CIRED

A brief history of the Center for International Research, Education, and Development at Virginia Tech



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Introduction

We live in a world of rapid human, social, technological, environmental, and economic changes. The impacts of these changes are felt most severely by the poorest of the poor, but they ripple across our world in the form of diseases, hunger, loss of habitat, migration, and conflict. Responding to these changes and their impacts requires collaboration across countries and governments, cultures and societies, communities and institutions.

For decades, Virginia Tech has created, conveyed, and applied knowledge to address global problems, challenges, and opportunities. Virginia Tech does this through research and technological innovation, engagement with outside partners and local stakeholders, and by educating students to be the next generation of global problem solvers. CIRED, which is part of Outreach and International Affairs (OIA), is the university-wide center that links Virginia Tech to the world. It seeks global partnerships and funding to support the university's research, teaching, and development efforts across the world. Integral to this mission is an emphasis on improving standards of living and livelihoods in developing countries.

CIRED's beginnings are closely associated with the mission of internationalizing the university. Over many decades, that mission has persisted while the organizational form occasionally has been re-configured. In 2018, the existing unit, the Office of International Research, Education, and Development (OIRED), became a university-wide center focused on continuing Virginia Tech's global legacy.

Van Crowder

CIRED Executive Director Professor, Department of Agricultural, Leadership, and Community Education

2020

<u>1975: **OIP**</u> Office of International Programs

<u>1977: OIA</u> Office of International Affairs

<u>1984: OID</u> Office of International Development

<u>1991: OIRD</u> Office of International Research and Development

<u>2002: **OIRED**</u>

Office of International Research, Education, and Development

<u>2018: CIRED</u>

Center for International Research, Education, and Development Founded in 1872 as a public land-grant university, Virginia Tech has exhibited a longstanding commitment to the discovery, creation, and dissemination of knowledge globally. For example, university faculty members began conducting agricultural research and development projects in Africa and Asia in the 1960s. Since then, hundreds of Virginia Tech faculty members, administrators, and students have contributed to international engagement at Virginia Tech. However, three leaders stand out—P. Howard Massey, Mary Hill Rojas, and S.K. De Datta.

Early internationalization centered on academic and humanitarian services. In those early years, projects emerged from individual faculty member activities that provided international service opportunities. The sporadic nature of these activities gave no indication of the critical role that Virginia Polytechnic Institute and State University (VPI&SU) would come to play in shaping the American global identity in research, education, and development.



Mary Hill Rojas



P. Howard Massey



S.K. De Datta

Early Institution Building

In the late 1960s, administrators recognized the global leadership capability of U.S. universities. However, it was not until the U.S. Congress invited land-grant universities to participate in international development through the Title XII Amendment (1975) to the Foreign Assistance Act that this capability would be harnessed. Title XII was more than simply a new funding mechanism; it was an explicit use of the traditional land-grant missions of teaching, research, and extension for U.S. diplomacy.

Appointed as the first chair of the University Committee on International Programs (UCIP) in 1971, Massey led VPI&SU in responding to this opportunity and hosted the first meeting of the U.S. President-appointed Board on International Food and Agriculture Development (BIFAD) on the VPI&SU campus in 1976. VPI&SU President William Lavery (1975-87) oversaw these developments and was appointed BIFAD Chair (1986-90) by President Reagan.

Title XII challenged VPI&SU to bring its scientific capabilities to bear on international development. Human resource development became dynamic, as the process expanded to address the multiple needs of developing countries and the university itself. Faculty understanding and student awareness of populations across the developing world increased.

Individual knowledge, skill development, and technological mastery were gained by waves of international students attending VPI&SU and returning home to become leaders in their own societies. For these individuals to be successful, VPI&SU teams designed and implemented projects to foster development of the social, economic, scientific, and governance institutions necessary to support development.





The participatory and inclusive processes that became the operational mode of the various incarnations of CIRED emerged early and drew on a gendered understanding of development. The Women in International Development (WID) program, began by Mary Hill Rojas provided critical leadership for the university. The program promoted women both as agents and beneficiaries of development. Stakeholder participation was required to effectively define problem parameters and determine acceptable solutions. Including women as both agents and beneficiaries in project planning and implementation led to better project outcomes. Consequently, participatory development methods increased.

"Our aspiration to be a world class university implies a responsibility for leadership and service in the Third World countries."

> James D. McComas Former Virginia Tech President

Multi-disciplinary teams were also required to address the interconnected biophysical, social, and economic dimensions of poverty and food insecurity, economic development, and climate change. By the mid-1980s, the Office of International Development (OID) was recognized by BIFAD for exemplary implementation of gender, participatory, and multidisciplinary programming.





