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AN INTERNATIONAL VIEW OF AGRICULTURAL EDUCATION

Is Your Agricultural Program Really the Center of the Universe?

Prior to the publication of *De revolutionibus orbium coelestium* (*On the Revolutions of the Celestial Spheres*) in 1543 by Nicolaus Copernicus, it was widely accepted that the Earth was the center of the universe and the sun, moon, stars and planets revolved around it. Many of us treat our agricultural programs in the same manner. We teach students about agriculture in the local community and never address its global aspects. There is nothing wrong with tailoring our programs to the needs of the local community, however, this should not occur at the sacrifice of educating our students about the international agriculture community.

In this issue you will have the opportunity to learn how two innovative teachers are introducing their students to the international aspects of agriculture. Eric Richer, agricultural education teacher at Wauseon High School in Ohio describes the study abroad trips he has organized for his students. In cooperation with Redwood Falls, Minnesota; Fayette, Ohio; and Switzerland County, Indiana; he organized an international study trip to Brazil. Twenty-nine students had the education of a lifetime. Mr. Richer describes the highlights of the trip as well as the planning and organization that it takes to accomplish such an activity.

What if you don't have the resources to make such an event happen? Nicole Marinos describes an alternative to a full-fledged study abroad trip. In her article, Ms. Marinos describes the integration of an international agriculture unit into the curriculum at Twin Valley High School in Pennsylvania. Her students take their education to the experiential level by developing applications for their international experience topic. The purpose is to provide the students with an international view of agricultural production systems and farming practices.

Are future agricultural education teachers being prepared to lead their students into the international world of agriculture? If activities at The Ohio State University and Perdue University are indicative of the preparation of future agricultural education across this nation, the answer is yes. Drs. Balschweid, Talbert, and Gottschalk describe the Perdue University study abroad program that took a number of students to Jamaica. Students at The Ohio State University, under the direction of Dr. Whittington, provided reactions to their international travel experiences.

Few of us recognize the country of India as a leader in international agricultural production. We see India as one of the most heavily populated countries, but we fail to observe the fact that India is a major producer of agricultural crops. Mr. Vommi, a doctoral student at West Virginia University, introduces us to the agricultural production in his country and describes why American students should be aware of the role India, and other similar countries, play in the production of agricultural commodities.

Dr. Shinn does an outstanding job of showing us how globalization is making a difference in our daily lives. He points out that as technologies change it promises to make an even larger difference in the future of our students and our children. Dr. Shinn challenges us to act as change agents and offers six principle centered implications of change.

Dr. Foster challenges agricultural education teachers to provide students with safe, understanding and culturally aware centers of learning. She indicated that as the world continues to shrink through technology we need to understand all cultures. She offers suggestions for incorporating international concepts into the day-to-day lessons of agricultural education.

In the final article of this issue, Ms. McAtamney describes a service learning program at W. B. Saul High School, the largest agricultural high school in the United States. She describes the collaboration between faculty at W. B. Saul and the University of Pennsylvania in establishing a biodiesel refinery.

I already hear a number of you saying that international agriculture programs will not work in my school. Borrowing a line from "*Field of Dreams*," my comment is that "if you build it, they will come." Four years ago I redesigned a "global agriculture" course at West Virginia University. The first year I had less than 50 students. Today the course has over 175 students per semester and includes students from every college at West Virginia University.

Harry N. Boone, Jr., is an Associate Professor at West Virginia University and Editor of ***The Agricultural Education Magazine.***

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Front Cover:
Dr. Glen Shinn, Professor, Texas A&M University (center), discussing agricultural education on a recent trip to Afghanistan.

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FFA Members....Ready to Compete Globally: "The Making of a High School Ag Ed Study Abroad"

by Eric Richer and Ricardo Shirota

As the waiters circled the tables with skewers of picanha and pineapple, students sampled any food placed in front of them and enjoyed the fellowship surrounding that day in the foreign land of Brazil. Used to eating their meals in 15 minutes or less, these youth spent nearly 3 hours savoring this traditional Brazilian barbecue in Piracicaba, Brazil, just outside the metropolis of Sao Paulo. They had evolved from the culture of their homeland to appreciate the uniqueness of culture unknown to them. The study abroad trip for which they had waited so anxiously was now upon them. Would it be the culture, the agribusiness tours or the people that would open their mind the most during this experience?

