Systems Engineering Research Center (SERC) Capstone Marketplace Objectives
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SYSTEMS ENGINEERING RESEARCH CENTER

SERC Capstone Marketplace Objectives

- The System Engineering Research Center's (SERC) objective in Capstone research is to reinforce system engineering "thinking" in students doing senior design projects, by presenting challenging problems and system approaches to good solutions.

- SERC's Capstone Marketplace connects student teams to government "customers" with real problems.

- Interactions between student teams and government customers model best industry practices in technical development efforts.

- Basic "system" approaches to problem solving are emphasized. Elaborate system engineering processes and overheads are not used.

- Involvement with SERC Capstone Marketplace projects provides students exposure to DOD and other government technology development activities

- Despite current challenges in the 2020-2021 Academic Year, the Capstone Marketplace will encourage research and development approaches that can allow students to perform effective research despite access and other health and safety restrictions.

- **Promising Capstone projects can be transitioned to research opportunities with government program offices.**

- **Multidisciplinary Team effort**—Ideal solutions to "problems" require teams to cut across engineering, management, business, and other disciplines

- **Direct contact with "real" customers**. The Marketplace provides direct contact with Subject Matter Experts who actively participate in guiding problem solutions

- **Critical thinking**. Deciding "what" the problem is. Evaluating different approaches to solve problems. Team decision making based on technical, schedule, and resource allocations. Emphasis on students' skills in forming, justifying, presenting project decisions and outcomes.

- **Mirroring business models of small entrepreneurships** Organization, planning, technical effort, schedules, status and reviews, financial tracking, risk management, and reporting that duplicate best business practices.

- **2 semesters of activity**. Nominally 3 hour credits each semester.

- **Tangible "deliverables".** The object of the SERC Capstone is to "make something" (hardware or software) that has application to a "problem".

- **Value to government customers**. Student efforts produce research, analysis, prototypes, "out of the box" approaches and other technical data valued by their customers.