

# OIP GLOBAL

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# OIP Global

As the world continues to cope with the major pandemic of a lifetime, Kansas State starts to reimagine internationalization at the University in a post-COVID-19 world. Higher educational institutions continue to provide high quality learning, research and outreach providing access to education and global solutions to global problems. Kansas State University is no different. At Kansas State University, the Office of International Programs (OIP) leads and supports the efforts of comprehensive internationalization that is so integral to the mission of the first land-grant university in the Americas. The OIP and the University continue to face many current challenges due to restricted student, faculty, scholar and staff mobility that are the traditional mainstay to in person teaching, learning, researching, collaboration, intercultural and engagement activities. These current challenges affect both the academic and resource sides of the University. We look forward to early 2022 to resume more normal international travel. The efforts of Kansas State University individuals, groups, programs and units continue to internationalize Kansas State University throughout the pandemic. This magazine highlights such continuing efforts as we embark on re-imagining internationalization at the University. A special thank you to Assistant Provost Dr. Marcellus Caldas for his work on this edition of the digital magazine. Hope you enjoy the magazine!



Associate Provost for International Programs



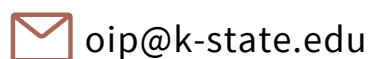
**Grant Chapman**

Associate Provost



**Marcellus Caldas**

Assistant Provost





SPRING 2022

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## OFFICE OF INTERNATIONAL PROGRAMS

785-532-5498  
k-state.edu/oip/  
oip@k-state.edu

304 Fairchild Hall  
1601 Vattier Street  
Kansas State University  
Manhattan, KS 66506



# WELCOMING NEW INTERNATIONAL STUDENTS!

Sara Thurston, Director of ISSS

International Student and Scholar Services (ISSS) was excited to welcome new students to campus this semester. Many events moved back to “in person” for orientation and students were so happy to attend the events, meet new people, and learn more about the K-State culture. Pictured is the trip to the K-State Women’s Basketball game, where students were able to try out all the cheers and songs they learned at orientation, including the school song, the Wabash, and the alma mater. The other picture reflects the outing to the Manhattan ice rink where a mix of skating levels were displayed. For many it was their first-time trying ice skating and for others, they had skated their whole lives, and still others too afraid to skate, came just to socialize.



The staff at International Student and Scholar Services (ISSS) provide vital services for K-State’s around 1,500 international students, scholars, and their families. This includes advice on U.S. immigration regulations, support during their stay in the U.S., and cultural programs. The staff assists them with visa and passport issues, work authorization, entry and exit documentation, certification of status forms, housing, programming and personal concerns. ISSS also offers assistance to faculty and departments wanting to bring international scholars to the United States. Additionally, the staff serves the entire campus as a resource on international student and scholar issues. Staff members provide leadership and support for a variety of programs that promote global awareness and understanding. For more information, please visit [www.ksu.edu/iss](http://www.ksu.edu/iss).





# The International Education Week -- IEW

*International Education Week (IEW) is a joint initiative of the U.S. Department of State and the U.S. Department of Education to promote programs that prepare Americans for a global environment and attract future leaders from abroad to study, learn and exchange experiences.*



Prof. James Douillard with Grant Chapman and Mike Day

## **THE** International Education Week at K-State presents opportunities to celebrate the

benefits of international education and exchange worldwide. Kansas State University celebrates International Education Week (IEW) each November through programs and activities for the campus and community as well as honoring individuals and organizations for their excellence in the internationalization of Kansas State University during the past year.

IEW provides a great opportunity for our university community to learn, absorb and support the international initiatives that make our campus a rich and diverse global arena. The 2021 celebration was much different than the previous year but not less important to us. Due to COVID-19 Protocols, we did not have a ceremony to congratulate our own international students, faculty as well as external distinguished individuals that contributed to K-State University internationalizations programs and activities.



# The IEW

**NEVERTHELESS** we were able to recognize the International Educator of the

Year, the International Innovative Education Program of the Year, and the Outstanding Support for International Initiatives of the Year. The International Educator of the Year award is awarded to a faculty, staff, administrator, or other member of the K-State community for major contributions and sustained commitment to advancing international education at Kansas State.

The International Innovative Education Program of the Year is awarded to an outside institute or organization for a successful international partnership or collaboration at the highest level with a Kansas State University department or unit. The Outstanding Support for International Initiatives of the Year is awarded to a Kansas State department, unit or organization that has gone above and beyond to support international programs, international initiatives or Kansas States' global student body in extraordinary ways.

The 2021 International Educator of the Year Award was presented to Professor and Dr. James S. Drouillard, professor in the Department of Animal Sciences and Industry, for making a huge impact on countless students, mentoring graduate international students and working with researchers from all around the world.

The International Initiative Education Program of the 2021 Year went to Institute of International Education (IIE) for the advancement of international programs at K-State. This award was accepted by Allan E. Goodman, Chief Executive Officer.

The Outstanding Support for International Initiatives 2021 went to the International Risk Travel Group and Risk and Compliance for helping our international students and scholars to navigate the international travel requirements. The award was accepted on behalf of the International Risk Travel Group and Risk and Compliance by Elliot Young, Assistant Vice President, University Risk and Compliance Office, and Cheryl Doerr, Associate Vice President for Research Compliance.

International Education Week (IEW2021) was different but still a success. Kansas State University continues international activities, programs and initiatives throughout the year. We look forward to celebrating internationalization at Kansas State University again in November 2022.



# K-State Pride in Ghana



## K-STATE AGRICULTURE ALUMNUS AND BHEARD SCHOLAR EDWIN KORBLA AKLEY BRINGS K-STATE PRIDE – AND AGRICULTURE TECHNIQUES -- HOME TO GHANA

**Sarah Reznikoff, Interim Associate Dean  
Graduate School**

The Soils Research program in the K-State Agronomy department conducts research from the biological, chemical, and physical perspectives to address issues of central importance to human and environmental health. International students in this program can return to their home countries with not only knowledge and skills to apply to local farming endeavors, but a professional support network of K-State faculty and colleagues.

For alumnus Edwin Korbla Akley, thanks to highly engaged faculty members and an innovative scholarship program, the relationship between his home community in Ghana and the Agronomy department at K-State began as soon as he started his graduate program. Akley, who had a bachelor's degree in Agriculture Technology with a specialty in Agronomy from the University for Development Studies in Tamale, Ghana, had worked for several years as a farm liaison and Agriculture Science instructor before he noticed an advertisement for the Borlaug Higher Education for Agricultural Research and Development (BHEARD) program. The BHEARD program honors Norman Borlaug, who won the Nobel Peace Prize for his work in preventing hunger and famine through agricultural innovation. By funding graduate education for scholars from partner countries at regional institutions or in the U.S., the program aims to develop and strengthen agricultural research in countries designated by the U.S. Government's Global Hunger & Food Security Initiative "Feed the Future."