As agricultural educators, we have a role in developing our students' view of the world. How we help them understand the world's marketplace will ultimately affect their career success, the way they treat people (customers), and grow into valuable citizens. So then, what are the objectives of an international activity? International agriculture experiences should help our students understand the global marketplace, respect diversity and examine international agricultural careers.

The Global Marketplace..

With ever improving communication and logistics channels, our students need to understand that American agriculture must continue to do business with all parts of the world. Whether researching a country's global impact on line or visiting the country in person, students need to be aware that we are trading partners with many countries and vica versa. International alliances are necessary for trading our corn, soybeans, beef, pork, etc. Similarly, we depend on Russian wheat, Brazilian sugarcane, Dominican bananas, Chilean grapes, etc. In any trip abroad, touring these types of agribusiness are the best ways to show students a variety of products, production practices and ways of doing business. Most international agribusinesses are thrilled to host foreigners and their hospitality alone is good for students to see.

FFA members prepare for a tour of the Usima Iracema sugarcane ethanol refinery in Sao Paulo, Brazil.

Respecting Diversity..

An international activity should teach students the value of diversity. Diversity, or variety, can apply to many things. First and foremost is the diversity in culture and race that an international agriculture experience offers students. Cultural and racial diversity can obviously be experienced without leaving the country, however, a service learning project in a foreign land exposes students to various living conditions, develops international civic relationships and fosters dialog among natives and students while working side by side. Diversity, with regard to international experiences, should also be applied to food, customs, language, education and agriculture. As agricultural educators, the diversity in agriculture and education can be intriguing in another country. Students will undoubtedly sense the difficulty of communicating and taste the variety of food much faster than anything else. As with the introduction to this article, students will adapt to this variety quickly or realize the "pickiness" of their tastes. International agriculture activities will show students that diversity just means "variety" or "different" and "different isn't bad, it's just different." This open-mindedness by students for diversity in people, agricultural production, culture, food and language is a very satisfying feeling as an agricultural educator. It is the same respect that will serve students well in their careers and in treating people "honest and fair in the game of life."

International Agriculture Careers..

Finally, an international agriculture activity should allow students to examine the wide array of agricultural careers in the world. These careers may be working for an agribusiness native to another country, working for a non-government organization (mission work or Peace Corps) or working for a multinational corporation with subsidiaries around the world. It should be brought to students' attention that the same math, science, and language arts skills required in the United States are also required abroad and throughout the world. Whether by video or first hand experience, it will not take students long to realize the necessity for a second language and the proficiency by which foreign students speak English. This alone is an eye opening experience for students. In many cases, students will realize the need for a long term international experience to make them even more valuable to future agribusiness employers.

Many of you might be saying "Why should our programs incorporate international agriculture education into our curriculum?" Most reading this article are agricultural educators or teacher educators. You have conventions, conferences, camps, and livestock shows to attend; CDEs, LDEs, class and award interviews to prepare for; school farms, shops, and greenhouses to maintain; let alone many SAE visits to make during your "free time." How can you possibly incorporate international education into your curriculum? Why doesn't the foreign language or social studies teacher do it? When will I have the time?

Ohio FFA members Saul Triana, Jacob Schroeder and Tyson Aeschliman listen to Andre Pedroso, manager of the EMBRAPA Research Farm, discuss the value of Tanzaniagrass in cattle pasture rotations.

One of the days on the study abroad was dedicated to a service learning project in Tatuape village outside of Piracicaba. Sandra Saldivar (2nd from left, senior, Wauseon FFA) was able to communicate well with this family as they worked together painting the family's house.

Simple Suggestions..

An international experience doesn't have to be a planned out study abroad trip. Rather it can be a host of things that cause students to think about the value of agriculture in the world. For starters, you may incorporate a short foreign country project into any level of your curriculum, middle school to senior. Have students or groups of students research the agricultural value (production, imports, exports, major trading partners, etc.) of a particular country and present via display boards, speeches, PowerPoints, etc. Increase the requirements to increase the difficulty. This activity may culminate with an "international potluck" featuring an authentic dish and recipe from respective countries. Another idea is to develop a mini unit using the information provided by agencies like American Farm Bureau Federation. Their information references world agriculture production and forces students to think about how our food dollar is spent. Other colleagues have used videos like teachertube.com or other websites to show the disparity of agriculture production around the world, from sustainable agriculture in developing countries to modern agriculture practices in many

Students touring the Case IH sugarcane harvester assembly plant in Piracicaba, Sau Paulo. One hundred percent of Case IH sugarcane harvesters are made in Sau Paulo state, Brazil.

