



# Searching for Life Across Space and Time: A Workshop

December 5-6, 2016

Irvine, CA

# Statement of Task

The National Academies of Sciences, Engineering, and Medicine will appoint an ad hoc planning committee to organize a workshop that will focus on facilitating an expert dialogue on the current status of extraterrestrial life detection and related issues. Based on our current understanding of the nature and physical and chemical limits of life on Earth, the characteristics of worlds in our solar system and planets orbiting other stars, and the state of the art of relevant technologies, the workshop will address the following questions:

- What is our current understanding of the limits of life and life's interactions with the environments of planets and moons?
- Are we today positioned to design, build and conduct experiments or observations capable of life detection remotely or in situ in our own solar system and from afar on extrasolar worlds?
- How could targeted research help advance the state of the art for life detection, including instrumentation and precursor research, to successfully address these challenges?

A workshop report will document the workshop, including summaries of individual presentations and ensuing discussions. This report will not present consensus conclusions or recommendations.

# Committee Members

**James F. Kasting** (Chair), Pennsylvania State University

**William Bains**, Massachusetts Institute of Technology, University of Cambridge

**Tanja Bosak**, Massachusetts Institute of Technology

**Irene A. Chen**, University of California, Santa Barbara

**Kevin P. Hand**, Jet Propulsion Laboratory

**Christopher H. House**, Pennsylvania State University

**Victoria Meadows**, University of Washington

**Philip M. Neches**, NAE, Teradata Corporation

**Nilton O. Renno**, University of Michigan

**Dimitar Sasselov**, Harvard-Smithsonian Center for Astrophysics



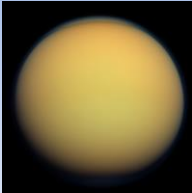
**Gary Ruvkun**, NAS, NAM, Harvard Medical School

**Mark H. Thiemens**, NAS, University of California, San Diego

**Nita Sahai**, The University of Akron

**Margaret Turnbull**, SETI Institute

# The (general) life detection problem

	<b>In situ detection (Solar System)</b>	<b>Remote detection (Exoplanets)</b>
<b>Life as we know it</b>		
<b>Life as we don't know it</b>		<b>?</b>