



## NEWSCENTER

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### Two at Northwestern Named Boeing Engineering Students of the Year Students honored for research likely to impact the future of aerospace engineering

By Megan Fellman

EVANSTON, Ill. --- Two Northwestern University graduate students in the McCormick School of Engineering and Applied Science have received first and second place in the 2009 Engineering Student of the Year Award competition sponsored by The Boeing Company and presented by the aerospace publisher Flightglobal.

The annual worldwide competition had two joint first-place winners this year: Can Bayram of Northwestern and Michael Grant of Georgia Institute of Technology. The second-place winner is Pierre-Yves Delaunay of Northwestern.

Julio M. Ottino, dean of the McCormick School, will host an awards event at 9:30 a.m. Monday, Dec. 7, in Cook Hall, room 2058, 2020 Campus Drive, on the Evanston campus. John J. Tracy, Boeing chief technology officer and senior vice president of Engineering, Operations & Technology, and Warren McEwan, sales director - North America, Flightglobal, will be in attendance.

The winners were announced as part of the Flightglobal Achievement Awards ceremony in the United Arab Emirates Nov. 14, the eve of the Dubai Air Show. Boeing has partnered with Flightglobal to host the Engineering Student of the Year competition since 2005 in an effort to encourage students to pursue careers in aerospace-related engineering fields.

Bayram and Delaunay both are Ph.D. candidates in the department of electrical engineering and computer science and members of the Center for Quantum Devices (CQD), led by Manijeh Razeghi, Walter P. Murphy Professor of Electrical Engineering and Computer Science.

"Boeing embodies innovation and leadership in aerospace technology, and I am excited and honored to receive this recognition from the company," Bayram said. "I hope to take advantage of the unique networking opportunities this award presents me and to develop a strong relationship with Boeing and other leaders in aerospace technology."

Bayram, a native of Turkey, focuses his research on energy-efficient III-Nitride semiconductor devices, including developments such as high-sensitivity ultraviolet detectors, high-performance light-emitting diodes and compact terahertz emitters, which could advance reliability, duration and performance in many areas of aeronautics and astronautics.

"Boeing has been a pioneer in aerospace for many years, thanks to a tradition of innovation and outstanding research," Delaunay said. "It is a great honor for me to receive this award, and I hope that my work can be useful to the aerospace industry."

Delaunay, a native of France, uses a novel quantum material called Type-II superlattices to fabricate infrared cameras. Atomic engineering of this semiconductor opens the door to novel photon detectors that are more sensitive and faster than previous technologies. The infrared cameras based on superlattices can detect temperature differences of a few millidegrees Celsius in a fraction of a millisecond.

"When I came to Northwestern University, it was my objective to create an environment that nurtures exceptional students to do research that has extraordinary applications," says Razeghi, director of CQD. "The numerous student awards in my group this year are just an example of how the Center for Quantum Devices has progressed towards achieving this goal. I'm thrilled that both the first- and second-place winners are from our group."

The Engineering Student of the Year Award competition is open to any full- or part-time engineering student around the world pursuing a recognized degree. The winning student's work must be judged as likely to impact the future of aerospace engineering in areas such as new or enhanced capabilities, systems, processes or tools; new levels of performance; and improved life-cycle costs.

"In our 2009 competition, we received a record number of entries from students in a diversity of nations and with a diversity of outstanding talents, interests and abilities," said Boeing's Tracy. "So to receive first or second place in this award competition is a great tribute to these students' significant achievements and future promise."

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## Student Receives Boeing Engineering Award



Can Bayram, a fifth-year PhD candidate in electrical engineering and computer science, was selected as the Boeing Company's 2009 Engineering Student of the Year. Open to engineering students worldwide, the prestigious award is given to a student whose work has potential for impact on current or future aeronautical or space technology.

Bayram, who works in the Center for Quantum Devices under the direction of Manijeh Razeghi, specializes in the development of high-performance nitride optoelectric devices. Applications of his work include ultraviolet detectors offering compact and portable substitutes for photomultiplier- or silicon-based biological agent detectors, and light-emitting diodes which can be used instead of fluorescent lights. He has also helped develop environmentally friendly emitters that can detect and analyze illegal drugs and explosives at security checks in airports.

