

Katherine Martin

His pleasantly deep voice carried over the banquet hall. The chatter throughout the room calmed and eventually everyone was silently listening to William Fithian's rendition of "Love and Marriage."

Fithian, valedictorian of Poquoson High School, is a man of many talents. A Presidential Scholar, co-captain of the varsity swimming team and aspiring Harvard capella performer, Fithian was recently selected for the Oracle Award, one of nine in the nation.

Fithian could have picked anyone in the state of Virginia to present his award. President George Bush Jr. presented the Texas winner's award. The Michigan governor presented the award to that state's winner. Dr. Olaf Storaasli, a NASA Langley research scientist and Fithian's Governor's School mentor for the past two years, presented Fithian's award.

"I feel really honored," Storaasli said. "William is just like another son to me. Of the many students I have mentored, William is ~~the top of them all~~ tops. We are expecting great things of him."

With a resume like Fithian's, it would be hard to disagree with Storaasli. Perfect score on the SAT, 4.53 GPA, captain and co-captain of various academic teams throughout his high school career and a varsity swimmer to boot, Fithian will attend Harvard this fall.

"You find your strengths and pursue them," Fithian said. "The things you succeed in most are the things you love."

Fithian's latest research interest at NASA has revolved around researching Field Programmable Gate Arrays, or FPGAs. These small gate arrays have the potential to be 100-500X faster than conventional CPU processors because each program for the system essentially recreates customizes the FPGA chip nearly instantaneously. ~~Because of this versatility, the FPGAs can to run many functions in parallel while optimizing silicon use (typical CPUs use <1% silicon/cycle), without sacrificing speed and accuracy.~~

Fithian worked with the new system using a graphical programming language called VIVA, a language invented by Star Bridge Systems Inc. Storaasli said Fithian picked up the language in a matter of two meetings.

"Working on a program can be frustrating when it isn't working and you don't know why," Fithian said. "I love the problem solving aspect. ~~Computer science~~ Science is a lot like math. It's problem solving. You write a program, run it and debug it."

~~The FPGA systems have until recently have primarily been used in only been used with telecommunications.~~ Robert Singleterry, fellow NASA research scientist, said the field needs people like Fithian to incorporate this new technology for scientific applications.

"We have found the younger folk pick up the program a lot better than the older folks," Singleterry said. "This language demands a fresh look."

William Fithian said he owes his interest in research to the Governor's School. During the junior year, all Governor's School participants mentor with a local scientist. Fithian said Storaasli's reputation preceded their initial meeting.

"I heard Dr. Storaasli was an excellent mentor so I emailed him about it and asked if he would be my mentor," William Fithian said. "He is first and foremost my motivation for going into scientific research."

Storaasli said some students can be a lot of work. William Fithian is an exception.

"William and others are self starters. Show them the ropes and let them have freedom to try it out their ideas," Storaasli said. "William is already like another a NASA researcher. ~~With William, he will~~ often surpassing what go farther than you expect."

Ellen Fithian, William Fithian's mother and a non-practicing dermatologist, said she is thankful for Storaasli's influence.

"It's been nice for William to have this opportunity," Ellen Fithian said. "Having Olaf as his mentor is important because we don't have a computer science background."

Ned Carr, Executive Director of New Horizons ~~regional~~ Regional education Education center Center, said William Fithian's mentoring experience is what the program aims for.

"It prepares students to make real unique contributions to society," Carr said. "When I watched William's presentation [with Storaasli and fellow NASA research scientist Robert Singleterry] it was like a discussion between three colleagues."

William Fithian leaves for Harvard this fall. While he said he doesn't think he will have a chance to work with FPGAs, he does want to contribute to the field of computer science.

"I want to create new software and hardware," William Fithian said. "Instead of seeing computers as a tool, I want to program them into something they haven't done before."

While William Fithian said he doesn't know what that might be, he did say he plans to return to Virginia during the summers to work with NASA via their summer internship program ~~with~~ for college students.