

BREAKING NEWS

2 – 6 SEPTEMBER 2024

LORENTZ CENTER@OORT
LEIDEN, THE NETHERLANDS

Executive Summary

We found extraterrestrial life!

A LORENTZ CENTER WORKSHOP ABOUT
COMMUNICATING ASTROBIOLOGY WITH THE PUBLIC.

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From 2-6 September 2024, members of Leiden University (The Netherlands), the Earth-Life Science Institute (Japan), and NASA Astrobiology (USA) co-organised the Lorentz Workshop on astrobiology communication titled “Breaking News: We Found Extraterrestrial Life!”. The workshop brought together a diverse group of experts from astrobiology, science communication, social sciences, history of science, information studies, and science journalism. The aim was to explore and address the challenges of effectively communicating the complexity and uncertainties of the Search for Life Elsewhere (SLE).

The SLE is at the heart of astrobiology, aiming at understanding the prevalence of life in the universe – a quest with profound scientific, social, and cultural implications. This endeavour combines cutting-edge technological development and interdisciplinary research. As the field develops capabilities towards the possible discovery of life in other worlds, effective and responsible strategies for communicating its results are urgently needed.

The workshop underscored the critical need for a communication strategy that prioritises transparency, clarity and inclusivity, balancing scientific rigour with accessibility. Such an approach is essential for fostering public trust, setting realistic expectations, and ensuring that the communication of astrobiology reflects current scientific and technological abilities, adequately conveying the field’s inherent limitations and uncertainties.

To achieve this, our community of interdisciplinary scholars must champion research in science communication, social sciences, and the humanities. It is vital to deepen our understanding of how astrobiology is portrayed in the media and the public sphere, and to address the significant gaps in knowledge about current communication strategies.

Key recommendations from the workshop:

01 Foster public trust through transparency:

Building public trust requires honesty and transparency in science communication. The scientific community should be forthright about the current state of knowledge in astrobiology, including its uncertainties and limitations. We should balance embargoes with transparency to cultivate trust, and consider making data publicly available as findings are announced. Clear communication, thorough documentation, and effective data storytelling should accompany any data release.

02 Balance scientific rigour with accessibility:

Communication should prioritise clarity and avoid jargon, using visuals, storytelling, and analogies to make complex concepts more relatable, but remaining within the bounds of the data.

03 Manage expectations and avoid overpromising:

It’s crucial to set realistic expectations about the SLE. Emphasise the long-term nature of astrobiology research. Avoid language that suggests the inevitability of life detection, especially promises tied to specific timeframes. Caution should guide any evaluation about the potential progress of the area towards the goal of finding life beyond Earth.

04 **Address ethical and cultural considerations:**

Success in finding life beyond Earth would raise profound ethical considerations. Communication should be sensitive to diverse cultural perspectives, which necessitates diverse teams. Social science research is needed to better understand public responses and the dynamics of information on social media. Discussions on the societal implications of life detection should involve public input well before any discovery.

05 **Strengthen interdisciplinary approaches:**

Support for social science and media research is essential to address key questions about the impact of hype in public trust and understanding of astrobiology. Future planning and scenario building exercises about potential life detection results should involve a broad spectrum of contributors, including historians, philosophers, artists, fiction writers, and literary scholars.

06 **Promote critical thinking:**

In an age of rapid information spread, fostering a culture of scepticism and critical thinking is vital to highlight the iterative process of scientific discovery, the role of peer review, and the importance of independent verification of results. It's also important to raise awareness of the political and social dimensions of astrobiology, including current academic and mediatic incentive structures that may lead to hype and sensationalism.

07 **Tailor communication to diverse audiences:**

Effective communication requires adapting messages to suit a diverse public. Use culturally sensitive language, translate materials into multiple languages, and leverage digital platforms to reach broader and younger audiences.

The workshop highlighted a critical need: coordinated action among scientists, communicators, educators, and journalists within and surrounding the astrobiology community. By uniting our efforts, we can craft narratives that are not only scientifically rigorous but also captivating and accessible, shaping public perception in a way that honours the intricate challenges and uncertainties of the field.

The workshop's recommendations extend beyond astrobiology, calling for broader application across all scientific disciplines. To turn these insights into actionable strategies, we must ask: What are the next steps to ensure these principles receive the attention they deserve? How can we deepen research into astrobiology's portrayal in the media, the societal impacts of hype, and the sociocultural implications of new discoveries?

Global organisations like the International Astronomical Union (IAU), particularly its Commission for Astrobiology (F3) and Commission for Communicating Astronomy with the Public (F2), along with regional bodies such as the European Astrobiology Institute (EAI), the European Astrobiology Network Association, space agencies, and other key stakeholders must lead the change. These entities should promote efforts to secure funding for interdisciplinary research, and drive a strategic push towards improved communication.

As we continue the search for life beyond Earth, we bear a shared responsibility to communicate it with both thoughtfulness and integrity, sparking wonder while managing expectations and ensuring that the story of astrobiology resonates powerfully with audiences around the globe, nurturing a collective curiosity and deepening our appreciation for humanity's quest to understand our place in the universe.
