NASA EPSCoR and Stennis Space Center Research Discussions

November 2022 NASA EPSCoR Virtual Caucus Meeting

Friday, November 18, 2022
Research Discussions with Stennis Space Center

Goal

- Establish connections between researchers at Stennis Space Center and EPSCoR Jurisdictions

Planning Committee Member

- T. Gregory Guzik, Director LA, Chair NASA EPSCoR Caucus
- Denise Thorsen, Director AK
- Caitlin Milera, Director ND
- Mitch Krell, NASA EPSCoR Deputy Project Manager
- Anne Peek, NASA SSC Chief Technologist
- Lauren Underwood, NASA SSC Technology Transfer Manager
List of Research Topics of Interest to SSC

- Intelligent Integrated System Health Management for Ground and Space Applications
- Autonomous Operations Capability for Ground and Space Applications
- Advanced Propulsion Test Technology Development
- Advanced Rocket Propulsion Test Instrumentation
- Advanced Manufacturing Techniques and Materials
Goal: Inform NASA SSC about EPSCoR Program and Showcase Research Capabilities at Jurisdictions

1. Modelled on Flash Talk session from January 2022
2. ~1.5-2 Hours in afternoon (Eastern) January 2023
3. Select ~20 speakers from submissions
4. Each speaker will be given ~2 minutes to cover their slide
5. Talks selected from submissions by planning committee
6. All submitted slides and biographies will be distributed to SSC in a researcher booklet

Format

- LSU Hosted Microsoft Teams Meeting
One submission per researcher, no limit per jurisdiction

Researcher Submissions

• 1 Standard 4:3 10 in. x 7.5 in. Slide
• Should highlight research capabilities and 2-3 min worth of material
• No video or animations
• Biography
  • Submit via Word Document
  • Includes:
    1. Contact information
    2. Topic Area
    3. Title for Flash Talk
    4. Headshot
    5. Brief biography/research interest summary
Intelligent Flight Systems and Trusted Autonomy: Smart cities, automation, robotics

Dr. Marcio de Queiroz

Louisiana State University
Department of Mechanical & Industrial Engineering
Innovation in Control & Robotics Engineering (iCORE) Laboratory
mdeque1@lsu.edu; (225) 578-8770

Marcio de Queiroz is a Professor of Mechanical Engineering at LSU. He’s the director of the iCORE Lab and coordinator for the Robotics Engineering minor. His research expertise is at the intersection of systems theory, control engineering, and robotics. Since 2011, Dr. Queiroz’s primary area of activity has been coordination control of multiple autonomous robotic vehicles. Such systems are intrinsic to missions that involve air traffic management, search and rescue, area coverage, perimeter protection, or co-transportation of large objects. The iCORE Lab is home to TIGER Square, an experimental testbed for multi-agent systems, which uses small, low-cost, custom-built, differential-drive robots as the mobile robot platform. The testbed can be operated in both centralized and decentralized modes of sensing, communication, and control.
Follow On Roundtables

Allow EPSCoR Researchers to meet with SSC Researchers

- ~1 week after the Flash Talks
- Open to all jurisdiction researchers who submitted Flash Talks
- Will again target ~2 Hours in the Afternoon Eastern Time

Format

- LSU Hosted Microsoft Teams with breakout rooms
- Breakout room for each research topic with multiple, but a small number of, jurisdiction participants
- Jurisdiction participants will be able to visit multiple breakout rooms during allotted time
- Will provide additional breakout rooms for researchers to break off for one on one discussions if needed
Following the RoundTable meeting Directors should meet with their researchers

- Determine potential for new collaborations with the Center
- Support travel (via RID funding) of jurisdiction researchers to meet with Center researchers and discuss collaborative research
- Keep in mind that the Center will require ~4 to 8 week, depending on citizen status for processing visitor passes

Post event assessment survey

- Later in Spring 2023 we will distribute a survey to NASA EPSCoR Directors to assess the outcomes and impact of this process
Tentative Timeline of Events

Research Topics Released: November 30
Flash Talk Submission Due: December 21
Presenters Selected: Mid-January
Virtual Flash Talks: End January
Virtual Round Tables: Early February