

August 2009 E-Newsletter

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1. Message on Internationalization from the New Dean of the College of Agricultural Sciences

Written by Dr. Bruce McPheron, Dean

“It changed my life.” “I didn’t know I could do something like this.” “I never dreamed I would see this.” “I thought their ideas would be different from mine.” “I know what I want to do with my life.” All phrases frequently heard from the lips of students experiencing their first international trip. As I write this, I’m flying home from three weeks in Paris—two of those weeks spent with 14 undergraduate students examining how we think of food and our agricultural systems in the United States compared to France and the European Union. I am thinking again of what a profound experience it is to step outside your comfort zone, as many of those young people did in taking this trip. I’m reminded of this feeling often—my



career seems to have become an opportunity to move from activities and perspectives with which I’m comfortable into new challenges, challenges from which I invariably learn and grow.

International experiences literally open that door to new possibilities. Over the past two decades, I have come to believe that we have a responsibility to not only open this door for the next generation, but to nudge them through it. Many of us, in our professional activities, have discovered the importance of international experience and collaboration for our own growth and success. Have we helped the students we train—both the next generation of scholars who will follow us and the next generation of informed citizens who will support us—to attain these same benefits?

We have a responsibility to continue the tradition of the College of Agricultural Sciences as leaders in infusing an international perspective into our work and our educational programs. I would like us to commit to increasing opportunities for our students to experience the world—formally or informally, for weeks or for a semester, in the classroom or in the community. We have grown in a few years from less than one percent of our students with such an opportunity to double digits, but we have further to go. I suggest we set a target of 25 percent of our students gaining some sort of international experience. Part of my goal within the next five years is to have 50 percent of our students engaged in some combination of international, service learning, research, or internship activity. Employers of our graduates ask for this experience, and they reward our alumni with excellent job offers. Graduate schools recruiting our students remark upon the breadth of perspective in candidates that comes with international exposure.

By committing to a continued emphasis on internationalizing our curriculum—not only by bringing an international view to our classrooms but also by sending our students into the world—we also internationalize our college. Our faculty, educators, and staff also must have the opportunity to experience the world. Their (your!) enthusiasm will communicate much to our students. And those 14 students with whom I shared the past two weeks? Those were their voices you heard in the quotes that began this essay. Being with them, seeing the world through their eyes, changed my life. Again. ([Return to Index](#))

2. CAS International Programs Welcomes New Employee Tom Gill

The Office of International Programs welcomed Project Associate Tom Gill to the team in May 2009. Tom's role is principally concerned with developing and coordinating agriculture projects in Eastern and Southern Africa focused on plant adaptation to drought and low soil fertility. Tom has recently finished his Ph.D. in Interdisciplinary Ecology at the University of Florida. He was born in England but has lived and worked for most of the past decade in the U.S., Uganda and Kenya. Tom and his wife Betsy move to State College in this month with their newborn daughter, Melissa. His other interests include soccer (or football as they call it in England), playing the piano and gardening. ([Return to Index](#))

3. Buffet Family Supports College Work in South Africa

Written by Jeff Mulhollem

The Howard G. Buffett Foundation recently awarded Jonathan Lynch, professor of plant nutrition in Penn State's College of Agricultural Sciences, a five-year, \$1.5 million grant to conduct research in Africa to develop maize and bean varieties with roots that allow them to thrive in drought conditions and low-fertility soils.

According to the agreement between the university and the Foundation, Lynch and his Penn State team will do the work on Buffett's Ukulima Farm in Limpopo Province in the Republic of South Africa. In addition to the grant, according to Lynch, the Buffett Foundation will develop research facilities, build a laboratory and housing accommodations on site for researchers.

