

CIREdconnect

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Andy Muelenaer: A man of many hats improving health in Malawi

A search for medical supplies to send to Russia is where it all began.

In 2003 at a biotechnology conference in the nation's capital, representatives from CitiHope International stopped by Virginia Tech's booth to inquire about donations. CitiHope regularly donates medical supplies to facilities with limited budgets around the world.

Andy Muelenaer, Jr., M.D., M.S., a pediatric pulmonologist and professor of pediatrics at the Virginia Tech Carilion School of Medicine (VTCSM), was manning the booth. "They came and talked to me, but I had just donated a machine to the veterinary school."

While he could not assist them that day, he soon realized there was a greater purpose to this chance meeting.

Dr. Andy Muelenaer, or Dr. Andy as he is affectionately called by his patients and students, has provided quality medical care in the New River Valley region for 28 years. During that time, he has worn many hats, including serving as Virginia Tech professor of Pediatrics and professor of Biomedical Engineering and Mechanics. In 1999, he became the director of the Carilion Biomedical Institute, where he managed research funds and projects that resulted in the transfer of health technologies and commercialization of medical products.

In this edition...

Andy Muelenaer (VTCSM) leads efforts to improve health in Malawi

IMPACT

IPM Innovation Lab and the Fall Armyworm

PROFILE

Spotlight on scientist Tran Thi My Hanh

Kristin Lamoureux: hospitality and tourism management

PROJECT UPDATES

Catalyzing Afghan Agricultural Innovation (CAAI)

Youth in Agriculture (YIA) - Senegal

Escuela Nacional Central de Agricultura (ENCA) - Guatemala

Spotlight on Dr. Andy Muelenaer - Cont.

“It wasn’t long after the biotechnology conference that my wife and I received standard laboratory equipment to donate to the organization.” His wife, Penny Muelenaer, M.D., M.P.H., also works at Virginia Tech as an assistant professor of pediatrics in the School of Medicine.

“Afterwards, CitiHope presented an offer that we could not refuse – a chance to change the health of nations.” The wheels of fate began to turn in 2004. Penny traveled to Malawi to assess food distribution methods and training needs for HIV care of infants and children. A trip by Andy to Kyrgyzstan two months later provided an opportunity to teach asthma care to 114 rural practitioners. Dr. Andy began to play a bigger role at CitiHope, starting out as Health Advisor, followed by appointments as chair of the board of directors and CEO.

In 2013, his passions for medicine, research, and development coalesced, and he began connecting the dots – linking Virginia Tech’s students and faculty with people thousands of miles away in Malawi.

The Beginning of TEAM Malawi

“I was in Malawi performing a needs assessment on behalf of the Coca-Cola Africa Foundation, when Penny reminded me that without proper water, sanitation, and hygiene (WASH), donated medicines are not as effective.

Andy ended up meeting Jill McGill during that visit. McGill, a missionary and engineer from the U.S., had been working on WASH projects in Malawi for years. McGill took him to the Mzuzu University Center of Excellence in Water and Sanitation. After touring the Malawian facility, Dr. Andy recognized a need and an opportunity to bring Virginia Tech’s students to help tackle water issues.

“We sent two Virginia Tech students to Malawi to conduct WASH research. As their faculty chaperone, Penny also conducted her capstone research on methods for household water treatment to complete her Master’s of Public Health degree,” said Andy.

“Between 2013 and 2015, we discovered a number of other groups in the New River Valley area who were doing humanitarian work in Malawi. We said let’s get together all the people we know who are working in Malawi.”

Their vision soon turned into reality, with an outpouring of support from local academic, religious, and non-profit organizations in the New River Valley, thanks to CitiHope International.”

In 2015, Andy and Penny helped to form TEAM Malawi, an interdisciplinary and multi-institutional collaboration to address challenges of community health and quality of life in Malawi. The program components address technology education, advocacy, and medicine (TEAM) using innovative design and application of solutions. The team liaises with partners in Malawi to develop research, development and educational programs such as:

- Pit latrine desludging to break the cycle of diarrheal diseases
- Well drilling
- Infant warmer
- Intravenous fluid delivery for pediatric patients
- Device for water sampling
- Formal course titled, “Experience WASH in Malawi”

...Andy recognized a need and an opportunity to bring Virginia Tech’s students to help tackle water issues.

CIRED works closely with TEAM Malawi, providing administrative and technical support.

