Opportunity Taken: The Value of Diverse Career Experience

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Alvin Seiff Memorial Lecture

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Diverse Experience Blessings*

- Student
- Aerospace technologist and systems engineer
- Project, program and line manager
- Educator
- Policy maker

*Continuously mentored
Through passion and dedicated effort, the EDL community has developed proven solutions to seemingly insurmountable challenges.
Phenolic Impregnated Carbon Ablator (PICA)

- Invented in 1997, 0.8 m uni-piece heatshield enabled Stardust 1200 W/cm², 12.7 km/s Earth return
- Technology investment continued for possible use on Orion
- Tiled, 4.5 m heatshield developed for MSL, when thermal issue was discovered with the baseline SLA TPS post CDR. Flight in August 2012.
- Tiled, 3.6 m PICAx heatshield for Dragon flight proven
- PICA-flex invented in 2009 for potential heavy mass Mars missions
  - Incorporates phenolic into flexible carbon felt rather than rigid carbon substrate
  - Arcjet and laser testing shows PICA-flex to be a viable ablator (up to 400 W/cm²)
  - Broad and diverse range of applications
What Does the Future Hold?
Take the Opportunity

• Technology advances are required for NASA’s future missions
• Technology advancement requires risk taking
• Innovative solutions often come from diverse experiences and the mindset that failure is an option.
• Hard work is required to demonstrate technical feasibility
• Capitalize on lessons learned and the community experience
• Create your opportunity
• Work passionately towards bold challenges