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The Creation of a PPPL-NASA Collaboration for Science Education ANDREW ZWICKER, JOHN DELOOPER, JAMES T. MORGAN, JERRY L. ROSS, STEPHANIE A. WISSEL, PPPL — For the past three years, PPPL's Science Education Program has collaborated with NASA's Microgravity University and The College of New Jersey's Departments of Physics, and Mechanical Engineering. The collaboration provides a unique academic experience for undergraduate students to successfully propose, design, fabricate, fly and evaluate a reduced gravity experiment of their choice over the course of four-six months. Our collaboration has focused on dusty plasmas that measured the sheath electric field using dust particles as probes, dust acoustic waves, and particle dynamics in microgravity . Recently, the collaboration was expanded to include the NASA Explorer School program and K-12 teachers in our DOE-sponsored Academies Creating Teacher-Scientists (DOE-ACTS). Here, experiments focused on measuring convective flow in a varying gravitational field using a plasma ball and "glitter lamp." Data from the experiment was used to create new curricula for 6-12th grade physical science classes. It is expected that both programs will expand in future years.

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