Central State University, Ohio’s only 1890 Land-Grant Institution Receives $10 Million Award for Innovative Sustainable Ag Research Project that Incorporates 1862, 1890, and 1994 Land-Grant Institutions!

The U.S. Department of Agriculture (USDA) has awarded Central State University, Ohio’s only 1890 Land-Grant Institution, a $10 million Sustainable Agriculture Systems (SAS) project.

The first of its kind – this five-year CSU College of Engineering, Science, Technology, and Agriculture (CESTA) led project, partners the expertise and efforts of all three types of Land-Grant Institutions – including College of Menominee Nation (1994 Land-Grant), Kentucky State University (1890 Land-Grant), and University of Delaware, University of Kentucky, and Mississippi State University (1862 Land-Grants). CSU is the only Ohio University and the only HBCU to ever receive a SAS award.
This is an historical award for Central State University,” says President of Central State University Dr. Jack Thomas. “It demonstrates CSU’s core value of academic excellence and continuous efforts to meet and enhance the university’s land grant mission.”

Dr. Brandy E. Phipps, research assistant professor of food, nutrition, and health who wrote the grant, serves as the principal investigator on the project. CESTA professors Craig Schluttenhofer, Ph.D. and research assistant professor of natural products, and Krishna Kumar Nedunuri, Ph.D. and professor of environmental engineering and water resource management serve as co-principal investigators.

According to Dr. Phipps this project impacts the entire value system chain ensuring that CSU positively impacts regional and national agricultural economics, increase the diversity of the agricultural workforce, develop environmentally and economically sustainable hemp and aquaculture systems, and ultimately improve the quality of lives of Americans – particularly those from underserved populations.

“To sustainably impact public health outcomes, we must holistically address long-standing issues of food and health inequities,” says Phipps. “This means coming alongside and partnering with communities – especially those that have been historically underserved – to build meaningful and relevant outreach and agriculture development programs that build on their existing desires and community efforts toward food sovereignty.”

We are beaming with pride at Central State University,” says F. Erik Brooks, Ph.D. and Provost and Vice President for Academic Affairs at CSU. “We are thrilled that Dr. Phipps has been awarded this grant. As provost and vice-president academic affairs, I have been charged with helping raise the university’s research profile.

This grant award will help strengthen research and build capacity for trailblazing and cutting-edge research at the university. This award is just an initial success of many more to come to help our university achieve eminence, disseminate knowledge, and serve our surrounding community.” added Dr. Brooks.

Colloquially known as SUSHI—Sustainable Use of a Safe Hemp Ingredient—this project received widespread support from all sectors of the hemp and aquaculture industries, as well as Tribal community, academic, and health sector stakeholders.

According to Dr. Phipps, stakeholders will continue to provide ongoing feedback through the life of the project. “Project goals include researching the potential use of hemp as an aquaculture feed, training and equipping new aquaculture producers, and increasing local production of produce and healthy fish in the Menominee Nation.

It is further designed to also provide workforce training to increase the Native American and African American graduates in agriculture,” Phipps added. “The partnership with College of Menominee Nation will create cross-cultural learning opportunities and experiential learning experiences for students from both institutions.”

“We in CESTA/1890 Land Grant Programs are committed to supporting Dr. Phipps and colleagues to deliver the expected outcomes to impact our stakeholders (underrepresented students, farmers and the community) to uphold the tripartite Land Grant mission of CSU,” says Michelle Corley, Ph.D., Dean of CESTA and 1890 Land-Grant Programs Director.

