Championing Arizona Sustainability Alliance's Innovative Food Tech for the Future Program

NEWS RELEASE BY **ON SEMICONDUCTOR**

Northampton, MA | July 20, 2021 10:46 AM Eastern Daylight Time

A student works on altering the growing environment on the food computer through code. Photo courtesy of Arizona Sustainability Alliance.

ON Semiconductor's **corporate social responsibility program** works to advance sustainability within the company's own footprint and supports environment-focused organizations in the community through grant making. One recent grantee of the ON Semiconductor Foundation making significant strides towards sustainability while encompassing social equity and economic development concerns is Arizona Sustainability Alliance.

Arizona Sustainability Alliance (AZSA) is a nonprofit organization centered on creating effective solutions to sustainability issues across Arizona. With more than 20 projects and programs related to priority areas of renewable energy, sustainable food systems, conservation, urban forestry and cities, AZSA is leading the way to a more resilient future

for Arizonans. Today we are highlighting an environmental education initiative of AZSA aiming to engage K-12 students and schools. This hands-on program around sustainable food systems plays a vital role in considering the environmental, social and economic impacts of growing food to sustain ecological and human communities well into the future.

In the spring of 2020, the ON Semiconductor Foundation awarded a grant that assisted in developing the **Food Tech for the Future Program**, a state-of-the-art initiative that encourages students to think critically about food sustainability issues and inspires them to create solutions based on well-founded science, technology, engineering and math (STEM) concepts. The funding helped develop the program to include specialized training, educational workshops and a pilot program to test a more advanced food computer model in four additional schools.

Through lessons and workshops, students study how to grow food directly from their classroom with a **food computer**, which is a digitized and climate-controlled hydroponic system designed for growing plants. Program participants learn how to use computer science and coding to program a Raspberry Pi microprocessor, which connects to a variety of sensors, including a humidity and a CO2 sensor in the food computer. The data collected from the sensors is stored on a server, so that students can track growth and monitor plant health as part of classroom experiments through a **MARSFarm** online portal.

Despite the challenges brought forth by the COVID-19 pandemic, the program was successful in its expansion by adapting to a virtual format that brought food sustainability concepts into local classrooms. Overall, AZSA hosted a virtual introductory workshop, two virtual food computer build sessions, seven Professional Learning Community (PLC) meetings with educators, and four virtual food computer instructional tours for students. The program reach also increased in the virtual learning environment with accessible instructional videos for students and educators. Arizona schools benefiting from the program include V.H. Lassen Elementary School, Phoenix Coding Academy, Basha Accelerated Middle School, and Basha and Hamilton High Schools. Past support from ON Semiconductor has also supported Food Tech for the Future programs at Glendale High School and the Global Academy of Phoenix.

“It was such an exciting year to engage Arizona students in learning about sustainable food systems and STEM with food computer technology,” said Julia Colbert, education director at AZSA. “With students being able to remotely access photos of daily plant growth and data collected about growing conditions, they were able to continue to participate in the program from school or from home. We are looking forward to continuing the program next year!”

The ON Semiconductor Foundation is excited to support Arizona Sustainability Alliance in preparing young people for the world of tomorrow through innovative programs such as Food Tech for the Future. When technology and sustainability concepts come together in the classroom, the possibilities to collaborate and invent for a better future are endless.

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