Session Goals and/or ABET Criterion (Criteria) Addressed
The goal of this session is to explore one of the most successful instruments for measuring student learning gains and to understand how this instrument can be used as a model for constructing similar instruments in other subjects commonly found in engineering curricula. The ABET student outcomes of importance here are the ones related to student understanding of fundamental concepts, in particular from Criterion 3, program outcomes (a) an ability to apply knowledge of mathematics, science and engineering; and (i) a recognition of the need for, and an ability to engage in life-long learning.

Presentation Format
This workshop will be conducted using a combination of lecture and active/cooperative learning strategies.

Session Summary
A weak link in the ABET accreditation process and one of the hindrances to reform in engineering education is the absence of good assessment instruments that can measure the value added to student learning due to new ways of teaching important material. This workshop will briefly review the original model for one type of assessment instrument, the Force Concept Inventory that has been found to be very useful in measuring whether students have learned the correct concepts in a course. This will be followed with discussions of the engineering science Concept Inventories that are currently being developed and tested by the Foundation Coalition for common engineering subjects. Some of the instruments to be discussed will be available for wide distribution while some will still be in the design stages. Participants will get experience with one or more of the available Concept Inventories as well as participate in activities that explore other misconceptions held by engineering students.

Key Words
Assessment, student learning, misconceptions, concepts, continuous improvement

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