Other partners on this project include Mr. Brian Kowalkowski (CMN), Dr. Waldemar Rossi (KSU), Dr. Tyler Mark (UK), Dr. Brandon McFadden (UDel), and Dr. Seong Yun (MSU).
OHIO CONGRESSWOMAN JOYCE BEATTY AND OHIO SECRETARY OF STATE FRANK LAROSE JOINED A HOST OF DIGNITARIES FOR CENTRAL STATE UNIVERSITY EXTENSION FIRST – OHIO SMALL/AGRI-BUSINESS INFORMATION SUMMIT OCTOBER 13, 2021

Photo: (pictured from L to R):

Dr. Jack Thomas – President, Central State University
Congresswoman Joyce Beatty – (Ohio 3rd District) House of Representatives
Frank LaRose – Ohio Secretary of State
Dr. Michelle Corley - Dean of College of Engineering, Science, Technology & Agriculture (CESTA)/ Director 1890 Land Grant Programs
Eric Seabrook - Deputy Director, Minority Business Development Division - Ohio Department of Development
Michael Rutherford - Business Program Director, Rural Development - United States Department of Agriculture
Ron Todd - Minority Affairs- State of Ohio Office of the Governor Mike DeWine
(2nd Row, L to R)
Everett Woodel, Jr. - District Director, Central and Southern Ohio District Offices - U.S. Small Business Administration
Allison DeSantis - Ohio Secretary of State
Monique Cox-Moore – Ohio Secretary of State
Jennifer Brown – Rural Development, USDA
Jerome Jones – SBA
Barry Peel – SBA
Stacy Cornett - Department of Development – State of Ohio
(3rd Row, L to R)
Shaundretta Boykins – Department of Development – State of Ohio
Dr. Siddhartha Dasgupta – Associate Administrator - CSU Extension
Paige Alost – Extension Educator, SE Region - CSU Extension
Ambrose Moses III - Extension Educator, Ohio Statewide - CSU Extension
Eric Smith – Extension Educator, NW Region - CSU Extension
Amber Twitty – Extension Educator, Southern Region - CSU Extension
Nabil Ali – IT Coordinator, College of Engineering, Science, Technology, and Agriculture
Mohammadreza Hadizadeh, Ph.D., assistant professor of physics at Central State University, has won the National Science Foundation’s HBCU–UP/Excellence in Research Program Award for his work in quantum mechanics of nuclear and atomic systems. According to the NSF, the new HBCU Excellence in Research (EiR) component supports projects that enable STEM and STEM education faculty to further develop research capacity at HBCUs and to conduct research. This three-year grant will support Hadizadeh’s research proposal, “Yakubovsky Calculations for Six–Nucleon Bound States,” and bring about $306,000 funding, including a computational workstation, to CSU. Professor Hadizadeh also received a SOCHE Excellence Award in 2020. To learn more about Dr. Hadizadeh, visit CentralState.edu.

CSU Physics Professor Wins National Science Foundation (NSF) Award

Mohammadreza Hadizadeh, Ph.D., assistant professor of physics at Central State University, has won the National Science Foundation’s HBCU–UP/Excellence in Research Program Award for his work in quantum mechanics of nuclear and atomic systems. According to the NSF, the new HBCU Excellence in Research (EiR) component supports projects that enable STEM and STEM education faculty to further develop research capacity at HBCUs and to conduct research. This three-year grant will support Hadizadeh’s research proposal, “Yakubovsky Calculations for Six–Nucleon Bound States,” and bring about $306,000 funding, including a computational workstation, to CSU. Professor Hadizadeh also received a SOCHE Excellence Award in 2020. To learn more about Dr. Hadizadeh, visit CentralState.edu.

Central State University Professor Dr. Anthony Arment Co-authors Study

Anthony R. Arment, Ph.D., joined the Central State University Department of Biology in 2003. He is a full professor holding his Ph.D. from Wright State University in Biomedical Sciences and Molecular Biology. In addition to his professorial duties, he has consulted as a scientific advisor for Pop Test and Palisades Therapeutics (PT) for over a decade. The results of his work was recently been featured in several publications. To learn more visit https://www.tandfonline.com/doi/full/10.1080/15384101.2020.1859752 and https://www.prdistribution.com/news/woman-owned-palisades-therapeutics-in-collaboration-with-the-veterans-medical-research-foundation-is-granted-fda-clearance-to-begin-phase-ii-iii-covid-outpatient-oral-therapeutic-study-that-targets-80-of-patients-2.html

Don’t forget to visit us often on social media to see the latest news and events from CESTA/1890 Land-Grant Programs at CSU!
Central State University Assistant Professor Dr. Brandy Phipps, Ph.D., has been appointed as the newest faculty affiliate with Case Western Reserve University’s Swetland Center.