European countries. Furthermore, like many agricultural education progams in our country, maybe you and your students would be willing to host an international agriculture student from England, Russia, Brazil, etc. Finally, maybe you would consider the reward of taking your students on a short study abroad to study agriculture in another country. While initiating quality programs like this take considerable effort on the educator's part (like all good lessons), the value passed on to our students is immeasurable.

The Making of a Study Abroad Program..

Our overall goal in designing a high school agricultural study abroad program the past few years was to allow students to experience a world class, interdisciplinary international experience that would provide agricultural and life lessons for our students that will last a lifetime. With the assistance of our local land grant university's college of agriculture and their study abroad department, we have been fortunate to take our students on two recent study abroad programs – the Dominican Republic in 2007 and Brazil in 2009. We chose Brazil most recently because it is on the forefront of agricultural production, agricultural research and alternative energy engineering. We believed our students stood much to gain. We also believed, with a study abroad of this nature, our students would stay on the cutting edge of experiential learning and the global agriculture industry.

Strength in People..

From the planning stages to the arrival home, my teaching colleague from Wauseon, Leah Amstutz, and I knew we needed to work with other agricultural educators committed to helping young people succeed in our industry. From the study abroad office at The Ohio State University's College of Food, Agricultural and Environmental Sciences, we were connected with the most important in-country link to our study abroad, Dr. Ricardo Shirota, a Brazilian agricultural economics professor with a Ph.D. from The Ohio State University and an advocate for student learning at the University of Sao Paulo-Escola Superior de Agricola de Luiz Quieroz (USP-ESALQ). Dr. Shirota and his interns made our study abroad a world class experience. His local contacts afforded us 24 agribusiness tours ranging from Zebu cattle ranches, sugarcane harvesting and sustainable dairies to coffee processors, ethanol production and the Case IH Sugarcane and Coffee Harvester Assembly Plant. He also coordinated cultural activities, authentic meals and an eye opening service learning project in a local barrio.

Additionally, we wanted to add some domestic diversity (agricultural, cultural, geographic, SAE, etc.) to our group by coordinating this trip with other FFA chapters. As a result of relationships established through the National Association of Agricultural Educators (NAAE), we were

Wauseon FFA senior Anthony Ruger stands with Brazilian translator Lucas Correia at Holambra wholesale flower auction located in the Sao Paulo state of Brazil.

able to involve other FFA members from Redwood Falls, Minnesota (Mr. Jeremy Daberkow); Fayette, Ohio and Switzerland County, Indiana, in our study abroad. In all, 29 students and six adults from five different FFA chapters participated. Much like FFA camp or Washington Leadership Conference, the new faces made things awkward at first but those faces became friends and colleagues by the trip's end. While this FFA member diversity has been good, we could still improve in this area and thus are seeking out chapters diverse from us for our next proposed study abroad.

Sell to Parents and Administration..

After contacts were made in Brazil and important vital information was established, our students delivered a very important presentation (one year in advance) to our Board of Education, requested official school board approval and the chance to earn high school credit towards graduation. Unlike some of our other school board presentations, students (and teachers) fielded a multitude of questions that indicated the school board would seriously consider all requests. At the next school board meeting the requests were approved and we moved forward. As a special note, you may want to check out your state's newest graduation requirements. Some states, like Ohio, encourage an international education component. Also investigate "flex credit" available to students. By September we had met with all students and parents who were interested, explained the application/selection process and how fund raising efforts would be conducted. To our surprise, we had more students apply than we had spots. During this same time, Mr. Daberkow was assembling his students in Minnesota and we cooperatively filled all 35 spots required to keep the fixed costs of the program at the lowest. In the year leading up to departure, we conducted three parent meetings to keep them abreast of all necessary information (VISAs, vaccinations, etc.). Parental communication was absolutely crucial for our success.

Student Assessment..

Mrs. Amstutz and Mr. Daberkow worked very diligently at developing a comprehensive curriculum that was used for instruction and board approval. Students in Minnesota and Ohio were approved to receive academic credit towards graduation upon completion of the "curriculum." Students were required to attend four pre-trip orientation meetings in June before departure. These meetings emphasized Portuguese language study, Brazilian culture and agriculture and culminated with a Brazilian potluck and panel by members of our community who had lived in Brazil. Each student was placed on a daily leadership team and asked to complete a group project for credit. Individual assignments included a daily journal, one blogsite entry summarizing an agribusiness tour, one tour video summary (see http://www.wauseon.k12.oh.us/ffa/), a comparative essay on Brazilian vs. American agriculture (often tied to students' SAEs), and a civic presentation upon their return. With these various "assignments," we believed that all students would be held accountable for learning objectives of the study abroad.