As part of the SANREM CRSP project, researchers examined gender roles in a market in Cochabamba, Bolivia. The majority of the vendors were female, and the men handled the lifting and transporting of goods.

In 1988, VPI&SU Interim President Torgerson led a university self-study of international programs. The study found that there had been rapid growth since 1975. International academic courses and course modules had been added to college curricula. An international studies undergraduate major and minor had been established and began to grow. VPI&SU technical assistance had reached \$10 million across Asia, Africa, and the Caribbean, serving 38 countries.

OID had grown from three to 11 members, 20 faculty members had served overseas in long-term positions, and over 50 faculty members had conducted short-term assignments. The seeds for internationalizing the university had been sown and were flourishing. As incoming President McComas declared in elaborating his vision for VPI&SU: "Our aspiration to be a world class university implies a responsibility for leadership and service in the Third World countries."

The self-study came at a time of transition. After leading OID for over a decade, Massey retired in 1989. The Board of Visitors approved permanent funding for the WID director's position the following year. The external environment was also changing. State funding for higher education was declining, donor support for agriculture-led growth for developing countries was exhausted, and the end of the Cold War signaled a change in foreign assistance strategies. In the process, academic perspectives were often challenged by the dominant market-oriented project approaches of the 1990s.

Transition to Collaborative Research

The hiring of S.K. De Datta as CALS Associate Dean for International Agriculture and Director of OID in 1991 was a major step in boosting Virginia Tech's commitment to international engagement. Director De Datta's first act was to change the name of OID to the Office of International Research and Development (OIRD). Adding the term research was emphasized as contribution of university research in international agricultural development. De Datta felt that OIRD should operate like a business that supplied research-based innovations for international agricultural development.

In addition, in 1991 the National Research Council (NRC) signaled a shift from traditional commodity-led agricultural development to sustainable agriculture and natural resources management. This new focus was in line with VPI&SU's participatory farming systems approach. Two new long-term (10-year, renewable) Collaborative Research Support Programs (CRSPs) were planned.

De Datta quickly brought VPI&SU into the forefront of this new phase in international development. First, bringing VT's WID expertise to the University of Georgia's successful bid to manage the Sustainable Agriculture and Natural Resource Management (SANREM) Collaborative Research Support Program (CRSP); and the following year leading VT's own successful bid for the Integrated Pest Management (IPM) CRSP with the support of George Norton in the Department of Agricultural and Applied Economics. OIRD was soon awarded the USAID mission-funded Community-Based Natural Resource Management (CBNRM) Project in Senegal (1994-2001), an innovative sequel to work begun in the 1980s.



Sedki Riad (information technology), third from left, and S.K. De Datta, third from right, joined project partners for the launch of the Management Development Initiative, Phase 2 (2002-06), a project to improve the quality of information technology in Egypt.



Aurora Baltazar, Phillipine's site coordinator for the IPM CRSP, presents comparative field trials intercropping onions and rice for improved profitability and weed management in the Philippines.



Virginia Tech weed scientist James Westwood (second from right) listens as Ukrainian agronomists describe pest problems growing maize in the Dnipropetrovsk region.



IPM CRSP review meeting with villagers, from left to right: IPM CRSP Director Brhane Gebrekidan, Site Coordinator Keith Moore, Evaluator Sonny Ramaswamy, IER Executive Director Boureima Dembélé, and Site Leader Madame Gamby



Project participants in the Amhara Micro-enterprise Development, Agricultural Research, Extension, and Watershed Management (AMAREW) project inspect a field with improved grain yield.



Ethiopian women produce improved, more fuel-efficient stoves as part of an AMAREW-promoted micro-enterprise.

Winning new projects required OIRD to focus on proposal writing and to be available for short-term technical assistance assignments. De Datta sought experienced development professionals from outside of Virginia Tech to staff these new positions. In addition to being more responsive, it had the added benefit that part of indirect costs generated would return directly to OIRD to further enhance development programing. By 1996, a core OIRD team of experienced development professionals had been assembled: Revathi Balakrishnan (gender), Michael Bertelsen (agricultural economist), Brhane Gebrekidan (breeder), Keith Moore (rural sociologist), Kent Reid (forester), and S.K. De Datta (soil scientist).

