# Education, Outreach, & Workforce Development

**For questions, email:**
**Robert Howard**
**NASA Johnson Space Center**

### CONTRIBUTORS

» **Tucker Hamilton**
USAF

» **Robert Howard**
NASA Johnson

» **Emily Kusulas**
University of Michigan

» **Chris Moore**
NASA Headquarters

» **Jeff Smith**
Ball Aerospace

» **Jeff Woytach**
NASA Glenn

**Potential types of activities include:**

» Component Fabrication
» Design Competition
» Guided Exercise
» Hackathon
» Space Mission Simulation

**Activities should promote or engage one or more of the following skills areas:**

» 3D Printing
» Art
» CAD
» Chemistry
» Computer Programming
» Math
» Music
» Physics

Education, Outreach, and Workforce Development is an expansive zone of ASCEND that includes technical papers, case studies, professional development activities, and outreach opportunities. ASCEND will extend the knowledge exchange inherent in conferences and workshops to the aerospace workforce to enhance their abilities and skill sets for the future. This will help to create an engineering workforce pipeline of information to solve real aerospace challenges.

## Technical Papers & Case Studies

Initiatives and programs come and go, often without any documented analysis to verify their effectiveness. Examples of successful activities, in-depth analyses of educational programs, outreach initiatives, and workforce development programs will help to identify what is and is not working. AIAA sections, external organizations, conference organizers, and others who have conducted education, outreach, and workforce development activities are strongly encouraged to document their experiences and results.

**Topics of interest include, but are not limited to:**

» Case Studies, Metrics, and Reporting on Outreach Initiatives
» Best Practices for Education and Outreach Activities
» Educational or Workforce Analysis
» Outreach or Public Engagement Analysis

## Tutorials & Professional Development Activities

Software vendors, university faculty, and subject matter experts are encouraged to propose to provide training and/or certification courses on space-related topics, in areas such as computer aided design (CAD), computational fluid dynamics (CFD), computer aided engineering (CAE), requirements management, ITAR/EAR compliance, thermal/structural analysis, trajectory analysis, numerical computing tools, programming languages, cloud computing, and applications of machine learning and data science. Consideration will also be given to tutorials on non-technical skills, such public speaking, leadership, or project management.

## Outreach Activities - STEAM Pilot Program

ASCEND seeks to engage the next generation…today! AIAA will partner with student organizations, youth-serving organizations, schools, community organizations, individuals, and others to use the platform of ASCEND as a means to engage both local and remote youth in space-focused activity. Providers should propose to conduct activities at ASCEND that are hands-on and engage youth in a manner that transfers aerospace education, creates excitement, and promotes STEAM-based space career paths. Activities should be appropriate for being conducted inside a typical conference exhibit hall or conference room and should target specific numbers and age-ranges of students. Youth-serving organizations should propose to bring a specific number and age range of students interested in being exposed to space-related opportunities. AIAA is especially interested in partnering with youth-serving organizations that impact underrepresented student populations.