

*B04-03 (10:24 to 10:36 AM) | Contributed Talk (12 Minutes) | Predictors of performance in introductory physics courses*

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We have administered a number of diagnostic preinstruction tests to introductory physics students at three campuses of two universities, including measures of mathematical skill, scientific reasoning, and physics knowledge. In addition, we have recently re-analyzed additional related data from two other universities. We find consistently, in every class analyzed, that the top scorers on these pre-instruction tests have substantially higher probability of receiving high course grades (A- or higher) than low-scorers on the tests, typically by a factor of two or more. Similarly, the high scorers have a much lower probability of receiving a low course grade (C+ or lower) than low scorers, again typically by a factor of two or more. Performances on the different predictors are positively correlated, but not perfectly so. The most consistent predictor seems to be pre-instruction score on the Lawson Test of Scientific Reasoning. We note that factors such as motivation, class participation, and consistent effort also appear to play a significant role in course performance.