Howard G. Buffett Foundation is focused on easing world hunger and improving food security in Africa and Central America. ([Return to Index](#))

4. Western PA Brings Students From Around the World

Written by Patreese Ingram

For more than 30 years, the 4-H/youth development program has provided an opportunity for American youth and Japanese youth to learn about each other's culture through a cultural homestay experience. 4-H youth have traveled to Japan to stay in the homes of Japanese families and Japanese youth have traveled to the United States to stay in the homes of American families. The goals of this program have

been to help youth from both countries to increase their global and cultural competence. 4-H partners with three Japanese youth development organizations: Labo, Lex and Utrek. Pennsylvania is one of about 25 states that participate in this exchange program. WorldWise Exchange Services, located in Seattle, Washington, provides management services for all of the participating states. In Pennsylvania, Patreese Ingram is the state coordinator.

More recently the program has expanded its menu to include additional countries. Currently, Costa Rica, Norway, Finland and Australia provide new opportunities for exchanges. As new programs, the number of delegates that travel from these countries are generally small (6-15) and are matched with host families all across the US. This is why we were very excited to host one delegate from Costa Rica and four from Norway in our state this year. While the program is marketed to 4-H families with youth aged 12 – 18, non-4-H youth can participate by joining 4-H.

Most of the exchanges include youth from other countries staying with Pennsylvania families for one month in the summer. On a much smaller scale, Pennsylvania youth also have an opportunity to travel to Japan for a month-long homestay. This year Cody Trace, of Crawford county traveled to Japan. Last year 7 Pennsylvanian 4-Her's traveled to Japan. And in some years, we have one or two delegates who were hosted in Pennsylvania and return to stay with their host family for an entire school year.

This year in addition to the Costa Rican and 4 Norwegian delegates, Pennsylvania hosted 23 Japanese delegates and two chaperones. A big thank you to all the host families! For more information on the program, please contact Dr. Patreese Ingram at pdi1@psu.edu. ([Return to Index](#))

5. University of Azores Gets Advice From Penn State

Written by Sally Blair

The Department of Dairy and Animal Science's Dairy Alliance is exporting their dairy advisory team concept to dairy farmers in the Azores, an autonomous region of Portugal.

In June, Lisa Holden, Ph.D, Associate Professor of Dairy and Animal Science, and N. Alan Bair, Director of Dairy Industry Relations, spent four days training dairy farmers and industry leaders on the Islands of Sao Miguel and Terceira in the organization and implementation of dairy advisory teams.

Through a collaborative program established with the Department and the University of the Azores, Holden and Bair facilitated an in-depth discussion of the concept and how teams function effectively to increase profitability for dairy producers.

Bringing together employees of farmers' associations, advisors, farmers, support people who work for industry, and government representatives, they discussed the goals of advisories teams, and how they might be implemented to help issues specific to the Azores.

More than 125 attended the four sessions on the two Islands, and learned the importance of bringing new ideas to the table, sharing information, developing trust and establishing open communications.

Holden emphasized that the farmer decides who the team members are and makes all the decisions about the implementation of the ideas brought to the table. She noted that team members are all working toward the goal of helping increase the producers' profitability.

The Azorean dairy industry is the most important industry of the Azores, employing 30 percent of the active populations. With 100,000 dairy cows, the industry features a year-round grazing system of management.

This training continues a relationship made possible through an endowment established by Don and

Sandy McCreight. The goal of the collaborative effort is to enhance the distribution of information from the University to their constituents similar to the Cooperative Extension programs, as well as to promote stronger and more effective relationships between the University of the Azores and agricultural industry leaders.

McCreight received his B.S. from Penn State in animal science in 1957, and his Ph.D. in agriculture education and animal industry in 1969. In 2000 he was the DAS Distinguished Alumnus in Animal Science. ([Return to Index](#))

6. Europeans Come to Penn State for Dairy Training

Penn State Dairy Alliance Press Release, Contact Michelle Moyer, mcm14@psu.edu

UNIVERSITY PARK, Pa. – Penn State is extending its ever-broadening impact in agriculture to the dairies of Italy and France. The Penn State Dairy Alliance team recently welcomed Italian and French dairy nutritionists – whose work influences one-fifth of the cows in the two countries – to University Park for advanced training in their field.

