

## **Performance History of the South Central South Dakota Science and Engineering Fair at International Competition**

For 15 years, the South Central South Dakota Science and Engineering Fair has participated in the International Science and Engineering Fair. We send two high school science projects, each created by a single individual, and one high school project created by a team of 2-3 individuals.

47<sup>th</sup> ISEF held in Tuscon Arizona: Andrew Farke, won a Grand First Award. Dr. Tim Mullican, our SRC head and group leader led Andy to our first victory. We were also pleased with two other projects from Wesleyan's Regional Fair that set up at the International Fair: Jamie Weigandt from Mitchell researched gravity's effect on projectile motion. And a team of three: Nick Koch, Jamie Vanden Oever, and Taylor Scott of Stickney demonstrated a working prototype of a train powered by the sun.

48<sup>th</sup> ISEF held in Louisville, Kentucky: Andy Farke again won a first-place award for a dinosaur study but with one important difference; this time the award came with a cash prize of \$3,000. Andy appeared on KELO television after he returned. Renae Boschee's project was also recorded for television, having caught the eye of a WLKY-TV interviewer in Louisville. Lee Christenson and Katherine Dvorak were also "discovered", this time by a woman from the Louisville Science Center. The two students had exposed brine shrimp to UV light to measure its effect on simple organisms. The Center included the students' work in an exhibit on the harmful effects of ultraviolet radiation.

49<sup>th</sup> ISEF held in Forth Worth, Texas: Andy Farke won a first-place award for the third time; over the years he has won cash awards exceeding \$6,000 for his dinosaur studies and he is already developing a reputation as a paleontologist. Craig Schroeder from Armour also attended with a project of considerable complexity. Craig found the exact volume of a soccer ball. Our third "International" project was both timely and practical. Jolene Thompson and Lynsey Eilers surveyed the diseases of Jerauld County and discovered an exceptionally high rate of skin cancer.

50<sup>th</sup> ISEF held in Philadelphia, Pennsylvania: Here, Andy would win a 2<sup>nd</sup> place in Zoology but that is not the end to his awards. In June he flew to Washington D.C. where he was also recognized as a Presidential Scholar. In Andy's own words: "we toured, attended performances and exhibitions, "hung out" and met President Clinton." Andy is currently a sophomore at the South Dakota School of Mines. The two other projects at the ISEF: a river study by Brooke Baade and Londa Cope, and Jasen's "Handicapped Motorcycle" were also highly original. The motorcycle was seen on Sioux Falls television.

51<sup>st</sup> ISEF held in Detroit Michigan: For his science project "A Random Circle on Target", Craig Schroeder won a \$73,000 scholarship to Drexel University and an Honorable Mention Award from the American Mathematical Society. Our two other projects at the ISEF: a study of bathroom passes by Jody and Stacy Vilhauer, and one on Bernoulli's principle by Ross Coleman did not win but put up a good showing against strong competition.

52<sup>nd</sup> ISEF held in Louisville, Kentucky: On Thursday, May 16, 2002, the International Science and Engineering Fair presented Adam Leiferman, a Regional Science Fair Winner from Mitchell, the following two awards: 1) From the Eastman Kodak Company: Honorable Mention (For the best use of photography to gather data, solve problems, or to clearly explain the essence of his project). Adam won \$250 in cash and he and his teacher both will receive a 1 year subscription to "Science News", a photo kit, Kodak cameras, Kodak films and systems, which enable students and teachers to experience the leading edge of current imaging technology. 2) From the Optical Society of America: Honorable Mention with a 1 year membership into OSA as well as a 1 year subscription to both "Physics Today" and "Optics Photonics News."

The 53<sup>rd</sup> ISEF held in Cleveland, Ohio: Adam Leiferman won a \$142,000 dollar award from Case Western Reserve University, a prize that includes an annual stipend of \$2,000 per year for research. Leiferman's project, which demonstrated a new way to increase fuel mileage when driving, would go on to win a third place in the International Fair's engineering division and a cash award of \$1,000. In environmental science, Kelly Day and Anne Koupal, seniors at Mitchell High School, received an identical award in the "Team" category for their research on the effects of tanning beds, a project called 'Fake Baked Worms'. The third Wesleyan project, by Ross Coleman, was titled "Modeling the Dynamics of a Pneumatic Water Sprayer". It won its creator a 4<sup>th</sup> place in physics and \$500 in cash. In addition, Coleman received a second place award and \$400 from the American Association of Physics Teachers. Each high school student will have an asteroid listed with his or her name beside it, by courtesy of the International Astronomical Union.

The 54<sup>th</sup> ISEF held in Portland, Oregon: Adam Leiferman won 4<sup>th</sup> place in the category of Engineering earning him a cash prize of \$500. His project entitled, "Redeem Your Steam" consisted of his building a device which captures the heat energy lost from an engine's exhaust and uses it for power. In his tests on a 16-horsepower engine, Leiferman was able to increase power by 21 percent and decrease fuel usage by 17 percent. The other individual grand award winner was Chris Strand from Mitchell. Strand tested the ethanol-producing capacity of a variety of weeds for his project entitled, "Gassy Weeds." He found that several weeds, most notably catnip, out performed the varieties of corn that he tested. This was his first project. The team winners were Tyson Bialas and Brett Hohbach from Mt. Vernon. Their project, "Shake, Rattle, and Roll," explored earthquakes on building structures.

The 55<sup>th</sup> ISEF held in Phoenix, Arizona: Elizabeth Rezak won two scholarships from Oregon State University. One is worth \$5,000 per year for four years and an additional \$2,000 per year for four years will be awarded if she enrolls in the OSU College of Engineering. Her project entitled, "These Bugs Are Chillin'", examined the reasons why box elder bugs survive through the winter. Other students who advanced but did not win at the international level were Tanner Hento from Avon and the team of Terra Toribio and Trisha Schleich of Mitchell.

The 56<sup>th</sup> ISEF held in Indianapolis, Indiana: Jordan Krell from Plankinton won a fourth place Grand Award with his project entitled, "Smart Seat", which was an engineering project involving modifying a standard infant car seat via sensors which were hooked up to the car's computer to notify the driver/occupant if the child became unbuckled when the ignition was on and also to send an alarm if the infant was left unattended in the car seat for more than 5 minutes. Elizabeth Bosworth of White Lake also won a fourth place Grand Award with her project, "Making Methane." Her project consisted of making methane from three sources: hog, cattle, and turkey manure. Cattle manure produced the most methane, running a generator for twelve seconds. Other students who advanced but did not win at the international level was the team of Terra Toribio and Trisha Schleich of Mitchell.

The 57<sup>th</sup> ISEF will be held in Albuquerque, NM: check back to see how we do!!