**“I had a passion to come to the U.S. I was delighted to win the scholarship and get admission to K-State,”**

In 2013 he began the program as a master’s student fully funded by the scholarship and was subsequently awarded BHEARD funding for his PhD work as well. Akley worked under the supervision of University Distinguished Professor Charles Rice, a member of the United Nations' Intergovernmental Panel on Climate Change, which received the Nobel Peace Prize for its work in 2007.

**Akley told me in a recent Zoom interview.**



The BHEARD program requires students to conduct a significant part of their research in their home country. For Akley, this meant doing field work at the Savanna Agriculture Research Institute (SARI) in Nyankpala, Ghana; taking classes in the U.S.; and shipping soil samples between the two countries. Rice says, “Akley did an excellent job. It was especially challenging because he had to go back and forth many times.”

When asked what most struck him upon coming to K-State, Akley first remarked on the size of the university -- “When I stepped into K-State, it was big!” – but quickly turned to the quality of facilities. “I was impressed at the level of equipment compared to what I had at home. I realized that the labs in the U.S. are well-equipped, they have better instruments compared to where I was coming from. In my head, in order to do quality research, you need to get the right instrument. That should be the fundamental thing, and that is what we are lacking [in Ghana]. Without that you cannot do meaningful research.” Professor Vara Prasad, Director of K-State’s Feed the Future Innovation Lab for Collaborative Research on Sustainable Intensification and a member of Akley’s dissertation committee commented, “Soil health is a major issue in sub-Saharan Africa.

The [BHEARD] program gave Akley the chance to use tech and innovation he learned here to implement [research projects] in Ghana.” Indeed, Rice’s international permit allowed for soil samples to be shipped (or carried by Akley) from Akley’s research station in Ghana to Manhattan, KS.

In 2019 both Rice and Prasad traveled to Ghana for Akley’s thesis defense, while other supervisory committee members joined the meeting by Zoom. During their visit, Rice and Prasad toured the research station, offered advice and guidance on projects, and gave seminars to the team. This was not unusual: between them, Rice and Prasad have visited former students and postdocs working in Colombia, Vietnam, the Netherlands, Mali, Kenya, and elsewhere.

Akley now leads a team of ten researchers at SARI just a few miles from where he grew up. Using BHEARD funding, he has been able to purchase some basic equipment for his lab in Ghana. Making accurate measurements with these tools requires improvisation. Rice continues to work with Akley on co-authoring articles and applying for grant funding. The professional network Akley developed through K-State also includes Dr. Ganga Hettiarachchi, Dr. Augustine Obour, and Eric Obeng (PhD, K-State, 2018), who is a postdoctoral fellow at Prairie View A&M.

Akley appreciates not only the scientific training but the professional development his mentors provided. “Apart from being busy, they take time to know their students and take time for the welfare of their families. This is something that when I came back, I tried to do for my lab team: I tried to know the team and really show concern about their families. The professors in my department were very wonderful. Apart from the lab they try to develop people professionally: to mentor them to learn to do things on their own. This is something I am replicating here---teach students to learn to do things by themselves.”

In Manhattan, Akley was active in the Baptist church and the K-State African Student Council, through which he made friends from many other African countries including Mali and Senegal. “I am really grateful to study in the US.” While here he was supported in travel to conferences in numerous states, including Michigan, Arizona, Florida, Minnesota.

During the period of the program, BHEARD sent 99 scholars to study at a total of 25 institutions in the U.S. K-State boasted a total of ten BHEARD scholars: four from Ghana, two from Bangladesh, three from Uganda, and one from Liberia. Akley consults and collaborates with several other researchers from the program, including Dr. Eric Owusu Danquah (Ph.D. Michigan State University), who works at Akley’s sister institute, the Crops Research Institute in Kumasi (CSIR); Mary Adjepong (PhD, Michigan State University), who is now at the Kwame Nkrumah University of Science & Technology; and Gifty Sienso (Ph.D., Texas Tech University), who is interested in gender and socioeconomics and now teaches at the University for Development Studies as a lecturer. Prasad, who supervised several other BHEARD scholars called it a “fantastic” program. However, funding agencies are pivoting to a strategy more focused on developing research and teaching directly on-site, rather than bringing students to the U.S., he says. While with its Institutional Capacity Development project, the BHEARD program is doing just this, international students who aspire to careers like Akley’s can receive training and mentoring from the K-State Agronomy Department with funding from faculty research grants.

The author expresses thanks to Mathias Ndizihwe and John Bonnell, BHEARD program officials at Michigan State University, as well as Professors Charles Rice, Vara Prasad, and Nina Lilja of K-State, for their assistance with this article.



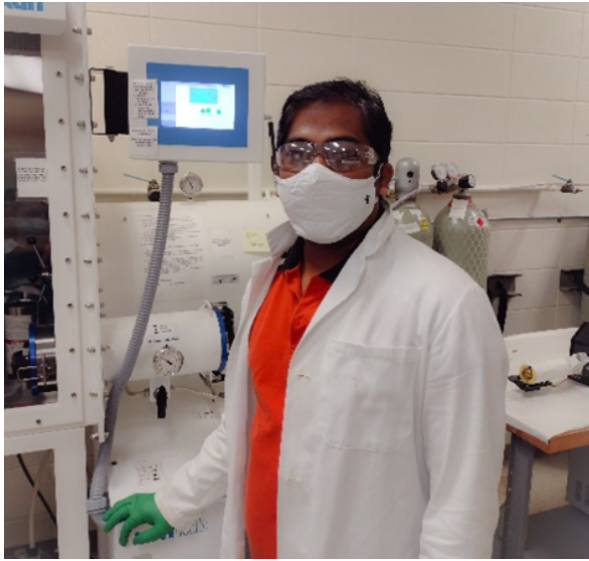


# Global Presence

## ENGINEERING PROFESSOR WORKING IN NANOTECHNOLOGY BRINGS GLOBAL PRESENCE TO HIS LABORATORY

**Gurpreet Singh, Professor**

Dr. Gurpreet Singh, Professor in Mechanical and Nuclear Engineering at Kansas State University, remembers the educational opportunity he was given as a young aspiring scientist. “Coming from India, it was a dream come true to pursue graduate school in the U.S. Thanks to the first-rate education that I received in the US, I have been able to achieve a successful teaching and research career in academia.



I felt the need to pay it forward and present these educational opportunities to other international students. Ever since I began my academic career, I have made it a point to hire underrepresented minority students and international students to conduct research in my lab. The hope is that education will help students transcend international barriers and inspire them to become global ambassadors for education.”

Singh has strong collaborations with researchers around the globe; these collaborations provide a pipeline of students who want to come and conduct hands-on research at his lab. In return, Singh and his local students at K-State learn more about different cultures, new experiments and technology used by his collaborators in Europe, Asia, and Latin America.

Dr. Gurpreet Singh has hosted three international students within the last year. The students are Ms. Carla Real from Universidade Estadual de Campinas (UNICAMP) in Brazil, Mr. Lokesh Vendra from Indian Institute of Technology–Madras (IIT Madras) India, and Ms. Heloisa Ramlow (currently visiting) from Chemical Engineering at Universidade Federal de Santa Catarina, Campus Florianópolis Brazil.





