



ACADEMIC CITY
UNIVERSITY

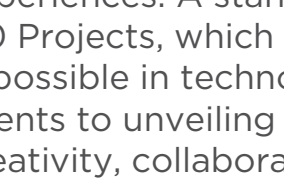


TECHNOLOGY AND
ENTREPRENEURSHIP CENTER (TEC)

The Innospire

Innovate, Inspire, Impact: The Innospire Way

October - December 2024



arm(E³)NGAGE

MakeLab ACITY-ACCRA

Introduction

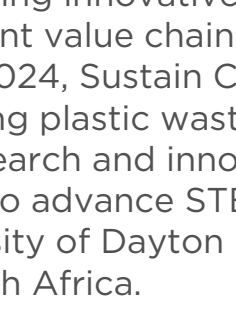
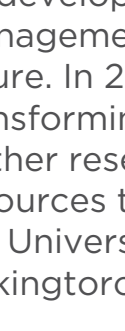
Welcome to the Q4 2024 edition of "The Innospire - Innovate, Inspire, Impact: The Innospire Way," the ACity TEC Newsletter. As the year comes to a close, we are proud to reflect on a remarkable journey filled with innovation, inspiration, and impact.

This final quarter has been a season of celebration and accomplishment, marked by transformative milestones, strengthened partnerships, and memorable experiences. A standout highlight has been the successful launch of Sustain City 2.0 Projects, which continue to champion sustainable innovation and redefine what is possible in technology and entrepreneurship. From hosting groundbreaking events to unveiling new projects, ACity TEC has solidified its role as a hub of creativity, collaboration, and forward-thinking solutions.

In this edition, we look back at our achievements, highlight the incredible energy of our students and partners, and share the stories that define our vision for the future. As we wrap up 2024, we remain committed to advancing technology and entrepreneurship in ways that leave a lasting legacy. Thank you for being part of our journey as we continue to live "The Innospire Way."

Partnership Spotlight: Empowering Innovation Together

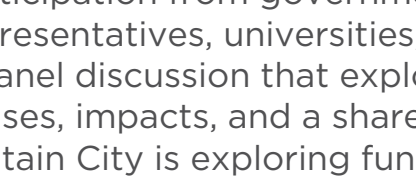
We are proud to acknowledge the invaluable support and strategic guidance provided by our esteemed partners. With their collaborative spirit and shared vision, we have achieved significant milestones and continue to drive innovation forward. Our partners include:



US State Dept. through the Coalition of Climate Entrepreneurs (CCE) Hub: Their commitment to fostering climate entrepreneurship aligns seamlessly with our mission to create impactful solutions for a sustainable future.

arm(E³)NGAGE

arm: Through our partnership, we have established cutting-edge labs and initiatives that empower students to explore emerging technologies and drive groundbreaking innovations.



Their dedication to promoting creativity and hands-on learning has enriched our educational ecosystem, enabling students to translate ideas into tangible outcomes.

Together, we are shaping a brighter tomorrow, where innovation thrives and transformative ideas come to life. Join us in celebrating these collaborative efforts as we embark on a journey of innovation, inspiration, and impact.

Sustain City 2.0 Launch: Advancing Sustainability Through Innovation

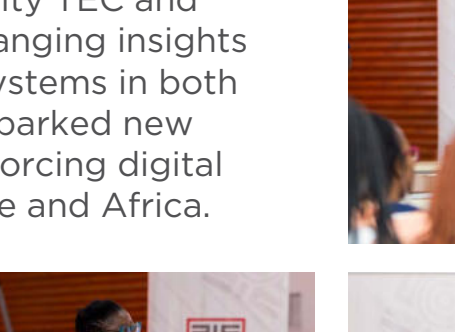
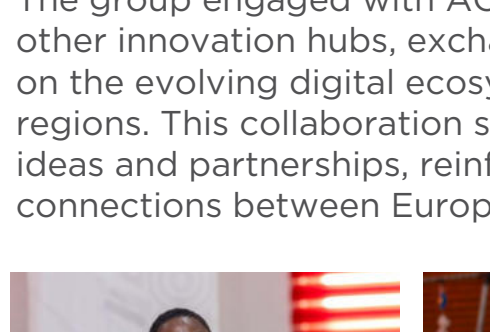


Sustain City is a campus-based startup under the Technology and Entrepreneurship Center (TEC) at Academic City University. The initiative focuses on developing innovative and sustainable interventions along the plastic waste management value chain to create value for Ghana and contribute to a greener future. In 2024, Sustain City set an ambitious goal to build machines capable of transforming plastic waste into 3D printing raw materials. This effort aims to foster further research and innovation in producing robotic kits and other educational resources to advance STEAM education in Ghana. The project's partners include the University of Dayton in Ohio, Millersville University in Pennsylvania, and Mckintorch Africa.