The mission of the Mary Ann Swetland Center for Environmental Health is to study the complex interplay between the environment and health. The center places special emphasis on investigating the environmental determinants of health inequities to translate these findings into policies and practices that promote community and population health.

Dr. Phipps’ honorary appointment allows Central State and the Swetland Center to collaborate on teaching, community engagement, and research initiatives in public and environmental health. It further provides opportunities for students at both institutions to have diversified and experiential learning opportunities.

Phipps’ responsibilities as a Faculty Affiliate include, but are not limited to: providing technical expertise to further Center activities through research, training & education, and community engagement; presentation of at least formal lectures, seminars, and/or other professional development initiatives; serving as an investigator, consultant, or advisor on center initiatives; contributing to the dissemination of center research, co-authoring research papers, and serving on the center advisory board.

According to Dr. Phipps, the Swetland Center uses a community-engaged research approach, working alongside institutional and academic partners such as CSU to translate these findings into policies and practices that promote healthy places for people to thrive. “We are already seeing positive outcomes from this partnership,” said Dr. Phipps. “Central State students have been attending seminars and the Fellow Showcase offered by the Swetland Center. Students are pleased with what they have learned and with the connections they have made,” she added.

CSU Professor’s appointment provides opportunities for students at both institutions to have diversified and experiential learning opportunities.
Central State student researcher, Emily Archer affirms Dr. Phipps’ assessment. Archer, who is majoring in environmental engineering, thought the presentations were very informative and she appreciated the opportunity to have meaningful discussions with Fellows. “I enjoyed discussing the importance of volunteering [in public and environmental health] and strategies for increasing volunteerism in local communities,” said Archer.

Dr. Phipps received her Ph.D. in Biomedical Sciences with a focus on Nutrition, Oncology, and Molecular Biology and Biotechnology from Virginia Polytechnic Institute and State University (Virginia Tech), during which time she served on the University Council, as a delegate to the Graduate Student Assembly, and as both a Pre-Doctoral and Doctoral Ford Fellow through the National Academies of Science, Engineering and Medicine. She received her Master of Science in Human Nutrition, Foods, and Exercise from Virginia Tech and a Bachelor of Science in Nutritional Sciences from the University of Florida.

To read the full article on Dr. Phipps visit https://case.edu/swetland/about/meet-team/faculty-affiliates.

**Professor Abu-Niaaj Appointed as Air Force Research Lab Fellow**

Lubna Abu-Niaaj, Ph.D., and associate professor of Biology in the College of Engineering, Science, Technology, and Agriculture (CESTA) at Central State University, has completed the US Air Force Research 2021 Summer Faculty Fellowship in the Environmental Engineering and Science Program. Her project focused on Microbial Bioremediation of Aquatic Systems.

**CSU Professor Ibrahim Katampe Ph.D. Presents to Nigerian Scholars and Academics**

The Workshop, held in October, supports TETFund in its Capacity Building Program (CBP) for enhancement of research activities in Nigerian’s public Higher Education Institutions (HEIs) such as Universities, Polytechnics, and Colleges of Education.
CENTRAL STATE UNIVERSITY STUDENT WINS NASA INTERNATIONAL SPACE STATION WASHING MACHINE BEST CREATIVITY AND INNOVATION AWARD

Some of the great things about attending Central State University are the numerous opportunities for undergraduate students to participate in research and special projects. Recently Suraju Lawal, a Central State University sophomore, majoring in manufacturing engineering was able to do just that and his efforts landed him an Innovators Award from NASA.

