



**CENTRAL**  
STATE UNIVERSITY

**1890 Land-Grant Institution**

September/October 2023

**CENTRAL STATE  
UNIVERSITY AND U.S.  
SMALL BUSINESS  
ADMINISTRATION  
MARK A MILESTONE  
WITH STRATEGIC  
ALLIANCE  
MEMORANDUM**

# **Leading Through Research**

**CSU RECEIVES MORE THAN \$1.6  
MILLION FOR RESEARCH AND  
EDUCATION DEVELOPMENT**

**+ PLUS**

**Intel  
Collaboration  
Continues**



# FROM THE DIRECTOR

Welcome to the Central State University 1890 Land-Grant News Magazine.

Central State University (CSU) is a beacon of innovation and progress in the field of agricultural research and extension services. As an 1890 Land-Grant institution, CSU is conducting research in food and agriculture and performing extension services that will impact stakeholders in Ohio, the United States, and globally.

The September/October 2023 newsletter highlights selected accomplishments towards this mission, including receiving approximately \$1.7 million for three projects from the United States Department of Agriculture's (USDA) National Institute of Food and Agriculture (NIFA) to strengthen our educational and research programs under the 1890 Capacity Building Grants (CBG) Program. The CBG supports activities that include curriculum design, materials development, faculty development, extension program development, and student recruitment and retention across the nation's 19-1890 Land-Grant institutions.

As we look towards the future, CSU is educating global leaders and supporting their academic pursuits by providing experiential learning and internship opportunities to undergraduates to enhance their outside-the-classroom skills and knowledge. This issue of Land-Grant News Magazine celebrates a few students who demonstrate CSU's value of academic excellence in pursuit of their education.

Keiana Briscoe works at the CSU Bee Lab under the guidance of Dr. Hongmei Li-Byarlay and her research focuses on landscape ecology and the oxidative stress levels of honeybees and small carpenter bees. Raymond Rolle and Edmond Kollie assist Dr. Pratibha Gupta in the CSU Nutrigenomics Lab. Jairus Burrows, who is also Mr. JWGCESTA (John W. Garland College of Engineering, Science, Technology and Agriculture) works with Drs. Susan Speight and Hongmei Li-Byarlay. All four students, along with 10 of their peers, presented at the 2023 Undergraduate Student Researchers Seminar.

Please explore the great and exciting opportunities within Central State University's 1890 Land-Grant programs and look for ways to partner with CSU to engage and transform communities through academics, research, and extension.

**Morakinyo A.O. Kuti, Ph.D.**

*Vice President, Research and Economic Development  
Director, 1890 Land-Grant Program*

**“CENTRAL STATE UNIVERSITY IS A BEACON OF INNOVATION AND PROGRESS IN THE FIELD OF AGRICULTURAL RESEARCH AND EXTENSION SERVICES.”**





**COVER: CSU student Edmond Kollie conducts research in the Nutrigenomics Lab under the guidance of Dr. Pratibha Gupta, Principal Investigator of a \$600,000 grant awarded by the United States Department of Agriculture (USDA's) National Institute of Food and Agriculture (NIFA).**



Central State Extension's Donna Kuykendall shares healthy eating information with the community

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**EDUCATING THE NEXT GENERATION OF TECH LEADERS**

## SCI BUZZ >

**T**echnology has changed the way we work and increasingly, skilled workers are needed to fill tech jobs of the future.

On July 17, Central State University (CSU) met with representatives from Intel, Wright State University (WSU), Ohio State University (OSU), and Cedarville University (CU) to discuss how they will collaborate to increase the number of students choosing to major in a tech-related field to help ensure a viable future tech workforce.

Jim Evers, Intel vice president and Ohio site manufacturing and operations manager, gave insights into Intel's initiatives in Ohio, notably the chip factory that is expected to be operational by 2025, and the potential future job opportunities for interns at Intel.



Interns share experience with representatives from Central State, Ohio State, Stark State, and Intel

The roundtable consisted of CSU Interim President Alex Johnson, Intel Vice President and Ohio Site Manufacturing and Operations Manager Jim Evers, and Wright State University President Sue Edwards.

Intel delegates were welcomed by CSU's Johnson, along with CSU Provost and Vice President for Academic Affairs, F. Erik Brooks, Ph.D., Morakinyo A.O. Kuti, Ph.D., then interim dean of the John W. Garland College of Engineering, Science, Technology, and Agriculture (JWGESTA) and director of 1890 Land-Grant programs, CSU's Department of Manufacturing Engineering Chairperson. Mahmoud A. Abdallah, Ph.D., CSU Intel Project Director Mohammadreza Hadizadeh, Ph.D., CSU Associate Professor Deng Cao, Ph.D., and Mubbashar A. Khan, Ph.D., research assistant professor of electronic engineering.

"I extend my deepest gratitude to Intel for their unwavering commitment to diversity and for recognizing the immense potential within Central State University's student body," Johnson said.

"Together, we are forging a path toward a brighter, more inclusive future that empowers underserved communities, promotes equality of opportunity, and showcases the immense value of diversity in the semiconductor field," he added. Central State University led a presentation on the current Intel-sponsored Semiconductor Education and Research Program. The briefing highlighted the summer internship program pathways to employment at Intel.

"After our meeting with Intel executives and our collaborators from WSU, OSU, and CU, it's clear that our summer interns are making impressive progress. This unique partnership between academic institutions and industry allows for real-world learning experiences that nurture the innovators of tomorrow's semiconductor industry. Such cooperative efforts are the engine that drives technology forward," Hadizadeh commented.



[View Video on You Tube](#)

# INTEL PARTNERSHIP LEADS TO CONTINUED COLLABORATION

by Lena Fields-Arnold



*The CSU-led Intel Summer Interns were honored with a certificate ceremony and pizza party. The students spent eight weeks learning about the semiconductor industry and being prepared with the skills needed to secure an entry-level position. The program further provides a pathway for employment at the Ohio chip factory scheduled to open in 2024. Students were awarded a \$5,000 stipend each for their dedication and hard work over the eight-week internship.*

*Continued from page 4*

The meeting was followed by interactive discussions, guided tours of the laboratory facilities, where students are trained, and lunch with the Intel interns. During lunch, Evers presented the latest research and developments in the semiconductor industry, along with Intel's strategic plan for hiring in Ohio. "I appreciate the successful training under the summer internship program led by Central State University," Evers said. "I am motivated by the interns and hope this will open doors for them to be part of Intel's skilled workforce when Intel's Ohio facility is operational in 2025." Evers further encouraged the students to apply for current internships and job openings at Intel's other facilities across the globe.