Between June and October 2024, students from three institutions—2 from the University of Dayton, 5 from Millersville University, and 12 from Academic City University—collaborated under TEC's guidance and the support of the engineering workshop at Academic City. Over four months, they designed, prototyped, and built a plastic shredder, plastic stripping device, plastic filament extrusion machine, and an injection mold. Using a design-thinking approach, the team utilized 3D printing and laser-cutting technologies at the TEC to create initial prototypes before constructing the final machines. Early samples produced from these machines included keychains, filaments, and even a robot made from plastic bottle waste filament.

In November 2024, the second phase of the project launched at the TEC with participation from government leaders, the diplomatic community, municipal representatives, universities, sustainability startups, and NGOs. The event featured a panel discussion that explored Ghana's plastic waste challenge, addressing its causes, impacts, and a shared vision for a sustainable future. Moving forward, Sustain City is exploring funding opportunities to develop robotic kits for STEAM education and to create a Trainer of Trainers (TOT) manual to facilitate robotics training across Ghana.

Sustain City has already achieved significant milestones before its 2.0 project. It has successfully recovered plastic waste generated on campus for recycling, saving the institution thousands of cedis on waste collection. The project also designed and fabricated a sustainable plastic waste receptacle in collaboration with Mckintorch Africa, which was commercialized in 2021. Additionally, Sustain City has conducted environmental sustainability training for schools and communities and installed one of its receptacles at Wisdom Ways School within the Academic City University community. Sustain City remains committed to driving innovative, sustainable practices while contributing to environmental stewardship and education in Ghana.



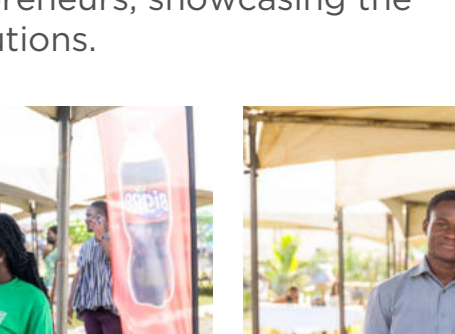
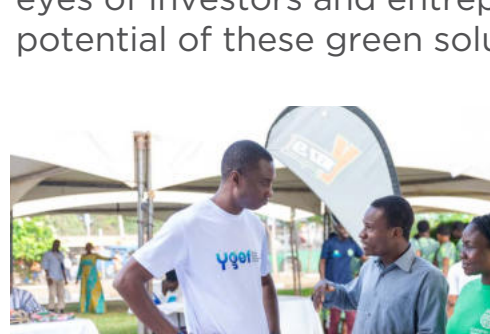
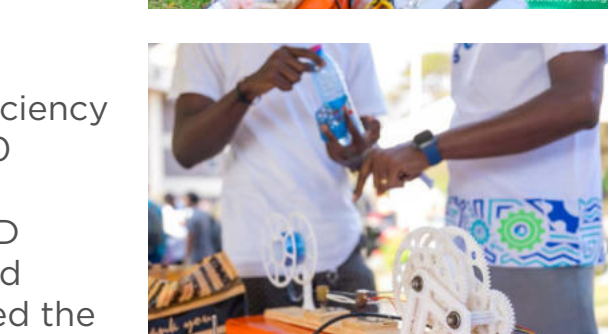
ARM(E³)NGAGE Student Club Workshop: A Hands-On Introduction to MicroPython and PyTorch



Academic City's ARM(E³)NGAGE Student Club kicked off an exciting journey into programming with Micro:bit and MicroPython. The workshop introduced members to machine learning using PyTorch, an open-source library powering AI models for tasks like predicting traffic patterns and optimizing systems.



