Space Engineering Research Center

Spring Seminar Series Announcement

New Seminar Series! The University community is invited to participate in the first seminar series presented by USC's Space Engineering Research Center (SERC). The SERC is a research center where graduate and undergraduate students can collaborate with professors and experienced engineers to gain hands-on experience with hardware-based projects in the space domain. Current research areas include: Microsatellites, Satellite Communications and Tracking, Lunar Lander technology (LEAPFROG), Satellite Servicing and Docking experimentation, technologies for Rendezvous and Proximity Operations, Advanced Propulsion, and Earth-based simulation testbeds for microgravity frictionless environments. Please visit our website for more information about the SERC.

Seminar Location on Campus: The seminars are from 5-6pm GFS. Light refreshments will be provided at the beginning of the seminar.

Seminars Topics Planned for Spring 2020:

- **January** – **"Big Ideas for Space: SERC projects for 2020".** Dave Barnhart, Director SERC. Abstract: The SERCs past/current projects will be presented, along with its approach to hands on space technologies and satellite development that involves students, faculty and staff at USC.
- **February** – **"LEAPFROG: USC's Flight Testbed re-thinking Planetary Landers for Next Generation Exploration".** Aloissia Russo and David Bernachia, Masters Candidates. Abstract: The SERCS LEAPFROG project will be presented and key technologies being developed to re-architecture how a lunar lander is used on the moons surface.
- **March** - **"Genetic Algorithms for Space Swarms:".** Rahul Rughani, PhD Candidate. Abstract: Brand new technologies are being applied to operating multiple spacecraft in close proximity for safety and efficiency. Research using genetic algorithms applied to optimization will be presented, as well as investigations into using the ISI Quantum Computer to expand solution sets.
- **April** – **"Trojans in Space: USC Satellite Flight Projects".** Dave Barnhart & Student Leads. Abstract: The SERC has built and launched USC's first satellites. Past and current satellite projects will be presented, along with concepts for collaboration for new science and research.
- **May** – **"Talking to Space: USC' Satellite Ground Communications Station".** Abstract: USC's satellite ground communications station exists on campus, and is used to teach graduate students how to communicate and control satellites. The Ground station will be presented with operations and research projects past and present.

The Space Engineering Research Center (SERC) is dedicated to disruptive space engineering, research, and education – including hands-on build, test and flight demonstrations of spacecraft and satellites. SERC seeks to challenge traditional methods of space R&D, manufacturing, and exploration with approaches that dramatically reduce costs, enable novel capabilities, and support vital democratization of the space domain.

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