This was Carla Real's second visit K-State, her first visit was in April 2019. During her most recent visit, Carla assisted with the development of an electrospinning equipment used for making polymer fibers in Dr. Singh's lab. As part of her research program, Carla received training on synthesis of carbon nanotubes and graphene oxide films for rechargeable battery applications. Carla Real was financially supported by the Brazilian Federal Foundation for Support and Evaluation of Graduate Education (CAPES) scholarship.

During his time in Dr. Singh's lab, Lokesh Vendra was trained on scanning electron microscopy and use of polymers and ceramics such as polysiloxane derived silicon oxycarbide for energy

applications, including renewable energy storage application such as Li-ion batteries. In addition, materials synthesized at IIT Madras were tested and evaluated for energy applications. Lokesh Vendra was financially supported by the Centre for Industrial Consultancy and Sponsored Research (ICSR), IIT Madras, and Kansas State University.

Heloisa Ramlow is the most recent international student to visit Dr. Singh's lab. Heloisa is currently being trained on electron microscopy. Her research training includes preparation of coin-cells for batteries using electrospun fibers prepared at her home institution in Brazil. Heloisa Ramlow is financially supported by her home institution and Kansas State University.



# SMIL A GLOBAL HUB FOR SORGHUM AND MILLET

Benjamin Kohl, Program Administrator

Feed the Future Innovation Lab for Collaborative Research on Sorghum and Millet

## THE FEED THE FUTURE INNOVATION LAB FOR COLLABORATIVE RESEARCH ON SORGHUM AND MILLET

(SMIL) is a global hub of cutting-edge research focused on increasing the resiliency of small-scale sorghum and pearl millet producers while leveraging global benefits to the agriculture industry in the US and worldwide. Led by Dr. Timothy Dalton, SMIL director and professor of agricultural economics at Kansas State University, this ten-year program (2013-2023) supported by USAID is building on the legacy of INTSORMIL. SMIL is focused on cultivating an interconnected global research network providing innovative technology solutions and responding to emerging national agricultural research for development needs. Embedded within the research portfolio are numerous activities to build human and institutional capacity that will contribute to the long-term development of the research and development systems in Ethiopia, Niger, Senegal, and Haiti.

**SMIL NETWORK** has developed numerous national releases of improved sorghum and pearl millet varieties and hybrids. SMIL established proof-of-concept agronomic interventions to improve yield and reduce loss due to pests and poor seedling vigor for pearl millet. SMIL has developed value-added food products with highly nutritious properties and consumer acceptance studies on new products. SMIL has created the first sensory laboratory for food product evaluation in the West Africa and focused on gender-differentiated technology priorities in West and East Africa.

**IN ETHIOPIA**, strategic and applied advances were made with the discovery of genes conferring anthracnose resistance to sorghum and the official release of a farm adapted variety “Merera” with up to 43% yield gain, the release of a hybrid sorghum varieties, and hedonic testing of new sorghum hybrids with superior functionality and nutritional properties for food products, particularly injera.







**IN WEST AFRICA**, the SMIL multi-country genomics-assisted breeding platforms advanced new sorghum varieties with drought, heat, and striga resistance leading on to national seed registration. Additionally, new materials with superior food and forage quality properties and lines with resistance to sorghum midge and storage pests have been identified and incorporated into the national breeding programs. Applied research has enabled the delivery of a millet head miner control technology through integrated pest management strategies. Smallholder farmers, particularly women, are benefiting from the regional scaling of a pearl millet seed ball fabrication and planting technique that provides up to 25% yield gains. Women entrepreneurs, in partnership with national food science teams, have developed and marketed value-added food products from composite flours for porridges fortified with locally available sources of micro-nutrients. In the urban settings “economic” couscous with lower production costs and the completion of consumer acceptance and market penetration studies of new food products are guiding youth and women toward new entrepreneurial opportunities.

**NINETY STUDENTS** have benefited from post-graduate degree training; many of whom are “early career” leaders back in their respective national agricultural research systems (NARS) and are benefiting from ongoing mentoring as they contribute to building the crops and food products of the future.

**EXPLORE MORE** about the exciting impact the Sorghum and Millet Innovation Lab (SMIL) is having in close partnership with national collaborators as the SMIL global network forges a long-term vision responding to the needs of sorghum and pearl millet producers in the Africa, Haiti, and the world. Visit the SMIL website at <https://smil.k-state.edu>. Follow SMIL on Twitter and LinkedIn. Subscribe to the SMIL YouTube channel and Newsletter.





# Building Bridges to Foster Educational Equity and Excellence around the World

**Socorro Herrera, Professor  
College of Education**

**THE CENTER FOR INTERCULTURAL AND MULTICULTURAL ADVOCACY** (CIMA), housed in the K-State College of Education, fosters the professional learning and networking of educators worldwide through a diverse array of international initiatives. One of the most recent and largescale examples is the [KHBART Program](#). Formally known as “Building Leadership for Change Through Immersion,” this initiative is an ambitious, long-term endeavor of the Ministry of Education in the Kingdom of Saudi Arabia. K-State began participating in this program to help transform the knowledge, dispositions, and capacities of Saudi education professionals through professional learning and university-guided immersion in successful K-12 schools.

Currently, six countries (US, UK, Canada, Australia, New Zealand, and Finland) host cohorts of students, typically for 12-month periods. During their time at K-State, the teacher scholars share about their educational system and culture. They gain new methods and strategies for engaging learners and enhance their English language skills. In collaboration with US teachers, administrators, and university faculty, KHBART scholars develop and present an action plan for implementing educational innovations within their classrooms, schools, and larger, educational systems in the Kingdom of Saudi Arabia.

Many current collaborations with international educators are rooted in the success of prior programs. The [Go Teacher Program](#), which began during the summer of 2012, was an international partnership between the KSU College of Education, Division of Continuing Education, English Language Program, the Ecuadorian Ministry of Education, and SENESCYT, the governing body of higher education in Ecuador. This program began by providing English language development and ESL/EFL coursework to teachers from Ecuador, and it has since served over 1,000 teachers with great success at partner institutions (i.e., New Mexico State University, Northern Illinois University, University of Kentucky, Valparaiso University) and at K-State. The Go Teacher Program provided the foundation for an expanded opportunity for 42 of those teachers to earn a master's degree in Curriculum and Instruction. Today, as a result of innovative graduate programming in the College of Education, some former Go Teachers are further extending their professional learning, through studies for the doctorate in Education.

To build the bridges and connections that allow us to share the hallmarks of effective pedagogy and language instruction with educators beyond the U.S. shores, Mona Menking, CIMA international liaison, collaborates with educational ministries and entities worldwide. CIMA tailors programming and student services to achieve the goals of the funding agency. This type of collaboration promotes development of new initiatives, expands existing relationships, and allows for customization of programming to the assets and needs of specific, international audience.

CIMA also actively strives to promote critical consciousness among future teachers and in-service educators at K-State. The Marilyn and Bill Taylor International Field Trip Program provides study abroad opportunities annually to K-State students.