The quality and quantity of food produced in developing countries is critical to increasing food security and nutrition in environmentally sustainable ways. Faced with the challenge of feeding a growing world population, Virginia Tech took global leadership in developing a model for mobilizing U.S. scientists and their host country counterparts in successful and sustained problem-solving efforts. The research portfolio quickly expanded. By 1997, OIRD ranked among the top five USAID-funded universities with a portfolio of 11 projects worth \$22 million.

Meanwhile, the University Council for International Programs was re-engaged, stimulating academic internationalization at the college level, which led to establishment of an international core area and additional course offerings. Peace Corps recruitment was also growing. Graduate assistantships associated with CRSP projects were retained by faculty in the academic departments.

By 2003, OIRD had merged with other international offices at Virginia Tech (including Education Abroad) to become the Office of International Research, Education, and Development (OIRED). The number of students studying abroad had quadrupled over the preceding decade. De Datta had been promoted to associate provost for International Affairs to reflect expanded responsibilities. Internationalizing the university had come of age at Virginia Tech.







Office of the AMAREW Project in Bahir Dar, Amhara Province, Ethiopia on the occasion of the project review workshop.



AMAREW Chief of Party Brhane Gebrekidan (third from left) and Mike Bertelsen (fourth from left) conduct a field visit in Ethiopia.

Consolidating Institutional Engagement

In the fall of 2004, OIRED reached new heights in international development research when it was selected by USAID to become the management entity for both the IPM CRSP and the SANREM CRSP. Total funding for this effort was \$34 million, the largest single-day award ever received by Virginia Tech. A key feature of both research programs was the participatory women and gender approach supplied by the Women in International Development (WID) Program. These collaborative programs were extended in 2009 through 2014. The IPM Innovation Lab has continued on into the present.

Projects were not the only output during those years. OIRED faculty members, often with colleagues in academic departments, published research findings from the IPM, SANREM, and Inter-CRSP projects. The WID Program was re-cast by the newly hired Director Maria Elisa Christie into the Women and Gender in International Development (WGD) Program. Christie expanded WGD activities to include one or two graduate research assistants each year to better service the CRSPs and solidify the academic foundation of OIRED.



Maria Elisa Christie



Maria Elisa Christie shares a meal with village women in Siguidolo, Mali during a participatory assessment of conservation agriculture practices.





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"Virginia Tech's world-class researchers are identifying and addressing problems that challenge the day-today lives of people in every corner of the world."

> Charles Steger Former Virginia Tech President

OIRED had become the dynamic center of Virginia Tech's internationalizing mission. De Datta took the lead in developing the university's International Strategic Directions for the coming decade (2007-12). In addition to the Center for European Studies and Architecture (CESA) in Switzerland, new university centers were being developed: the Caribbean Center for Education and Research (CCER) in the Dominican Republic and a campus presence near Chennai, India. The core team had grown to include Gene Ball (finance), Muni Muniappan (entomologist), and Larry Vaughan (zoologist).

In 2008, the U.S. Department of State-led Higher Education Summit for Global Development brought together university presidents from 70 developing countries and all the states in the U.S. This summit signaled a new phase in development assistance programming. Responding to renewed interest in higher education and institutional development on the part of the donor community, OIRED was soon launching projects for university institutional development with partners around the world.

Village woman explains the concerns and priorities for the development of conservation agricultural practices in Mozambique. 





As part of a central node in a worldwide network of collaborative research and education partners in over 40 countries, OIRED was well placed to design new university campuses with innovative research infrastructure and pedagogical techniques. India and Oman were recommended for development of new universities in collaboration with local private-sector entrepreneurs. Other projects included resurrecting higher education in post-conflict countries like Haiti, Liberia, and South Sudan. Curriculum development built on Virginia Tech's strengths in agriculture, forestry, business, engineering, and education—promoting both STEM and soft skills.

Characteristic of this phase of OIRED activities was the USAID-funded Education and Research in Agriculture (ERA) project in Senegal (2010-2018). This project addressed the research, education and training needed to strengthen Senegal's agricultural higher education system through competitive research programs, curriculum revision, state-of-the-art pedagogy, efficient administration, and quality assurance. It involved not only deploying innovative practices along agricultural value chains, but also training skilled entrepreneurs and technicians.

After leading internationalization efforts at Virginia Tech through two decades of collaborative research and university development in the developing world, S.K. De Datta retired in 2011. Michael Bertelsen was appointed the new executive director of OIRED under the direction of the new associate vice president for international affairs, Guru Ghosh.









From left, Dan Taylor (Agricultural Economics), Keith Moore (OIRED), and James Anderson (Agricultural, Leadership and Community Education) listen to students at Makerere University in Uganda discuss curriculum and education concerns during an InnovATE project preliminary investigation.



