18-Year-Old Engineer Constructs Fuel-Efficient, Stable "Flying Wing" Aircraft Prototype
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Ivo Zell of Lorch, Germany Wins US$75,000 Top Prize at Intel International Science and Engineering Fair

Ivo Zell, 18, of Lorch, Germany was awarded first place for designing and constructing a remote control prototype of a new "flying wing" aircraft at this year's Intel International Science and Engineering Fair, a program of Society for Science & the Public and the world's largest international pre-college science competition. The competition featured nearly 1,800 young scientists selected from 425 affiliate fairs in 78 countries, regions and territories.

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Amber Yang (from left), Ivo Zell and Valerio Pagliarino take the stage on Friday, May 19, 2017, at the 2017 International Science and Engineering Fair, a program of Society for Science & the Public and the world's largest international pre-college science competition. Zell, of Lorch, Germany, was awarded first place for designing and constructing a remote control prototype of a new "flying wing" aircraft. Yang, of Windermere, Florida, and Pagliarino, of Castelnuovo Calcea, Italy, received Intel Foundation Young Scientist Awards. (Credit: The Society for Science & the Public)

Flying wings are inherently more efficient than traditional aircraft designs, but also less stable in flight because they have little or no fuselage or tail. Zell's working prototype aircraft addresses this issue, using an unusual bell-shaped lift profile for improved stability and using telemetry to demonstrate its stability. The modified shape of Zell's aircraft allows it to operate smoothly and safely in challenging flight situations without the need for a complex electronic stabilization system and without significantly sacrificing fuel efficiency. Potential applications range from drone delivery systems to larger aircraft design. Zell received the Gordon E. Moore Award of US$75,000, named in honor of the Intel co-founder and fellow scientist.

Press Kit: Intel International Science and Engineering Fair: Empowering Next-Generation Innovators

Amber Yang, 18, of Windermere, Florida received one of two Intel Foundation Young Scientist Awards of US$50,000 for her innovative approach to predicting the locations of clouds of space debris that move in low Earth orbit. An estimated 500,000 space trash objects now pose a potential hazard for spacecraft. Yang adapted an algorithm to train her own artificial neural network to recognize space objects in a specific debris cloud and predict their future locations.

Valerio Pagliarino, 17, of Castelnuovo Calcea, Italy received the other Intel Foundation Young Scientist Award of US$50,000 for his prototype of a novel laser-based, wireless, high-speed network. Motivated by the lack of reliable Internet access in his rural locale, Pagliarino designed his new system using off-the-shelf components and then built and tested a small version of the network.

"Intel congratulates this year's winners. Ivo Zell, Amber Yang, and Valerio Pagliarino and all of the

participants inspire us with their talent and passion for changing the world," said Rosalind Hudnell, Intel vice president of Corporate Affairs and president of the Intel Foundation. "As a diverse and inclusive group developing groundbreaking solutions to global challenges, these young people represent the next generation of innovators. We're proud to support all of the finalists as they endeavor to improve the world around them."

In addition to the top winners, approximately 600 finalists received awards and prizes for their innovative research, including 22 "Best of Category" winners, who each received a US$5,000 prize. The Intel Foundation also awarded a US$1,000 grant to each winner's school and to the affiliated fair they represent.

The following lists the 22 Best of Category winners, from which the top three were chosen:

Category	First	Last	City	State/Country
Animal Sciences	Jessica	Young	Wellington	Florida
Behavioral and Social Sciences	Erin	Smith	Lenexa	Kansas
Biochemistry	Karina	Movsesian	Karlovy Vary	Czech Republic
Biomedical and Health Sciences	Daniel	Zhang	San Diego	California
Biomedical Engineering	Clara	Wagner	Saginaw	Michigan
Cellular and Molecular Biology	Davey	Huang	Honolulu	Hawaii
Chemistry	Kyle	Fridberg	Boulder	Colorado
Computational Biology and Bioinformatics	Prathik	Naidu	Potomac Falls	Virginia
Earth and Environmental Sciences	Adam	Nayak	Portland	Oregon
Embedded Systems	Valerio	Pagliarino	Castelnuovo Calcea	Italy
Energy: Chemical	Kendra	Zhang	Jericho	New York
Energy: Physical	Camille	Miles	Niceville	Florida
Engineering Mechanics	Ivo	Zell	Lorch	Germany
Environmental Engineering	Prashaant	Ranganathan	Jamshedpur	India
Materials Science	Nicky	Wojtania	Plano	Texas
Mathematics	Karthik	Yegnesh	Lansdale	Pennsylvania
Microbiology	Rahul	Subramaniam	Cos Cob	Connecticut
Physics and Astronomy	Amber	Yang	Windermere	Florida
Plant Sciences	Isabella	Bowland	Boulder	Colorado
Robotics and Intelligent Machines	Tassilo	Schwarz	Seeon	Germany
Systems Software	Michael	Lee	Manhasset	New York
Translational Medical Science	Jeremiah	Pate	Oro Valley	Arizona

"The breakthrough ideas presented at the Intel International Science and Engineering Fair by Ivo Zell, Amber Yang and Valerio Pagliarino truly have the capacity to change our world for the better," said Maya Ajmera, president and CEO of Society for Science & the Public and publisher of Science News. "As our world grows increasingly complex, we need innovative, transformative ideas to identify new solutions to our world's most intractable challenges. Congratulations to all our finalists as well as our top three winners on their extraordinary research projects."

The Intel International Science and Engineering Fair encourages millions of students to explore their passion for developing innovations that improve the way we work and live. All finalists are selected by an affiliated, local competition and receive an all-expenses-paid trip to the Intel International Science and Engineering Fair. At the competition, finalists are judged by hundreds of science, engineering and industry professionals who have a Ph.D. or equivalent (six years of related professional experience) or are senior graduate students with doctoral-level research in one of the 22 scientific disciplines listed above.

A full listing of finalists is available in the event program. The 2017 Intel International Science and Engineering Fair is funded jointly by Intel and the Intel Foundation with additional support from dozens of corporate, academic, government and science-focused sponsors. This year, approximately US$4 million was awarded.

About Intel

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About the Society

Society for Science & the Public is dedicated to the achievement of young scientists in independent research and to public engagement in science. Established in 1921, Society is a nonprofit whose vision is to promote the understanding and appreciation of science and the vital role it plays in human advancement. Through its world-class competitions, including the Regeneron Science Talent Search, the Intel International Science and Engineering Fair, and the Broadcom MASTERS, and its award-winning magazine, Science News and Science News for Students, Society for Science & the Public is committed to inform, educate, and inspire. Learn more at www.societyforscience.org and follow us on Facebook, Twitter, Instagram and Snapchat (Society4Science).

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