### Awards & Honors

**Juan Carlos Caicedo**, surgery, was named one of *Crain's Chicago Business's "40 Under 40"* for 2009.

**Sunjay Kaushal**, surgery, was awarded a **Thoracic Surgery Foundation for Research and Education award**.

**Kathryn N. Farrow**, pediatrics, will receive a **Young Investigator Award** during the American Heart Association Resuscitation Science Symposium.

**Peter C. Stair**, chemistry, received the **2010 American Chemical Society Award** in Hydrocarbon and Petroleum Chemistry.

**John B. Matson** and **Ariella Shikanov**, chemical and biological engineering, received **2009 IBNAM-Baxter Career Development Awards**.

**Richard Van Duyne**, chemistry, received the **2010 American Chemical Society Award** in Analytical Chemistry.



## Boeing Announces 2009 Engineering Students of the Year

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**DUBAI, United Arab Emirates, Nov. 14, 2009** -- The Boeing Company [NYSE: BA] today announced the winners of the company-sponsored 2009 Engineering Student of the Year Award, presented by aerospace publication Flight International. This year's competition had two first-place winners: Can Bayram of Northwestern University and Michael Grant of Georgia Institute of Technology. The awards ceremony was held in Dubai on the eve of the international Dubai Airshow.

Bayram, a Turkish Ph.D. candidate at Northwestern's Department of Electrical Engineering and Computer Science Center for Quantum Devices, focuses his research on energy-efficient III-Nitride semiconductor devices, including developments such as high-sensitivity ultraviolet detectors, high-performance light emitting diodes, and compact terahertz emitters, which could advance reliability, duration and performance in many areas of aeronautics and astronautics.

Grant, an American Ph.D. candidate, is researching the design and optimization of space systems for exploration of the planet Mars. Grant received a NASA Special Achievement Award by demonstrating that swarm theory can be utilized to optimize large complex systems having potentially conflicting multi-objective goals. His work has the potential to improve systems design in all areas of ground, air and space systems.

The second-place winner is Pierre-Yves Delaunay, a French Ph.D. candidate at Northwestern University, and the third-place winner is Alexandros Thomopoulos, a Greek master's candidate at Delft University in the Netherlands.

"Boeing embodies innovation and leadership in aerospace technology, and I am excited and honored to receive this recognition from the company," said Bayram. "I hope to take advantage of the unique networking opportunities this award presents me and develop a strong relationship with Boeing and other leaders in aerospace technology."

"There is no greater honor than being recognized among your peers," said Grant. "As a graduate student at Georgia Institute of Technology, my research has focused on space applications, and I am eager to take advantage of the opportunities Flight and Boeing will present for me to learn more about the aviation industry."

Boeing has partnered with Flight International to host the worldwide Engineering Student of the Year competition since 2005 in an effort to encourage students to pursue careers in aerospace-related engineering fields. The competition is open to any full- or part-time engineering student pursuing a recognized degree. The winning student's work must be judged as likely to impact the future of aerospace engineering in areas such as new or enhanced capabilities, systems, processes or tools; new levels of performance; and improved life cycle costs.

"Our 2009 competition reflected a great diversity of nations, and a great diversity of talents, interests and abilities. We had entries from many outstanding students whose accomplishments were most impressive and made for our best competition ever," said Charles Toups, vice president of

Engineering and Mission Assurance for Boeing Integrated Defense Systems. "Their work is destined to take the art and science of engineering to new levels -- the future of aerospace is in very good hands."

A unit of The Boeing Company, Boeing [Integrated Defense Systems](#) is one of the world's largest space and defense businesses specializing in innovative and capabilities-driven customer solutions, and the world's largest and most versatile manufacturer of military aircraft. Headquartered in St. Louis, Boeing Integrated Defense Systems is a \$32 billion business with 70,000 employees worldwide.

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