“We wanted a program that would give us practical – but advanced – training in various areas of dairy nutrition, so we approached Penn State. It has a very strong dairy nutrition program that is known and respected around the world,” explained Paolo Colturato, manager of Team Paragon, the dairy consulting firm that sponsored the training. Team Paragon is comprised of nutrition specialists who provide technical and marketing support to feed millers and mineral and additive producers across Europe.

The nine visiting nutritionists boast a total of 180 years of technical and field support experience and represent feed companies that are ranked among the world’s top 10 in production, including Veronesi Feed and Glon Sanders. Combined, the visitors serve more than 20 percent of the dairy cows in France and Italy.

“We came to Penn State because we think it’s the ‘must’ in dairy nutrition. Penn State is known for its high level of fundamental research on dairy and for quality teachers,” noted Colturato, adding, “This level of applied research in dairy nutrition is practically unknown in Italy.”

The training was a team effort that drew upon the expertise of faculty and staff from Penn State’s departments of Dairy and Animal Science and Veterinary and Biomedical Sciences. Gabriella Varga, distinguished professor of Animal Science at Penn State, coordinated the team, which included Kevin Harvatine, assistant professor of nutritional physiology; Alexander Hristov, associate professor of dairy nutrition; Virginia Ishler, nutrient management specialist; and Robert Van Saun, Extension veterinarian and professor of Veterinary Science. Together, they developed the curriculum and served as instructors for the intensive four-day program, which explored current and emerging strategies in dairy nutrition management.

The program was very successful from many aspects, noted Varga. “The visitors continually asked questions and shared their personal experiences in their own countries. We discovered many similarities in feeding programs and especially in the economic challenges facing dairy producers in the U.S. and Europe,” she added.

One afternoon was spent at the Penn State Dairy Research Facility, where guests participated in hands-on training in bunk management, forage quality, ration particle size, and general feeding management. A second afternoon was devoted to sharing the slate of new research in dairy nutrition, reproductive physiology, protein metabolism and feeding behavior currently under way by Penn State faculty, staff, and students.

“The visitors were extremely interested in all the different areas we presented,” said Varga. “The program was very successful because there was always interaction and we found many similarities in the

challenges our dairy industries are facing, especially today. The one interesting fact that we appreciated was that their dairy producers have been very conscientious about importing nitrogen onto the farm. They have been feeding lower protein rations (15% - 16%) for quite awhile.”

Colturato reports the nutritionists are making good use of their new knowledge back home. Some are implementing new strategies with transition cows, another has applied suggested changes in soluble-degradable protein on farms he works with, another is meeting with his company’s sales force to share the new skills and strategies he learned, and so on.

Future collaboration between the groups is expected. “All want to come back in a short period,” said Colturato. Penn State Dairy Alliance’s goal is to hold future educational programs here or abroad, as well as host online training on specific topical areas.

“It is critical in today’s economy that we look beyond the borders of Pennsylvania and even the U.S. to work together in the global agricultural community. We have a great deal in common with other countries in the dairy industry and we need a better understanding of how each country has the potential to impact the other,” noted Varga.

Penn State is uniquely positioned to customize training in dairy nutrition, reproduction, management and animal health, explained Varga. “With a strong faculty and staff presence we are able to provide expertise in various disciplines that impact all aspects of the dairy industry around the world,” she said.

Penn State Dairy Alliance is a Cooperative Extension initiative. Its mission is to provide education and leadership to progressive dairy producers, their employees and advisers. ([Return to Index](#))

7. Penn State Students Build Eco-Village in Kenya

Written by Sjoerd Duiker, Tom Colledge, and Janelle Larson

A group of 39 students and faculty members traveled to Kenya in May and June, 2009 as a culmination of two semesters’ activities in humanitarian design and social entrepreneurship focused on a collaboration with the Children and Youth Empowerment Centre (CYEC), a program for former street children. These activities comprised three projects – the development of a system of EcoVillages to facilitate the reintegration of former street children into society, Mashavu, a web-based system to improve access to healthcare, and WishVast, a cell-phone based network to build social capital.

