Thinking like a physicist: Condensed Matter and Materials Physics in the Paradigms in Physics Curriculum at Oregon State University

JANET TATE, Oregon State University

The Paradigms in Physics Program at Oregon State University organizes the upper-division undergraduate physics curriculum to blur traditional subdisciplinary boundaries and makes use of many interactive pedagogic techniques. Condensed matter physics and materials science content appear in many places in the early curriculum, culminating in a capstone course in solid state physics where students calculate band structure of real materials related to their research projects. A mix of analytic, computational, and research approaches are employed to include, for example, traditional topics like doping in semiconductors and modern topics like carbon nanotubes.

\textsuperscript{1}Research on aspects of the Paradigms in Physics Program is funded by the National Science Foundation under DUE 06-18877.