

NWS12-2012-000040

Abstract for an Invited Paper
for the NWS12 Meeting of
the American Physical Society

Invention activities as preparation for learning laboratory data handling skills

JAMES DAY, Department of Physics and Astronomy, University of British Columbia

Undergraduate physics laboratories are often driven by a mix of goals, and usually enough of them to cause cognitive overload for the student. Our recent findings align well with studies indicating that students often exit a physics lab without having properly learned how to handle real data. The value of having students explore the underlying structure of a problem before being able to solve it has been shown as an effective way to ready students for learning. Borrowing on findings from the fields of education and cognitive psychology, we use “invention activities” to precede direct instruction and bolster learning. In this talk I will show some of what we have learned about students’ data handling skills, explain how an invention activity works, and share some observations of successful transfer.