Prior to this, one hundred and fifty one undergraduate students and seven faculty members, part of an interdisciplinary group representing three Penn State campuses, seven different colleges, and sixteen different majors, spent the spring semester learning about the culture, politics and economics of Kenya as well as the associated problems of caring for the vast number of ‘street children’ in Kenya. The students then proceeded to design culturally appropriate solutions, from a systems perspective, in order to assist in the caring and nurturing of these children – with agricultural systems being a critical component of the undertaking.

The designed solutions were implemented by those who travelled to Kenya during May and June, 2009. The team spent almost a month at the project site in Nyeri, Kenya. Together with youth from the CYEC, they built prototypes of affordable technologies in sustainable agriculture, water harvesting and purification systems, renewable energy generation, and housing construction. The Mashavu team field tested low cost medical sensing equipment designed by Penn State undergraduates and used to monitor vital health parameters, using cell phones to network with a server to permit physicians the world over to monitor the data. While the WishVast team designed and field tested a social networking system, again using cell phone technology and the internet, to facilitate trust building and social capital development to spur economic growth, particularly in the trade of agricultural commodities.

The plan is to establish a system of EcoVillages in Kenya to facilitate the successful exit of former street-dwelling children and youth from rehabilitation centers. The microenterprises being developed, including

Mashavu and WishVast, as well as a steam-driven engine generating system, and a low cost water well drilling rig are to provide sources of training, employment and income for the residents of the villages. Education in the operation and maintenance of the systems is central to the effort as is training in business development and entrepreneurship. Youth graduating from these centers would become independent and self-reliant even when immediate employment is not available.

The phenomenon of street-dwelling persons is the result of complex political, social and economic conditions resulting in poverty and family break-down. In the late 1990s there were an estimated 135,000 street-dwelling children in Kenya and more than 600,000 living in extremely difficult situations. The CYEC was established as a model center for street-dwelling children and was charged by the Government of Kenya to address three gaps in the understanding and practice of interventions for such children: to develop standards of provision and care, to establish a sustainability strategy for programs that care for such children, and to develop an effective exit strategy for these programs. The Penn State students and faculty are helping the CYEC develop and implement the EcoVillage initiative as an exit strategy, while the microenterprises and agricultural production seek to facilitate economic sustainability.

To prepare for the project, a team of faculty members from PSU had travelled to Kenya in June 2008. While there they met with the director of the CYEC, Paul Maina and several members of the CYEC board. They also met with administrators and faculty of a local university – Jomo Kenyatta University of Agriculture and Technology (JKUAT). In January of 2009, the director of CYEC and an administrator of JKUAT visited Penn State for a workshop with a group of interested faculty and staff. The Interinstitutional Consortium for Indigenous Knowledge at Penn State has recently sought to participate in the effort as well.

While in Kenya, the EcoVillage team built a small-scale biodiesel plant, a bicycle-powered electricity generator, a system to collect and store roof runoff, a biological filter to purify and re-use waste water, a merry-go-round pumping system, and a rammed-earth structure. These prototypes are to be used as demonstration systems in preparation for scaling up and constructing the proposed village which is to house up to 300 youth. Students and faculty also visited a potential site for the first 'real' EcoVillage, which is planned for next year.

The team from the College of Agricultural Sciences built a 30' x 16.5' high tunnel with drip irrigation system and started a nursery of horticultural crops to plant in the high tunnel. The high tunnel was built in response to local demand as there is a strong market for vegetables in the area, especially in the dry season. The high tunnel would allow production of vegetables year-round. The teams worked closely with CYEC students and staff who were trained in the construction of the high tunnel and irrigation system. Given that 70% of the population engages in subsistence agriculture, agricultural training and extension is critical. The demonstration sites and training efforts are essential to the sustainable nature of the program.

The trip to Kenya was life-changing for many students who had never been to Africa. It was especially eye-opening to see the optimism and determination despite the utter poverty of the CYEC students and many others in Kenya. At the same time, long-lasting friendships were established between Penn Staters and students and staff at the center. Students or faculty interested in this project can contact Khanjan Mehta (krm209@psu.edu – Mashavu, WishVast microenterprises for the EcoVillage), Tom Colledge (thc100@psu.edu – infrastructure for the EcoVillage), Janelle Larson (jbl6@psu.edu – agricultural economics for the EcoVillage) or Sjoerd Duiker (sduiker@psu.edu- agricultural systems for the EcoVillage).