The CSU-led Intel Summer Internship program for Women and Underrepresented Minorities concluded on July 28. The eight-week intensive course began June 5. During this time, students received training in electronic hardware design, fabrication, and security. The curriculum included five courses that involved daily lectures and extensive hands-on lab practice.

Twenty interns from Central State, Wright State, Stark State, Sinclair Community College, and local high schools were selected for the internship from a pool of more than 80 applicants. With continued support from Intel, CSU intends to train an even larger pool of interns over the next two summers. For more information visit [centralstate.edu/semiconductors/Intel](http://centralstate.edu/semiconductors/Intel).

DISCOVERING USES FOR

# HEMP

HEMP RESEARCH  
PAPER BY CENTRAL  
STATE UNIVERSITY  
TEAM RECEIVES FIRST  
PLACE IN  
INTERNATIONAL  
CONFERENCE

At the Sixth European Conference on Industrial Engineering and Operations Management, hosted by NOVA School of Science and Technology (FCT NOVA) Lisbon, Portugal, July 18-20, 2023, a paper presented by the research team from Central State University, including Drs. Sam Soni, Craig Schluttenhofer and Subramania Sritharan was awarded First Place under the Simulation Competition for their presentation titled "Interlaminar Stresses in Hemp Reinforced Composite Laminates."

This is part of the research on using hemp-based materials for developing composite laminates led by Dr. Schluttenhofer in close collaboration with Drs. Soni and Sritharan. The research in the Agricultural Research Development Program (ARDP), funded by the National Institute of Food and Agriculture (NIFA) and by the State of Ohio, will assist in developing composite materials using fiber from hemp needed in manufacturing industrial components.



*From left to right-Drs. Sam Soni, Craig Schluttenhofer and Subramania Sritharan*

AGRICULTURE

# Leading through Research

*Central State University Land-Grant  
receives \$1.6 million in USDA grants to  
strengthen its educational and research  
programs*



Dr. Marcus Nagle (r) and Dr. Ebony Murrell (l) plant silflower on a plot in Beaver Creek Township in mid-September. The site is the last of several small-acre plots in the area to test integrating the perennial crop for increased production and honey yield.

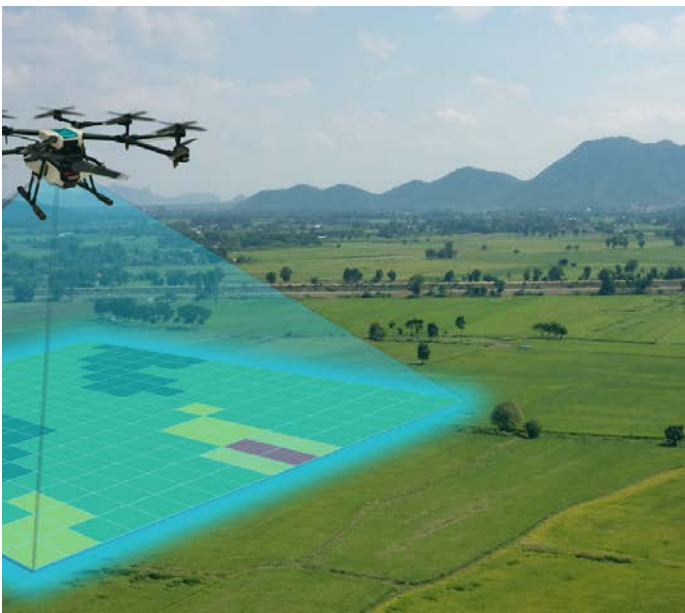
## **Central State University Land-Grant receives \$1.6M in USDA grants to strengthen its educational and research programs**

by Lena Fields-Arnold and Cyril Ibe

Central State University Land-Grant has received \$1,696,698 from the United States Department of Agriculture's (USDA) National Institute of Food and Agriculture (NIFA) to strengthen its educational and research programs. The USDA has awarded three grants to Central State through its 1890 Capacity Building Grants Program, which supports activities such as curriculum design, materials development, faculty development, extension program development, and student recruitment and retention across the nation's 19 Historically Black Colleges and Universities designated as 1890 Land-Grant institutions.

"This investment will help ensure [that] Central State University has the tools and resources to equip students with the skills and knowledge they need to advance their careers," said Ohio State Senator Sherrod Brown. "This investment will not only support faculty and students but will also lead to more technological development and economic growth in the Miami Valley region," he added in a statement released to the press in July.





Unmanned aerial systems are increasingly used in agriculture for pest control, plant health monitoring, livestock management, soil analysis, and aerial surveys.

#### Funding from the USDA includes:

- **\$598,814** to enhance unmanned aerial systems (UAS) teaching capacity at CSU through new unmanned aerial systems course development and incorporating new UAS models into current agriculture, forestry, and natural resources curriculum. Unmanned aerial systems are increasingly used in agriculture for pest control, plant health monitoring, livestock management, soil analysis, and aerial surveys. The funding will also allow Central State University to hire new teaching faculty to enrich its curriculum, expand degree offerings, and support more new research in unmanned aerial systems technologies and their applications in agriculture-related fields.

The UAS project titled **“Building Education and Research Capacity of Unmanned Aerial Systems”** is led by Xiaofang Wei, CSU professor of geography, GIS, and remote sensing, who serves as the Project Director. Ramanitharan Kandiah, Ph.D., professor of environmental engineering and chair of the Department of Water Resources Management, and Deng Cao, Ph.D., interim chair and professor of computer science, serve as co-directors.

“This effort aims to inspire, engage, educate, and motivate the next generation of learners to pursue degrees and careers in agriculture and STEM,” said Wei.