Through the program, students have the opportunity to collaborate with teachers and other students in various locations around the world. The students work to advance English education and increase student engagement in their host schools. Throughout their time in the host country, K-State students are guided to critically reflect on their own meaning perspectives as they gain insights into other educational systems.



International field trip participants return to Kansas with more informed perspectives and understanding of the global educational community, which they use to bolster their own practices and share with peers and colleagues.

Students who have the opportunity to travel abroad through the international field trips include participants of [Project KANCO](#), a College Assistance Migrant Program (CAMP) with sites at Kansas State University, Garden City Community College, and Colorado State University, Pueblo. CAMP provides students from migrant and seasonal farm work backgrounds assistance in completing their freshman year of college and continuing to graduation. The project is a 5-year grant funded by the Office of Migrant Education, a division of the U.S. Department of Education. CIMA provides ongoing mentoring and support to ensure that CAMP students reach their academic goals.

With the emergence of COVID-19 and the pandemic that ensued, CIMA had to re-envision international programming. We could no longer utilize infrastructures that relied solely on sending or receiving students to physical campuses. It was a time to create a new vision for international programming, one that kept student relationships at the heart of our efforts but allowed for expanded access and increased flexibility. Our focus on short-term programs evolved to one that now encompasses graduate-level certificate programs and degree programs as well.

In order to maximize resources, Ms. Menking now serves in a dual capacity to support the ongoing internationalization efforts of both CIMA and the Department of Curriculum and Instruction. This role allows her to more fluidly maximize the experience and expertise of College of Education faculty members and envision forward-thinking ways of expanding the scope of the college portfolio. Recent endeavors have opened new pathways for both CIMA and Department of Curriculum & Instruction that broaden access to the Master of Arts in Teaching (MAT) and the Doctor of Education (Ed.D.) programs for global audiences.

As we explore and map new avenues for international initiatives and programming in 2021 and beyond, we continue to reinvent ourselves. The pandemic has highlighted the urgency to be creative and adaptive and to change our structures and services to ensure CIMA and the College of Education are responsive to emerging and shifting needs of students, the education profession, and the world. Where we stand today is merely where our next journey begins.





# INTERNATIONAL EXPERIENCE IN AGRONOMY COURSE OFFERS STUDENTS A CHANCE TO EXPAND THEIR HORIZONS

NATHAN NELSON, PROFESSOR - SOIL FERTILITY; KRAIG ROOZEBOOM, PROFESSOR - CROPPING SYSTEMS; DEPARTMENT OF AGRONOMY



**FOR THE PAST SEVERAL YEARS**, groups of students from the College of Agriculture have experienced agriculture in an international context thanks to a new course offered by the Department of Agronomy. Before 2015, international programs in Agronomy were offered only occasionally at the discretion of individual faculty. Since then, the Department of Agronomy has offered students an annual opportunity to study and visit an international destination with the goal of understanding how the complex interactions of climate, soils, geography and culture influence agricultural systems. The program was formalized as a 3-credit course, International Experience in Agronomy (AGRON 502), in 2018. The typical format of the course is to study various aspects of the destination country (e.g. culture, climate, crops, livestock, government) in 8-10 weekly sessions, travel to the destination for 10-14 days, and finish up with a post-travel debriefing and student presentations about their experience for campus and local groups.



One of the challenges in offering this type of program targeted for students in the College of Agriculture is that most agriculture students have either summer jobs or internships during the summer months. That leaves either the winter holiday break or spring break as the most likely options for travel.



So far, this timing has worked well for destinations in Central or South America where important crops are actively growing in those areas during January and March. The mix of site visits has depended on the destination country, but interactions with local farmers in their fields have been a priority. These personal interactions allow students to observe farm structure, production practices, soil resources, and important local crops first-hand. Many farm visits have included hands-on activities like planting pineapple in Ecuador and making chocolate from fermented cacao beans and loading oil palm bundles in Costa Rica.

Some crops have been much more familiar to students. No-till corn and soybean production systems were observed by students visiting Brazil in 2015 and 2017.

Student feedback about what they learned during their international experiences has been resoundingly positive and has reinforced the importance of traveling to facilitate in-person observations and interactions:

**“Going to Costa Rica will help me in my future career, as it has opened my mind to a whole new viewpoint on agriculture. I think I will be more open to working with others and listening to a variety of opinions on agricultural issues I might face.” – Costa Rica 2020**

**“I THINK ALMOST EVERY SINGLE THING WE LEARNED ON THIS TRIP COULD NOT HAVE BEEN LEARNED IN THE CLASSROOM.” – COSTA RICA 2020**

**“This trip completely humbled me. Before going I viewed agriculture outside the U.S. as ‘behind the times’ or sub-par, but this is in no way true. I learned so much about agronomy and management strategies from these farmers.” – Ecuador 2018**

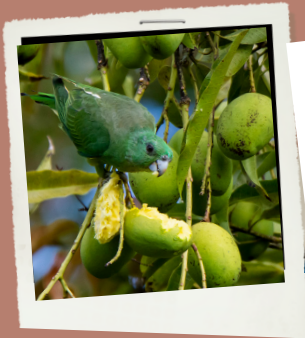


**“A FEW THINGS I LEARNED DURING THIS TRIP THAT I COULDN’T HAVE LEARNED IN THE CLASSROOM IS THE CULTURE OF ECUADOR AND CONSTRAINTS OF AGRICULTURAL PRODUCTION. THE FACT THAT WE WERE PHYSICALLY ON FARMS AND SEEING THEIR OPERATIONS MADE ME THINK OF WAYS TO BE MORE EFFICIENT AND INCREASE PRODUCTION AND PROFITABILITY.” – ECUADOR 2018**

**“Receiving a hands-on experience is hard to beat. We got to see firsthand the land, resources, methods, and challenges Brazilian farmers have to work with. It is important to think critically about how they are dealing with these challenges and be able to apply it to Kansas and U.S. agriculture. The trip reminds us that every farm is different and every environment demands unique techniques to manage the crops grown there.” – Brazil 2017**

With AGRON 502 – International Experience in Agronomy listed in the catalog as an annually available course, students can plan ahead to effectively incorporate it into their course plan. The course is one of several options that fulfills the Agronomy Capstone course requirement. Students who want to take the course earlier in their academic program can enroll in AGRON 302, which has fewer prerequisites but can’t be used to fulfill the Agronomy Capstone requirement. Graduate students can enroll in AGRON 902 for graduate credit and are expected to assist in various leadership roles in the course. AGRON 302/502/902-International Experience in Agronomy is one way that the department is meeting its K-State 2025 goal of having 10% of undergraduate students participating in an international experience.

# CATS in the Philippines



## Manny Reyes

K-State's Dr. Leland Call — for whom Call Hall is named — was assigned in 1921 to consult with the Philippines on agriculture programs. Now, a century later, memorandum of understandings for renewed partnerships were inked by KSU with 18 higher education institution (HEIs) in the Philippines with a focus on agri-food systems. These partnerships were facilitated by KSU's Office of International Programs with the Philippines Commission on Higher Education and Education USA, an initiative by the U.S. embassy in the Philippines. In addition, K-State also has a memorandum of understanding with the Southeast Asian Regional Center for Graduate Study and Research in Agriculture, or SEARCA headquartered in the Philippines.