Relating to this project, this fall semester we are offering a one credit course (EDSGN 352). This course will have students focus on information gathering and resource organization in order to provide the spring semester teams what they need to begin their design efforts from the outset of the semester. All disciplines are welcome!! A goal is to form multidisciplinary teams in the spring - thus we need participants from all majors - particularly in Ag. Sciences. Please contact Tom Colledge for more information. ([Return to Index](#))

8. Large Number of New Agreements Signal High Interest in International Partnerships

During the last year, the College has entered into a series of new partnerships around the world, testimony to the global reach of our faculty and programs. Following is a list of the new initiatives that have been developed with the administrative assistance of the Office of Global Programs.

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| Benin: | Letter of Intent with the Africa Rice Center (WARDA) |
| Brazil: | Memorandum of Understanding with the University of Sao Paulo and the Federal University of Parana |
| France: | Memorandum of Understanding extension with Agrocampuse Ovest |
| Georgia: | Letter of Intent with the University of Chavchavadze |
| Honduras: | Memorandum of Understanding with Zamorano University |
| India: | Memorandum of Understanding with Jammu University |
| Kazakhstan: | Letter of Intent with the University of Kazakhstan |
| Kenya: | Memorandum of Understanding with the Children & Youth Empowerment Centre |
| Kenya: | Memorandum of Understanding with Jomo Kenyatta University of Agriculture and Technology (JKUAT) |
| Kenya: | Memorandum of Understanding with ICIPE – Africa Insect Science for Food and Health |
| Mozambique: | Memorandum of Understanding with the National Institute of Agronomic Research (IIAM) |
| Namibia: | Letter of Intent with the University of Namibia |
| New Zealand: | Memorandum of Understanding with Lincoln University |
| Zambia: | Letter of Intent with the Department of Fisheries, Minister of Agriculture & Cooperatives |

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9. Spotlight on Africa – Updates on Current Projects

- Dr. Leland Glenna conducted some research in Ghana in collaboration with WARDA (Africa Rice Center), starting in 2008. The focus of his research in Ghana was on the effectiveness of a program to promote rice production among small farmers. He is currently hoping to get research money to continue this work.
- Dr. Jim Tumlinson presently has a USDA, ISE grant to study African honey bees in Kenya and other parts of East Africa. This grant was funded for 2 years beginning in 2008, involving an initial trip to Kenya in February 2009, and a follow-up trip planned in early 2010. The African collaborators on this project are scientists at the International Center for Insect Physiology and Ecology (ICIPE) in Nairobi. Dr. Tumlinson is also in the process of establishing an MOU with ICIPE to cover a broad scope of work that he hopes scientists in the Center for Chemical Ecology as well as others can collaborate on.
- Dr. Jill Findeis is working closely with the Socioeconomic Unit of IIAM (Mozambique's national agricultural research institute) on diffusion networks for the low-P legume and evolution-proof malaria cloths. The project is based at 8 sites at Sussundenga, Angonia, Gurue and Lichinga now. She will be heading over this summer with Dr. Rachel Smith to train IIAM socioeconomic team members in GIS and network analysis. She is also preparing training materials in GIS and network analysis for members of the other projects that are part of the South-Eastern Africa McKnight Community of Practice.

Dr. Findeis has also been recommended for a USDA International Science and Education (ISE) grant for the project 'Ag 2 Africa'. The topical focus of the grant is on the interrelationships between food systems and disease dynamics/control. The grant also will train selected graduate and undergraduate students in network methods, systems science and survey methodologies, in the context of Africa. Penn State students from multiple disciplines will be taken annually to South Africa for training in supply/value chains, followed by field work in networks, systems and survey methods at the Mozambique sites. Students will also be trained in the methods at local

Pennsylvania field sites being used for the Transitional Zone (T-Zone) Ecosystem Project. The concept is to immerse students in the new Community, Environment and Development (CED) major in this topical area, training them in a variety of new approaches and techniques.

