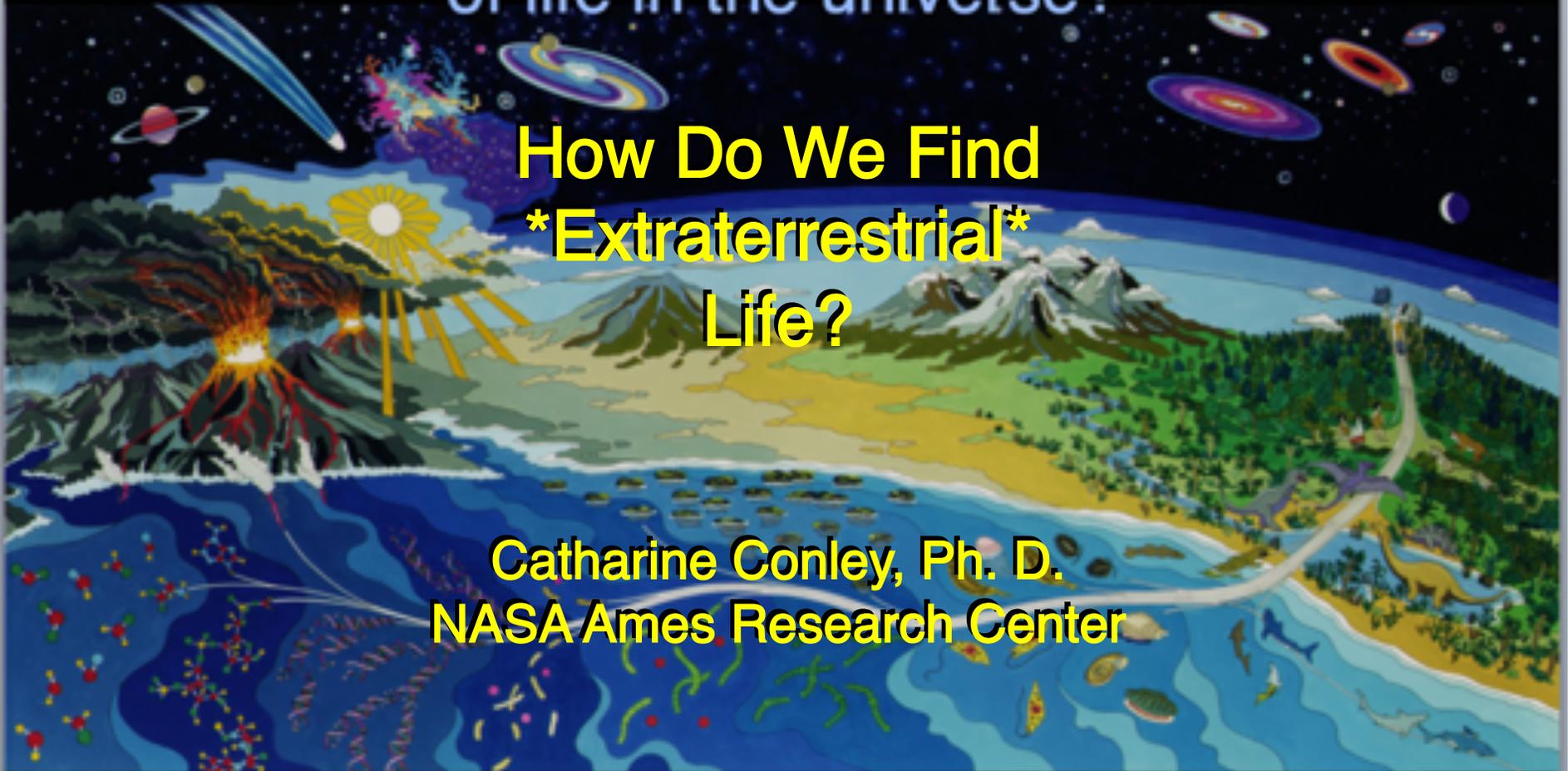


Astrobiology's Big Questions:
What are the origins, distribution, and future
of life in the universe?