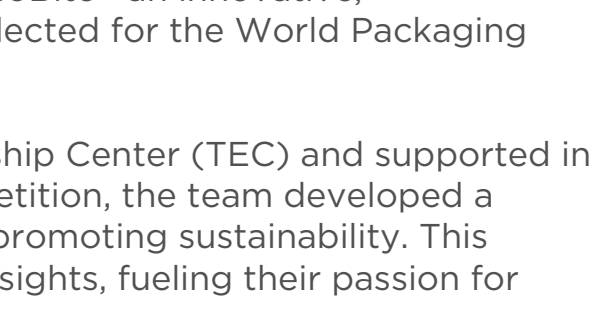
Through hands-on examples, participants explored neural networks and gained insights into how AI uses patterns for predictions. The session highlighted the potential of open-source tools like PyTorch in machine learning. Special thanks to Derrick Edem Sosoo and Zenas Awuku for their expert guidance.



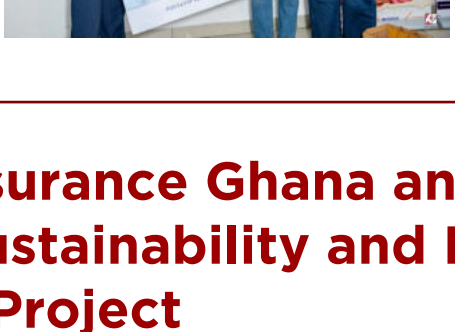
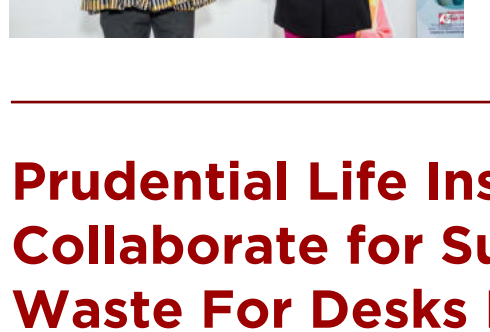
SEADE Project: A Cross-Continental Learning Journey in Ghana's Innovation Hubs



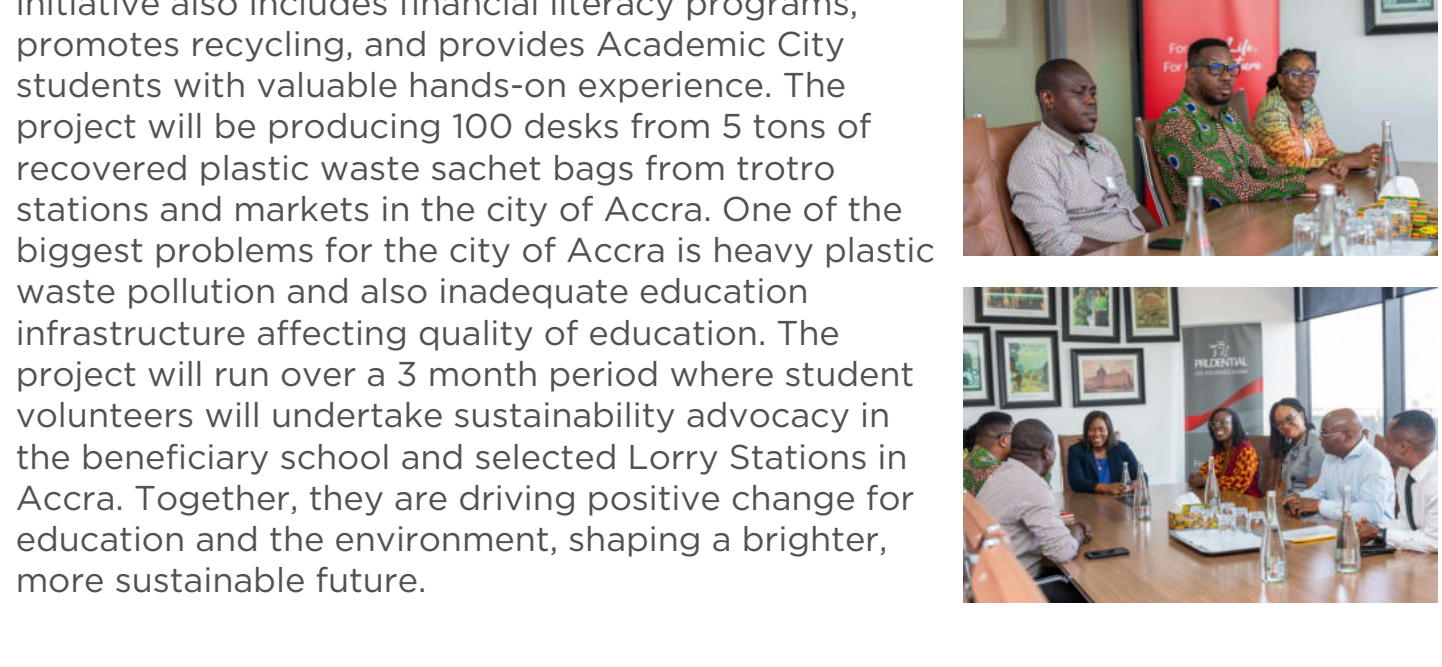
The ACity TEC hosted a group of researchers and innovators from Africa and Europe as part of the Strengthening Europe-Africa Digital Ecosystem (SEADE) project. Organized by the SEADE team, the Association of African Universities (AAU), and Hapaspase, the visit offered participants a hands-on exploration of Ghana's innovation landscape.



