

Math Research Takes Top Spot at Intel Science Talent Search 2009

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The grand prize winner of this year's Intel Science Talent Search was math wizard [Eric K. Larson](#), 17, of Eugene, Ore. His mathematics project, "The Classification of Certain Fusion Categories," garnered \$100,000.

[Last December](#), Larson's project won second place—a silver medal and \$50,000—at the 2008 Siemens Competition.

Fusion categories belong to a branch of algebra known as [category theory](#), an abstract way of dealing with mathematical structures and expressing relationships between them. Larson helped advance the classification of fusion categories.

Earlier work had classified those categories of dimensions p , pq , and pqr , where p , q , r are distinct prime numbers. Larson classified those of dimension pq^2 , where p and q are again distinct primes. Unlike the previous cases, this class contains examples not arising from group theory. He also classified some other families of graded fusion categories. Larson has coauthored a [paper](#), with graduate student David Jordan of the Massachusetts Institute of Technology, on the subject.

At South Eugene High School, Larson is active in the math, chemistry, and programming clubs. In 2007, as a 10th-grader, he was a winner of the [USA Mathematical Olympiad](#), then competed in the International Mathematical Olympiad in Hanoi, Vietnam, where he received [a silver medal](#). An accomplished classical pianist, he is a four-time gold medalist at the Oregon Junior Bach Festival. Larson enjoys conducting his own investigations and thinking about questions that nobody knows how to answer. He hopes to pursue a career as a mathematician at Harvard or MIT.