“This effort will strengthen CSU’s educational capacity by developing a new UAS course and teaching materials for students to learn about the principles of UAS technology, as well as receive hands-on practice on equipment and drone data-processing software.”

The three-year project is also expected to strengthen CSU’s effort to expand undergraduate student participation in UAS research through internships and fellowship opportunities.

“Wei brings more than thirty years’ experience in teaching and research of Geographical Information Systems and remote sensing to this project,” said Morakinyo A.O. Kuti, Ph.D., CSU’s vice president of research and business development and director of the 1890 Land-Grant Program. “In her 15-year tenure at CSU, she has been striving to bring cutting-edge advancement in geospatial science and technology on campus and conduct research in wide areas of agriculture, forestry, and natural resources. I fully support this project.”

- **\$600,000** for research and development of an integrated pilot program focused on obesity prevention in minority communities.

Central State University Research Associate Professor Pratibha Gupta, Ph.D., serves as the Project Director for the project titled “Nutrition Education and Outreach Program to Address and Prevent Obesity in Minority Communities: Application of Nutrigenomics.”

Dr. Gupta is also a specialist in food, nutrition, and health and her research focuses on nutritional biochemistry/nutrigenomics. The project aims to: provide nutrition education and outreach programs to address and prevent obesity in minority communities through the application of nutrigenomics; apply the principles of nutrigenomics to prevent, control, and manage type 2 diabetes; train the agricultural workforce in competency in food, nutrition, and consumer food safety; address the special nutrition needs and healthy lifestyle changes needed to promote healthy living in older adults.

Dr. Anshiya Ramanitharan, Health and Wellness Coordinator, Family and Consumer Sciences (FCS) CSU Extension, will serve as a co-Project Director.

Other co-PD's include Sarah Eber, RD, LD, CDE, MPH, Nutrition and Health Program Coordinator at Lincoln University (Missouri), and Nilima Mishra, M.S., extension associate for Dietetics and Human Nutrition Cooperative Extension, College of Agriculture, Community, and the Sciences Cooperative Extension at Kentucky State University. Other partner institutions include the University of Toledo and Ace Integrative Health of Cincinnati.

The research project is expected to last three years with plans to target at least 300 participants. Program participants will receive personalized nutrition plans and lifestyle recommendations based on their unique genetic profile. According to Dr. Gupta, participants will be provided with tailored solutions best suited to everyone's individual needs.

Nutrigenomics is the branch of study focusing on how certain foods affect genes and how bodies react to the nutrients in the foods we eat. "Through analyzing a person's DNA, we can provide them with a comprehensive understanding of their body's needs and enable them to make informed choices about their health," said Dr. Gupta.

"Our service is tailored to provide personalized nutrition plans and lifestyle recommendations based on one's unique genetic profile. We believe that this groundbreaking approach will revolutionize weight management for those facing challenges in this area."

Dr. Gupta said that through cutting-edge technology focused on the interaction between nutrition and genes, individuals will gain a deeper understanding of how their genes affect their weight and metabolism, leading to better control of their overall health.

- **\$497,884** for research on the use of a perennial flower species as a new crop to promote honey production and agricultural sustainability in Ohio. Test plots will be set up at Central State University and several other farms in the area to test the integration of silflower as a perennial crop with managed honeybee hives in the hopes of increasing seed production of the crop and increasing honey yield.

This project will be led by CSU researchers Marcus Nagle, Ph.D., and Hongmei Li-Byarlay, Ph.D., and Ebony Murrell, Ph.D., lead scientist of crop protection ecology at the Land Institute in Salina, Kansas.

Dr. Marcus Nagle is a research associate professor of horticulture at CSU, an expert in plant and crop processing, and Project Director for the Natural Product Project for CSU Land-Gant research. Dr. Li-Byarlay is a research associate professor of entomology at CSU and serves as Project Director for the CSU pollinator health project.

The three collaborating researchers will attempt to domesticate silflower, the perennial oilseed crop which attracts dozens of pollinator species and has an anticipated potential for increased honey production. "This is mainly due to the fact that it blooms late, from mid-summer to autumn, when forage for honeybees tends to be scarce," said Dr. Nagle. "In collaboration with the Land Institute, we will test the ability of a silflower as a perennial crop in Ohio.

The silflower research project is expected to last three years, and the scientists will exchange between CSU and the Land Institute for capacity building, and results will be used to develop topics for continuing collaborative projects. Each project will involve undergraduate students in research through hands-on experiential and internship opportunities.

[Read Ohio State Senator Sherrod's Brown's statement regarding the 1.6M funding.](#)



*Dr. Pratibha Gupta (r) and Dr. Anshiya Ramanitharan (l) look on as students learn how to use the body composition machine (Bod Pod) in the CSU Nutrigenomics Lab.*



*This program serves as a testament to our unyielding dedication toward creating a workforce in the semiconductor industry in the U.S.*

Dr. Arunasalam Rahunathan  
Interim Dean,  
JWGCESTA

# Unlock a world of opportunities with a Semiconductor Processing Certificate

Courtesy of Central State University Public Relations

By joining the Intel Semiconductor Education Program at Central State University (ISEP-CSU), you can unlock a world of opportunities and pave the way toward a fulfilling and prosperous career with Intel's new \$20-billion manufacturing hub in New Albany, Ohio. Central State is committed to addressing the shortage of skilled workers in the semiconductor industry. By enhancing its existing manufacturing and computer science programs, the University is preparing a diverse group of technicians and entry-level engineers for careers with Intel.

ISEP-CSU provides a comprehensive certificate program that equips students with the necessary skills and knowledge to excel in lucrative careers in the semiconductor industry. With a focus on cutting-edge technology and interactive learning experiences, graduates of this program are well-prepared to enter the workforce and make a meaningful impact in the field. "Whether you're a high school graduate seeking a strong start or a professional considering a career shift, our semiconductor processing certificate program opens doors to a dynamic industry and bridge to significant companies like Intel," said Dr. Mohammadreza Hadizadeh, director of ISEP-CSU.