When asked about the most rewarding part of working with TEAM Malawi, Dr. Andy highlighted the global partnerships. “We have introduced dozens of undergraduate and graduate students, to areas of global health. By establishing international collaboration space in Malawi, we are able to bring our knowledge and understanding in a way that meets Malawi’s most critical health needs. Our first student, Ashley Taylor, started as an undergraduate Scieneer in Malawi, and now she is leading efforts to promote STEM education of girls and young women in Malawi.” For more, visit team.cired.vt.edu

Women & Gender Conference 2019

From February 28 to March 1, 2019, nearly 200 students, faculty members, researchers, and practitioners joined CIRED's Women and Gender in Development (WGD) program for its first WGD Conference. Participants enjoyed open discussions, networking opportunities and poster presentations on a variety of current issues related to women's roles in international development.



(left to right): Amer Fayad, associate director of the IPM Innovation Lab, Guru Ghosh, vice president for Outreach and International Affairs, and Maria Elisa Christie, director of CIRED's Women and Gender in International Development program, prepare for the first day of the conference.



A student shares her research during the poster session that featured more than 60 posters.



Participants exchange ideas on what it means to be empowered.

CIRED Colloquium Series 2019

The CIRED 2019 Colloquium Series kicked off this month with Dr. Otto Gonzalez, director of the Center for International Programs at the National Institute of Food and Agriculture (NIFA), U.S. Department of Agriculture (USDA). Speaking on the topic, "Why International and How You?" Gonzalez highlighted Virginia's contributions to the agricultural and economic markets of the U.S. and abroad. He also highlighted four agricultural development goals including national security, scientific advancement, translational effectiveness and market advancement. According to Gonzalez, "International collaboration is vital. By 2030, 96% of the world's customers will live outside of the United States." Attendees also learned about partnership and funding opportunities with NIFA. The event was co-sponsored by the College of Agriculture and Life Sciences, Global Programs.



Dr. Gonzalez speaks with attendees representing multiple departments.



After his presentation, Gonzalez answered questions about NIFA's role in funding development opportunities.



CIRED Executive Director thanks the speaker and participants for helping kick off the Colloquium.



The fall armyworm attacks hundreds of plant species, but favors maize, a staple crop in Africa.



Laouali Amadou (left), Muni Muniappan (center), and Laouali Karimoune (right) search for the fall armyworm on sorghum in Niger.

IPM Innovation Lab works to combat the Fall Armyworm

The fall armyworm is an invasive pest that reached Africa in 2016 and Asia in 2018—resilient to harsh climates, the pest easily travels long distances and multiplies in large numbers. Currently, pesticides are being used against the fall armyworm, but not only are they expensive and a potential health hazard, the pest is beginning to develop resistance to chemicals.

The IPM Innovation Lab, along with collaborators from the International Centre of Insect Physiology and Ecology (icipe), have made headway on a solution that harnesses natural enemies against the fall armyworm in both its egg and larval stage. The two natural enemies are local to Africa, which will decrease the possibility of turning a non-native species into an invasive one.

A devastating pest, the fall armyworm threatens 100 percent of maize yields, Africa's staple crop, but feeds on nearly 300 species of crops including sorghum, cotton, and millet. The natural predators are doubly efficient, as they will help reduce caterpillar pests that attack most crops.

As the IPM Innovation Lab continues to create awareness around the fall armyworm's damage, teams around the world are being trained on IPM management methods. In Niger, where the IPM Innovation Lab works on the biological control of the pearl millet head miner, collaborators at the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) are training technicians on the mass production of natural enemies. Further, from February 24 to March 1, the Innovation Lab hosted a training workshop on biological control of the fall armyworm in Nairobi, Kenya. Participants from areas including the Ivory Coast, Ethiopia, Kenya, Tanzania and South Sudan received training on field collection, mass rearing, and release of indigenous biological control agents of the fall armyworm, a further introduction of technology regionally.

In the coming year, the IPM Innovation Lab plans to release the natural enemies on a mass scale in Ethiopia, Kenya and Tanzania.

Scientist Spotlight: Tran Thi My Hanh

Who? Tran Thi My Hanh, deputy head of Plant Protection at the Southern Horticultural Research Institute (SOFRI) in Vietnam, is a collaborator of the IPM Innovation Lab (IPM IL). In Vietnam, she helps identify and address pest issues that threaten food security on crops such as mango, dragon fruit, longan and lychee. SOFRI has helped to dramatically increase yields and reduce chemical sprays on fruit with the development of inexpensive, renewable fruit bagging, which in turn, has helped to improve the country's fruit export capabilities.