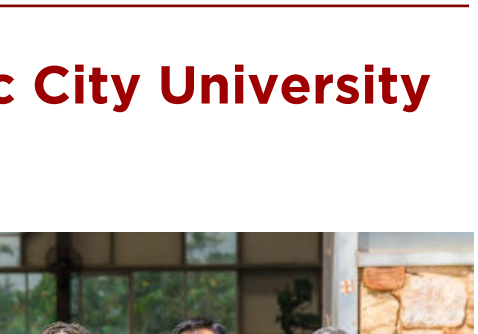
The group engaged with ACity TEC and other innovation hubs, exchanging insights on the evolving digital ecosystems in both regions. This collaboration sparked new ideas and partnerships, reinforcing digital connections between Europe and Africa.



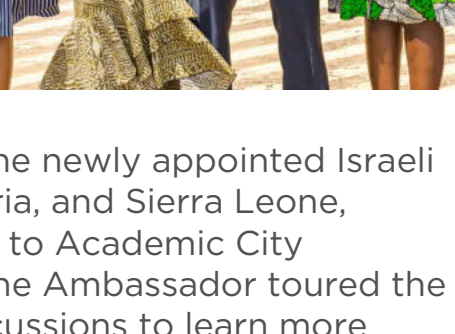
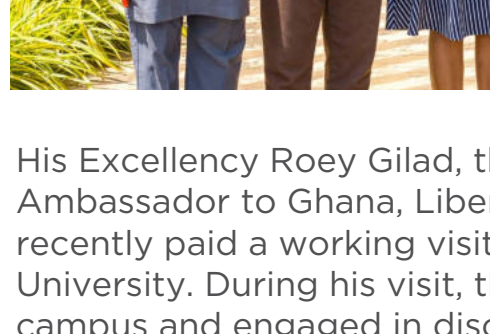
ACity Students Showcase Innovation at 2024 Young Green Entrepreneurship Forum



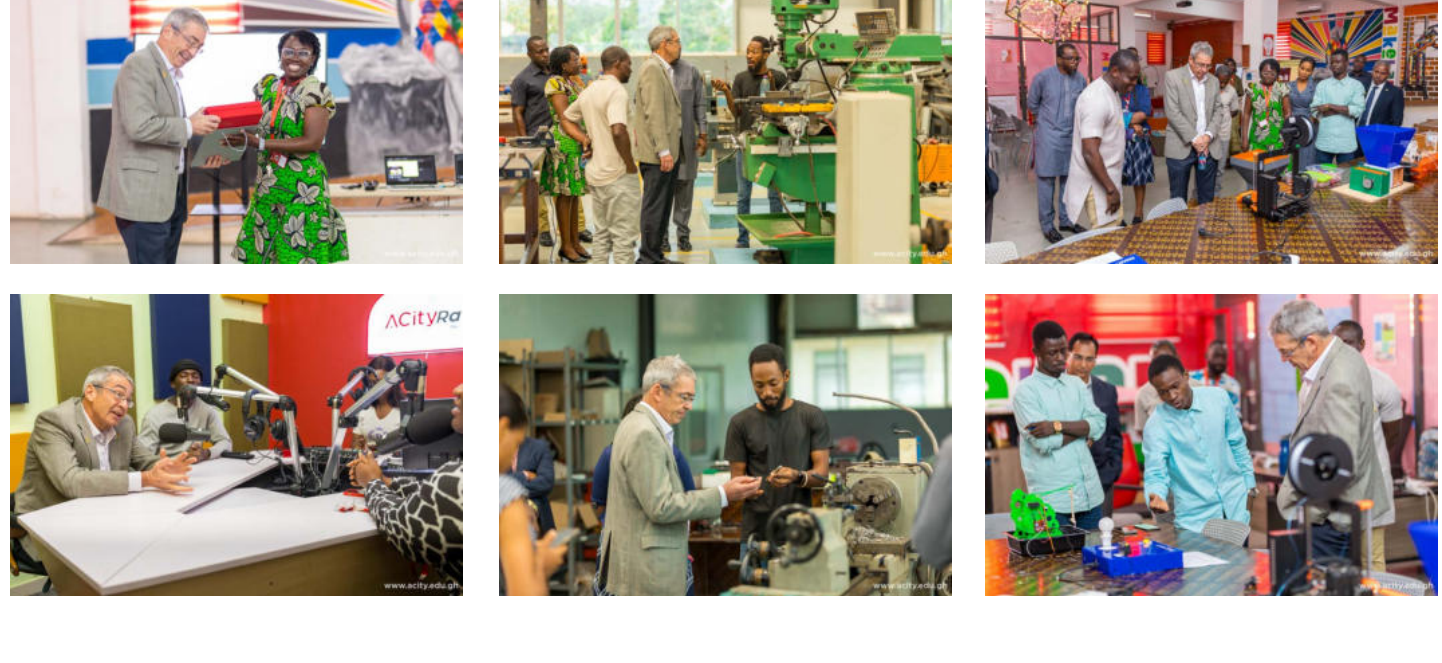
On October 4th, Academic City students participated in the 2024 Young Green Entrepreneurship Forum, where they highlighted two of their groundbreaking projects: The Sustain City 2.0 Filament Maker and the NELDI Project. Hosted at the Accra Metropolitan Assembly, the event brought together young innovators and industry leaders focused on sustainable business practices.



