Cultivating Global Change: FAMU Pioneers New Model for International Agricultural Development

By Heather Nicole Hayashi on April 03, 2025

Trellis Fellow Joshua Asiamah (right) from Lincoln University of Missouri, and South Asia Regional Hub Research Assistant Bishrant (left), conducting field research on a trial farm in Bhaktapur, Nepal. Their study focuses on developing effective strategies for managing soil-borne diseases. Photo courtesy of Forum for Rural Welfare and Agricultural Reform for Development (FORWARD Nepal).

"I gained an appreciation for the complexities of global agricultural challenges, realizing that solutions require more than just technical expertise—they demand empathy and adaptability." – Joshua Asiamah.

Trellis Fellow Josephine Nyame (right) from Tuskegee Institute in Alabama, performing field work as part of a West Africa Regional Hub initiative, promoting food and nutrition security in the West African sub-region through Indigenous, neglected and underutilized fruits and vegetables. Photo courtesy of University of Ghana.

A new approach to agricultural development is taking root through a groundbreaking partnership: 1890s Land Grant Universities and agricultural research organizations worldwide. Florida Agricultural and Mechanical University (FAMU), leading the Feed the Future Innovation Lab for Horticulture's Trellis Fund Fellowship Program (TFFP), is spearheading a transformative shift in how U.S. universities engage with global food security challenges.

Building on a decade of success, the Trellis initiative has strengthened food systems through partnerships between U.S. graduate students and agricultural research organizations, reaching over 12,000 farmers—65% of them women. Originally envisioned by UC Davis students in 2014, the program has since grown into a collaborative effort led by UC Davis in partnership with other leading U.S. agricultural universities. In 2024, under the leadership of Harriett Paul, Director of FAMU's Office of International Agriculture Programs, nine fellows from five 1890s Land Grant Universities brought fresh perspectives to locally driven agricultural initiatives across four global regions. The students collaborate with local researchers over the course of approximately one year, culminating in a two-week field visit at the project sites. This dynamic provides international research experience for the fellows, and external expertise to the in-country projects. "I was a Trellis Fellow and it changed how I did my research –I became more hands on," said Erin McGuire, director of the Horticulture Innovation Lab, "the program has always been one of our most impactful efforts and it has become even more so through FAMU's leadership"

To ensure lasting impact, Paul's program design strategically matched each fellow with local Principal Investigators (PIs) leading region-specific research initiatives through the Horticulture

Trellis Fellows William Larbi from Lincoln University of Missouri (second from left) and Beatrice Obungu from FAMU (to his right), interned with ICED, Horticulture Innovation Lab's East Africa Regional Hub based at ICED. Regional Hub Directors: ICED President and CEO David Ameyaw (fourth from right), and Penina Yumbya, PhD (second to right). Photo courtesy of ICED.

Trellis Fellow Tseganesh Sete (second left) from University of Maryland Eastern Shore, with PI Robert Kajobe (right). Photo courtesy of ICED.

and Development (ICED) in East Africa, University of Ghana in West Africa, Zamorano University in Central America, to Forum for Rural Welfare and Agricultural Reform for Development (FORWARD Nepal) in South Asia – focus on community-driven priorities aligned with Feed the Future goals.

This locally led approach proved particularly powerful at the East Africa Regional Hub, where two fellows advanced women-led agricultural innovation. FAMU entomology student Beatrice Obungu and Lincoln University's William Larbi joined PI Kwadwo Danso-Mensah at the International Centre for Evaluation and Development to examine women farmers' transition to horticultural crops, while University of Maryland Eastern Shore student Tseganesh Sete collaborated with Professor Robert Kajobe at Uganda's Muni University to develop technologies reducing postharvest losses. These partnerships yielded practical solutions for women farmers. "Mentoring [these fellows] was a transformative experience that advanced our understanding of the complexities women smallholder farmers face," Danso-Mensah said. "These outcomes have lefta lasting impact on the policy and intervention space by shaping the approach to program development. Hosting them has been an enriching experience, and I would highly recommend it to other researchers. Their expertise, dedication, and fresh perspectives enrich projects and significantly advance Feed the Future priorities."

Similarly, at the West Africa Regional Hub, the focus on nutrition security and youth engagement led to innovations that also empowered local communities. Tuskegee University's Josephine Nyame collaborated with PI Freda Asem at the University of Ghana on Indigenous fruits and Vegetables, while Lincoln University's Peter Owolabi partnered with PI Atanda Oladejo at

Trelils Fellow Peter Owolabi from Lincoln University of Missouri, with PI Dr. Atanda Oladejo and team members of the project in front of elementary school. Photo courtesy of Obafemi Owolowo University.

Obafemi Awolowo University to engage Nigerian youth in sustainable agriculture. "Working alongside African scientists has reinforced the importance of supporting locally led agricultural research and development," Nyame said. "The insights gained will inform [my] agricultural development approaches for years to come." For Owolabi, his defining moments came during educational outreach sessions across six schools in three Nigerian states. "Initially skeptical students became increasingly animated as we connected modern agricultural techniques with locally available resources. What made this moment particularly powerful was watching students realize that sustainable agriculture could be both innovative and accessible. Their enthusiasm convinced me that practical, localized approaches can effectively bridge traditional farming practices with modern innovations." The impact rippled through several communities, as "Peter conducted extensive youth outreach across multiple local governments," Oladejo remarked. "These interactive sessions covered transforming local waste resources into agricultural inputs for Indigenous fruits and vegetables. Engaging youth in agriculture is crucial because they bring energy, creativity, and adaptability to the sector."