Final Thoughts..

Without a doubt in my mind, the idea and execution of a high school study abroad for agricultural education students has been the highlight of my teaching career. We have gained so much insight about technical agriculture and conducting study abroad programs since coordinating these two studies abroad. There are still several things to improve but we believe the program to be 100% successful. We originally told students to budget $2,500 for the cost of the trip and thought maybe that would turn some kids away...it didn't and the cost of the trip ended up being $2,300 for 10 days all inclusive. Like many students in our programs, FFA is the ticket for them to experience life...if not in FFA, they may not get the opportunity again. Whether they get the opportunity again is yet to be determined. All I know is that the study abroad students returned home as changed young people-- minds open to the world around them and infused with contagious FFA energy ready to compete in a global agricultural marketplace.

Eric would welcome your inquiries about high school Ag Ed study abroad programs and potential participation in an upcoming study abroad. Ericher@WauseonIndians.org.

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Integration of International Agriculture at Twin Valley High School

by Nicole Marinos and Thomas Bruening

What is international agriculture at the secondary level? Is it the knowledge of the humanitarian food distribution effort that is ongoing in Haiti? Is it knowing how a Peace Corps volunteers needs to be respectful of the culture while working in Bolivia? Is it USDA working in Moscow to improve the importation of "Bush's Legs" (chicken legs) into the Siberian countryside? Perhaps it is the understanding that more than a billion people in the world go to bed hungry each night. Maybe it means that students have some idea that our food and food of other nations could be used to threaten our national security interests. Does it mean that we all need to know something about international agriculture because we are all part of a large network of people with common interests and food and issues around the food and fiber system are essential to everyone? Clearly it seems that international agriculture is a critically important topic that all teachers should consider including or integrating into the secondary school curriculum.

Senior students at Twin Valley High School in Elverson, Pennsylvania are introduced to concepts of international agriculture as part of the curriculum in the Agricultural Science Department. The overarching goal of the curriculum is to provide students with a worldview regarding agricultural production systems and farming practices around the world. In addition, it is important that students understand how to take active roles in making decisions that support global health and citizenship.

Keith Gleason, Amy Kemp, Stephen McBay, and Seth Higgs developed a program to bring awareness and support for AIDS.

The senior level course (Agriculture Leadership) includes a unit on international agriculture. In this unit, students are asked to synthesize their previous years of agriculture science learning into a dialogue about international agriculture. Knowledge from previous courses in horticulture, animal science, aquaculture, and natural resources is combined with information concerning practices and advancements in international agriculture concepts. Students create an open dialogue where they discuss, compare and contrast, and debate methods to improve agriculture in a global context.

Agriculture Leadership students begin the unit by studying aspects of international agriculture as well as studying various countries. After discussing the difference between developed and lesser developed nations, students identify countries that fit into these classifications. The class then focuses on specific issues that deal with the development of various nations. Students discuss current and traditional methods of agriculture such as polycropping, no-till, sharecropping, and steppe farming and compare and contrast farming practices inside and outside the United States. Included in this discussion is information about the Green Revolution, GMO's, and how technology can either save or harm a developing country's agricultural system. Throughout this unit students are asked to apply their previous knowledge and make new connections regarding global agriculture.

After gaining new knowledge regarding international agricultural systems, students build on their knowledge by answering questions about how agriculture in all nations can be impacted by population dynamics, public health care, trade and taxes, wealth and poverty dynamics, political complications, and culture and tradition. Students then begin to make deep connections regarding the large number of factors that can influence food production, education, and issues such as poverty. Ultimately, students are able to see more clearly how the United States' agriculture is impacted by culture and percep-

Laurell Stoltzfus, Jolene Graydus, Anna White, Lauren Gossler developed a program for students in the US to partner with other countries to develop a pen pal program.

tions of non-agricultural populations. Global organizations such as the United Nations, Heifer International, and USAID give students practical examples of how countries are interconnected and how aid is given.

As a culminating lesson, students in the Agriculture Leadership class were put into groups and given the task of developing an organization that will focus on a world issue and work to promote awareness, develop revenue, or encourage actions in a community. To complete this project, the students were divided into four groups. The groups quickly established their causes; one group decided to provide clean water for lesser developed countries, the second group selected AIDS awareness, the third group chose teen awareness of global issues, and the last group selected international food aid.