Where? With funding from the IPM Innovation Lab, Hanh spent a semester at the Center for International Research, Education, and Development (CIRED) working under IPM IL Director Muni Muniappan.

When? August to December 2018

Why? Hanh travelled to the United States to improve her English skills, which in turn, will be helpful in promoting her team's work to wider audiences, publishing manuscripts in journals, and introducing her colleagues to new research and ideas. While at Virginia Tech, Hanh attended courses at the Language and Culture Institute, in addition to taking courses in entomology, statistics and gender.

What? During Hanh's time in the United States, she was selected as a finalist for a scientific blog contest at Agrilinks, prepared numerous manuscripts in English for prospective journals, and hosted a booth at the 2018 Hokie BugFest.



Tran Thi My Hanh and Muni Muniappan oversee the IPM Innovation Lab's booth at Hokie BugFest.

Kristin Lamoureux: Leading tourism development around the world

For most travelers, tourism is about spending time enjoying their favorite destinations. Yet, in developing countries, tourism is opening the doors to abundant opportunities, providing jobs, livelihoods, and sustainable futures for millions of people. In recent years, tourism has been a major engine for economic growth and poverty reduction in developing countries. It is estimated that tourism accounts for 1 in 10 jobs worldwide and delivers 1 in 5 of all new jobs created in 2017.

Speaking at the 2019 United Nations World Tourism Organization Global Conference in Buenos Aires, the former president of Costa Rica said, “Tourism equates to 27% of Costa Rica’s GDP. Eighty percent of that benefits the lowest quintile, and 60% of the jobs are for women.”

Dr. Kristin Lamoureux, Visiting Professor of Tourism and Hospitality Management at Virginia Tech, is helping to shape a new generation of hospitality professionals that is dedicated not only to excellence in hospitality and tourism, but also to improving the lives of the people impacted by tourism. With a career spanning more than 20 years, she has gained renown as an expert in tourism workforce education, international development and sustainable destination management.

In 2017, she began working with CIRED to provide technical assistance in analyzing vocational training needs in Morocco’s tourism industry for a future project funded by the Millenium Challenge Corporation (MCC) that is expected to begin in June 2019.

She points out that tourism is only part of the equation. “The goal is never just tourism. In fact, tourism is very much a tool for achieving a number of goals such as poverty alleviation, gender equality and economic growth.”



Dr. Kristin Lamoureux

The United Nations proclaimed 2017 as the International Year of Sustainable Tourism, recognizing “the important role of sustainable tourism as a positive instrument for the eradication of poverty, the protection of the environment, the improvement of the quality of life and the economic empowerment of women and youth and its contribution ... to sustainable development, particularly in developing countries.”

Lamoureux noted that, “For many years, the hospitality and tourism industry has focused simply on growth. Now that destinations are facing overtourism with negative impacts on the environment and the communities, the question has changed to how can tourism be a force for good? How can it improve the quality of life of the host communities?”

“Quite often, tourism dollars do not stay with the host destination. Following the principles of sustainable tourism, we focus on improving the quality of life for residents, economic returns, protecting the environment, and developing the tourism industry in a way that doesn’t have negative impacts on local populations.”

Kristin Lamoureux - Cont.

During her career, Lamoureux provided her tourism and hospitality expertise in developed and developing destinations such as Virginia, Washington, DC, New York, Montana, and Oklahoma, as well as countries such as Jordan, Morocco, Honduras, Belize, Egypt, Mali, Dominican Republic, Ecuador, Ethiopia, Bulgaria, Myanmar, Mexico, Portugal, Namibia, and Spain. "Tourism is often labeled as easy to do, but the reality is that in most of the world, good tourism takes careful planning, good policies and community input," added Lamoureux.

She currently teaches Social and Cultural Impacts of Tourism, International Tourism, and Travel and Tourism Management at Virginia Tech.

"I am in a unique position to teach and to continue to do international development work. I love engaging students in the process and helping them figure out what they're doing," added Lamoureux. "I like the fact that we are breaking down barriers between academe and the industry."

When asked about her work with CIRED, she commented, "Virginia Tech is fortunate to have a center that crosses all of the disciplines. Never before have I had the opportunity to approach a development problem with such a broad array of expertise such as agriculture, architecture, business, natural resource management and engineering the way that CIRED does it. It affords me the opportunity to grow in my field and collaborate with other experts."