In recent years, organic agriculture (OA) in the Philippines has become an emergent market that has been integrated into the national economy.

The Philippines has the "Organic Agriculture Act" that can be enhanced by Conservation Agriculture (CA). CA is a biodiversity friendly crop production farming system that is resilient to and can mitigate climate change. Therefore, the specific area of interest of the eighteen HEIs, SEARCA and KSU is on Conservation Agriculture for Organic Agriculture (CA4OA). The mission of CA4OA is to grow and distribute nutritious healthy food, profitably and equitably, while enhancing soil-water-air-biodiversity health, mitigating climate change, and nurturing partnerships and peaceful communities. CA4OA has been pursuing six actions: 1. CA4OA Training; 2. CA4OA research, extension, and education; 3. CA4OA K-12 experiential learning; 4. CA4OA Open Systems Agricultural Machinery Manufacturing (OSAMM); 5. CA4OA business enterprises; and 6. CA4OA integration in government policies.



The CATS is on the move, with the University of the Philippines Los Baños (UPLB) and RU Foundry, a local machinery manufacturer, and a US company, Cleber LLC, and Danfoss; this year (2022), the first Philippine made, four-wheel tractor and United States Department of Agriculture designed roller crimper will be sold by RU Foundry. The brand of the machines is UR (pronounced ‘Your’) --- ‘Your’ tractor. UR machines are manufactured in an OSAMM environment. Since the design is shared, universities and manufacturers with the farmers can tailor modify machines for adoption in unique agroecological systems for the several thousand islands of the Philippines.

CATS hunted for a marketing app and with a US company, ‘Go Native International,’ introduced Go Native, Philippines (GNP). GNP training has been provided to the 18 HEIs partners. HEI’s will use the GNP so merchants, especially farmers, can directly market products with consumers. The GNP Merchant, Delivery and Customer apps are all available in Google Play. ‘GNP Merchant’ enables merchants to set up stores and input produce or services the merchant sells; ‘GNP Delivery’ links persons in the community ‘to deliver with a fee’ goods sold by merchants to the customers, and ‘GNP Customer’ is for community to order goods from the merchants. For the island of Busuanga, Grassroots Coron Social Enterprise has started GNP in Coron, Palawan a popular tourism destination. This year, several GNP openings are envisioned by CA4OA teams in different provinces and communities.

CATS spotted Coron Natural Farms (CNF), enabling CNF to be a Philippine accredited learning site for agriculture and with SEARCA, UPLB, Regalo ng Kilit Foundation Inc, Parrot International and the United Service Foundation conducted trainings, on implementing SEARCA and UPLB’s School plus Home Garden cum Biodiversity Enhancement Enterprise (SHGBEE) initiative in several K-12 schools in the island of Busuanga.

CNF hosted field visits to at least 100 persons on CA4OA farming systems, several of which are teachers in K-12 schools; training was provided on setting the 15-30 vegetable home garden systems in schools and in households. SHGBEE supports the Philippines Department of Education directive to K-12 schools on: ‘Gulayan sa Paaralan Gawin sa Tahanan (Vegetable Garden in Schools Do It in Homes).’ Central Philippines State University has been conducting SHGBEE training using the SHGBEE training videos from Coron for the province of Negros Occidental.

CATS instead of preying on a parrot, led in the conservation of the Kilit. The Kilit, or blue headed racket tail parrot. is a vulnerable parrot endemic or can be found only in Palawan and still abundant in Busuanga Island. A CAT led for the Kilit to be declared as a flagship bird of Coron, and in organizing the first and second Kilit Festivals participated by several K-12 schools. Drama, drawing, dancing and multiple other competitions are held during the festival with several K-12 schools competing during the festival. The Kilit’s habitat is all over the island, hence with Kilit as the flagship bird it is a rallying point for communities to enhance biodiversity and regenerate several of the Kilit’s damaged habitats. Habitat boost for the Kilit is habitat upgrade for all the other flora and fauna in the island. In addition, organic agriculture is emphasized as pesticides harms the terrestrial, aquatic and marine biodiversity in Busuanga Island. Since the Kilit eats the agricultural produce of the people in the island, locals treated the Kilit as pests. To change the mindset, donations, services and competitions were done as ‘Regalo ng Kilit’ or ‘Gifts of the Kilit;’ like sports tournaments, building of basketball and volleyball courts and gardens in K-12 schools, and other services are provided to communities as Gifts of the Kilit. This led to the establishment of the Regalo ng Kilit Foundation.



CATS cared, since October 2020, every Tuesday, a CAT met with HEI’s, and every Thursday with Central Philippines State University. Discussed were education, research and extension initiatives on CA4OA that HEI’s can engage on. A CAT, lectured on conservation agriculture. These lectures will be repeated in 2022 and will be videoed and compiled by Agriportal Philippines for release in the Agriportal Philippines’ YouTube channel. Several of the HEI’s partners through engagement with a CAT are engaged on CA4OA research, and some committed to integrating CA4OA in undergraduate and graduate curriculums.



# COMPUTER SCIENCES INTERNATIONAL ACTIVITIES

DAN ANDRESEN  
&  
KELLY BEIKMANN

The Computer Science Study Abroad Program aims to enrich, empower, engage, encourage, and expose students to many opportunities. This year's trip, students will be going to the Czech Republic for one week during spring break. The trip is recommended for any student in the computer science program and related fields who have been in the program for at least one semester. The benefits of this trip are numerous as it will allow students to experience a new country and gain exposure to new experiences and points of view. This opportunity will also be a way to make connections that could open doors for their future. The students will be accompanied by CS faculty member Dan Andresen and staff member Kelly Beikmann.

All students on the trip will enroll in CIS 118 for course credit. The purpose of this course is to provide students with a professional development class that teaches them work skills. Traveling abroad will provide new opportunities while students navigate their transition to learning about an international institution. This program will also benefit our next generation of leaders and the Computer Science department. At the end of the trip and class, the students will turn in a presentation and paper regarding what they learned on their trip. Their reflection is essential to the trip because it allows the students to compare the differences between culture, professional life, and academic environments.





Kansas State University has had a unique relationship with Czech Technical University since 1992. For many years, exchange students from the Czech Republic have received generous scholarships from Joseph Barten-Dobenen, a former professor at K-State. He was also involved in helping to set up Manhattan's partner city relationship with Dobrichovice, CZ. According to Brent Holiday, Assistant Director of Education Abroad, since 2003, KSU has sent 357 students to Czech Tech while KSU has received 246 students from Czech Tech, often for the full academic year. Holiday states, "It is by far KSU's most robust exchange program and has been a fantastic partner for students in Engineering, Technology, and Mathematics fields." The Computer Science Department will continue with relationship by going abroad for one week to see the professional development opportunities for students as well as Czech Technical University.

During the trip the students will be able to explore Prague, and visit Czech Technical University and local companies.