The NELDI Project, a device that allows users to remotely control electronic devices, garnered attention for its potential to improve energy efficiency and accessibility. Meanwhile, the Sustain City 2.0 Filament Maker drew interest for its ability to transform recycled materials into eco-friendly 3D printing filament, promoting waste reduction and sustainable manufacturing. The projects attracted the eyes of investors and entrepreneurs, showcasing the potential of these green solutions.



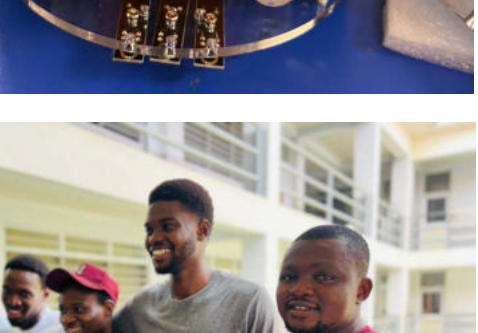
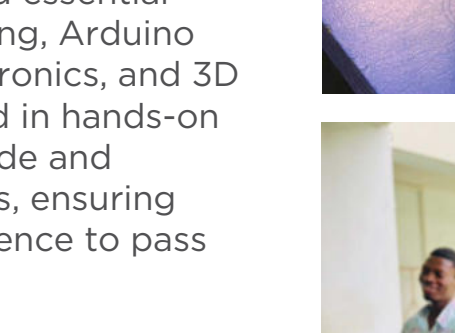
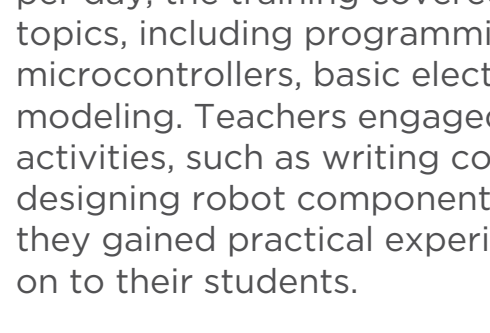
6th Edition of Packaging Research and Innovation Challenge



Academic City secured 3rd place at the 6th Students Packaging Research and Innovation Challenge by the Institute of Packaging Competition. Represented by Doreen Edwina Owoo and Karyn Amao, their project, EcoBite—an innovative, biodegradable packaging solution—has been selected for the World Packaging Competition.

Mentored by the Technology and Entrepreneurship Center (TEC) and supported in their participation in the Royal Packaging competition, the team developed a practical solution addressing plastic waste and promoting sustainability. This achievement provided valuable exposure and insights, fueling their passion for innovation.

Congratulations to Doreen, Karyn, and the team!



