



National Aeronautics and
Space Administration

Communicating Discoveries in the Search for Life

ExoPAG Meeting
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Daniella Scalice

Communications and Engagement Lead
NASA Astrobiology Program



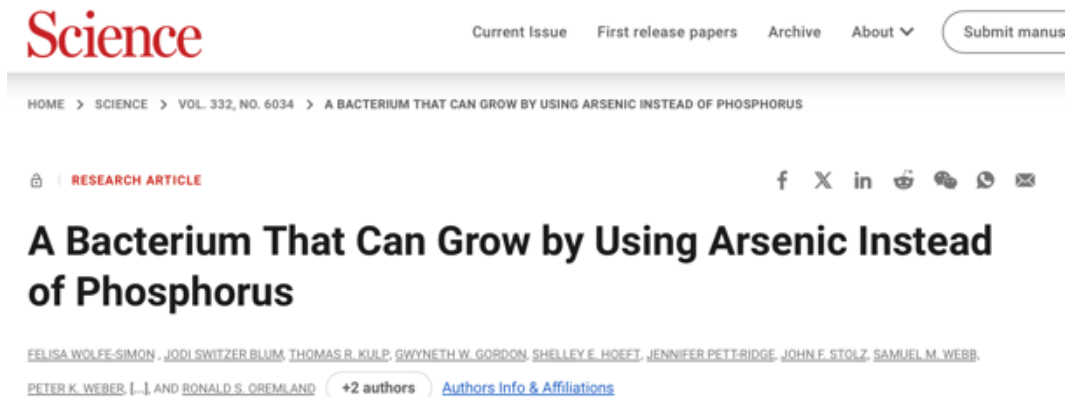
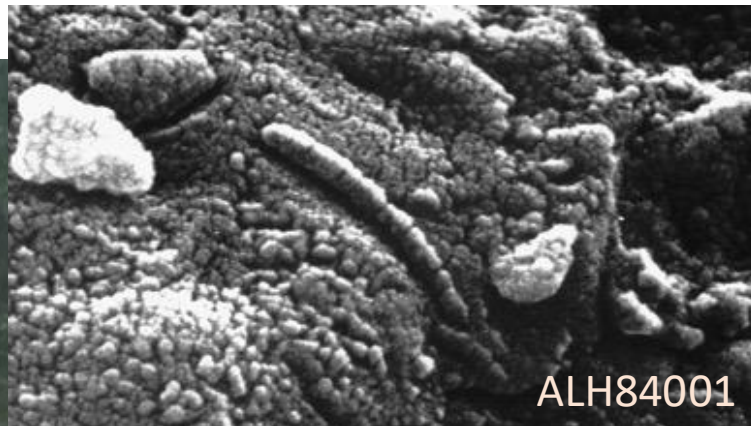
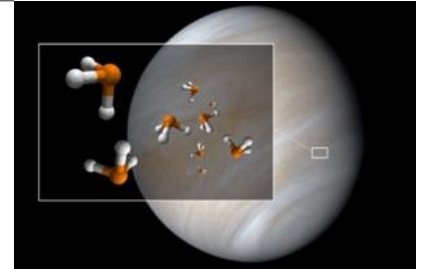
Purpose

- Share our experiences with discovery communications
- Engage your experiences, ideas, feedbacks
- Begin building consilience and community on goals and best practices, toward *shared vision and comprehensive planning* for all discovery comms going forward

Discovery Communications – a Journey

It's complicated! Care is needed...

- ALH84001 – mid '90's
- Arsenic Life – 2010
- Venusian Phosphine – 2020



Discovery Communications – a Journey

It's complicated! Care is needed...

- Perseverance, 2024: Cheyava Falls
- Webb, 2025: DMS in K2-18b, now reversed!

The New York Times

NASA Did Not Say It Found Life on Mars. But It's Very Excited About This Rock.



earlier this year

The New York Times

Astronomers Detect a Possible Signature of Life on a Distant Planet

Further studies are needed to determine whether K2-18b, which orbits a star 120 light-years away, is inhabited, or even habitable.

a few weeks later...

SUSTAINABILITY TIMES

Green news on tech, business and the environment

"I Was Convinced We'd Found Aliens": Scientists Backtrack on K2-18b Breakthrough Before Revealing the Devastating Truth

In a groundbreaking re-examination of exoplanetary data, researchers have significantly weakened previous claims of alien life on K2-18b by expanding the analysis of atmospheric chemicals, casting fresh doubt on earlier findings and reigniting scientific debate.



Rosemary Potter — May 28, 2025 at 4:59 PM 32

- Updated studies found no statistically significant evidence of these compounds, highlighting the need for **robust scientific methods**.

AB Program Work with Discovery Communications

2021: Biosignatures Standards of Evidence Workshop

- Engage the *scientific community* in considering shared standards of evidence for discoveries/results in the search for life
- A generalized framework for biosignature assessment
- Places a discovery on a spectrum of confidence
- Called for engaging communicators...