To prepare for the final presentation, groups developed slogans, a campaign mission, objectives, budget for the program, major activities and events to help raise awareness and/or funds, and they also developed a timeline of events. The students in the class took to the task with great enthusiasm. They rose to the highest levels of expectation and developed thoughtful, creative, and effective presentations.

AIDS Awareness in Africa

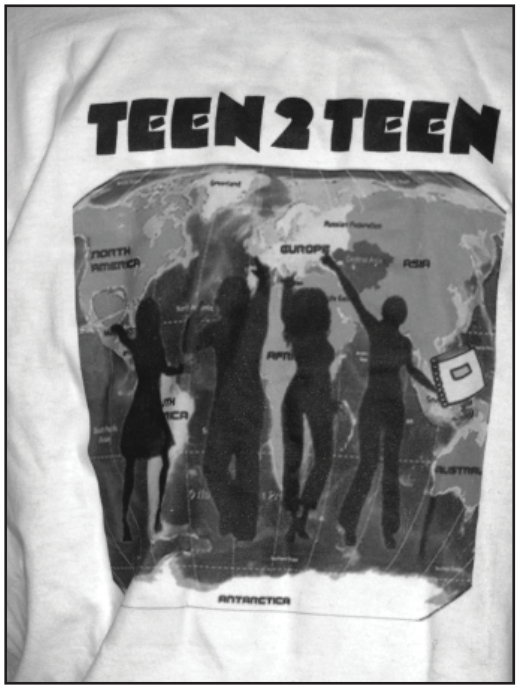
One group proposed the idea to develop a benefit concert that would work to promote continued education on AIDS awareness in Africa. Students identified sponsors, an intricate budget, and then detailed how the event would involve raising funds, sharing stories of families from Africa, and developing an open dialogue between people from the United States and the countries that would be served through this activity. Two other groups decided to develop programs that would also bring open communication to groups of people in different nations.

Teen to Teen

"Teen to Teen" was a concept proposed as a way for high school students in the United States to develop contacts with peers from other nations. The program would identify schools in several different countries and match the students there with students in participating high schools in the United States. The schools in the United States would work with their international pen pals to complete assignments in their classes. This group of students proposed the idea that schools would develop a common curriculum in International Agriculture that would encourage the students to share experiences, research each others' cultures, and ask important questions about agriculture, trade, and technological development. Students in this presentation group strongly believed that by developing connections between young people in different cultures, they would continue the bonds through adulthood. This would lead to a greater global consciousness and a desire to close gaps between cultures and countries. When it came time for the presentation in class, the group surprised everyone by wearing t-shirts they had made for the program. The logo was designed by one of the girls and it showed a map of the world with silhouetted teenagers. They were not required to create the shirts but had simply wanted to take that step. It was great to see them truly immerse themselves in the project.

Together for Life

"Together for Life" was an idea



Teen to Teen project t-shirt.

Erin English, Emily Ramsay, Lauren Supplee, Katie Lyster, inspired by their desire to enter the health care field, developed a program for doctors around the world to train together.

by a group of young women planning to enter the health field. Students in the group took their personal professional goals, their knowledge of agriculture and international issues, and their desire to help humanity, and combined these ideas in a program that would encourage better health care across the world. In this program, doctors and health care workers would be allowed to work and learn in different cultures at their choosing. Borrowing the concept of "exchange student," this program would allow nurses and doctors from developing countries to come and train with doctors in developed nations. It would also send doctors trained in modern medicine to serve in the communities of developing nations to train people there as well.

Clean Drinking Water

The final group developed a program to provide clean drinking water to communities by raising money to dig wells and to provide water-purifying systems to nations in need. By developing clean water systems, students hoped to lower the risk of waterborne illnesses and decrease the need for members of a community to travel long distances to acquire drinkable water.

The four groups of students researched their topics and found examples and information from ongoing international aid projects. However, the students also infused their own knowledge, creative ideas, and hopes for the future of international development into their projects. Through the study of international agriculture, students developed an appreciation for people in other cultures, and developed a desire to make a difference. The programs they proposed indicate that these students found meaningful ways to understand international development issues. Clearly these students were able to relate to development issues and suggest solutions that could have impact.

By developing an appreciation and respect for other cultures through international agricultural education, students become well-rounded individuals and hopefully some will seek opportunities to study and work abroad. Moreover, perhaps the spark that students demonstrated in their projects will lead to further inquiry.