Michael Bertelsen, former executive director of OIRED



THIÉRÉ - COUSCOUS





In 2012, OIRED was awarded Innovation for Agricultural Training and Education (InnovATE), a project by USAID to promote innovative agricultural education and training globally with a focus on employability and entrepreneurship. Training needs assessments, case studies, and thematic papers on educational capacity building were conducted throughout Africa, Asia, and Latin America. InnovATE hosted four international symposia including a campus climate symposium in Senegal in 2016. OIRED was also supporting the International Center for Agribusiness Research and Education in Armenia (ICARE) and Ohio State University's Innovative Agricultural Research Initiative (iAGRI) at Sokoine University in Tanzania, both funded by USAID.

At the end of 2014, Bertelsen retired. During his tenure, OIRED had grown to over 30 faculty and staff and was managing a large portfolio of projects, largely funded by USAID.



SANREM CRSP graduate student Jessie Gunter training Sokoine University faculty members on the application of computer assisted techniques for social network analysis in their research in Tanzania.

IPM Innovation Lab

Since its inception in September 1993, the IPM Innovation Lab has reached millions of farmers throughout the developing world, increasing food security in nearly 30 countries in West and East Africa; Eastern Europe; Central, South, and Southeast Asia; Latin America and the Caribbean.

The program, now in its 26th year, has been administered by a series of accomplished leaders. When the program was awarded to Virginia Tech, S.K. De Datta became administrative principal investigator of the IPM CRSP. He recruited plant breeder Brhane Gebrekidan as program director, and entomologist Greg Luther was hired as assistant director in 1997. In 2002, entomologist Short Heinrichs came on board as program director, and in 2004, zoologist Larry Vaughan as associate director. Weed scientist Donald Plucknett was recruited as program director in 2005, and the position was later taken over by entomologist Muni Muniappan in 2006. Virologist Amer Fayad was recruited as assistant director in 2010, and in 2014, he was promoted to associate program director. To this day, Muniappan continues to serve as director of the IPM Innovation Lab.

Over the last 26 years, the IPM Innovation Lab has generated more than \$75 million for Virginia Tech in core program funds, associate awards, and buy-ins, and nearly \$2 billion in economic benefits for the developing world. The program's involvement in managing the invasive papaya mealybug alone resulted in a benefit of \$1.34 billion to India. By developing IPM packages for crops, the IPM Innovation Lab addresses chronic native pest problems, and monitors, models, and develops management technologies for invasive species such as *Parthenium* weed, papaya mealybug, South American tomato leafminer, and fall armyworm. The program has graduated over 500 graduate students and published thousands of scientific and popular articles in refereed journals, extension bulletins, magazines, and conference abstracts.



In 2014 in Ecuador, the IPM Innovation Lab introduced grafted plants of the economically important naranjilla crop that were less susceptible to Fusarium wilt disease. The initiative increased production of the fruit by 30 percent.



The fall armyworm, in which the IPM Innovation Lab has initiated biocontrol to manage, is a devastating pest that attacks maize, cotton, and hundreds of other plant species.



Mossammat Shamsunnahar, principal scientific officer for the Bangladesh Agricultural Research Institute, helps develop Trichoderma, a naturally occurring fungus that boosts plant defense mechanisms.



George Norton (left), principal investigator for an IPM project in Asia, and Muni Muniappan (center) meet with Yousuf Mian (right), a project coordinator in Bangladesh, where IPM practices are tested on crops like cauliflower to increase production and decrease reliance on pesticides.



Van Crowder, CIRED executive director and professor, Department of Agricultural, Leadership, and Community Education



Undergraduate students at the Agribusiness Teaching Center in Armenia receive certificates of support for a one-year sponsorship to ICARE. ICARE Director Vardan Urutyan (third from left), CIRED Executive Director Van Crowder (second from left) and Water and Energy Advisor and Mission Environmental Officer for USAID Armenia Marina Vardanyan (far left) presented the certificates.

Expanding Global Partnerships

Looking back to 1993, CIRED and its predecessors have generated nearly \$195 million in sponsored research funding for Virginia Tech and \$15 million in returned overhead. Work has been done in 43 countries, over 500 graduate students have been supported globally, and enduring partnerships have been formed with numerous academic, government and non-governmental partners.

With the recruitment of Van Crowder as the executive director in 2015, a new phase began, including the transition from an office to a center (2018) with the intention of creating a wider campus presence that would facilitate the growth of the project portfolio as well as diversify funding sources.

