

SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)  
On Track - Undergraduate Space Education (3)

Author: Mr. Mark Becnel  
RadioBro Corporation, United States, mark@radiobro.com

ENABLING NEAR-SPACE RESEARCH WITH THE 2015 BALLOONSAT WORKSHOP

**Abstract**

Ballooning has become a common platform for researchers to investigate the atmosphere, perform Earth-observation, and develop systems for spacecraft. Large balloons can carry tons of mass to altitudes over 30km and hold for weeks. Small balloons are proving to be a cost-effective flight platform to perform science as well, reaching 30km carrying only 5kg of payload. By teaching college students to use ballooning as a science platform, the students are better able to perform missions in science, engineering, and community outreach. In January 2015, the 2015 BalloonSat Workshop was held, hosting 100 students and instructors from colleges and universities in the United States. The 11 teams were trained on ballooning, introduced to designing embedded systems, and were able to perform their first near-space balloon flight. The teams were challenged to return to their institutions and continue ballooning in support of their science, engineering, and outreach goals. The author will discuss the 2015 BalloonSat Workshop event and the balloon flights. The author will share the success of the home institution teams in their first independent flights. The author will suggest the impact the workshop training has had in terms of an increase scientific capabilities and public outreach.