

International Agriculture Research and Engagement

A. Scope /audience

Purdue University administration, potential international partner institutions, funding agencies, and foundations.

B. Overview & contribution in the past 5 years

Over the last few years, our faculty has been involved in a variety of international engagement activities ranging from collaborative research with colleagues at international institutions, to student exchange programs, hosting international visitors, and visiting other institutions.

C. Current challenges

Although we have been engaged in several international initiatives, participation has been scattered and upon request or based on individual faculty motivations and not as a more focused and unified program from a collective resolve of a group of faculty in the department. As such, the visibility and the opportunities have been limited to a few faculty and not to the large focus of the department. A more coordinated international effort at departmental, college, or university level may also encourage new faculty to engage at earlier stage in their careers helping them receive credit for advancement and build linkages and reputation for continued involvement.

D. Fundamental Issues for Next 10 Years

The world is getting “hot, flat, and crowded.” Greater challenges of food, feed, fiber, and energy abound. These challenges are not limited to the confines of our nation, nor are they only distant problems of foreign lands. It is becoming more and more evident that we are all interconnected in the very small village that our planet has become. We are more and more interdependent in our needs as well as in the impact our respective lifestyles have on each other. The expansive ramifications arising from our interdependence require that we grow more and more outwardly in our outlook. Nations and institutions that develop global perspective and engage more proactively are likely to be better positioned for opportunities both for nation building and to serve the global common good.

E. Projects Purdue and especially Agronomy can develop to address these issues

Instead of individual projects, this document is a vision piece that seeks to establish a collective resolve among faculty members to improve internationalization:

A Vision for International Partnerships in Education, Research, and Extension: Globalization at Purdue Department of Agronomy

Purdue University aspires to be a major global university acknowledged for its leadership and participation in the task of addressing many of the enormous global challenges through research and education. To be a truly global university, an institution should possess faculty and students with an international knowledge base and experience, and have a global vision, perspective, and reach for its future engagements. Across the large spectrum of Purdue University departments, colleges, centers, and institutes, experiences vary in their respective past and current international ventures. The Department of Agronomy has a long history of global involvement. The Agronomy faculty has made substantial contributions in building the human capacity base and institutions of higher learning, strengthening the agricultural research infrastructure, as well as institutions of engagement and technology deployment internationally. Several of our faculty members have lived and worked in foreign lands, trained international students, and conducted research on global issues. We have hosted scientists from numerous countries and engaged in collaborative associations with many of them. Graduates of our department have led national and international research and educational institutions, participated in public governance, and engaged in private entrepreneurship in many nations.

The Agronomy faculty has provided significant leadership in campus-wide efforts to further enhance globalization of the programs and mission of Purdue University by engaging in international teaching, collaborative research, and technology transfer endeavors. Furthermore, our faculty has participated in advisory capacities at the highest levels of policy planning, decision making, and management of global agricultural research programs. The faculty has also engaged in technical and programmatic evaluation of international scientific programs. The Department of Agronomy is committed to build on its fine legacy of excellence in international agriculture. The broad-range of disciplinary expertise of our large faculty, our significant experience in interdisciplinary research, and our ongoing efforts in development and delivery of technologies for variety of national stakeholders should allow us to further contribute and advance our global engagement in each of the primary mission areas of education, research, and extension.

Education

A major challenge in furthering our globalization effort in education will be our ability to provide international experience for our students and to attract international students, particularly from developing nations. This is not because of lack of interest. More than ever, developing nations have greater need of a well-educated human capacity base as they increase commitment to advance their economic development efforts. Institutions of higher learning in the developed world will also need a diverse international student body to

enhance their own globalization initiatives. However, the rapid rise in the cost of education in higher institutions (of the developed world in general and in our North American institutions in particular) coupled with the decline in technical assistance support for higher education from federal and foundation sources, have made finding resources to cover the cost of education of international students a significant bottleneck. Many nations have reacted to this scenario change by trying to strengthen their own local universities and colleges, albeit with, at best, mixed results. The inability to establish the satisfactory recruitment and retention of a cadre of well-qualified faculty has been a major problem for most developing country institutions. Some nations, India and China in particular, have found various means to continue to send their young men and women to Western universities to build, complement, and enhance their growing institutions from a base of diverse experience.