Lawal, who is also an Aircraft /Airplane Mechanic, and his team members, Himshikha Nath a math and computer science major from the University of California, and Mariam Shah, a chemical engineering major from North Carolina State University won “The Best Creativity and Innovation Award” in the International Space Station (ISS) Washing Machine Design Challenge Competition. The competition was organized for the NASA Glenn Research Center Interns as a part of the NASA Glenn Research Center Virtual Summer 2021 Internship Programs.

According to Central State University Professor of Manufacturing Engineering Dr. Abayomi J. Ajayi-Majebi, PE, CMfgE, CQE, CRE, the ISS design challenge competition offered an excellent learning experience in engineering design, teamwork, creativity and it represented a mix of engineering, scientific, intellectual and creativity effort unleashed to meet a need of world-wide significance – support for the International Space Station (ISS) Astronaut Crew hygiene needs.

"Dare the high and mighty, for under its large and towering wings, lies the golden nuggets of creativity, innovation, and genius,” -Dr. Ajayi-Majebi

Participants were challenged to assist astronaut’s, who currently wear the same clothing in the very clean environments of the ISS for about 7 to 14 days before they are changed. The six Summer Intern teams, including Lawal's team, worked on designing a washing machine that could reduce that cycle. Due to ISS payload restrictions and other constraints, no washing machine is currently available that would have allowed for a more frequent personal clothing change cycle.

Teams were tasked with assembling designs of various systems of the proposed machine and Lawal's team demonstrated the greatest amount of innovation and creativity and as a result they won the NASA Best Creativity and Innovation Award.

The ISS Washing Machine Design Challenge Competition took place on Thursday, July 1, 2021 and was overseen by a panel of Judges from around the US. Lawal's team was mentored by NASA's own Vikram Shyam, Ph.D., Ezra McNichols Ph.D., and Gordon Berger as well as Lawal's Central State mentor Abayomi Ajayi-Majebi, Ph.D., PE.
“Dare the high and mighty, for under its large and towering wings, lies the golden nuggets of creativity, innovation, and genius,” says Dr. Ajayi-Majebi. “When I think of what these students accomplished the following scripture in Psalms also comes to mind ‘The heavens declare the glory of God; And the firmament sheweth his handywork.’ Lawal and his team showed up with a design that can touch the heavens.”

Central State University Provost and Vice President for Academic Affairs, Dr. F. Erik Brooks said, “At Central State University, we are ramping up our research expectations. Whenever possible, we expect our professors to include our students in their research efforts. This is a wonderful example of these expectations.”

**CSU ROTC Scholarships-Developing 21st Century Leaders**

Army ROTC scholarships pay 100% tuition and up to $1,200 per year for books and required fees. Scholarships are awarded based on merit – like academic achievements, extracurricular activities, personal interviews, and physical fitness. Scholarship winners also receive a monthly stipend of $420.00 for each academic month.

Each scholarship may have different benefits that are attached to the type of scholarship it is. For example, the GRFD and Dedicated Guard scholarships include up to $10,000 per year room and board money. The University may also include school-sponsored benefits that can provide substantial financial assistance in room and board as long as you remain fully qualified and in good standing with ROTC and the school.

To learn more call or text 937-361-2263 or visit CentralState.edu
Research student Hosea Belton from the CSU Bee Lab received complimentary registration for Entomology 2021. The Entomological Society of America's annual meeting of 2021 took place in-person and virtually from October 31-November 3, 2021 in Denver, Colorado. Hosea presented his research in honeybee grooming behavior.

Central State University student Rohan Swami, a senior majoring in Biology, recently co-authored a paper titled "Assessment and Comparison of Two Different Methods to Extract Nucleic Acids From Individual Honey Bees." The Paper was co-authored by CSU researcher Hongmei Li-Byarlay Ph.D.. Other authors include, Brooke Ganser, David R Tarpy, and Micheline K Strand, The scientific journal is Annals of the Entomological Society of America. It is free online.

https://doi.org/10.1093/aesa/saab027.
The abstract can be read below.

Assessment and Comparison of Two Different Methods to Extract Nucleic Acids From Individual Honey Bees.