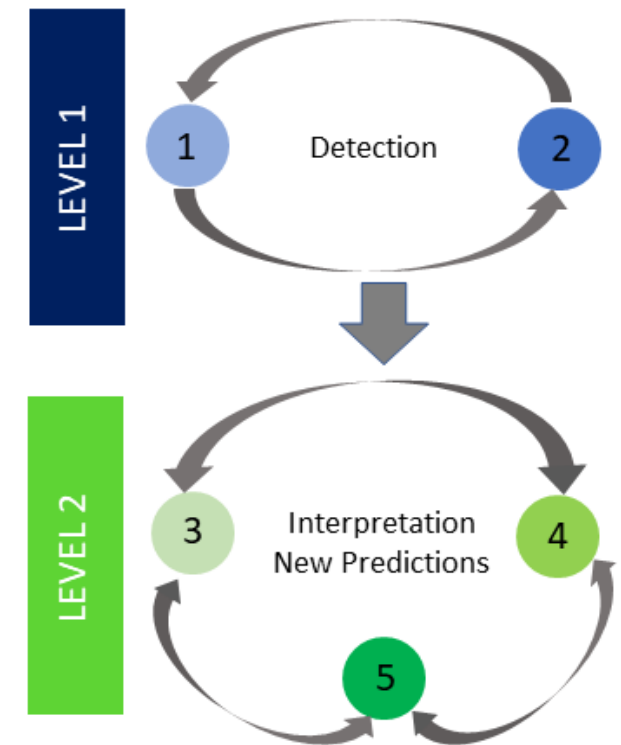
Question 1: Have you detected an authentic signal?

Question 2: Have you adequately identified the signal?

Question 3: Are there abiotic sources for your detection?

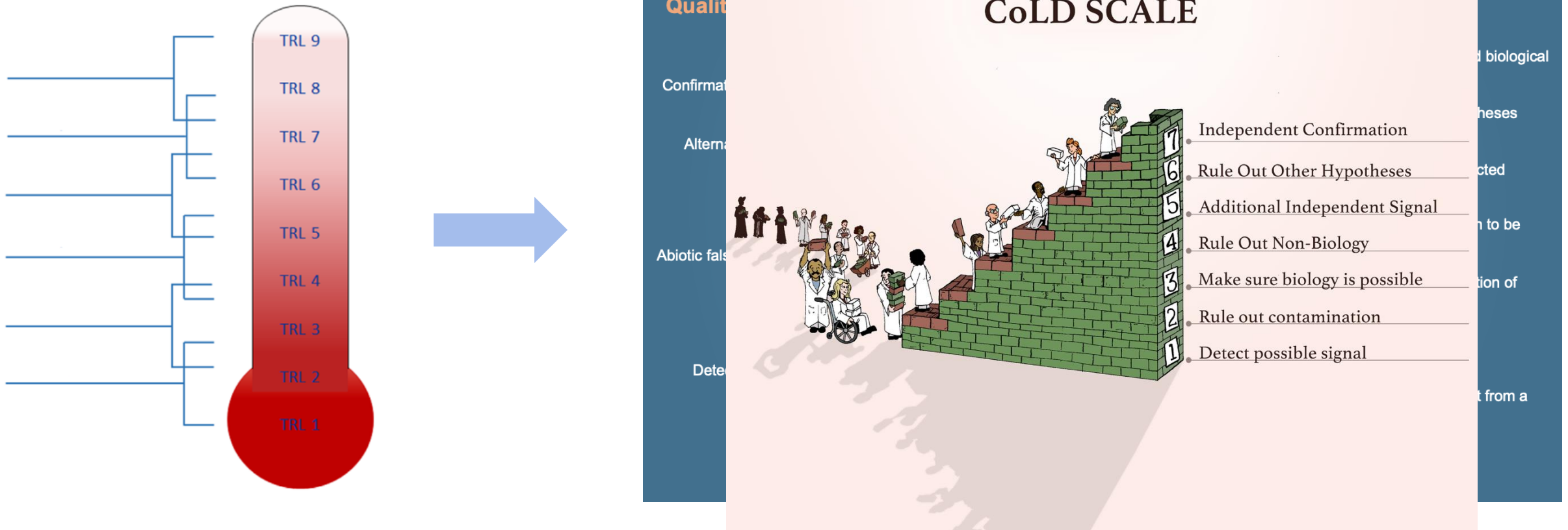
Question 4: Is it likely that life would produce this expression in this environment?

Question 5: Are there independent lines of evidence to support a biological (or non-biological) explanation?



AB Program Work with Discovery Communications

2021: Call for a Framework for Reporting Evidence for Life Beyond Earth



Green, J., Hoehler, T., Neveu, M. *et al.* Call for a framework for reporting evidence for life beyond Earth. *Nature* 598, 575–579 (2021). <https://www.nature.com/articles/s41586-021-03804-9>

Workshops for Discovery Communications

2023/24: Communicating Discoveries in the Search for Life in the Universe (CDSLU) Workshop

- US-based, hosted by NASA Astrobiology
- Engage the *astrobiology, social science, and science communication communities* to explore mutually beneficial and socially responsible paths forward for discovery comms
- Participants engaged in case studies of historical examples, and possible future scenarios

2024: “Breaking News: We Found Extraterrestrial Life!” A Workshop about Communicating Astrobiology to the Public

- Europe-based, hosted by Leiden University, ELSI (Japan), and NASA Astrobiology



Key Learnings and Emergent Issues

Scientific and science communication communities must work together

STRONG COORDINATION

Co-define the roles and the values guiding us all

What is our shared responsibility going forward?

Convey the iterative, methodical, incremental nature of the scientific process

Convey gradations of discovery vs. binary reporting (a finding is life or not life)

Communicate uncertainty, manage expectation/emotion, rebuild public trust

Availability of data – open science initiatives

What constitutes priority access and why?

What is the role of the mission team?

Equity

Sensitivities about terminology

Use of technical terms can introduce misconceptions and alienating people



Co-Creating this Moment

As the scientific/mission community, you are on the leading edge of this discovery!

Build a community where we're all sharing ideas, concerns, innovations

Build a movement where we're on the same page, looking at the same case studies, accessing the same thoughts/ideas/resources, having the same sensitivities...

So that when the time comes for an announcement, we will **work together** to ensure all considerations have been weighed and we're being responsible with the privileges we've been given to do this work

Thank You!

daniella.m.scalice@nasa.gov