"Central State University has established itself as a prominent leader in educating African American students in STEM areas, all thanks to our faculty's unwavering commitment to excellence in teaching, research, and service," said Dr. Arunasalam Rahunathan, interim dean of the John W. Garland College of Engineering, Science, Technology, and Agriculture. "This program serves as a testament to our unyielding dedication toward creating a workforce in the semiconductor industry in the U.S."

The certificate program will prepare students for the dynamically growing world of semiconductors by equipping them with the skills and insights necessary to excel by combining comprehensive theoretical knowledge with practical experience. From exploring basic principles to diving deep into advanced applications, students are given the tools and education needed to shape the future in this field.

For additional information on the Semiconductor Processing Certificate Program, please contact Dr. Mubbashar Khan at [mkhan1@centralstate.edu](mailto:mkhan1@centralstate.edu).



**CENTRAL STATE**  
**UNIVERSITY**  
**STUDENT**  
**HONORED BY**  
**THE**  
**ENTOMOLOGICAL**  
**SOCIETY OF**  
**AMERICA**

by Lena Fields-Arnold



Keiana working in the lab with her professor and mentor Dr. Hongmei Li-Byarlay

A rising junior, Briscoe began working at the CSU bee lab in November 2022 under the guidance of Dr. Hongmei Li-Byarlay. Her research is focused on landscape ecology and the oxidative stress levels of honeybees and small carpenter bees.

Her work is important in studying pollinator health in organic and conventional agricultural landscapes. Keiana has presented her work at the ESA-IB Virtual Symposium, CSU's Research and Scholarly Activities Day, and the Fifth International Conference on Pollinator Biology, Health and Policy in Pennsylvania hosted by The Penn State Center for Pollinator Research.

During her time at CSU, Keiana worked with chemistry professor Dr. Natosha L. Finley on evaluating agricultural soils using low-field nuclear magnetic resonance. Her work with Dr. Finley provided her the opportunity to present at the 2023 Dayton Chapter American Chemical Society Meeting.

While exploring the fields of entomology and chemistry, Keiana developed her research areas of interest, which include ecology and molecular biology. More specifically, she is interested in how human intervention affects species on the molecular level.

*“I am thankful for this opportunity and the many doors it will open for me,” said Keiana. “I am especially thankful for Dr. Hongmei’s guidance and encouragement throughout my research experience.”*

“Keiana has a true passion for research and science. I really enjoyed working with her on her first research project,” said Dr. Li-Byarlay.

The Entomological Society of America (ESA) is the largest organization in the world serving the professional and scientific needs of entomologists and individuals in related disciplines. Founded in 1889, ESA has more than 7,000 members affiliated with educational institutions, health agencies, private industry, and government. Members are researchers, teachers, extension service personnel, administrators, marketing representatives, research technicians, consultants, students, pest management professionals, and hobbyists.

To learn more about honeybee research taking place at Central State University visit [CentralState.edu](http://CentralState.edu) or email [hli-byarlay@centralstate.edu](mailto:hli-byarlay@centralstate.edu).

**Each** year the Entomological Society of America (ESA) recognizes scientists, educators, and students who have distinguished themselves through their contributions to entomology.

In 2023, Central State University (CSU) student Keiana Briscoe was honored with the Alate Award which recognizes students currently enrolled at Historically Black Colleges and Universities (HBCU) and other Minority-Serving Institutions (MSI). The Alate Award aims to promote interest in entomology and encourage students to attend the ESA Annual Meeting. Award honorees will be showcased during the annual event from November 5-8, at National Harbor, Maryland.

Keiana Briscoe is an undergraduate student researcher in the Department of Agriculture and Life Sciences at CSU. She is pursuing her bachelor's degree in general biology with concentrations in sustainable agriculture and chemistry.



# **CENTRAL STATE UNIVERSITY RECEIVES \$10,000 GOOGLE AWARD**

**THE CENTRAL STATE UNIVERSITY JOHN W. GARLAND COLLEGE OF ENGINEERING,  
SCIENCE, TECHNOLOGY, AND AGRICULTURE RECEIVES A SECOND \$10,000 GIFT FROM  
GOOGLE TO PROMOTE SCIENCE AND TECHNOLOGY IN THE CLASSROOM**

*by Lena Fields-Arnold*



As part of Google's growing efforts to support excellent research in academia, Central State University's John W. Garland College of Engineering, Science, Technology, and Agriculture (JWGCESTA) has received a second gift of \$10,000 from Google to promote science and technology in the classroom.

Beginning Aug. 30 this unrestricted award will support Emdad Ahmed, Ph.D., CSU assistant professor of computer science, in his work related to TensorFlow machine learning courses at the University. TensorFlow is a free and open-source software library for machine learning and artificial intelligence. TensorFlow was originally developed by Google for internal research and production, and according to tensorflow.org, is an end-to-end platform that makes it easy to build and deploy machine learning models.

We are thrilled to announce this significant milestone in our ongoing commitment to excellence in education and research," said Deng Cao, Ph.D., interim chair, and professor of computer science at Central State. "This partnership exemplifies Google's dedication to fostering innovation and supporting educational initiatives that have a lasting impact."

"As we learn to live with Artificial Intelligence tools, the gifts from Google will help improve our AI (Artificial Intelligence) and Machine Learning courses in the computer science curriculum," said Arunasalam Rahunathan, Ph.D., interim dean of JWGCESTA and professor of mathematics.

According to Dr. Cao, the gifts from Google play a pivotal role in enhancing academic programs, research endeavors, and the overall campus experience. "Central State University is deeply honored to be recognized by a tech giant like Google, and we are excited about the opportunities that lie ahead," said Cao. "We are committed to leveraging this support to empower our students and faculty members to reach new heights in their pursuit of knowledge and innovation."

*Dr. Emdad Ahmed pictured with students in the classroom at CSU.*

***WE ARE THRILLED TO ANNOUNCE THIS SIGNIFICANT MILESTONE IN OUR ONGOING COMMITMENT TO EXCELLENCE IN EDUCATION AND RESEARCH," -DENG CAO, PH.D., INTERIM CHAIR AND PROFESSOR OF COMPUTER SCIENCE AT CENTRAL STATE.***

# LAND-GRANT NEWS

EXTENSION >

## CENTRAL STATE UNIVERSITY AND SMALL BUSINESS ADMINISTRATION MARK A MILESTONE WITH SIGNATURE CEREMONY

by Crystal Duckett

Central State University (CSU) and the Small Business Administration (SBA) formally commemorated their Strategic Alliance Memorandum (SAM) renewal on Friday, October 13, 2023, with a signing ceremony. This event served as a reaffirmation of the partnership and dedication of both organizations to bolster and nurture local small businesses.

