

**Department of Chemistry and Biochemistry**  
**Seminar, Friday, 9/16/2016**  
**2:00-2:50pm, Langseth 102**  
**Richard Lahti, Ed.D.**

**“Three years of research on science fair - Lessons learned”**

**Abstract**

Participation in science fair is positively associated with improved performance on the 8th Grade MCA III Science Exam, based on an analysis of statewide MCA scores and regional science fair participation. When examined in isolation, science scores were 2.29 points higher, and passing rate (percent of students meeting the standard plus percent of students exceeding the standard) was almost 8 % higher (36.8% pass vs. 44.7%) in schools that participated in science fair at the regional level. Even when demographic variables including, but not limited to, percent free lunch, percent minority, and percent special education are accounted for, a smaller but statistically significant difference remains. Although the difference in raw scores was small (one point, 100 point scale), the difference in passing rate was still nearly 4% higher in schools that participated in science fair than in those that did not, after adjusting for other factors. Contrary to claims of some detractors, participation in science fair does not appear to hurt preparation for the science content portions of the exam (Earth Science, Life Science, Physical Science), as both Physical Science and Life Science sub-scores were statistically significantly higher in districts participating in science fairs than in districts that did not. No statistically significant results were observed at the high school level or in North or South Dakota.

In a follow-up study, a survey was distributed via social media to examine perception of science fair and its impact on students, particularly non-winners. Although some literature criticisms of science fair were substantiated, experiences varied widely and other criticisms were not supported.