University study abroad programs are a great way to build the background helpful in developing the contextual international agricultural expertise to share with students. However, teachers do not have travel to other countries or study international agriculture at the collegiate level to be an effective international agricultural teacher. There are numerous opportunities available to learn more about international agriculture and integrate international content into the general agriculture science curriculum. Programs such as Heifer International, International 4-H Youth Exchange (IFYE) program, Food and Agriculture Organization of the United Nations (FAO), the historical impact of Work Experience Abroad (WEA-FFA) are worthy of further investigation. Ultimately, when secondary students get an opportunity to learn about international agriculture they will be better prepared to become global citizens ready to enter the competitive global workplace and understand why this is a topic that is important to learn in secondary school.

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Was Friedman Correct? Is the World Really Flat? If so, What Does it Mean for Agricultural Education?

by Glen Shinn

Thomas L. Friedman wrote a New York best seller in 2005 called *The World is Flat—A Brief History of the Twenty-first Century*. It was an engaging read that helped explain globalization and why you and I should give his proposition some serious thought. Maybe because globalization is making a difference in our daily lives and promises to make a huge difference in the future of our students and our children. Let's get a cup of coffee and think about his proposition for 15 minutes.

Many international universities are working to increase capacity in agricultural teaching and research. Teachers benefit from new methods, including problem solving and community-engaged education. Trends show an increase in demand for agricultural education specialists in developing countries.

First, let's go back a bit from the 21st Century and pick up on our roots. Remembering our old college notes, we recall that "in the beginning" was 1917 and that era lasted until sometime in the late 1970s. Things happened slowly over those 50-some years, but don't try to tell that to your Grandfather—two world wars, Vietnam, and a Great Depression. Vocational agriculture started slowly with Smith-Hughes, but took off in the `50s with program expansion in all 48 states. World population was estimated at 2.7 billion people. The Vo-Ag program was grounded on the principles of "learning to do, doing to learn, earning to live, living to serve." The Future Farmers of America brought leadership to the forefront as a transportable skill. Solid stuff for farm kids. Norman Borlaug was recognized as the father of the Green Revolution that dramatically increased wheat yields. Over the next decade he provided food for more than a billion—with a B—people in India and Pakistan, and received the 1970 Nobel Peace Prize as a result of his work. And then things changed—

Some remember that the 1970s brought a spike in gasoline and fertilizer prices, a recession and a farm financial crisis. On January 4, 1980, President Jimmy Carter announced a grain embargo to the Russians. Federal Land Bank interest went to 18 percent. On January 28, 1986, the Space Shuttle Challenger broke apart in front of auditoriums filled with school children. Keith Jackson—veteran sportscaster—would say Whoa Nellie! Couple the grain embargos, high interest rates, and a series of droughts and things got tough down on the farm. Vocational agriculture remodeled the curriculum and adopted "agricultural education" as the new brand. Enrollment of females increased, but program enrollment and program numbers slid back; so did the number of farms and optimists about agriculture. Lots of farm sales, consolidations, and vertical integration! Marketing turned from the local sale barn to the Chicago Mercantile Exchange and cash markets migrated to forward contracts. NAFTA arrived in 1993 along with a revision in GATT—agricultural exports began to rise. World population was 4.6 billion while U.S. population grew to 230 million—farm population continued to fall. At the same time, agribusiness was on the rise and FFA provided practice for a valuable set of leadership skills. With innovations in curriculum, flexibility in course delivery, and increasing urban programs, there were increases in agricultural education student enrollment, class size, and program (chapter) numbers. Judging contests changed to CDEs. Welcome to LifeKnowledge®. Then 30-some years later things changed again—

September 11, 2001 shook our world! The United States responded to the attacks by launching a "War on Terrorism" and Afghanistan and Iraq became the evening news. Under this canopy, there were changes from Wall Street to Main Street to the farm gate. More than $4 trillion were lost from markets in less than a week. Wikipedia reported, "2007–2008 saw dramatic increases in world

food prices, creating a global crisis and causing political and economical instability and social unrest in both poor and developed nations." The financial crisis of 2008 created an implosion of major institutions and the housing industry. Crazy!

