# AOC Foundation Honors Outstanding Young Scientists at ISEF 2025

The future of science and technology is in remarkable hands. The Regeneron International Science and Engineering Fair (ISEF) 2025, held in May in Columbus, Ohio, showcased the extraordinary capabilities of young minds tackling some of today's most pressing technological challenges. The AOC Foundation was privileged to recognize three exceptional projects that exemplify innovation, technical excellence, and the potential to transform our world.

## A Global Stage for Young Brilliance

ISEF 2025 brought together over 1,600 finalists from nearly 70 countries, regions, and territories. This year's event showcased projects spanning diverse fields, from artificial intelligence and biotechnology to environmental science and engineering. The level of sophistication and real-world applicability of these student projects continues to astound industry professionals and academic leaders alike.

## Recognizing Excellence: Our 2025 Award Winners

The AOC Foundation's Special Award recipients were:

**First Place: Junseop Shin & Kyungjin Shin**
*Korea Science Academy of KAIST, South Korea*
**Project:** A Novel Magnetic Field-Based UAV Detection System Through Electromagnetic Signal Analysis of Drone Motors

This innovative detection system addresses the growing need for reliable drone identification technology. By analyzing the unique electromagnetic signatures produced by drone motors, the team developed a cost-effective solution that could revolutionize airspace security and management.

**Second Place: Cavon Hajimiri**
*Polytechnic School, California, USA*
**Project:** A Wearable Low-Cost 10.5 GHz Radar-Based Early Collision Warning System for Pedestrians With Dynamic Threshold Adjustment

Combining wearable technology with advanced radar systems, this project tackles pedestrian safety through intelligent collision detection. The dynamic threshold adjustment feature ensures optimal performance across varying environmental conditions, making it a practical solution for real-world implementation.

**Third Place: Jonathan Luke Dorminy**
*Sola Fide Home School, Georgia, USA*
**Project:** Faster Terahertz Gap Modulation for Higher Data Rates

This cutting-edge research pushes the boundaries of high-speed data transmission. By advancing terahertz gap modulation techniques, the project opens new possibilities for ultra-fast communication systems that could transform how we share and process information.

## About the AOC Foundation

For more than 35 years, the AOC Foundation has been providing grants and scholarships to assist military enlisted personnel, veterans, and US undergraduate students pursuing studies in electrical engineering, physics, mathematics, and related disciplines. The Foundation also supports STEM education relating to the electromagnetic spectrum to middle and high school students around the world.

## Looking Ahead

The projects recognized by the AOC Foundation at ISEF 2025 represent more than academic achievement – they offer glimpses into solutions for real-world challenges. From enhancing security through drone detection to improving pedestrian safety and advancing data transmission speeds, these young

innovators are already contributing to a better, more connected world.