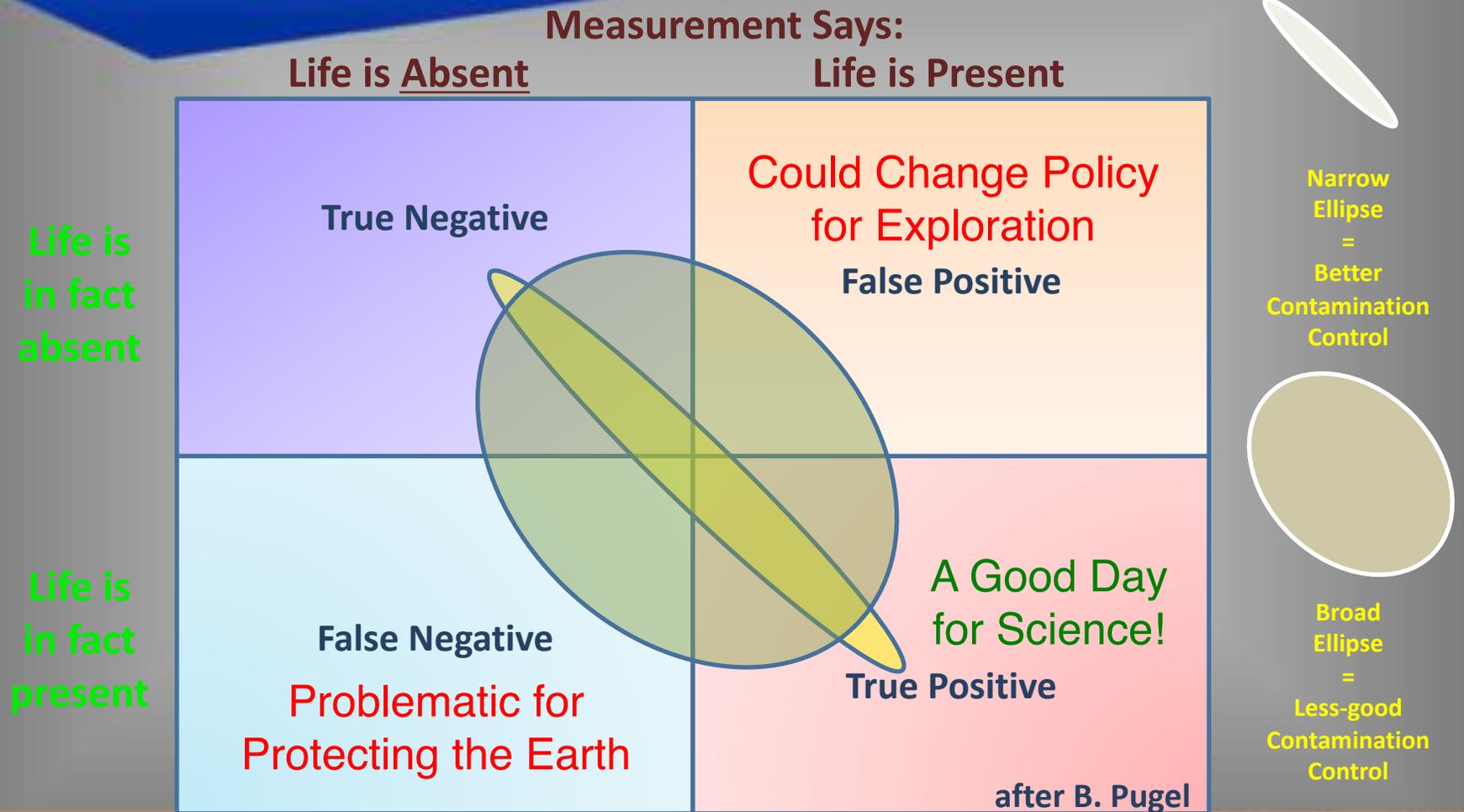
**How Do We Find
Extraterrestrial
Life?**

**Catharine Conley, Ph. D.
NASA Ames Research Center**

It's trivial to find life, if we bring it with us...

