

TSS15-2015-020015

Abstract for an Invited Paper
for the TSS15 Meeting of
the American Physical Society

Plenary – Twenty first century needs and Investigative Science Learning Environment (ISLE):

Preparing your students for success

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Success in the 21st century is determined by one's ability to pose problems and seek multiple solutions, to evaluate assumptions, and to cope with uncertainty in the answer. Companies are more interested in people who can work in a team and communicate than in those who know a lot of information. K-12 education responded to these needs with the Next Generation Science Standards and the revisions of all AP courses. The changes in the accreditation requirements for schools of engineering and in the focus of new MCAT show that whole professions are rapidly adapting to the new needs. In this talk I will describe a learning system for physics courses that naturally and seamlessly helps students develop the above abilities and can be implemented without major revisions to the infrastructure. The learning system, called Investigative Science Learning Environment (ISLE), helps student learn physics by systematically engaging them in the processes that mirror the practice of physics. It is based on the findings of brain research and physics educations research and is supported by a set of comprehensive curriculum materials and numerous studies of student learning.