

ENTRY, DESCENT AND LANDING TECHNOLOGY INVESTMENTS WITHIN NASA'S SPACE TECHNOLOGY MISSION DIRECTORATE. Michelle M. Munk¹, ¹NASA-Langley Research Center (Mail Stop 489, Hampton, VA 23681, Michelle.M.Munk@nasa.gov).

NASA's Space Technology Mission Directorate (STMD) has several investments in Entry, Descent and Landing (EDL) technologies, across its nine programs. These investments span low-Technology Readiness Level (TRL) concepts through flight demonstrations. This presentation will give a top-level view of the various investments, and how they relate to the NASA Space Technology Roadmap (TA-09) and other Agency activities.

STMD investments in EDL technologies are focused on those in the mid-TRL range (3-6), which are managed within the Game-Changing Development (GCD) Program. The portfolio in GCD contains five projects: Hypersonic Inflatable Aerodynamic Decelerators (HIAD), Adaptive Entry and Placement Technology (ADEPT), Propulsive Descent Technologies (PDT), Entry Systems Modeling (ESM), Thermal Protection System Materials (TPSM), and Mars Science Laboratory Entry, Descent and Landing Instrumentation 2 (MEDLI2). A brief overview of the content, major accomplishments, and maturity of each of these projects will be given.

The STMD's programs in the lower TRL range include NASA Innovative Advanced Concepts (NIAC), Small Business and Innovative Research (SBIR), and Space Technology Research Grants (STRG). The presentation will describe efforts to increase the number and quality of EDL-related solicitations and investments in these "pipeline-feeding" programs. These programs engage universities, future employees, and small businesses in meaningful activities that will keep the EDL state-of-the-art moving forward.

On the other end of the TRL spectrum are STMD's Small Satellite Program, Launch Opportunities Program, and the Technology Demonstration Missions. Each of these contains, or will contain, EDL activities to flight test and demonstrate promising capabilities.

Despite the STMD budget levels being reduced compared to what was planned, the new mission directorate has made EDL technologies a priority investment area. These developments will build a stronger technical base, and will mature the capabilities needed to allow NASA to accomplish more challenging future exploration missions.