



**Yihe Dong**  
*Cedar Shoals High School*

**GEORGIA**

**Yihe Dong**, 17, of **Athens**, studied the effects of parental dietary restrictions on the offspring of fruit flies (*Drosophila melanogaster*) for her Intel Science Talent Search **zoology** project. While previous studies had shown that reduced caloric intake increased longevity and oxidative stress resistance to herbicides in fruit flies, Yihe wondered if their offspring would be similarly affected. In a seven-month investigation, she studied 3,200 virgin offspring of regular diet (R) vs. diet-restricted (DR) parents. Her data suggests that the offspring of DR parents have improved stress resistance, but may have reduced longevity. She believes her findings can further understanding of the evolutionary trade-off between quality and quantity in *Drosophila* reproduction. Yihe is first in her class of 275 at **Cedar Shoals High School** where she is president of student government. The founder of Young Partners for a Prosperous Athens, her many honors include First Place and Best of Category Grand Awards in animal sciences at the Intel ISEF 2007. A native of China, she is fluent in Chinese, English and German. The daughter of Wubei Dong and Fengrui Guo, Yihe hopes to continue her studies at MIT or Harvard.



**Benjamin Edward Dozier**  
*Los Alamos High School*

**NEW MEXICO**

**Benjamin Edward Dozier**, 18, of **Los Alamos**, studied the logical complexity of describing random bit strings for his Intel Science Talent Search project in **mathematics**. Any finite string of 0's and 1's can be completely described by a sentence of first order logic. Ben investigated the complexity of this description for random bit strings of length  $n$  which are equipped with a function  $p(n)$  giving the likelihood that any entry in the string has value 1. He found asymptotic bounds in the case of very sparse strings (few 1's) and also in the case where  $p(n)$  does not vary with  $n$ . Ben is first in his class of 278 at **Los Alamos High School** where he serves as the math club president and enjoys playing tennis. The winner of numerous math and science awards, Ben was the first-ever qualifier from his school and the only student from New Mexico in the 2006 USA Mathematical Olympiad. That year he also earned an Honorable Mention in the National Peace Essay contest, was a semifinalist in the Ayn Rand Anthem Essay contest, and traveled to Croatia, Hungary and the UK. The son of Miguel Dozier and Esther Kovari, Ben hopes to continue his research at MIT or Harvard.