Abstract Submittal Form

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**Title:** Application of Additively Manufactured Components in Rocket Engine Turbopumps

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**Primary Author** (this author will receive all correspondence regarding participation in this program)

- **Name:** Marty Calvert Jr
- **Organization:** NASA MSFC
- **Address:** ER31
- **City:** Marshall Space Flight Center
- **State:** AL
- **ZIP Code:** 35812
- **Phone:** 256-544-1538
- **Fax:**
- **Email:** marty.r.calvert@nasa.gov

**2nd Author** Please provide full contact information for each author.

- **Name:** Andrew Hanks
- **Organization:** ER21
- **Address:** ER21
- **City:** Marshall Space Flight Center
- **State:** AL
- **ZIP Code:** 35812
- **Phone:** 256-961-0816
- **Fax:**
- **Email:** andrew.hanks@nasa.gov

**3rd Author** Please provide full contact information for each author.

- **Name:** Preston Schmauch
- **Organization:** ER42
- **Address:** ER42
- **City:** Marshall Space Flight Center
- **State:** AL
- **ZIP Code:** 35812
- **Phone:** 256-544-1218
- **Fax:**
- **Email:** preston.b.schmauch@nasa.gov

**4th Author** Please provide full contact information for each author.

- **Name:** Steve Delessio
- **Organization:** Jacobs Engineering / ESSSA Group
- **Address:** ER41
- **City:** Marshall Space Flight Center
- **State:** AL
- **ZIP Code:** 35812
- **Phone:** 256-544-7431
- **Fax:**
- **Email:** steven.m.delessio@nasa.gov

**Approval**

- [ ] Approved by Management (indicates required resources are available to prepare, submit, and present this paper at the above subject JANNAF Meeting)

**U.S. Citizenship**

- [ ] The presenting author is a U.S. Citizen qualified to receive unclassified, limited-distribution information. Attendance at this meeting is restricted to U.S. Citizens.
The use of additive manufacturing technology has the potential to revolutionize the development of turbopump components in liquid rocket engines. When designing turbomachinery with the additive process there are several benefits and risks that are leveraged relative to a traditional development cycle. This topic explores the details and development of a 90,000 RPM Liquid Hydrogen Turbopump from which 90% of the parts were derived from the additive process. This turbopump was designed, developed and will be tested later this year at Marshall Space Flight Center.