**Project Title:** Collaborative Research: Assessment of Product Archaeology as a Platform for Contextualizing Engineering Design

**Principal Investigator:** Dr. Steven Shooter, Professor of Mechanical Engineering

**Co-PI:** Dr. Charles Kim, Associate Professor of Mechanical Engineering, Dr. Joseph Tranquillo, Associate Professor of Biomedical and Electrical Engineering

**Funding Agency:** National Science Foundation (NSF)

**Award Amount:** $65,649

**Award Period:** 2012-2014

NSF funds Drs. Shooter, Kim, and Tranquillo to develop sustainable and scalable novel approaches for educating engineering students to understand the global, economic, environmental, and societal context and impact of engineering solutions. In this project, students will be required to consider products as designed artifacts with a history rooted in their development. With such an archaeological mindset, students will be tasked with evaluating and understanding a product's (and its designers') global, societal, economic and environmental context and impact. These hands-on, inductive learning activities require students to move beyond rote knowledge, to hone their engineering judgment, extend and refine their knowledge, and apply their knowledge in meaningful ways to realistic challenges. This pedagogical framework thus provides students with formal activities to think more broadly about their professional roles as engineers.

The broader impacts of this collaborative project include the engagement of nearly 1750 engineering students and 20 faculty members from 4 different disciplines across a network of 6 diverse institutions. In addition, outreach and engagement initiatives will connect students to other universities in on-line learning communities, to local K-12 students and teachers, and to regional communities.

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