The honey bee is an excellent model system to study behavioral ecology, behavioral genetics, and sociogenomics. Nucleic acid based analyses enable a broad scope of research in functional genomics, disease diagnostics, mutant screening, and genetic breeding. Multiple levels of analysis lead to a more comprehensive understanding of the causes of phenotypic variation by integrating genomic variation, transcriptomic profiles, and epigenomic information. One limitation, however, is the sample preparation procedures to obtain high quality DNA and RNA simultaneously, particularly from small amounts of material, such as tissues of individual bees. We demonstrate that it is feasible to perform dual extractions of DNA and RNA from a single individual bee and compare the quality and quantity of the extracted nucleic acids using two different types of methods. There was a greater total yield of DNA and RNA from ethanol-based extractions with minimal differences in overall concentration in ng/µL. We describe here the first validated method for dual extraction of DNA and RNA specifically from individual honey bees.
CSU Professor Invited to Present at Natural Healing Conference

The BioNatural Healing College (BNHC) and Conference Committee invited Central State University CESTA/Land-Grant Researcher Pratibha Gupta, Ph.D. to share her expertise at the 1st BioNatural Healing Virtual Conference. As an expert in her respective field, Dr. Gupta was asked to present "Suffering and its Solution." According to Dr. Gupta, this was a great opportunity to share mutual academic research and interact among colleagues within the US and abroad. The conference was held virtually on May 24-25, 2021. For more information on Dr. Gupta visit CentralState.edu or email pgupta@centralstate.edu.

CSU Researchers Publish Peer Reviewed Papers

Researchers Eric Salas Ph.D.,(bottom left) and Sakthi Subburayalu Ph.D., (top left) recently published in Heliyon (Earth Science) NASA project. In the paper the researchers quantified the uncertainty in the landscape and determined the optimal number of samples to effectively capture the variability in the study area. This paper aims to aid researchers who would want to optimize the sample size and locations and increase certainty in results. The paper, titled "Assessing the effectiveness of ground truth data to capture landscape variability from an agricultural region using Gaussian simulation and geostatistical techniques" can be found at: https://www.sciencedirect.com/science/article/pii/S2405844021015425

Mathematics Professor Awarded Nearly $300,000 for Research

Bhupendra Paudyal Ph.D., assistant professor of mathematics, has been awarded a Research Initiation Award of $284,405 for three years to work on “Spectra on Composition Operators on Analytic Function Spaces.” This is one of the prestigious National Science Foundations research awards for early career faculty in HBCUs. Visit https://www.centralstate.edu /academics/cse/documents/Paudyal-CV.pdf to learn more about Dr. Paudyal.
CESTA College Credit Plus student, Tristin Fernandes, presented his research on “A Comparison of Central-Upwind Schemes for Solving the Burgers’ Equation” at the 2021 National Council on Undergraduate Research Conference. Tristin was mentored by Arunasalam Rahunanthan, Ph.D. Dr. Arunasalam Rahunanthan is an associate professor of mathematics and serves as the Chair of Mathematics and Computer Science department. The project was made possible by funds from the National Science Foundation (NSF).

Tristin is also working with Dr. Rahunanthan on extending this work to the Buckley-Leverett equation, which is used to model two-phase (for example, water and oil in an oil reservoir) flow in porous media. The results of which are expected to be published soon.

Tristan, who took several upper-level mathematics classes, through College Credit Plus, enrolled as a mathematics major this fall semester at Central State University. Tristin is an honors student and the recipient of Marauder Choose Ohio First Honors Scholarship supported by the Choose Ohio First program and administered by CSU’s Honors College.

Ohio’s College Credit Plus (CCP) Program helps high school students earn college and high school credits at the same time. Students enrolled in CCP take college courses from community colleges or universities. The purpose of this program is to promote rigorous academic pursuits, provide a wide variety of options to college-ready students, and help parents save money on college.