The event took place on the front steps of the historic Emery Hall, which houses Extension program offices, was attended by CSU President Alex Johnson, Ph.D., and SBA Columbus District Office, District Director Everett M. Woodel, Jr., who stood as the chief signatories; Mark Rendleman, CSU's program leader for Community and Economic Development; and Morakinyo A.O. Kuti, Ph.D., vice president for Research and Economic Development and director of 1890 Land-Grant Programs at CSU.



CSU-SBA MOU signing 2023 (L) SBA Everett M. Woodel, Jr., and CSU President Alex Johnson, Ph.D.

According to the SBA Office of Advocacy small businesses account for 99.96% of all businesses in Ohio (2022 Small Business Profile). These businesses employ 2.2 million people (44.7% of the workforce) in Ohio. CSU and SBA reaffirmed their collective commitment to champion the launch, preservation, and capacity building of the small businesses ecosystem. Their collaboration emphasizes mutual respect, transparency, and stringent adherence to legal requirements, all targeting a robust small business ecosystem, both Johnson and Woodel agreed.

The Commemorative Signing event has further solidified Central State University and the Small Business Administration's pledge to fuel the aspirations and ambitions of small businesses. Their shared vision promises a brighter economic horizon for the community.

To learn more about CSU's Community and Economic Development program and the memorandum renewal at Central State University, email Mark Rendleman [mrendleman@centralstate.edu](mailto:mrendleman@centralstate.edu).



Front Row (l to r): Mark Rendleman, Everett Woodell, President Alex Johnson, Amber Twitty (CSUCED). Back Row: Terry Bolden (Columbus District Deputy Director), and Jerome Jones (SBA) Dr. Morakinyo Kuti, Ambrose Moses (CSUECED)





Keiana Briscoe    Jairus Burrows    Dylan Damiano    Chantinae Gray    Vandeleezza Hepburn    Royalty Hightower

## UNDERGRADUATE INTERNSHIP AND RESEARCH REVIEW

Students' presentation of 2023 summer work



Zakkiyah Jones    Edmond Kollie    Damon Polk    Gabrielle Rolle    Raymond Rolle    Bryant Willis

Photos by Cyril Ibe

NOT PICTURED: KHYDEA FLANAGAN & NATAJAI WELLS

Fourteen students presented at the annual Central State University Undergraduate Internship and Research Review October 4, in the CSU Student Center Ballroom from 9 a.m. to noon. Students presenters included Keiana Briscoe, Jairus Burrows, Dylan Damiano, Khydea Flanagan, Damon Polk, Chantinae Gray, Royalty Hightower, Zakkiyah Jones, Edmond B. Kollie, Gabrielle Rolle, Raymond Rolle, Natajai Wells, and Bryant Willis.



**Hongmei Li-Byarlay**, Ph.D., associate research professor of entomology, has been recognized nationally by the Association of Women in Science (AWIS) for her “innovative achievements in STEM and a commitment to workplace diversity.” Dr. Li-Byarlay, who is also Project Director for Pollinator Health for CSU’s Agricultural Research and Development Program, is one of three women AWIS honored with its “Zenith Awards.”

AWIS’s Spark, Meridian, and Zenith awards for 2023 “recognize AWIS members who demonstrate strong leadership skills, innovative thinking, and a commitment to inclusivity, diversity, equity, and accessibility in STEM (Science, Technology, Engineering, and Mathematics),” according to a press release issued by the organization.

Among other things, AWIS lauded CSU’s Li-Byarlay and other 2023 honorees for their outreach efforts to “historically excluded communities” to mentor first-generation, low-income students; for providing supportive learning environment for “rural or disadvantaged students;” and for “developing DEI (diversity, equity, and inclusion) action plans to ensure inclusion environments” for their students.

“With diversity in our workforce, we can do better with innovative and critical thinking, and connect to more cultures and people, which is the goal of STEM education,” Dr. Li-Byarlay said in explanation of why she is committed to diversity, equity, and inclusion. “The recognition further motivates me to continue striving for excellence in the workplace as a female scientist and giving back to the community to cultivate young generations of leaders and workforce in STEM.”

According to AWIS CEO Meredith Gibson, in the press release announcing the Awards; AWIS Awards recognize that diverse perspectives, experiences, and backgrounds are critical to driving innovation and progress in scientific fields. To learn more visit [Awis.org](http://Awis.org).

***“IT IS AN INCREDIBLE HONOR TO RECEIVE THIS RECOGNITION, AND I AM TRULY HUMBLLED AND APPRECIATIVE,” DR. LI-BYARLAY SAID. “I WOULD LIKE TO THANK AWIS FOR CONSIDERING MY ACCOMPLISHMENTS AND CONTRIBUTIONS. I AM EXTREMELY PROUD TO BE PART OF AWIS.”***

## NEWS EVENTS

### Summer of STEM success

by Crystal Duckett



This summer, Central State University partnered with the USDA (United States Department of Agriculture) and the DoD (Department of Defense) STEM Education Consortium to host two incredible educational experiences: The Seed to Bloom Ag-STEM Institute Residential Summer Camp and the DSEC Summer Bridge Academy.

From June 18 to 30, CSU's main campus buzzed with the excitement of young minds eager to learn and grow. The Seed to Bloom camp welcomed 56 middle school students in two separate cohorts, engaging them in various STEM-related subjects. The camp focused on integrating agriculture with science, technology, engineering, and math. Students delved into topics ranging from animal and plant science to water chemistry and gardening. They explored professional development and leadership skills alongside hands-on activities and field trips, aligning with the nationally recognized 4-H youth development program.