- Since 1995 Dr. Audrey Maretzki has co-directed the Interinstitutional Consortium for Indigenous Knowledge (ICIK) with Ladi Semali in the College of Education. (www.ed.psu.edu/icik). Since 2006, ICIK has facilitated the activities of a Working Group on Indigenous Knowledge and Development in East Africa (Kenya, Tanzania and Uganda). In 2007, nine PSU faculty took part in an ICIK-organized workshop conducted in collaboration with Tumaini University in Arusha, Tanzania. In 2008, two groups of PSU faculty conducted collaborative research projects in Tanzania that were initiated during the 2007 workshop. In June 2009, an ICIK Workshop was held in Nyeri, Kenya to highlight the work of PSU students and faculty involved with the Children and Youth Empowerment Centre in Nyeri.
- From 2002-2005, Dr. Maretzki was involved with the establishment of a nutri-business cooperative in Northern Namibia in cooperation with the Small Business Development Centre on the University of Namibia's Osakati Campus. In November 2008, she was part of a PSU team that assessed the impact of Community Based Natural Resource Management (CBNRM) conservancies established in Namibia by the World Wildlife Fund. PSU's interest in Parks and People in Africa has resulted in a Letter of Intent between PSU and UNAM.

Dr. Audrey Maretzki was part of a PSU research team in 2008 that received funding from PSU's Social Science Research Institute to study the social networks of women agro-entrepreneurs in Northern Tanzania and to learn how these women employ cell phones in their business activities.

- In July/August 2009, Ed Mills from Dairy and Animal Sciences and Dr. Maretzki will be in Kenya for three weeks as a part of an NIH-funded HIV-AIDS nutrition project that IUPUI is conducting with Moi University in Eldoret. They will be assessing the feasibility of establishing a nutri-business cooperative to process and market a shelf-stable animal-source food product for individuals who are HIV+.

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10. Internationalizing the Curriculum: A Success Story

Written by Dennis Buffington

Penn State College of Agricultural Sciences has a long track record of encouraging undergraduate students to gain international experiences while they are still undergrads. The percentage of students who gain such experiences has risen dramatically because the College has been very pro-active in encouraging the development of various flexible formats for offering opportunities for international experiences. Unfortunately, a large majority of our students never gain meaningful international experiences before graduation.

An additional approach for our students to gain some international perspectives is for the resident faculty to "internationalize" their courses taught on this campus. Dennis Buffington (professor of Agricultural and Biological Engineering) has attempted to integrate international perspectives in B E 300 (Biological Systems Engineering) over the past ~5 years. He emphasizes that he did not add an international component to the course, but rather he embeds international perspectives and viewpoints as often as he can throughout the course. Embedding international experiences occurs in examples, classroom discussions and homework problems. He gained the international perspectives that he embeds primarily through his experiences of teaching in Russia at Moscow State Agro-Engineering University eight times since 2000. He has gained additional perspectives through other professional travel and reading.

Dr. Buffington developed (with inputs from several faculty members) a set of five supplemental questions for the SRTE during Fall Semester 2008 so that for the first time he could get objective student feedback concerning his attempts at internationalizing the course. The SRTE questions that were developed are:

SRTE Questions to Assess Internationalization of a Course

1. Rate the extent the instructor incorporated her/his experiences from other places around the world into the lectures and homework assignments.
2. Rate the extent the instructor promotes dialog and discussion regarding relevant international examples and/or content into the course.
3. Rate the extent you learned about applications of the course materials to other parts of the world.
4. Rate the extent you have gained a greater awareness of pressing global concerns related to the topics of this course.
5. Rate the extent your capability to address global issues related to the course topics has improved.

Please contact Dennis Buffington (deb2@engr.psu.edu) if you have any suggestions to modify any of the above five questions and/or to suggest additional questions.

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