A Comparison of Central-Upwind Schemes for Solving the Burgers’ Equation

Tristin Fernandes
Faculty Advisor: Dr. Arunasalam Rahunanthan
Department of Mathematics and Computer Science, Central State University, Wilberforce, Ohio 45384

Abstract
The Navier-Stokes equations, which describes the motion of fluid substances, can be used to model several phenomena in science and engineering. The Burgers’ equation is a simplified version of the Navier-Stokes equations. There are several schemes available for the numerical simulation of the Burgers’ equation. In [1], Kurganov and Tadmor proposed semi-discrete high-resolution central schemes for solving convection-diffusion equations, such as the Burgers’ equation. In this paper, we compare two central-upwind schemes proposed in [2] and [3] to find the numerical solution of the inviscid Burgers’ equation in a one-dimensional domain.

Introduction
In 2000, Kurganov and Tadmor introduced a second-order semi-discrete central scheme in [1]. While the Kurganov-Tadmor (KT) scheme was much better than its predecessors, its main flaw was that it assumed the Riemann fans of the corresponding Riemann problem of the PDE were symmetric; therefore, its accuracy was limited. In 2001, Kurganov, Noelle, and Petrova resolved the problem in [2] by using two local speeds instead of one to more accurately calculate the width of the Riemann fans. In 2007, the Kurganov-Noelle-Petrova (KNP) scheme improved again when in [3], Kurganov and Liu introduced an anti-diffusion term in the scheme in [2] to reduce the numerical dissipation that the scheme once had. We will call this the Kurganov-Liu (KL) Scheme. Those schemes maintain a simple structure while producing accurate results, because of this, they are of great interest. In this study, we performed a numerical simulation of the inviscid Burgers’ equation using those three schemes to observe their numerical differences in one dimension.

Hyperbolic Conservation Law
We consider a one-dimensional scalar hyperbolic conservation law of the form
\[ \frac{\partial u}{\partial t} + f(u) = 0 \]
subject to the initial condition u(x, t = 0) = u_0(x).

The Central Schemes
Here, we present the most discrete time of the central schemes from [1, 2, and 3]. We recall that it is important that the scheme is the second-order, Strang-Richter scheme [4].

The KT scheme from [1] has the standard flux:
\[
\phi_{i+1/2} = \frac{u_i + u_{i+1}}{2}
\]
\[
\eta_i = \frac{u_{i+1} - u_i}{2}
\]
\[
\delta_i = -\frac{\eta_i}{2}
\]

The KNP scheme from [2] has the standard flux:
\[
\phi_{i+1/2} = \frac{u_i + u_{i+1}}{2}
\]
\[
\eta_i = \frac{u_{i+1} - u_i}{2}
\]
\[
\delta_i = -\frac{\eta_i}{2}
\]

The KL scheme from [3] has the standard flux:
\[
\phi_{i+1/2} = \frac{u_i + u_{i+1}}{2}
\]
\[
\eta_i = \frac{u_{i+1} - u_i}{2}
\]
\[
\delta_i = -\frac{\eta_i}{2}
\]

Time Marching for the Scheme
The time integration adopted for solving the scheme is the second-order, Strang-Richter scheme [4].

\[
x_i^{n+1} = x_i^n + \frac{\Delta t}{2} f(u_i^{n+1})
\]
\[
x_i^{n+1} = x_i^n + \frac{\Delta t}{2} f(u_i^n)
\]
\[
x_i^{n+1} = x_i^n + \frac{\Delta t}{2} f(u_i^{n+1})
\]

Numerical Results
We approximate the solutions to the inviscid Burgers’ equation
\[
x_i^{n+1} = x_i^n + \frac{\Delta t}{2} f(u_i^n)
\]
with the Riemann initial data
\[
\phi_{i+1/2}^{n+1} = \phi_{i+1/2}^{n} + \Delta t \frac{\partial \phi_{i+1/2}}{\partial t}^{n+1/2}
\]
This particular PDE has a prior solution of the form
\[
x_i^{n+1} = x_i^n - \Delta t f(u_i^n)
\]
In this scheme, we can see that the numerical flux is the right and left-hand side of the Riemann problem.