Some of Prague locations include Prague Castle, St. Vitus Cathedral, St. George Basilica, Old Town Hall with Astronomical Clock, Tyn Church, and the Strahov Monastery & Library. At Czech Tech University, the students will be given a campus-wide tour including Library and a detailed tour of the Department of Computer Science and the Czech Institute of Informatics, Robotics, and Cybernetics (CIIRK). This tour will include attending a FIT lecture and attending lunch on campus with faculty members from CIIRK. The main presentation will be from G2OAT, which is a research group that focuses on research in discrete optimization. The focus of this group is in computational and combinatorial problems that arise (mostly in) graph theory, game mechanisms, cooperative, and non-cooperative games, and computational social choice theory.

The local tech company that the students will visit first is Paralelni Polis. Paralelni Polis is a non-profit organization with the legal form of a "society," where the structure of the company is based on membership.

The members of the organization contribute to the running of the project financially or through their own activity. This project combines art, social sciences, and modern technology. The income of this company consists of many donors. Our students will see the new Technologies, decentralization and cryptarchy in the company. The students will see how Paralelni operates completely without state participation, and how it does not draw any finances from the public.

The Computer Science Study Abroad Program aims to expose students to new and exciting opportunities, thus enriching their overall undergraduate experience. This professional development trip will offer chances for students to learn about a new country, see different types of professional companies in action, all while experiencing a new culture. It will help them develop contacts for future jobs and add valuable international experience to their resume. It will also help them to develop personal responsibility and independence. This unique environment will foster social, academic, and professional development.



# ***EWB-KSU***

## ***K-STATE ENGINEERS WITHOUT BORDERS CONTINUES WORK IN UNDERDEVELOPED COUNTRIES***

**Carley Phelps**

The Kansas State University Engineers Without Borders (EWB) Chapter, established in 2013, will soon be completing their 4th international project. They have been hard at work on their current global projects: a clean potable water system in Nicaragua, an irrigation system for a droughted area in Nicaragua, and a kitchen in Guatemala. These efforts have provided the opportunity for developing communities to grow. The chapter is also engaged locally, completing Habitat for Humanity projects and participating in outreach events such as the Konza Rotary Club’s Water Matters day.

With over 50 members, all eight departments within the Carl R. Ice College of Engineering are represented in Engineers Without Borders at K-State. The chapter is over 44% female – more than double the college’s 18% female rate. With 22% multicultural members, they surpass the current 12% multicultural rate in the college. The team’s 2021-2022 School Year activities include: Kitchen Implementation, a Remote Assessment Trip for the Irrigation Project, Projected Alternatives Analysis for the Irrigation Project, Alternatives Analysis for the Water Project, and Local Service Projects – all within the scope of the three projects that the chapter is currently pursuing.

EWB is presently taking strides in three Central American Communities: El Amate, Guatemala; El Cascabel, Nicaragua; and Santiago del Coyalito, Nicaragua. The project in El Amate began in fall of 2019 with the program itself set in place in 2014.



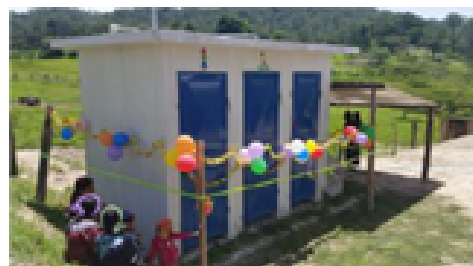


## International Projects in El Amate

After building a school, a new sanitation system, and a retaining wall in the Guatemalan city, EWB decided to build a community kitchen on the school grounds. In January 2020, members of the KSU international team traveled for the implementation of a retaining wall around the perimeter of the school yard, assessment for the kitchen implementation, and monitoring of the already implemented sanitation system. In 2021, a remote implementation of the kitchen was completed, and they are now in the final stages of closing out the Kitchen Project with a Monitoring and Evaluation trip. Project Lead, Joel Guess, described the project components, saying,



School/Community Center  
Implemented in 2015



Latrine/Sanitation System  
Implemented in 2017

**“The kitchen will include a permanent cook stove and sink, along with a large amount of open space. This open space will give the community the ability to customize the kitchen to their specific needs and really make it their own.”**



Retaining Wall  
Implemented in 2020



Community's Current Kitchen  
New Kitchen Expected Implementation in 2021

The water program and project in El Cascabel was established in Spring 2020. The development team has been working with the community located in Nicaragua just outside of Boaco. This is a community of 250 people with no access to a reliable, clean source of water. There are sixteen hand-dug wells located around the community and a river that are the main sources of water for community members. The team is studying water-well applications including using solar power, electrical pumps, or rainwater harvesting. Project Lead, Kaitlyn Ulrich describes the intentions of the project saying,

**“We partnered with this community in March 2020 to help provide a sustainable source of clean, potable water, likely by a deep well or spring with a pump.”**

In August 2020, EWB-KSU decided to take advantage of their abundance of student participation within the college of engineering, so they launched a third project: The Agriculture and Irrigation Project in Santiago del Coyolito, Nicaragua. The irrigation project team seeks to benefit a community of 580 members in Santiago del Coyolito. The community experiences elongated dry seasons that last for an average of 8 months, which creates challenges for farmers who produce food for the community. With limited natural irrigation through rainfall, the farmers are struggling to maintain crop output. The goal is to design and install sustainable irrigation systems for the farmers in Santiago del Coyolito. This includes options for drip irrigation, rain catchment, water towers, and pumps to provide enough pressure and water on a limited budget and with limited materials. The irrigation project has grown immensely, as Project Lead Carley Phelps shares,

**“Even within the first four months of partnership with Santiago del Coyolito, this project has been a source of many real-life perspectives and leadership skills that we will carry with us into many different areas in our future. We can’t wait to see what experiences lie ahead!”**





# Hunger Fighter



## K-State Graduate Student is Fighting Poverty through Sustainable Agricultural Practice in Nigeria

**Olalekan Sipasi, Ph.D. student in Horticulture  
and Natural Resource**

**ON OUR CAMPUS IS A HUNGER FIGHTER!** Yes, hunger fighter. Olalekan Sipasi (Sipasi) is young Nigerian dedicated to fighting hidden hunger and extreme poverty in Nigeria. Having grown from same, he refused to settle for the status quo, he decided to start a Not-for-Profit organization, where he trains children, youth, women and farmers in sustainable agricultural practice to fight hidden hunger and extreme poverty in order to improve their livelihood.

Agriculture is strategic to development and sustainability of Africa. This enterprise sustains about 70% of Nigerian population, from production, processing, packaging, transportation, value addition, marketing to mention but a few. Sadly, farming is directly associated with poverty in Nigeria. Most times, when you introduce yourself as a farmer, you are stereotyped, there is usually no seat for you on the high table. This also informs the high rural urban migration we witness in Nigeria.

