



DEPARTMENT OF BIOMEDICAL ENGINEERING

# 2021 SEMINAR SERIES

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PH.D.**

Professor, Biomedical Engineering

*Duke University*

**5/7/21**

[Zoom link HERE](#)

Passcode: BMESeminar

10:30 a.m.

**ABSTRACT:**

## *ENHANCING UNDERGRADUATE STEM COURSES THROUGH AUTHENTIC PROJECTS*

Learning opportunities for students that involve authentic and realistic challenges can be difficult to scope and implement in the classroom; however, benefits to students can be substantial. One teaching method is to structure a course around a complex, open-ended problem or project. In her project-based learning course, first-year engineering students tackle client-based engineering design projects and build prototypes. In her problem-based learning course, student teams create mathematical models that capture complex physiological systems to elucidate differences between healthy and diseased states. Assessment of technical and professional skills demonstrate gains within the semester and extend more than a year beyond the course. Successes and failures of teaching using authentic problems and projects in undergraduate engineering courses will be discussed as well.

**BIOGRAPHY:**

Ann Saterbak is Professor of the Practice in Biomedical Engineering and Director of the First-Year Engineering Program. Since joining Duke in June 2017, she launched the new *Engineering Design and Communication* course. In this course, first-year students work in teams to solve community-based, client-driven problems and build physical prototypes. Prior to Duke, she taught at Rice University, where she was on the faculty since 1999. Saterbak is the lead author of the textbook, [Bioengineering Fundamentals](#). At Rice and Duke, Saterbak's outstanding teaching has been recognized through five school- and university-wide teaching awards. For her contribution to education within biomedical engineering, she was elected Fellow in the Biomedical Engineering Society and the American Society of Engineering Education.



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