We too need to find creative ways to attract international students since we know doing so adds great value to our educational efforts here at home. We need to increase our student and staff exchange efforts with other international institutions of both the developed and developing world to enhance the global experience of our faculty and students. We need to be even more deliberate in creating a more enhanced curriculum with contemporary international agricultural issues as we produce the new generation of graduates ready to serve nationally and internationally, and with a more global knowledge base. We should develop partnerships either bilaterally or through alternative consortia, or commit to sister-university association with institution(s) of choice. In doing so, we will add value to the educational mission and goals of partnering institutions as well as our own. Finding the resources to implement some of these initiatives will indeed be a challenge, but the first and most important step will have to be developing the recognition and resolve for the value of the mission.

Research

A global university is one that has linkages and collaborative engagements with a variety of international institutions. Our department has a good history of collaborative engagements with a number of national and international institutions. Some of our current faculty have extensive collaborative research associations with a number of other institutions. Some have developed research relationships with colleagues at other universities and research centers. A few have linkages with one or more international agricultural centers of the consultative group for international agricultural research (CGIAR). We also have faculty that participate in federally funded collaborative research support programs (CRSP) and foundation-supported programs that encourage linkages with scientists in developing countries. We have capacity to do more. We can increase our linkages with other institutions, as well as become a significant player in international agricultural research addressing some of the pressing problems of the developing world in global partnerships. We can create an atmosphere of an even more open,

more globally engaged faculty and department that is recognized internationally for its successful research initiatives and accomplishments.

Extension

Much of the success of US agriculture has been attributed to the tripartite functions of the land-grant university system. The private sector built on this success in advancing agricultural science in its commercial exploitation of new agricultural technologies for a variety of stakeholders. The combined efforts of public and private institutions have continued to provide science-based innovations to users here and beyond. Successful extension education takes agricultural knowledge further down the impact pathway in much of the developed world. Where it has been successfully replicated, this model has paid dividends in developing nations as well. However, the lack of functional extension educational programs stemming from weak institutional infrastructure and/or human capacity base is recognized as a major bottleneck in advancing modern agricultural sciences in most developing countries. For a global university, public engagement for dissemination of knowledge is as vital as linkages in learning and discovery.

F. The science team (expertise needed)

Science teams will be comprised of many Agronomy faculty as well as faculty in the College of Agriculture. Collaboration across disciplines will also enhance the international initiatives proposed.

G. Time frame

There is an immediate need to organize our internationalization effort and identify specific opportunities for engagement in each of our primary program areas of education, research, and extension. Several of the efforts are likely to remain as individual initiatives, but there is value in identifying certain collective efforts to place globalization as one of our signature areas. Once identified, it is imperative we stay the course as such engagements are slow to build and gain momentum for greater impact.

H. Evaluation of success

There are likely to be a variety of measures of success. An itemized list of new partnerships for each faculty and the opportunities that those linkages brought in student recruitment, joint papers published, grants obtained, and/or lessons gained may serve as good measure. Establishment of a stable, productive working relationship with a sister institution in a developing country to engage joint faculty and student exchanges, joint teaching, research, and extension programs that benefit both institutions may take time to mature but should lead to quantifiable measures of success in the long run even using standard instruments of measures of success: papers published, dollars brought in, students trained, and also lead to success

determined using non-conventional measures such as lives changed, better policies catalyzed, and good will developed.

I. Dissemination of information to decision makers/scientific community/public

Gains made from international engagement and the package of experiences made can be held up as examples to be showcased for state, federal, and private donor agencies.

J. Resources needed

The immediate need is for resources to increase the international experience base of our faculty in target geographies. Although one or two week trips to foreign lands have value, somewhat longer stays that focus on specific teaching, research, or extension tasks sharpen skills better, increase confidence, and are more likely to help build a program of excellence for the department in the area of internationalization.

K. Conclusions/recommendations/vision for the future

American higher education continues to be the envy of the world. Even at a time when the global stature of our nation is diminishing on many fronts, globalizing our universities may serve as an effective way to share knowledge and experience, enhance production of food, feed, fuel, and fiber, safeguard our natural resources, build well informed global citizenry, create better understanding, generate good will, and in the process, help restore our moral stature and value in the world.