17th IAA SYMPOSIUM ON VISIONS AND STRATEGIES FOR THE FUTURE (D4)
Space Elevator Critical Technology Verification and Validation Testing (3)

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KEYNOTE: THE ASU INTERPLANETARY INITIATIVE: ADVANCING SOCIETY THROUGH EXPLORATION

Abstract

The Interplanetary Initiative is a pan-university venture at Arizona State University that is pioneering a new model for integrated research and learning, to investigate, communicate, and define our human space future. Humankind's space future necessitates that we fuse disciplines together. We can transform both how we educate the next generation and how we conduct research while finding common cause in our space future.

Our projects are interdisciplinary (science, engineering, philosophy, law, sociology, psychology, art. . .), include partners from the private sector and government, and train students how to solve problems and create knowledge both in teams and in the classroom.

Our Research Process: Teams Built Around Questions

Traditional university research is done under one leader, who controls the direction and outcomes of the work. We promote a team model, rather than this traditional hero model. We begin our pilot process by brainstorming what big questions need answering. Not increments, but questions that are the equivalent of throwing your javelin out over the horizon, and then running to find it.

Six of our current 15 research pilots spring from this "big question" process (see https://interplanetary.asu.edu/). Other pilots are focused on specific tech or learning advances, including rapid responsive missions, new instruments, and ISRU. All are under project management. We have over 150 participants from 25 ASU units and 15 outside partners.

Two key factors for our early success appear to be (1) asking input from all people in choosing directions, so there is broad participation and ownership; and (2) choosing questions that are deeply motivating – bigger than most research questions, compelling, and worthy of our time.

The Future of Education: Exploration Learning

Content delivery is no longer the differentiator in education. Learners need to abandon passive acceptance of delivered content and become comfortable with and motivated to solve unsolved problems. Students must learn the skills and processes needed for answering tomorrow's questions, not just absorb the content discovered to date.

Through exploration learning, learners should:

- Recognize and be unafraid of unsolved problems,
- Be willing to work toward answers in steps over time, and
- Have patience with ambiguity and dead ends.

We are seeking partners from all segments of the space community. Please contact us if you are interested in research or education related to our space future.