

CFD 2030 Panel

AIAA SciTech

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Key Factors for the Success of a Grand Challenge (GC) Problem

- If achieved, will have a **significant impact** on vehicle/mission risk, or project life cycle cost (such that someone cares)
- Is challenging “enough,” yet has attainable, measurable **intermediate successes** (not dependent on a physics breakthrough)
- **Addresses some imminent change** in the landscape or infrastructure of how “business” is conducted (such as, aging facilities may not be available, risk posture will be significantly different, or workforce/resources will be reduced)

Issues Surrounding Advocacy for Resources in Support of Specific Grand Challenge Problems

- GC problems are, by definition, long-term.
 - Our programs and missions of record are the top priority, and longer-term, less tangible **investments are difficult to sustain**
 - **Leadership turnover** means loss of high-level buy-in and the need to constantly “re-sell” initiatives
 - Mid-level leadership/**advocate turnover** may become a challenge as the workforce becomes more transient
- GC problems cross-cut missions, programs, and organizations:
 - Although there may be multiple parties interested in the outcome, there is **no one organizational “owner”** of a GC; requires much coordination
 - NASA’s System Capability Leads, NESC Tech Fellows, and engineering organizations are the stewards of the technical community’s “health,” but **none have significant budgetary authority.**