The younger generation are not going into agriculture because of the direct experience they had from their parents. Where there is limited extension service, where there were, they are not trusted, they experience whooping post-harvest loss right on the farm, seeing middlemen/women ripping off their parents, a sad situation of buyers being the price taker or farmers forcefully composting their produce because of the ridiculous price offered by buyers. These they've seen and also experiencing the living standards of their parents depreciating by the day. No child from such a family/community would want to recycle such a lifestyle.

Sipasi passion in helping improve the production, productivity and connecting farmers to viable market has shown the full potential of what could be achieved when all hands are on deck. He explored his resources and connections to bring opportunities to his rural community.

He was funded by The Pollination Project US in 2017 to train 120 indigent women in sustainable vegetable production using local content initiative, with the support of Carrington Youth Fellowship Initiative of the US Consulate Lagos, he and his team of four others trained 25 indigents youths in FEED I (Farming for Entrepreneurship and Economic Development), they were trained on sustainable broiler chicken production, economic vegetable farming and agribusiness. The training recorded 96% success. In 2018, the US Consulate Lagos, doubled the funds for ProtectOzone to train more youths on the FEED II project. In 2019, The Consulate General of the Federal Republic of Germany Lagos also funded ProtectOzone's FEED III project. The FEED project reached more than 300 youths, women and farmers directly and 8,667 people indirectly. It is of note to mention that World Connect US funded ProjectOzone to train and establish four (4) Eco-Friendly School Farms across four (4) government schools in Lagos, Nigeria.



Idea4US funded us to train women in sustainable agriculture to mention but a few. The impact of these projects are enormous, as the youths are now job creators, the women can produce fresh vegetables for their families and for sale, the farmers learn sustainable ways of producing food.

Still leveraging on local content initiative, ProtectOzone built on the MicroVeg effective and economic water saving irrigation kit using environmental waste material. This is truly innovative. Sipasi was shortlisted by the US Dept of State among the 2019 Mandela Washington Fellows and was posted to K-State because of his leadership role his taking to improve food production in his community hosted by Staley School of Leadership Studies. During which he met his now advisor, Dr. Jeremy Cowan. Their work is focused on intercropping mushroom with various horticultural crops to improve the production and income of farmers. Sipasi with the support of his advisor recently got a grant from the US Consulate in Lagos to improve the skills of youths, farmers and extension workers in conservation and regenerative agriculture through intensive Permaculture Design Class in Nigeria for the 2022 calendar year. Let's wish them well I they proceed to Nigeria in Summer and Fall of 2022.





# Study Abroad Around the Globe without leaving the classroom

Mary Bowen, Communications  
Coordinator, Agricultural Economics  
Department,

*Imagine traveling around the globe to learn about seven different cultures in four months. For most students this wouldn't be possible, but the agricultural economics department at Kansas State University offers a course that gives undergraduate students the opportunity to study abroad without leaving the classroom.*



K-State's comparative food and agriculture systems course, AGEC 710, introduces students to the agricultural and cultural situations in the Mercosur, European Union, Russia and the former Soviet Union, East Asia, Oceania, South Asia and sub-Saharan Africa. It is taught by instructors in each of the regions, who spend two to three weeks each discussing the food and agricultural systems of their country and how it relates to the global market.

***“The Comparative Food and Agriculture Systems course changed my entire perspective of the world and how I do my job. It gave me a better understanding of the global agriculture industry,” said R.J. Layher, Policy Advisor at United States Department of Agriculture - Risk Management Agency and Master of Agribusiness alum, said.***



**"IT IS VIRTUALLY TEAM-  
TAUGHT BY  
PROFESSORS FROM  
AROUND THE GLOBE,  
ALL WITH YEARS OF  
INDUSTRY EXPERIENCE,  
SO STUDENTS GAIN  
KNOWLEDGE ABOUT  
THOSE REGIONS  
WITHOUT BEING  
INFLUENCED BY A U.S.  
BIAS. EACH  
INSTRUCTOR PROVIDES  
A DIFFERENT VIEW OF  
THE FOOD AND  
AGRICULTURE SYSTEM  
WITHIN THEIR REGION,  
AS WELL AS THEIR TAKE  
ON GLOBAL SITUATION.  
STUDENTS LEARN  
ABOUT OTHER REGIONS  
OF THE WORLD  
WITHOUT HAVING TO  
LEAVE THE K-STATE  
CAMPUS."**

The award-winning course was originally developed as an elective for K-State's Master of Agribusiness online program but was restructured to also allow undergraduate students the opportunity to learn about the global nature of the agriculture industry.

The course is delivered through distance technology by professors from France, Russia, Uruguay, New Zealand and Thailand. Current professors include Allen Featherstone, a K-State agricultural economics department head, professor and director of the Master of Agribusiness program; Ravipim Chaveesuk, a professor with an agro-industry technology management background at Kasetsart University in Bangkok, Thailand; Roberto Fava Scare, founding partner of Markestrat Consulting Group in Sao Paulo, Brazil; Theodora Hyuha, a professor of agribusiness at Makerere University in Kampala, Uganda; Nic Lees, a senior lecturer in agribusiness management at Lincoln University and an agribusiness consultant for Aglobal Ltd. in Christchurch, New Zealand; Tiago Siqueira, an agribusiness expert and researcher for Cirad in Toulouse, France; Rajinder Sidhu, Dean of the College of Basic Sciences and Humanities at Punjab Agricultural University in Ludhiana, India; and Eugenia Serova, Director for Agricultural Policy at the Higher School of Economics in Moscow, Russia.

The course offers an in-depth view of the global food and agribusiness industry from people who have experienced it firsthand. The goal of the course is to give U.S. students an inside view of international agriculture taught by those with a lifetime of knowledge regarding the region, according to Featherstone.





Facilitated by Featherstone, each professor provides lectures, readings and an assignment for his or her module. Students can watch the lectures and finish the readings at their own pace within each section. Each module contains information regarding the culture, politics and history of the region; maps and photos; a complete economic portrait; and detailed information about the agricultural situation. Key crops, livestock, and imports and exports are discussed and compared with the U.S.

***Live chat sessions are led by the international professors, so students can ask questions and interact directly with faculty around the globe. The opportunity to question the instructors about reading materials or current events creates an interactive and engaging learning environment as well as establishes international connections.***

"The flexibility of the course was very handy. I could watch the lectures on my own time as long as I had them completed before the chat sessions," said Phil White, agricultural communications and journalism alum, said.

"It was neat to connect live with professors all around the world and be able to ask questions."

The course is helpful to students in several majors, White said.

***"I think a lot of students would enjoy and learn from the class. I would highly recommend it, especially for business and economic majors because agriculture affects the global economy," he said. "I thought the course was a good way to learn about the global economy without all of the traveling."***

The three-credit hour course is open to students with junior standing and is offered in the spring semester. More information is available by calling 785-532-4495. To find out more about the course or to enroll, go to [www.mab.ksu.edu](http://www.mab.ksu.edu).



# Joint Agricultural Research by the U.S and Israeli Scientists

## Integrated Solution Systems

### Development for Precision Fertilizer Management

By Maria Sweet



The U.S.-Israel Binational Agricultural Research and Development (BARD) funds a project for developing an integrated system capable of quantifying soil spatiotemporal variations at the field level to facilitate optimal fertilization before and during the crop growing season. This project is in its third year and is conducted jointly by Kansas State University (KSU), U.S, Colorado State University (CSU), U.S, and Galilee Research Institute, Israel.

