NASA Astrobiology Institute Overview
29 June 2007

Astrobiology is devoted to the scientific study of life in the universe—its origin, evolution, distribution, and future. It brings together the physical and biological sciences to address some of the most fundamental questions of the natural world: How do living systems emerge? How do habitable worlds form and how do they evolve? Does life exist on worlds other than Earth? The tremendous breadth and depth of this endeavor requires interdisciplinary investigation in order to be fully appreciated and examined.

As part of a concerted effort to undertake such a challenge, NASA established the NASA Astrobiology Institute (NAI) in 1998 as an innovative way to develop the field of astrobiology and provide a scientific framework for flight missions. NAI was envisioned and implemented as a virtual, distributed organization of competitively-selected teams to promote, conduct, and lead integrated astrobiology research guided by the Astrobiology Roadmap. NAI is administered by its Director and a small staff, an office known as "NAI Central," located at NASA Ames Research Center. A history of the NAI outlines the unique path through which it arose and developed.

NAI's mission is to carry out, support and catalyze collaborative, interdisciplinary research; train the next generation of astrobiology researchers; provide scientific and technical leadership on astrobiology investigations for current and future space missions; explore new approaches using modern information technology to conduct interdisciplinary and collaborative research amongst widely-distributed investigators; and support outreach by providing scientific content for K-12 education programs, teaching undergraduate classes, and communicating directly with the public. This mission outlines an integrated, holistic approach to establishing a new field of scientific inquiry, as well as charts the course for exploring some of life's most compelling questions.

NAI's teams are supported through cooperative agreements between NASA and the team's institutions; these agreements involve substantial contributions from both NASA and each of the teams. The NAI Handbook outlines the expectations of membership in the Institute, emphasizing active participation in realizing all aspects of NAI's mission. The team Principal Investigators, together with the NAI Director and Deputy Director, comprise the Executive Council. Its role is to advise NAI management in matters of Institute-wide research, space mission activities, technological development, and external partnerships.

NAI is an achievement in forging interdisciplinary research. Currently composed of 16 teams distributed across ~150 institutions, its membership includes ~600 investigators. The executive summaries from each team's latest annual report describe their recent contributions to astrobiology research. NAI's online Research Archive highlights top scientific discoveries and advances.

Community and collaboration are essential to achieving NAI's mission and effectively addressing the questions of astrobiology. The Director's Seminar Series brings the

community together monthly via videoconference to share scientific progress; the Focus Groups mobilize expertise within the community on relevant topics; and the NAI Newsletter provides the latest news about activities and opportunities. A special focus on the next generation of astrobiologists, exemplified by the NAI's Postdoctoral Fellowship Program and the Lewis and Clark Fund, has contributed to a vibrant, forward-thinking community. NAI Central also organizes Institute-wide workshops, such as the Strategic Impact Workshop, to facilitate collective discussion and planning for NAI's research.

NAI continues to adapt and evolve in a changing environment. Most recently, NAI's 2007 Director's Discretionary Fund competition emphasized a strategic impact on NASA's ability to achieve its goals, especially in the areas of flight missions, cross-program synergies, collaborations with other funding agencies, and external partnerships. Additionally, NAI welcomed four new teams in May, 2007, expanding the Institute's research portfolio in exciting, new directions. Together, these milestones establish a strong foundation for moving into the Institute's second decade.