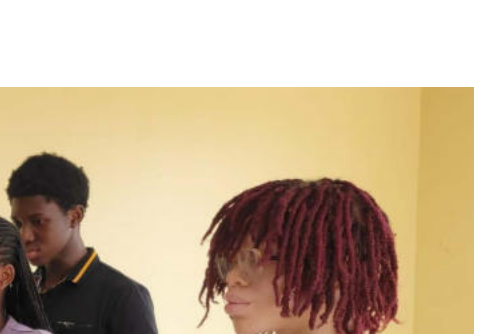
Prudential Life Insurance Ghana and Academic City Collaborate for Sustainability and Education: Plastic Waste For Desks Project



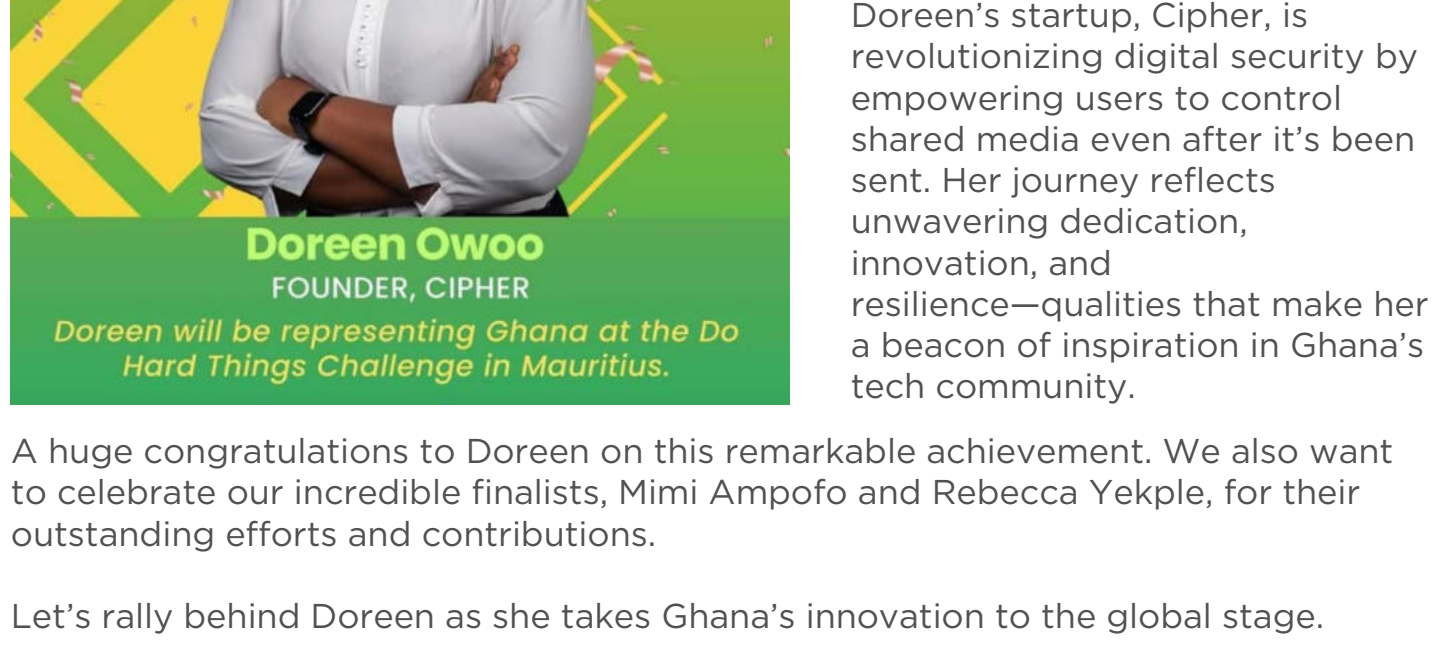
Prudential Life Insurance Ghana and Academic City University have joined forces to tackle plastic pollution and inadequate school infrastructure in underserved communities. The partnership is transforming recycled plastic into durable school desks, blending innovation with sustainability.