In Guatemala at the Central America Regional Hub, climate adaptation challenges sparked innovative solutions. FAMU entomologist Kiara Ivy conducted field sampling and molecular analysis at Universidad del Valle de Guatemala with PI Rolando Cifuentes, developing an integrated pest management manual for protected agriculture. University of Maryland Eastern Shore doctoral candidate Erasmus Aduteye partnered with PI Salvador Vega Prado at Acceso Guatemala, surveying 50 farmers for greenhouse adoption and analyzing quality control systems that connect farmers to high-value markets. “This experience was amazing for my professional development, “ said Ivy. “I feel like a more well-rounded researcher, and it has pushed me to develop more of my working Spanish related to my field. My lab team and mentors were so welcoming, and I am forever grateful to them.” The value of these partnerships was strongly emphasized by Cifuentes, who noted, "These experiences are invaluable for both the institution and the exchange student. They expand networking opportunities and provide deep insights into the challenges other countries face in promoting sustainable agriculture." He further highlighted the enriching nature of such exchanges: “Kiara’s contributions fostered a collaborative

environment within our team.” Cifuentes also reflected on the broader impact, saying “Sharing insights with someone who can offer new perspectives is immensely beneficial,” while expressing his only regret being that the collaboration couldn't have lasted longer.

Trellis Fellow, Kiara Ivy from FAMU participating in field sample collection and evaluations (UVG Altiplano Campus, Sololá). Photo courtesy of Universidad del Valle de Guatemala.

Trellis Fellow Jacob Annan, doctoral student from Southern University (front center, fourth from left) with PI Bishnu Kumar Bishwakarma (front, third from left) and research group for the YUVA project. South Asia Regional Hub Director, Krishna Sapkota (front, second from right). Photo courtesy of FORWARD Nepal.

At the South Asia Regional Hub, two fellows advanced different aspects of agricultural resilience. Lincoln University molecular biology student Joshua Asiamah brought specialized next-generation sequencing expertise to the Nepal Agricultural Research Council, where he developed bioinformatics pipelines with scientist and PI Ram Khadka while engaging directly with farmers. The collaboration revealed benefits for both institutions and communities. "Joshua's expertise has helped our lab gain critical knowledge that is often not accessible in developing countries," Khadka said. "This will ultimately benefit smallholder farmers by providing timely and accurate disease diagnoses. His commitment to future collaboration creates ongoing opportunities for knowledge exchange between our institutions." For Asiamah, the experience fundamentally shifted his understanding of agricultural research. "One of the most profound lessons I learned was the power of collaboration and cultural understanding," he said. "Interacting with Nepalese farmers showed me that meaningful research goes beyond publishing findings—it's about empowering farmers with tools and knowledge to improve their livelihoods." This emphasis on youth engagement and empowerment continued through Southern University doctoral candidate Jacob Annan's work with Bishnu

Bishwakarma at FORWARD Nepal, where they created pathways for young entrepreneurs to build sustainable agricultural businesses.

The inaugural 2024 TFFP cohort demonstrated that when expertise from 1890s Land Grant Universities intersects with local innovation, transformative change occurs. Through these meaningful exchanges, the program creates agricultural leaders equipped to tackle global challenges while strengthening the institutions and communities they serve.

The success of this comprehensive approach – combining a six-week online preparatory training program and participatory research with hands-on field experience – has led to successful outcomes for the Trellis 2024 Cohort and global research groups. The Trellis Fellows have also served as great ambassadors, sharing the good news and great accomplishments of their program involvements. In 2025, a first cohort of 15 fellows have been selected with 8 alternates to support work across 11 countries.

Despite the recent announcement of the early termination of USAID's contract with the Feed the Future Innovation Lab for Horticulture due to federal priority shifts, FAMU will continue the Trellis Fund Fellowship Program with adaptations for the 2025 cohort. "We're committed to building on this foundation by evolving our approach," said Harriett Paul, Director of FAMU's Office of International Agriculture Programs and Center for International Agricultural Trade Development Research and Training. “The 2025 program will shift to a virtual platform using Microsoft Teams for monthly topic-based discussions beginning in late March with *Postharvest Management Strategies and Market Development in Guatemala*. The program will feature curated research materials, expert insights, and regular engagement through social media during the summer, before resuming monthly meetings for the 2025-26 academic year.” Paul emphasized that while the format is changing, the program's core mission remains intact: connecting emerging agricultural leaders with global research partners to address critical food security challenges through locally-driven solutions. “This commitment reflects FAMU’s vision for developing agricultural leaders who understand both scientific innovation and community needs”, says Paul.

Trellis Fellows and Program Director, Harriett Paul (front center) at ARD Symposium, 2024. Photo courtesy of FAMU.

Trellis Fellow Peter Owolabi (left) with PI Atanda Oladejo (right) delivering workshop in classroom to students. Photo courtesy of Obafemi Owolowo University.

"A defining moment was when initially skeptical students became increasingly animated as we connected modern agricultural techniques with locally available resources. What made this moment particularly powerful was watching students realize that sustainable agriculture could be both innovative and accessible. Their actions convinced me that our research was truly making a difference. This experience reinforced that practical, localized approaches to agricultural education can effectively bridge the gap between traditional farming practices and climate-smart innovations." – Peter Owolabi

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