# AMTAS Morphing Structures and Multifunctional Materials

- Multifunctional structures include capabilities morphing, sensing, structural, damping, self-healing, etc
- Many interesting possible applications that cut across industries
  - Buildings – structural insulation
  - Automotive – safety features, tires
  - Wind power generation – acoustic, thermal
  - Aviation – morphing, multifunctional composites
- Examples of capabilities to expore
  - Tailored composites – use CTE mismatch
  - Tailored response to mechanical loading or performance
  - Integrated damping and acoustic attentuation

# Tools

Common feature is need for tools

- Modeling, design, analysis
- Certification and safety
- Fabrication/Manufacturing methods
- Testing to support applications design and certification

# Recommendation

- SBIR style program
  - Tools
  - Application lab scale
  - Application full scale
- Explore other industry uses – largest bang for your buck drives application
- Review of methods and tools available for multifunctional structures that enable aviation safety and certification applications
  - State of the art, what's out there