Why things will change again—

Paul Kennedy and John Naisbitt first coined "megatrends"—defined as a general shift in thinking or approach affecting countries, industries, and organizations; a large scale change in circumstances. These mega forces include growth in world population, impacts of disruptive technologies, degradation of the environment, increasing migration and immigration, and global terrorism. World population is currently pegged at 7 billion people and projected to increase to 9.2 billion by 2050. Paul Collier brought attention to the "bottom billion" - those who earn less than $1 per day. Collier contends that the gap between the haves and the have-nots is widening and will promote social instability. The United Nations and Secretary-General Ban Ki-Moon posted eight Millennium Development Goals and adopted a blueprint for a better world. Presently the megatrends seem to be gaining ground.

What does this mean for you and me? Six principle-centered implications.

If change is constant, then we should act as a change agent. Our curriculum should emphasize systems thinking. Take a look out your window. Change is orderly if you understand the system. Change is chaotic if you don't. We live in nature's system and it has general system order—spring, summer, fall, and winter. Our curriculum should be so systematic.

Brock Yeats, former editor of Car & Driver Magazine, said "what appears to be happening has already happened." When a NASCAR driver is traveling 180 mph, if it appears that the car is going to hit the wall, it will hit the wall. Yeats warned to "Look ahead." When the velocity of change increases, it is crucial that we increase the length of our viewpoint. Looking at the leading edge of megatrends gives us the reaction time necessary to negotiate the change when the brake lights come on.

There is nothing as powerful as a good demonstration. International and American students consistently ask for "more practice and hands-on experience." Small plot demonstrations couple theory and practice while reinforcing problem solving skills. Dewey recommended progressively building on student experiences and expanding future contributions.

Third principle—change comes with a new set of problems. We should practice and teach problem-solving methods within a framework of a learning organization. A six-step method is fundamental to our roots—some authors identify five steps, but acting on the decision and taking responsibilities for the action is crucial to success. I once visited a master ag teacher who had thirty-five years of success in his resume. He had the six steps taped to his classroom desk. His advice was "follow the principles."

Learning organizations are larger than the school—what and how we think is shaped by our larger personal experiences. Students are in class for 55 minutes but in the world 24/7. John Dewey argued that teachers must first understand the nature of human experience. Then as agricultural educators, we can set about organizing subject matter in a way that recognizes students' past experiences. With that done, we should provide experiences which will help to open up the prospects of future growth experiences, thereby expanding the person's contribution to society—John Dewey's ideas, not mine. I do subscribe to his thinking. Not the easy road of answering the questions at the back of the book, but the results are worth the effort.

Knowledge is growing at a rapid rate—with some fields of study doubling in less than seven years. Peter Drucker saw your student's future as a knowledge worker—dramatically different from Taylor's assembly line model. Drucker said "we can also predict with confidence that we will redefine what it means to be an educated person." Drucker explained that the educated person must "understand the world's cultures, religions, and traditions . . ." and "will

International agriculture could benefit from better agribusiness and marketing systems. Agricultural markets lack grading standards, cold storage and uniform pricing information. A substantial amount of the vegetables spoil in the market place.

have to be trained in perception fully as much as in analysis." He concluded that this integration of new knowledge requires continuous learning and teaching. This is a megatrend that your students face.

Finally a catch-22. In today's tight job market, you cannot get a job without experience—and you cannot get experience without a job. This paradox can be solved by using our founding fathers' methods tool box—classroom and laboratory instruction coupled with supervised agricultural experience and leadership. Students will have an edge in the market if we provide greater exposure to work and community through SAE and FFA. Effective teachers must first seek to understand their students, that is, their perception of reality.

Our 15 minutes are almost gone. What does this mean for our world?

In September 2006, a small team of agricultural educators had the opportunity to spend almost two years in Yerevan, Armenia working with professors at the State Agrarian University of Armenia. There we found some 10,000 students and 550 professors struggling with an old Soviet-style curriculum. Over a ten year period, they have incorporated an agribusiness teaching centre that promotes free market economics and entrepreneurship. The model is based on successful agricultural education principles. As change agents, the knowledge was shared without diminishing our own knowledge—and we developed life-long relationships. Our mentor said, "share the principles."

In 2008, another opportunity took a team of agricultural educators to eight provinces in southern Iraq to promote agricultural development in a post-conflict environment. You saw the CNN news from Baghdad, but that was not the environment in the countryside. There we worked alongside Sheiks and sharecroppers who have the same aspirations as you and me—just trying to make tomorrow a little better than yesterday. They need what you teach—problem solving and systems thinking. Sharing those strategies make us both better. By the way, the sixth step proved to be the hardest to teach.