Prior to joining Virginia Tech, she served as the Associate Dean of the Jonathan M. Tisch Center for Hospitality and Tourism within the School of Professional Studies at New York University and as the Executive Director of the International Institute of Tourism Studies (IITS) at George Washington University. During her time at IITS, she was elected vice-chair for the Americas of the Affiliate Council of the United Nations World Tourism Organization (UNWTO).

CIRED welcomes Joshua Anderson



The CIRED team is pleased to welcome Joshua Anderson, business development director.

Anderson comes to CIRED with a strong background in international business development. Prior to joining CIRED he worked as grant acquisition team manager at World Vision Philippines in Manila. In this role, he led a team that focused on acquiring grants from international institutional donors such as the U.S. Agency for International Development, European Union and Gates Foundation.

In his new position, he will spearhead CIRED's business development, managing all steps of project acquisition from the initial identification stages through proposal preparation and final award. He will work closely with the CIRED executive director, the director of operations and program development, and other team members to achieve successful responses to funding proposals.

"My family and I are very happy to be in a great town like Blacksburg, working with CIRED to connect VT and its faculty to the world through international development projects. It is my hope that these projects will transform the lives of people in other countries and also the VT faculty implementing them," said Anderson.

Catalyzing Afghan Agricultural Innovation project in full swing on ways to improve agricultural teaching and learning

Following a series of capacity-building trainings conducted by Virginia Tech faculty in India in January, the CAAI team has held numerous training events throughout Afghanistan to help improve teaching and learning in agriculture.

After the successful recruitment of two instructors, English language courses have begun at the Kabul Agriculture and Veterinary Institute (AVI) and the Qarabagh Agriculture High School (AHS). Following a pretest to evaluate registered students, a curriculum was developed with technical support from the CAAI project management team.

Multiple pruning and grafting trainings were held in Balkh, Herat and Kandahar for instructors of AVI, AHS, university faculty members and Department of Agriculture and Livestock (DAIL) technical staff. Participants developed their knowledge and understanding of pruning and grafting methods and ways to apply it in their teaching. In Herat, participants also learned about seedling planting, methods for preparing fertilizer and how to apply it, pruning/branch-cutting methods, pest and disease identification and control, technique of making lime sulfur, and establishment of orchards. Due to high demand, a second training was held for additional AVI, AHS, and university instructors.

CAAI designed and organized trainings on soil testing and analysis for students and teachers at AHS and AVI, universities, and DAIL in Herat and Kabul using local firms for development of the training materials. The six-day training provided a platform for the participants to learn how to analyze soil, gain an understanding of soil in the local context, and use different equipment and materials in a soil lab.

CAAI also conducted a training on animal laboratory diagnostic testing at laboratories in Darul Aman that focused on practical lab exercises and explanations. On March 9, 2019, CAAI organized a session with the SERVIR project funded by USAID on remote sensing and GIS technologies and their use in agricultural education for teachers in Kabul. The SERVIR project is a joint initiative of NASA and USAID that helps developing countries use satellite data to address challenges in food security, water resources, weather, climate risks, and land use.



Teachers attending the English course in Kabul AVI organized by CAAI



Trainees performing soil tests at the laboratory during the training in Kabul

Youth in Agriculture project certifies future 4-H leaders



Bineta Guisse (left), the project's national director, talks with workshop participants during an icebreaker designed to foster team spirit.

The Feed the Future Senegal Youth in Agriculture (YIA) team was in Kaolack, from March 18 through March 30 to lead a train-the-trainer workshop as part of their plan to scale up the 4-H positive youth development (PYD) program. In two back-to-back weeklong workshops, the YIA team trained over 40 youth development leaders on the principles and practices of 4-H and PYD.

In turn, these new certified trainers will each train at least four club leaders, who will then be equipped to lead 4-H clubs offering life skills, agricultural entrepreneurship skills, and competencies in science, technology, engineering, and math (STEM) to youth ages 8 to 25 throughout Senegal.

Led by the project's PYD Specialist Fatimata Kane, the workshop also relied on the expertise of National Director Bineta Guisse and Associate National Director Ya Cor Ndione.

The YIA team was backstopped by a team of Virginia Cooperative Extension and Virginia Tech experts consisting of Bethany Eigel (Chesterfield County), Wendy Herdman (Westmoreland County), Tara Brent (Northumberland County), Caitlin Verdu (Arlington County), Kathleen Jamison (Professor Emerita), and Hannah Scherer and Tom Archibald (both from Agricultural, Leadership, and Community Education).