Complementing this, the DSEC STEM Summer Bridge Academy catered to 19 rising high school students, including two incoming college first-year students. This intensive, two-week residential camp centered on preparing participants for the demands of college life. With a keen focus on college algebra, introductory chemistry, biology, computer science, and engineering, the academy empowered students with the tools necessary to excel in their future academic pursuits.

Both programs are free, ensuring that youth from various backgrounds have an equal opportunity to explore new horizons. As the participants returned home, the seeds of knowledge planted during these camps were ready to bloom.

Sponsored by Central State University, the USDA, and the DoD STEM Education Consortium, these events represent an investment in our community's youth and a step toward a better tomorrow.

*Photo- Seed to Bloom Ag-STEM Institute Residential Summer Camp students holding their certificates at the closing ceremony.*



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## IN THE NEWS-ONLINE

[YOUTH LEARN STEM SKILLS AT CSU SUMMER CAMPS-CENTRAL STATE NEWS](#)

[BLACK FARMING CONFERENCE AT CSU-CENTRAL STATE NEWS](#)

[GROWERS DISCUSS ACCESS AT CSU BLACK FARMING CONFERENCE-WYSO](#)

[CENTRAL STATE RESEARCHERS LOOK TO DOMESTICATE WILD GRAIN-WYSO](#)

[CENTRAL STATE UNIVERSITY GETS GRANT FROM GOOGLE TO PROMOTE SCIENCE & TECHNOLOGY-ERUDERA](#)

[CENTRAL STATE'S DEPARTMENT OF WATER RESOURCES MANAGEMENT CHAIRPERSON DR. RAMANITHARAN KANDIAH NAMED FELLOW BY ASCE BOARD OF DIRECTION-CENTRAL STATE UNIVERSITY NEWS](#)



On Thursday, September 28, nearly 150

JWGCESTA students were honored for their academic achievements. The bi-annual

**Dean's List Celebration** honored students

from Spring 2023. Congratulations to these hardworking students! Visit us on Facebook to see the full photo gallery.

# HONORING PAST HEROES



**O**ctober 27, 2023 Wilberforce, Ohio - The SROTC Battalion cadets from Central State University are congregated around the burial site of Lieutenant John Hanks Alexander, who was the inaugural Professor of Military Science at CSU for the SROTC Battalion. Lieutenant Alexander holds the distinction of being the second African American to graduate from the United States Military Academy at West Point. His life ended in 1894 during his tenure as the Professor of Military Science for our program. The cadets have assembled to tidy up the Cherry Grove Cemetery located in Xenia, OH.

“The Department of War, citing Alexander as a “a man of ability, attainments, and energy,” honored him by giving a military installation at Newport News, Virginia, the name of Camp Alexander in 1918.

Learn more at [encyclopediasofarkansas.net](https://www.encyclopediasofarkansas.net)



The scenic Seed to Bloom Botanical and Community Garden in Wilberforce, Ohio, is the site of Homeschool Adventures, a Central State University Extension program.

The program involves monthly sessions led by CSU Extension Associate Clare Thorn. Elisha Fisher and her son, Brooks, 11, returned for the first fall session of Homeschool Adventures on Sept. 8.

The family, from Ohio's Madison County, has participated in the program since it began in November 2021. Homeschool families with children ages 5-11 are welcome to attend sessions of their choice. Each themed session will include an educational activity, nutrition activity, interactive game, or observation walk.

Garden programs are an outdoor learning experience, so families are encouraged to dress for the weather. Families supply water and snacks for their children, whom an adult must accompany during the entire program. Registration is required, and space is limited. Interested families may contact Thorn at [cthorn@centralstate.edu](mailto:cthorn@centralstate.edu) for additional information.

# Homeschool Adventures in the Garden

# EVENTS

Central State University Extension and Research participated in the **Farm Science Review** program, September 19-21, in London, Ohio. Cited as the largest farm show in Ohio with crowds of over 100,000 people, the three-day event is an opportunity to showcase CSU programs to Ohio's farmers.

This year's display featured CSU Extension's Mobile Health Education Unit where farmers could receive a screening on blood pressure and information on nutrition to promote healthy lifestyles. The display showcased hydroponics and ways farmers could be involved with CSU Extension programming. Three partner organizations were included in the display: Bronzeville Growers Market, Farmer Veteran Coalition, and the BIPOC Farming Network. BIPOC Farming Network was there to promote the 2023 Black Farming Conference.

➔ [View Highlight Video](#)



## 2023 Black Farming Conference

The Black and Indigenous People of Color Network (BIPOC) in collaboration with the National Afro-American Museum & Cultural Center (NAAMCC) and Central State University Extension, (CSUE) hosted the annual Black Farmers Conference September 29-30.

According to Patty Allen, chair of the 2023 event, the conference celebrates both the heritage of Black farmers in America and the regenerative Afro-Indigenous farming practices developed by enslaved farmers.

The two-day event consisted of a dinner, workshops, and skills sharing workshops featuring BIPOC farmers in Ohio sharing skills from their farms to other farmers. CSU Extension hosted a tractor-driving demonstration for farmers to learn tractor safety. A vendor tent featured USDA programs for farmers as well as sharing with other farmers.



To find out about upcoming events in your area visit:

[centralstate.edu/events](https://centralstate.edu/events)