Conclusion and Future Work
In this study, we performed a simulation of the inviscid Burgers’ equation using the three schemes described in [1, 2, and 3]. We compared the results provided by the three schemes. The results show that while the newer schemes can provide numerically better results than the KT scheme in one dimension, there is virtually no difference between the new schemes in one dimension post-shock. In one dimension, there are no eigenvalues of the Jacobian to calculate, because of this, the second term of the numerical flux in [2] and [3] from our experience will almost always be zero. Because of this, we plan to test these schemes on the Buckley-Leverett Equation with multiple dimensions so that we can fully understand their numerical differences.

References

Acknowledgements
The authors are supported by National Science Foundation (NSF) under Grant No. HED-1963015.
Mohammadreza Hadizadeh, Ph.D., assistant professor of physics, co-authored a paper titled "Relativistic nucleon-nucleon potentials in a spin-dependent three-dimensional approach." The paper appears in the September 2021 edition of Scientific Reports Journal of Nature Research. The article proposes a novel computational technique to calculate relativistic nucleon-nucleon interactions to be applied in nuclear structure and reactions calculations. The research was performed in collaboration with the KNT University of Technology (Tehran). To read the full paper visit: https://www.nature.com/articles/s41598-021-96924-1

This study was supported by an NSF Excellence in Research (EiR) grant.

Under the direction of Dr. Hadizadeh, CESTA also received a research and development grant for the amount of $303,242 from the National Science Foundation. More information on the project, titled "Targeted Infusion Project" to bring computational thinking and computing skills to CSU by infusing computational learning opportunities into the Natural Sciences curriculum," can be found at: https://www.nsf.gov/awardsearch/showAwardAWD_ID=2107320&HistoricalAwards=false

Central State University (CSU) has been awarded more than $100,000 through Regionally Aligned Priorities in Developing Skills (RAPIDS) program by the Ohio Department of Higher Education.

The purpose of the RAPIDS program is to support collaborative projects among higher education institutions to strengthen education and training opportunities that maximize workforce development efforts in the state.

Through the RAPIDS grant, the College of Engineering, Science, Technology, and Agriculture will acquire equipment for education and training of CSU students in Computer Science, Environmental Engineering, and Manufacturing Engineering programs. Dr. Arunasalam Rahunanthan, Chair and an Associate Professor of Mathematics, serves as Project Director for the RAPIDS program at CSU.
Sakthi Subburayalu, Ph.D. named 2021 Conservationist of the Year

Central State University Research Assistant Professor of Soil Science and Agronomy Sakthi Subburayalu, Ph.D. has been named 2021 Conservationist of the Year by the Warren County Soil and Water Conservation District. This award is presented annually to an individual who has excelled at conservation of the natural resources of Warren County. Dr. Subburayalu was nominated by Ohio State Representative P. Scott Lipps who represents the 62nd District of the Ohio House of Representatives.

Dr. Subburayalu also received commendations from Ohio State Senator Steve Wilson and Rep. Scott Lipps (pictured in photo with Dr. Subburayalu) for his dedication to conservation.

Dr. Subburayalu received his B.Sc. Agriculture and M.Sc. Soil Science degrees from Tamilnadu Agricultural University (Coimbatore, India) and Ph.D., from The Ohio State University (OSU). He has worked as a research scientist with projects in digital soil mapping, water quality and urban forestry. He presently serves as project lead for a soil health and water quality project in the Great and Little Miami watersheds in Ohio. His research interests include soil and water conservation, data science in digital agriculture, application of machine learning and remote sensing for precision agricultural management. Dr. Subburayalu is an active partner in the Caesar Creek Collaborative conservation efforts and his work is increasing conservation projects in Warren County.