Tom Archibald, director of the project, remarked that, "The training has had a remarkable impact on the participants, most tangibly evident during the graduation ceremony at the end of each week. Participants were highly motivated as they shared their visions of success for 4-H and PYD in Senegal."

According to one high school biology teacher from Dakar, "This was a transformative experience." In the words of a department head from the University Cheikh Anta Diop of Dakar, "I know that I have gained immensely from this workshop, on a personal level, and that my university has also gained, as we strive to be more engaged in community and economic development across Senegal."

The Youth in Agriculture project has created a community of practice for trainers that will continue to gain professional development support and coaching via an online platform and through regular communication .



The trainers used hands-on activities to teach the elements of 4-H (belonging, mastery, independence, and generosity).

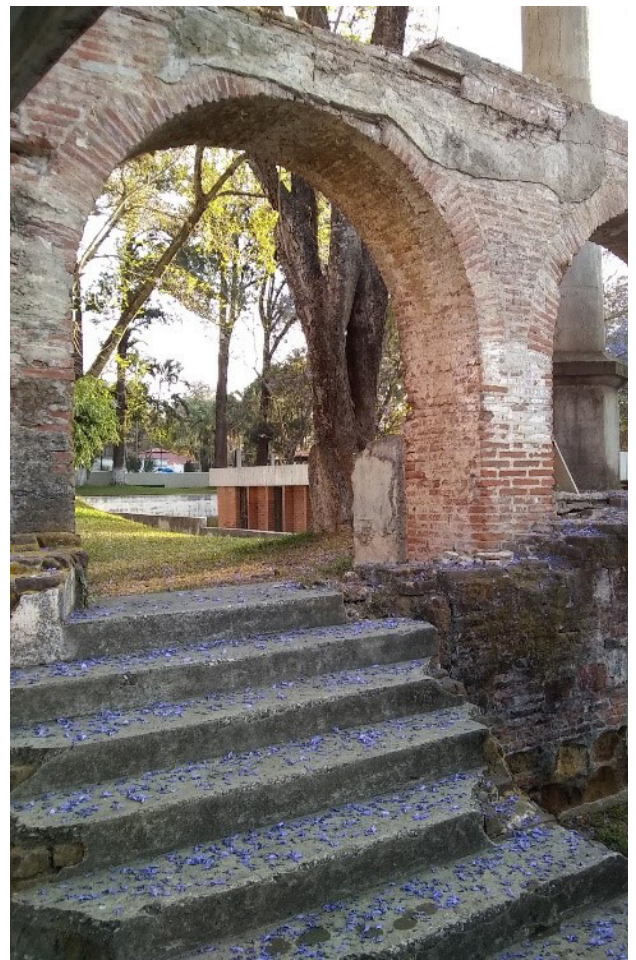
Project to strengthen agricultural training kicks off in Guatemala

In September 2018, the kick-off meeting was held for the Millennium Challenge Corporation (MCC) project in Guatemala to strengthen agricultural technical and vocational education and training (ATVET) at the Escuela Nacional Central de Agricultura (ENCA). Representatives from the 19 agricultural and forestry technical schools across Guatemala, participated in the meeting, hosted at ENCA.

The event was an opportunity to share project goals and elicit stakeholder input related to curricula revision focused on meeting agricultural, agro-industrial and forestry sector needs. Presentations and sessions were conducted with the project team, including Virginia Tech's Dr. Henry Quesada, associate professor, Department of Sustainable Biomaterials, College of Natural Resources and Environment, and John Ignosh, advanced extension specialist, Department of Biological Systems Engineering and Virginia Cooperative Extension.

The in-country project team is now conducting a series of focus groups to gain insights into the specific needs of the private sector across the diverse regions and production systems of Guatemala. This will inform updates and revisions to the curricula, and also serve to create a new agro-industrial program. The goal is to better address the gaps between private sector needs and the current skillset of graduates.

In February 2019, the project team, in collaboration with EARTH University in Costa Rica, met to develop strategies for teachers to use experiential learning to deliver and facilitate student understanding of the new technical information. The \$1.2 million, 2-year project is led by GOPA Consultants, a private consulting company based in Germany that works with MCC-Guatemala on improving education and training.



Steeped in history: Remnants from the old aqueduct with the school library in the background

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