a “lichen spore” discovered in the robotically returned Mars sample is actually a martian organism — and one that might no longer be being kept under containment on Earth. Mistakes made in a sample-return mission would certainly invite regulatory agencies into the picture, but it is likely that the attitude of the public would be that microbial aliens from Mars would likely have been on Earth sooner. That aliens are living in our solar system is an accepted view by much of the public that started with the first Star Wars film. And if they are only benign microbes, many will not be interested in their potential beyond their possible use in pharmaceuticals, and as being no threat to a future ability to sell extraterrestrial real estate. Such life would guarantee that life from Mars would not disturb or modify Earth’s cultural norms.