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Project-Based Learning with 3D Printing and Embedded Electronics.[1] JOHN FEDERICI, SAMUEL GATLEY, IAN GATLEY, NJ Institute of Technology, ADDLAB TEAM — Project-based learning, especially when focused on real-world problems and applications, has important implications with regard to student engagement. In this model students collaborate in teams and develop skills in project management, technical and business analysis, design, social interaction, and idea presentation. This mode of learning significantly enhances learning experiences: students' accomplishments have a lasting effect and build over time via 'learning by doing'; students are able to generalize skills through diverse educational settings; and students internalize what they learn and produce. Using a project-based learning approach, the Physics Department at NJIT assembled an interdisciplinary group of undergraduate students who utilized 3D printing and embedded computing to design, fabricate, and test prototype components and devices. In this presentation, several examples from the students' interdisciplinary efforts will be showcased which contributed to the research mission of the team.

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