For the U.S team, Prof. Raj Khosla, Dept. Head of Agronomy and Director of Precision Agricultural Lab, hired Mr. Wub Yilma from Ethiopia, as Ph.D.-level graduate student. The project is currently conducted at five different locations, in the state of Kansas and Colorado. Data collection was conducted in 2020 and 2021, soil samples, proximal, multi-spectral, thermal, hyperspectral, and ground truth yield data were collected.



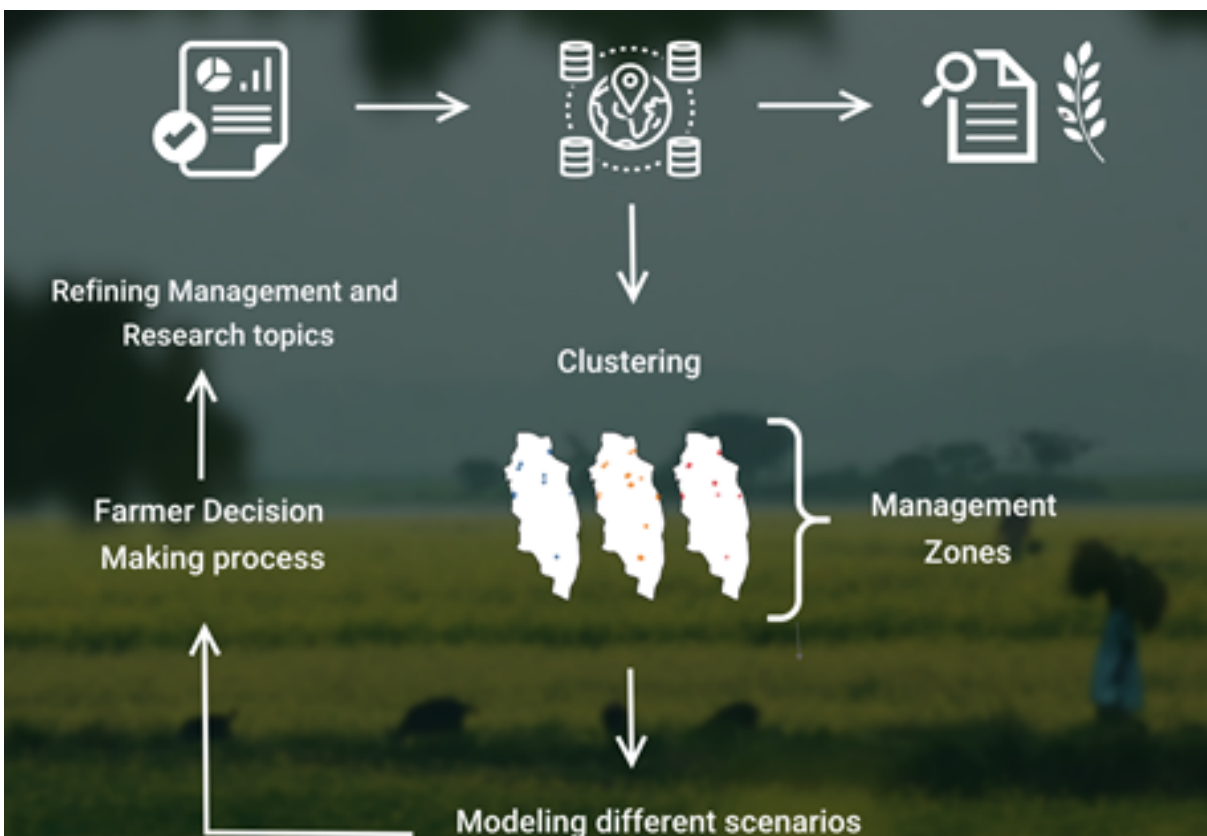


MR. WUB YILMA FLYING MATRICE 100 ON A BARE SOIL

*The project hypothesizes is that soil spatial variability dictates optimal nutrient inputs for crop production. The objectives of the proposed research are; 1) testing the feasibility of delineating Site-Specific Management Units (SSMUs) with large ancillary datasets (i.e., proximal soil survey, multispectral and thermal imagery; 2) formulate the cost-effective multi-objective sampling design problem, and investigate, develop and validate algorithms for solving the derived optimization problems in SSMUs; 3) to evaluate the usefulness of hyperspectral sensing to reduce soil sampling and analysis in terms of crop-available nutrient concentrations; 4) to compute digital maps of recommended fertilization inputs for each SSMUs, and test it on the field. The final project product will be a web-enabled integrated decision support system that provides near real-time solutions such as variable-rate nutrient applications across spatially variable fields.*

# A 'Digital Agriculture' consortium develops foundational support tools for smallholder farmers in Africa (Senegal) and Asia (Cambodia & Bangladesh)

Ignacio Ciampitti  
Constanza Mackrey



*The Digital Tools, Geospatial, and Farming Systems Consortium (DGFSC), funded by Feed the Future Innovation Lab for Collaborative Research on Sustainable Intensification (SIIL, with Dr. P.V. Vara Prasad as the lab director), is focused on generating foundational information to support the development of digital support tools. These digital tools would guide decision-makers and producers to improve food security, human nutrition, risk management, and resiliency of smallholder farming systems today and in the future.*

*The long-term goal of the project team is to improve the resilience of smallholder livelihoods through the application of digital geospatial tools for managing and enhancing productivity, economics, environmental, and social aspects of human wellbeing.*





*"Identification of millet crop residue, grown as dual purpose (grain and forage), in Senegal. Photo credit: Baba Mouhamadou Diop, 6th Grain's contributor in Senegal. December 2021.*

The DGFSC is integrated by principal investigators, post doctoral researchers and students from Kansas State University, University of Minnesota, Michigan State University, University of Colorado Boulder and University of Maryland.

Ignacio Ciampitti, director of the consortium highlighted, "we strongly believe that the development of new data products can positively impact smallholders and help them to better adapt to emerging environmental and market pressures". An example of a potential framework is shown in the previous page.

The DGFSC will focus on developing resilience-relevant data. These datasets can be used in digital platforms to inform USAID and local policymakers. Ultimately, these activities enhance current efforts towards achieving the Sustainable Development Goal target of ending malnutrition by 2030. Working collaboratively with institutions across the US and the globe, this consortium will support the mission of the SIIL lab by providing a geospatial integration of the five domains of the sustainable intensification assessment framework.

### **Current Projects**

The consortium is leading projects in Senegal, Bangladesh and Cambodia. The main topics investigated are climate drivers, livestock farming systems, climate variability, suitability and land capability for agriculture productions, soil salinity, and soil carbon mapping.

This consortium develops an interdisciplinary and solution-oriented geospatial framework, integrating remote sensing, farming systems modeling, and geospatial data layers to provide innovative data products to take actions towards more resilient farming systems, benefiting families and communities.