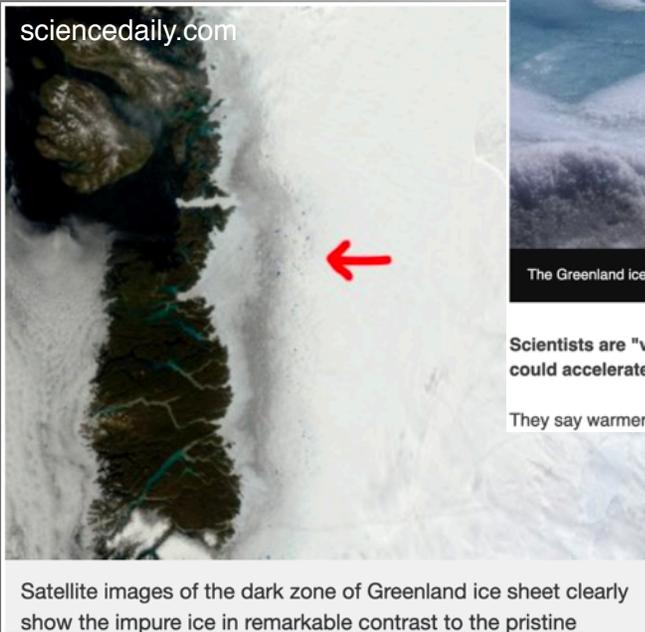


Organic Contamination and Life Detection



Introduced Organisms Can Have Ecological Impacts

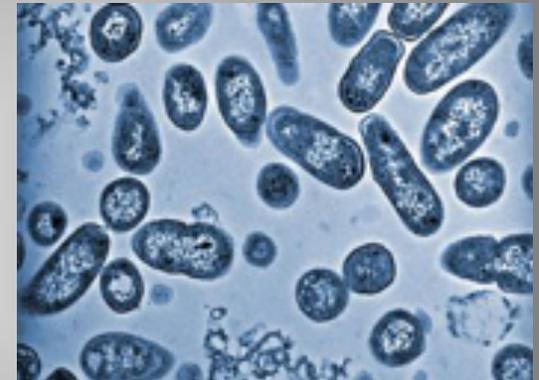
Stable environments are resistant to invasion, but...



Scientists are "very worried" that the melting of the Greenland ice sheet could accelerate and raise sea levels more than expected. They say warmer conditions are encouraging algae to grow and darken the surface.

...organisms with novel capabilities can sweep through a community

Salmonella typhimurium express more virulence genes after culture in space



Exploration with Humans?