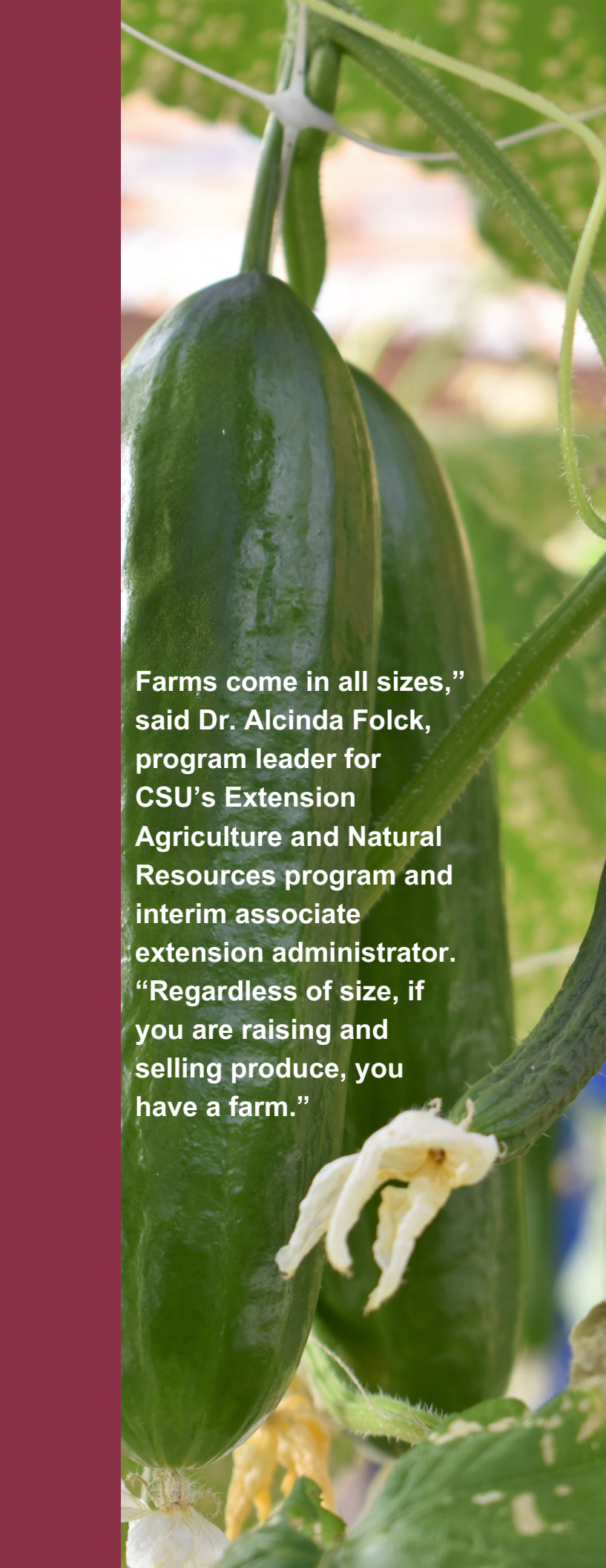
➔ [View Highlight Video](#)

# Tamiko Troutman: The Blooming Journey from Learner to Farmer

**Crystal Duckett**



*Tamiko shows off turnips grown at her home farm.*



**Farms come in all sizes,”  
said Dr. Alcinda Folck,  
program leader for  
CSU’s Extension  
Agriculture and Natural  
Resources program and  
interim associate  
extension administrator.  
“Regardless of size, if  
you are raising and  
selling produce, you  
have a farm.”**

**N**estled in the heart of Trotwood, Ohio, lies a flourishing small farm—a testament to Tamiko Troutman's dedication and to the transformative knowledge she gained from participating in Central State University Extension's Agriculture & Natural Resources Fast Track Farming Program. Troutman's garden of flowers and crops beautify her corner of Trotwood and serves as a beacon of sustainable agriculture in the region.

The journey began when Troutman enrolled in the course, seeking to bring her love of farming into full bloom. Taught by ANR (Agriculture and Natural Resources) educator Marc Amante at the Trotwood Incubator Farm, located at the Trotwood Community & Cultural Arts Center in Trotwood, Ohio; the course gave Troutman the practical skills and theoretical knowledge needed to make informed small plot farming decisions.

A particular standout from her learning experience was the adoption of drip irrigation. This efficient watering technique ensures water is delivered directly to the plant roots, minimizing waste and ensuring plants receive needed moisture. With Ohio's unpredictable rainfall patterns, drip irrigation became a momentous change for Troutman's garden enabling her plants to thrive, come rain or shine.

Using the knowledge she gained from the course, Troutman tailored her practices to suit Ohio's Zone 6B climate. This micro-level climate adaptation means her flowers and crops are visually stunning and ecologically balanced, making the most of Ohio's specific growing conditions.

"Before joining Marc's class, I thought I knew the basics. But what I learned at the Trotwood Incubator Farm opened a new world," Troutman said. "Understanding the nuances of Zone 6B and integrating drip irrigation has turned my hobby into a haven. It's no longer just about the beauty of the blooms, but the science and sustainability behind them."

Troutman's story is about more than plants. It is a narrative of continuous learning, adaptation, and the beauty that stems from melding knowledge with passion. Troutman's small farm plot stands as an inspiring example of what is possible when one has the right tools, guidance, and an unyielding love for nature.

The Fast Track Farming Program is funded by a Capacity Building Grant from USDA-NIFA. To learn more email [afolck@CentralState.edu](mailto:afolck@CentralState.edu).



CENTRAL STATE UNIVERSITY  
**HOMECOMING**  
 2023

1890 Land-Grant

Each year thousands of guests descend upon the campus of Central State University to connect with former friends, cheer the football team, and enjoy delicious food and drinks. This year they also learned about the important research taking place at CSU and the various Extension programs offered to communities throughout Ohio.

Central State University Land-Grant Homecoming 2023 activities included:

U.S (United States) Small Business Association (SBA) and Central State University Extension Strategic Alliance Memorandum (SAM) Ceremonial Signing, Friday, Oct 13, from 9-10:30 a.m. on the front porch of Emery Hall. Signing featured representatives from the US (United States) SBA and CSU Interim President Alex Johnson, Ph.D.

*(Top photo) Mr. and Mrs. ARD Jairus Burrows and Jade Simmons in the parade with Dr. Pratibha Gupta (l), Dr. Sakthi Kumaran (c), and Brian Kampman (r). (Insert photo) Mr. and Mrs. JWGESTA Dylan Damiano and Chantinae Gray.*





Activities Included:

**Land-Grant Showcase**, Friday, Oct. 13, 10 a.m. to 3 p.m. on the Hallie Q. Brown Memorial Library lawn along the Parade Route and in the Vendor Village. Land-Grant Extension and Research staff shared information about Extension’s four program focus areas—Family and Consumer Science (FCS), Community and Economic Development (CED), Agriculture and Natural Resources (ANR), and 4-H Youth Leadership Development (4-H); and Agricultural Research and Development taking place at CSU. Other activities included live demonstrations, a display of Land-Grant vehicles including the Health Education Mobile Unit.