Traditionally, the international engagement focus had been on agricultural development, and while it is still important, increasingly CIRED is emphasizing other areas. These include hospitality and tourism management, a growth sector in many developing countries; engineering, including energy, drones, and data analytics; the effects of climate change on natural resources and people; positive youth development; workforce education and development; water and development; and health.



To support these focus areas, multi-disciplinary faculty communities of practice have been formed. There has also been an effort to diversify funding sources. To these efforts, Van Crowder brings previous work with the Food and Agriculture Organization of the United Nations (FAO) and the Millennium Challenge Corporation (MCC). Projects currently managed by CIRED include:

- The USAID-funded Youth in Agriculture (YIA) project in Senegal to build capacity and support the institutionalization of positive youth development (PYD) drawing on earlier 4-H work under ERA and strengthen vocational training systems to create entrepreneurship and employment opportunities for youth.
- The USAID Catalyzing Afghan Agricultural Innovation (CAAI) project, which promotes innovation in agriculture by training a highly skilled, modern Afghan agricultural workforce. The focus is on agricultural value chains and in particular on facilitating interactions between public and private sector value chain stakeholders. A pilot activity tests the effectiveness and viability of blended face-to-face and distance education to address obstacles that keep women from education.
- A UNICEF-funded African Drone and Data Academy (ADDA) in partnership with the Malawi University of Science and Technology, which will offer certificate programs and a Master's degree to teach technical and entrepreneurial skills in drone technology, operations, and data analytics. Across Africa, drones are used increasingly for humanitarian, commercial and development purposes.

- A project funded by Millennium Challenge Corporation (MCC) in Morocco with the Ministry of Tourism to strengthen the Institute of Hotel and Tourist Applied Technology in Ouarzazate to develop new programs, including cultural tourism and ecotourism management.
- An MCC activity in Guatemala to strengthen agricultural training at the Escuela Nacional Central de Agricultura (ENCA), including improving linkages between curricula and employment and entrepreneurial opportunities.
- The USAID Rural Livelihoods and Violence activity in Honduras, in partnership with the University of Florida, is studying how factors such as climate change, degraded agricultural environments, limited employment opportunities, and violence influence youth choices, including migration.

With projects in many countries, CIRED offers faculty members opportunities to conduct innovative research and apply their knowledge to solving global problems.





Female students attending the Balkh Agricultural and Veterinary Institute in Afghanistan participate in group work during a CAAI post-harvest training.



The CAAI project helps to strengthen research and extension through the formation of research teams that deliver training in effective collaborative research.





The Virginia Tech team leads a focus group discussion with students attending the Institute of Hotel and Applied Tourism Technology in Ouarzazate, Morocco.



Virginia Tech team members working on the Morocco ecotourism project, (from left) Kristin Lamoureux, Phillipe Duverger, and Youssef Samihi, are joined by the institute's director and two faculty members.



Under the leadership of Maria Elisa Christie, the Women and Gender in International Development Program continues to ensure that gender roles, relations, and norms are factored into the design, implementation, and evaluation of all CIRED project and activity. In 2019, Virginia Tech hosted the Women and Gender in Development (WGD) Conference: Out of the Theory and Into the Field, with over 200 participants from around the world coming to campus to discuss issues linked to nutrition, gender, agricultural extension, and value chain development.

With CIRED support, TEAM Malawi, a collaboration of Virginia Tech multidisciplinary faculty and the Blacksburg community formed in 2015, continues to address development challenges in Malawi through participatory research, design, and pedagogy. TEAM Malawi's objectives are to: 1) improve quality of life and strengthen communities; 2) promote STEM projects leading to workforce development; and 3) provide research, teaching, and learning opportunities for scholars and students.

CIRED also houses the Peace Corps program for Southwestern Virginia. Virginia Tech is among the top 20 "What we invent here is for all mankind. Discovery and learning are what we do; engagement is the way we do it."

> Guru Ghosh, Vice President for Outreach and International Affairs

large universities providing Peace Corps volunteers for two years of international development service.

Looking ahead, CIRED is committed to supporting Virginia Tech's Beyond Boundaries vision for advancing as an internationally recognized, global land-grant university. Providing opportunities for faculty and students to engage internationally results in benefits for the university as well as for the Commonwealth of Virginia, the nation, and beyond. As Vice President for Outreach and International Affairs Guru Ghosh stated at the launch of CIRED, "What we invent here is for all mankind. Discovery and learning are what we do; engagement is the way we do it."