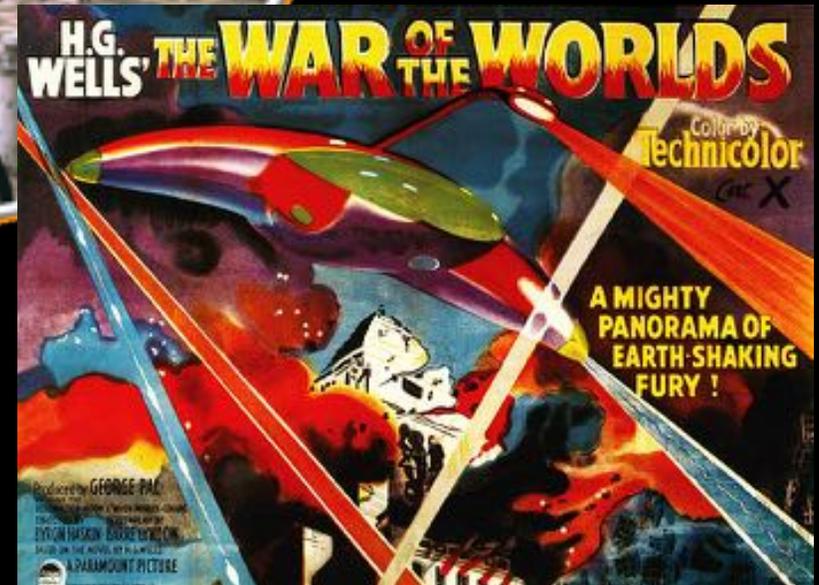
H.G. Wells
1898

And scattered about...
were the Martians—dead!
—slain by the putrefactive
and disease bacteria against
which their systems were unpre-
pared; slain as the red weed was
being slain; slain, after all man's devices
had failed, by the humblest things that God,
in his wisdom, has put upon this earth.

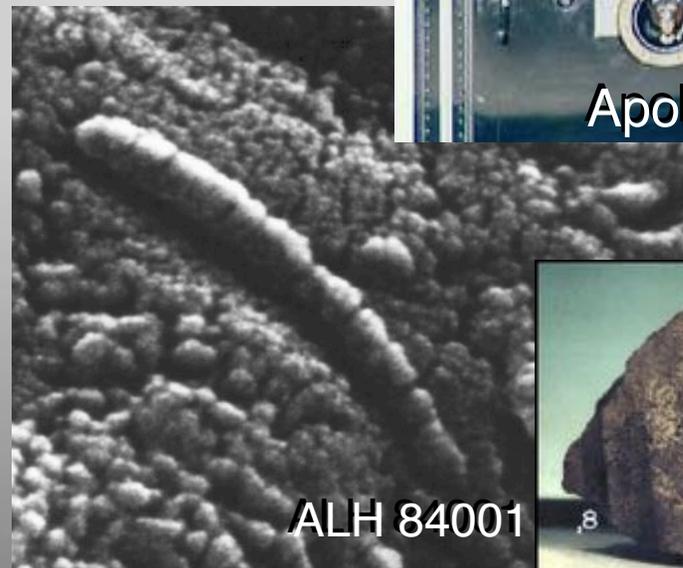
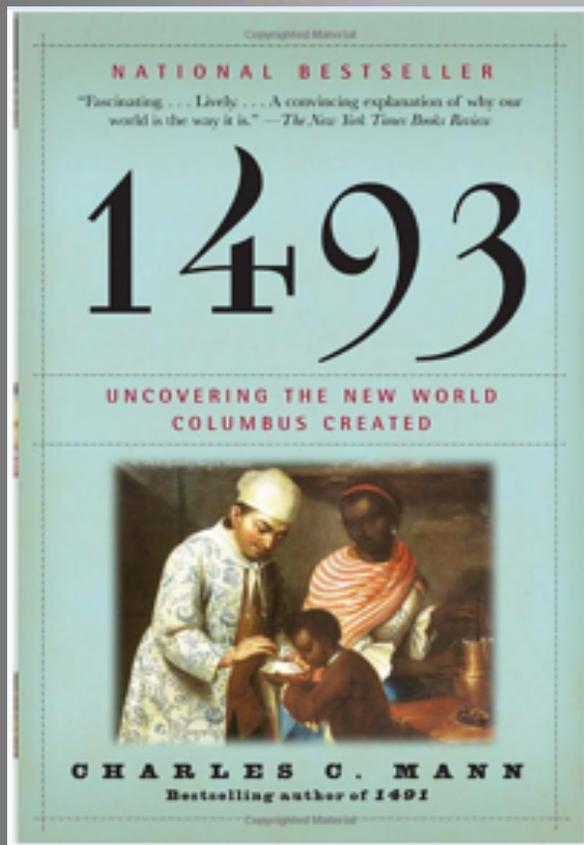
...By virtue of this natural selection of our kind
we have developed resisting power; to no
germs do we succumb without a struggle...



Orson Welles
1938



Space Exploration: Lessons from Earth



How Can We Improve Confidence in a 'Detection Event'?