**Agricultural Research and Development Program Open House**, Friday, Oct. 13, 10 a.m. to 3 p.m. The event consisted of tours of the corn, hemp, water resources, soil, herpetology, and bee labs; a student/faculty round table; and a networking mixer for visitors, CSU research faculty, staff, and CSU students.

**Live CSUE (Central State University Extension) Wellness Connection Forum Webinar** “Opiate Misuse,” featured Dr. Karen Mathews. Executive Director of Health & Psychological Services at Central State University on Friday, Oct. 13, from 3-4 p.m. in the basement of Emery Hall.

**Live Taping of Research Connection Podcast** episodes, Friday, Oct. 13, 4-6:30 p.m. in the Joshua I. Smith Center for Engineering and Natural Sciences (CENS Room 132). The two podcasts highlighted the scope of Land-Grant research projects and the millions of federal dollars supporting Agricultural research at CSU.

**Parade Participation**, Saturday, Oct. 14, 9 a.m. featuring Mr. and Ms. ARDP (Agricultural Research and Development Program) King Jairus Burrows and Queen Jade Simmons and Mr. and Ms. JWGESTA Dylan Damiano and Chantinae Gray.

The Central State University Homecoming is an annual event that brings together alumni from all over the country. Join us next year and save the Date (April 26, 2024) for our **10th Anniversary Celebration** and Land-Grant Open House.



(Top) Students from New Lexington, Ohio school district tour labs and learn about CSU research during Homecoming.

# Agricultural Research and Development Programs



## Developing and Infusing Emergent Technologies in Agricultural System

- Developing robotic platforms to improve irrigation scheduling in raspberry production systems using onboard soil moisture and spectral sensors.

## Sustaining Plant and Animal Systems

- Developing specialty starch hybrids through corn breeding programs that can be planted, managed, harvested, stored, and transported without the need for additional technologies available to existing corn producers
- Analyzing specialty crops for phytochemicals, especially antioxidants and metabolomics, and nutrient density associated with public health
- Improving the adaptability of sweet potato in Ohio agriculture
- Conducting hemp variety trials, breeding new hemp varieties, developing fiber-based products, building processing machinery to create new foods and modification of cannabinoids
- Quantifying biomolecule Interactions and potential Impacts on health from the use of hemp products

## Securing Natural Resources and Environmental Systems

- Identifying novel brain genes responsible for variations in honeybee grooming behavior and glyphosate effects on grooming behavior
- Measuring the contribution of honeybee ventral nerve cord to mite resistance behavior
- Quantifying climate change impacts on socially disadvantaged farmers, landowners, and communities of color
- Targeted implementation of agricultural best management practices using advanced laboratory, geospatial, and artificial intelligence techniques for improved soil health and water quality in Great and Little Miami watersheds in Ohio
- Minimizing nutrient loading into the Great Miami River, Ohio, from Dayton's wastewater treatment plant by minimizing excess infiltration and inflows (I&I) using smart sensors strategically deployed across the network of sewer pipes

## Enhancing Food Nutrition and Health Systems

- Quantifying the effects of plants and natural herbs (red sanders, cinnamon, fenugreek, and bitter melon) in controlling and managing Type II diabetes
- Identifying and quantification of antimicrobial, insecticidal, and anticancer activities of natural molecules from turmeric, garlic, ginkgo, yellow ironweed, and New England aster.
- Creating a new standard in complete segmental body composition analysis using
- Bioelectric Impedance Assessment (BIA) technology.
- Identifying linkages between myocardial NO bioavailability and H<sub>2</sub>S bioavailability resulting in cardioprotection in ischemia induced heart failure
- Identifying common Salmonella species, Escherichia coli, and Listeria species presence and persistence on produce microenvironment in aquaponic and retail systems and the development of rapid microbiological detection methods in food systems.

Funding Agency: NIFA

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# Educating the next generation of tech leaders

*Central State University Extension and Apple Team up to help teens learn coding.*

## CRYSTAL DUCKETT

Recently Central State University Extension proudly collaborated with Apple Lab Camp for a groundbreaking initiative to train the next generation of tech leaders.

Thanks to a pilot grant, CSU Extension 4-H staff including Rochelle Williams and Amber Twitty, along with volunteer Richard Smith; successfully conducted the Apple Creative Community Camp, an exclusive program tailored for high school tech enthusiasts. Eleven students from North College Hill City Schools embraced this enriching journey, making it a summer to remember.

From July 10 to the 25, the young innovators immersed themselves in the world of coding and Apple applications. Under the mentorship of the CSU team and dedicated staff from the Beavercreek, Ohio, Apple store, the students mastered the nuances of the Apple platform.

The free program, which included a complimentary lunch, took place each day, from 10 a.m. to 3 p.m. During that time, students were passionately engrossed in hands-on sessions that included workshops, presentations, and hands-on activities.



Volunteer Richard Smith with Apple Camp student.

The highlight of the summer experience was the virtual Apple Creative Community Showcase on July 25 where participants confidently showcased their skills on a national level, virtually. Presenting their projects to other camp groups from across the nation. It wasn't just a presentation; it was a testament to their dedication, passion, and the collaborative spirit of the camp.

The school recently adopted a four-day schedule and each Monday, students are encouraged to explore career opportunities via the 'Blended Learning Experiences (BLE) day.

*"We are extremely grateful for the opportunity to partner with Central State University Extension and plan to expand the BLE day to include the Apple Creative program,"- Eugene Blalock, Jr., superintendent of North College Hills City Schools*

According to Twitty, this initiative not only served as a summer retreat but also provided students with insights into CSU's extensive STEM programming, paving the way for potential future engagements and possible future career opportunities for participants with Apple.

Reflecting, the partnership between Central State University Extension and Apple Lab Camp stands as a testament to the potential of collaborative tech education. The tech world should certainly keep an eye out for these budding innovators.



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U.S. DEPARTMENT OF AGRICULTURE

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Pictured above: View from the Seed to Bloom Botanical Garden at Central State.