CSU CESTA Researchers and Extension Staff Host Black Farmers Tour

CSU CESTA Dean and Director of Land-Grant Programs Michelle Corley Ph.D. (center) pictured with Paula Hicks-Hudson, Former Mayor of Toledo and current State Representative, Ohio House District 44 (left) and Juanita Brent, (right) State Representative Ohio House District 12, at the Black Farmers Tour of CSU Research plots, Friday, September 10, 2021. The Tour was part of the Annual Black Farmers Conference hosted by Agraria Farms in conjunction with Antioch College.
Conferences, Presentations, and Professional Service

Conference presentation:
M. R. Hadizadeh, Sh. Miller, and R. Swami, APS March Meeting, Virtual, USA, March 16, 2021. Calculation of rovibrational energy levels of Neon, Krypton, and Xenon dimers in momentum space (talk)
Website: https://meetings.aps.org/Meeting/MAR21/Session/X25.14

Conference presentation:
M. R. Hadizadeh, F. Nazari, and M. Radin, APS March Meeting, Virtual, USA, March 16, 2021. Nucleon-nucleon interactions in a three-dimensional momentum helicity representation (poster)
Website: https://meetings.aps.org/Meeting/MAR21/Session/H71.216

Professional Service:
-- Date: April 2021
-- Service Performed By: Dr. Mohammadreza Hadizadeh
-- Role: Member of Nuclear Theory Proposal Review Panel
-- Host Organization: National Science Foundation

CSU Student Volunteers Perform Garden Concert

Central State University (CSU) students and Marauder Marching Band members Terron Dames, (not shown) Davaughn Major, Kedron Rolle and Cadmus Inniss, worked with CSU Extension staff to provide a lunch concert in the Seed to Bloom Botanical Garden on July 21, 2021. The students organized and performed a blend of music, including music from their native country Nassau, Bahamas. The concert was designed to provide a wonderful and inspiring experience for those visiting the Garden while also honoring Bahamian culture and music. Each student also spends time working with Land-Grant staff to care for the Garden.
Congratulations to CSU 2021 Manufacturing Engineering (MFE) graduates who recently accepted job offers! Emmanuel Dorvil—General Motors (DMAX), Markus R. Puckett—Honeywell Aerospace, USA, and Bobby Gist—General Motors Engine Plant in Dayton, Ohio. Each has received starting salaries ranging from 69K–85K annually.

CESTA Hosts Student Led Summer Research Symposium

Central State University College of Engineering, Science, Technology, and Agriculture (CESTA) Hemp and Nutrition Labs recently held a Summer Research Symposium. Student researchers made presentations on various subjects including: Characterization of Common Vape Devices & Carrier Liquids, presented by Prinika Smith; Hemp Cultivation and Production of Smokable Hemp Products, presented by Koy Dudley; and Characterization of Hemp Breeding Lines, presented by Jes’Sundra Anderson. The event was held in the JISC/CENS Auditorium July 30, 2021 on the campus of CSU.

Opening remarks were given by Assistant Professor Brandy E. Phipps, Ph.D. Students were mentored by Dr. Phipps and Craig Schluttenhofer, Ph.D.
Funded by NIFA/USDA Evans-Allen Research Program and the FDA.
FACULTY & STAFF

Michelle Corley, Ph.D., Dean and Director, College of Engineering, Science, Technology and Agriculture and 1890 Land-Grant Programs
Claudine Gee, Ph.D.-Director of Fiscal Affairs and Operations
Abayomi J. Ajayi-Majebi, Ph.D., Prof. of Manufacturing Engineering
Adelynn Reeves, Laboratory Technician
Alfred Robertson, BA, Videographer
Alessandro Rengan, Ph.D., Assoc. Prof. of Manufacturing Engineering
Alvera Rea-Laboratory and Animal Care Technician and Public Engagement
Anthony Arment, Ph.D., Prof. of Biology
Arunasalam Rahunanthan, Ph.D., Chair of Mathematics and Computer Science
Augustus Morris, Jr., Ph.D., Assoc. Prof. of Manufacturing Engineering
Bhupendra Paudyal, Ph.D., Asst. Prof. of Mathematics
Brandy E. Phipps, Ph.D., Assistant Professor of Exercise Science
Cadance Lowell, Ph.D., Chair, Agricultural and Life Sciences
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