APR06-2006-000516

Abstract for an Invited Paper
for the APR06 Meeting of
the American Physical Society

Bringing Nuclear Science into the Undergraduate Curriculum[1]

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Think about the first time you encountered nuclear science in your formal curriculum. For most nuclear scientists this experience occurred as an undergraduate in an upper-level course in a traditional four-year institution. Because of changing student demographics, an explosion of interest in the life sciences, the end of the cold war and a variety of other factors, fewer undergraduates are encountering a traditional nuclear science course at all. For the field to remain vital, we suggest that educators in nuclear science will have to adapt to the changes in student populations and interests. To this end we now offer a variety of experiences to our undergraduate students that incorporate fundamental nuclear science. One component to our approach is to create exciting opportunities in undergraduate research, and another component involves creation of nuclear science modules that can fit within other courses. In recent years both of these components have evolved with an interdisciplinary flavor, but continue to yield students that become interested in pursuing nuclear science careers. We will discuss research opportunities offered to undergraduates at Hope College, and our success with collaborative research opportunities at a variety of extramural laboratories, as well as with our in-house research program with a low-energy accelerator. An overview of several pedagogical approaches we have adopted will also be presented, and there is clearly opportunity to pursue this approach much further. Although the examples are specific to Hope College, both components can clearly be adopted at a variety of other institutions.

[1]Funding from NSF-RUI #0354920 and NSF-MRI #0319523 gratefully acknowledged.