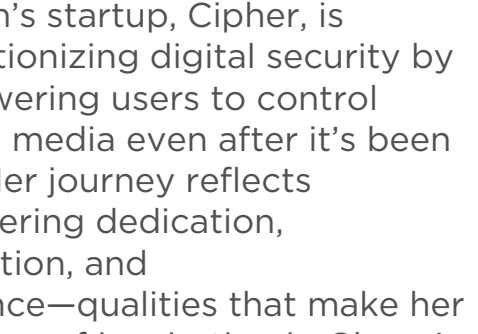
Described by Jane Mingle, Acting General of Prudential Life Insurance Ghana, as "science meets practice," the initiative also includes financial literacy programs, promotes recycling, and provides Academic City students with valuable hands-on experience. The project will be producing 100 desks from 5 tons of recovered plastic waste sachet bags from trotto stations and markets in the city of Accra. One of the biggest problems for the city of Accra is heavy plastic waste pollution and also inadequate education infrastructure affecting quality of education. The project will run over a 3 month period where student volunteers will undertake sustainability advocacy in the beneficiary school and selected Lorry Stations in Accra. Together, they are driving positive change for education and the environment, shaping a brighter, more sustainable future.



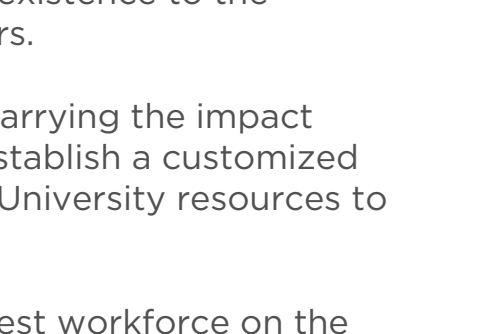
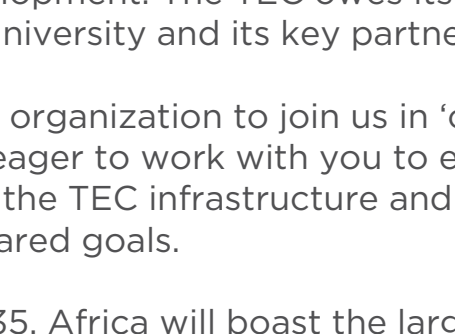
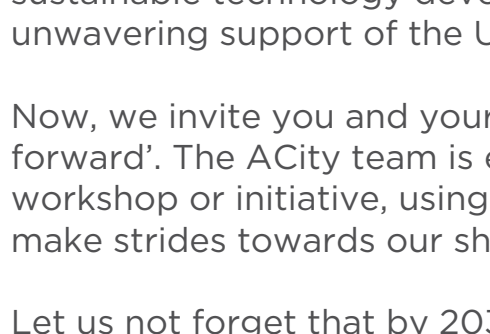
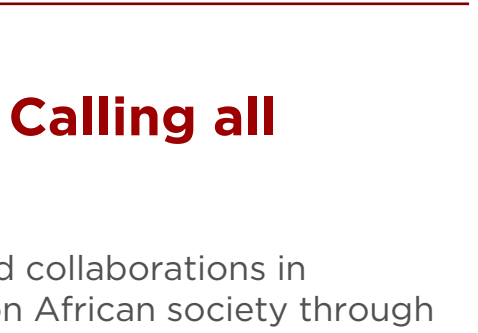
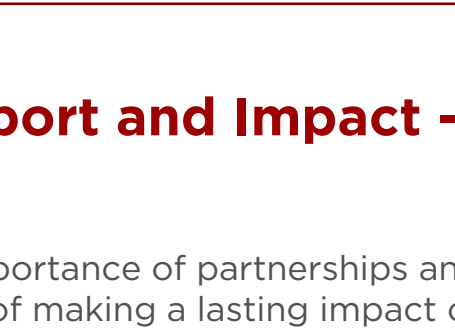
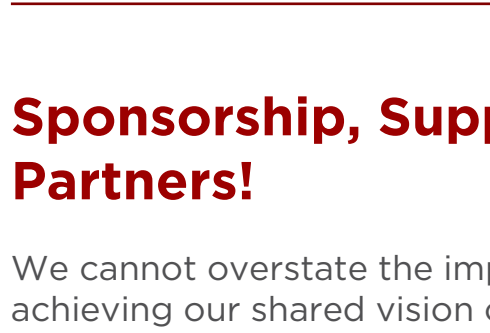
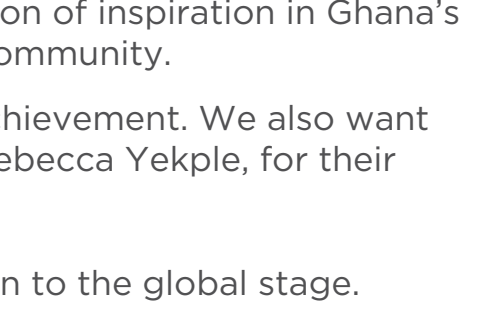
Israeli Ambassador Visits Academic City University and MakeLab ACity-Accra



His Excellency Roey Gilad, the newly appointed Israeli Ambassador to Ghana, Liberia, and Sierra Leone, recently paid a working visit to Academic City University. During his visit, the Ambassador toured the campus and engaged in discussions to learn more about the university's innovative programs and its commitment to shaping future leaders.



