

Abstract Submitted
for the APR08 Meeting of
The American Physical Society

Development of Research Projects in Advanced Laboratory PING YU, SUCHI GUHA, University of Missouri — Advanced laboratory serves as a bridge spanning primary physics laboratory and scientific research or industrial activities for undergraduate students. Students not only study modern physics experiments and techniques but also acquire the knowledge of advanced instrumentation. It is of interest to encourage students using the knowledge into research projects at a later stage of the course. We have designed several scientific projects for advanced laboratory to promote student's abilities of independent research. Students work as a team to select the project and search literatures, to perform experiments, and to give presentations. During the research project, instructor only provides necessary equipment for the project without any pre-knowledge of results, giving students a real flavor of scientific research. Our initial attempt has shown some interesting results. We found that students showed a very strong motivation in these projects, and student performances exceeded our expectation. Almost all the students in our first batch of the course have now joined graduate school in Physics and Materials Science. In the future we will also arrange graduate students working with undergraduate students to build a collaborative environment. In addition, a more comprehensive method will be used to evaluate student achievements.

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Date submitted: 10 Jan 2008

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