The visit also included interactions with staff and a tour of the university's state-of-the-art facilities. His Excellency expressed a keen interest in Academic City's contributions to technology, education, and sustainability, recognizing the university's role in advancing these crucial areas for the development of the region.



The ACity Robotics and ARM(E³)NGAGE Club Launches Training Program at St. Brother Andre Senior High School

In an effort to expand access to robotics education, ACity Robotics and ARM(E³)NGAGE Club delivered a transformative seven-week Training of Trainers (TOT) program to teachers at St Brother Andre Senior High School. Held between September and November 2024, the program was designed to equip educators with foundational robotics skills, enabling them to inspire and educate their students in STEM fields.



Conducted once a week with two sessions per day, the training covered essential topics, including programming, Arduino microcontrollers, basic electronics, and 3D modeling. Teachers engaged in hands-on activities, such as writing code and designing robot components, ensuring they gained practical experience to pass on to their students.

The program was met with great enthusiasm, showcasing the potential of empowering educators to bring robotics education into the classroom. By investing in teacher training, this initiative is fostering a generation of innovators and expanding access to technology-driven learning opportunities.

Exhibition and STEAM session at Marigold School, Tema

On November 9, 2024, the Technology and Entrepreneurship Center (TEC) and student volunteers facilitated an interactive STEAM education session at Marigold School in Ashaiman. The session, led by Lab Technician Dauda Mustapha with support from students Gloria Kamikazi, Faith Udeh, and Ethan K. Andoh, focused on 3D printing, plastic recycling, and robotics.

The session aimed to introduce students and teachers to innovative STEAM (Science, Technology, Engineering, Arts, and Mathematics) concepts and technologies while highlighting their real-world applications. Engaging activities encouraged creativity, critical thinking, and problem-solving skills, blending technical knowledge with artistic expression.

Environmental sustainability was also a key focus, inspiring participants to connect STEAM education with solutions for global challenges. Both students and teachers left the session energized and eager to explore more.

This initiative showcases TEC's commitment to fostering hands-on STEAM education and nurturing a passion for innovation and sustainability.

Doreen Edwina Owoo Wins Do Hard Things Challenge Demo Day in Ghana

We're thrilled to share that MakeLab and TEC Volunteer Doreen Edwina Owoo, Founder of Cipher, has emerged as the winner of the Do Hard Things Challenge Demo Day in Ghana. Doreen will now represent Ghana on the global stage in Mauritius.

Doreen's startup, Cipher, is revolutionizing digital security by empowering users to control shared media even after it's been sent. Her journey reflects unwavering dedication, innovation, and resilience—qualities that make her a beacon of inspiration in Ghana's tech community.

A huge congratulations to Doreen on this remarkable achievement. We also want to celebrate our incredible finalists, Mimi Ampofo and Rebecca Yekple, for their outstanding efforts and contributions.

Let's rally behind Doreen as she takes Ghana's innovation to the global stage.

Sponsorship, Support and Impact - Calling all Partners!

We cannot overstate the importance of partnerships and collaborations in achieving our shared vision of making a lasting impact on African society through sustainable technology development. The TEC owes its existence to the unwavering support of the University and its key partners.

Now, we invite you and your organization to join us in 'carrying the impact forward'. The ACity team is eager to work with you to establish a customized workshop or initiative, using the TEC infrastructure and University resources to make strides towards our shared goals.

Let us not forget that by 2035, Africa will boast the largest workforce on the planet, with nearly half of the world's population living on the continent by the end of the century. Shockingly, less than 10% of young people pursue tertiary education, leaving African workers without the necessary skills and entrepreneurial spirit to thrive in the 21st century and beyond. Time is of the essence, and we must act now.

Don't miss out on this opportunity to make a real difference. Contact us at tec@acity.edu.gh and let's explore how we can work together to create a lasting impact and drive sustainable development in the region.

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- Rental of Maker Space
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