In October 2009, five agricultural educators completed an agricultural needs assessment in four Afghanistan provinces. Faced with a 20% literacy rate and 80% poverty rate, the Afghans face huge economic challenges, often causing them to resort to illegal activities. We found farmers and professors with the same aspirations as you and me—just trying to make tomorrow a little better than yesterday.

Is the world flat? Well, not exactly. But while we were standing in a small garden with an Afghan student, his mobile telephone rang. He smiled and answered speaking in Pashto—I think it was his agriculture teacher calling checking on his garden project. It is amazing the effect agricultural education could have on establishing a more peaceful world. You know what Keith Jackson would say—Whoa Nellie! He might also say "God bless America." I say, "Thanks for your 15 minutes and for what you do every day. Adapt the principles."

Dr. Shinn would like to acknowledge three colleagues as special editors, Gary Briers, Gary Wingenbach and Alice Shinn.

Glen C Shinn is Professor of Agricultural Leadership, Education, and Communications at Texas A&M University. He is also a member of the Graduate Faculty of Texas Tech University. Glen Shinn provides leadership to academic and research programs, most recently in Armenia, Iraq and Afghanistan.

Study Abroad Opportunities for Agricultural Education: Lessons Learned and Tips for Teachers

by Mark Balschweid, B. Allen Talbert and Daniel Gottschalk

According to the Council on Standards for International Educational Travel (CSIET) only one fifth of one percent (0.2%) of high school students study abroad (2008). That compares with less than five percent of U.S. college students studying abroad in any particular year, according to U.S. Census Bureau (2004) data. Although travel has never been more accessible and affordable, many students simply don't place a priority on seeing the world outside the borders of the United States. Travel abroad can seem frightening, difficult to understand, and to some, unnecessary. However, in an industry as global as agriculture, students studying agricultural education could benefit from exposure to cultures different than their own. Agricultural education students, whether secondary or post-secondary, must be prepared to live and work in a multicultural, global society. The purpose of this article is to share insights for leading study abroad experiences for students in agricultural education.

Many educational institutions and programs target international activities as a strategy for helping young people think globally. The National FFA Organization offered members their first international trip in 1948 when they participated in an exchange with the Young Farmers of Great Britain (National FFA Organization Records, 2010). Similarly, 4-H established an international exchange to Europe that same year, and currently promotes the 4-H Global Citizenship Program Model with established curriculum for engaging today's young citizens (University of Nebraska-Lincoln, 2002).

Perdue University's international opportunity for future agricultural education teachers.

One University's International Opportunity for Future Agricultural Education Teachers

In 2004, Agricultural Education program faculty and staff at Purdue University proposed a short-term study abroad for its teacher education students. The country of Jamaica was chosen as the destination for multiple reasons. First, it had a secondary agricultural education system to observe, second, the country had a college of agriculture with a mission similar to a U. S. land-grant university, and third, it was substantially different in ethnicity and socioeconomic status from Indiana.

How it Works

As with any international travel opportunity, funding is a key factor in the decision making process. An internal grant supported two of the authors to travel in the summer of 2004 to Jamaica to establish in-country arrangements for the initial study abroad experience scheduled for summer 2005. From this exploratory trip it was determined that Jamaica's College of Agriculture, Science, and Education (CASE) would be the "home base" for the study abroad. It was also decided that the experience would be three weeks in length. This length was chosen for both pedagogical and financial reasons. It was also the average length of most other summer study abroad programs at Purdue University. The authors strongly encourage a separate reconnaissance trip by the teacher(s) prior to any proposed international study abroad trip to ensure no surprises exist in accommodations, eating establishments, transportation, or safety.

It is important when establishing study abroad trips to build a budget that is realistic and one that is sustainable if future trips are a consideration. A budget should be developed based on a targeted number of participants and expected expenses. Giving students options for activities ahead of time can help determine overall costs and insure student interest in the final itinerary and trip length.

Determining the ideal time of the international experience is critical for securing the greatest number of interested students. The authors

decided that their study abroad experience would begin immediately after the conclusion of spring semester exams. This allowed students to complete the three week experience and still have the months of June and July to work at internships or take on-campus summer classes. This schedule also allowed the instructors to be on-campus during the state's FFA Convention, the university's summer incoming student registration, and the state's agricultural teachers' association summer conference.

It is also helpful to determine and communicate to students, prior to the trip, the educational expectations for the international experience. A variety of formats can be used that include direct credit for the experience alone, providing credit for coursework completed before and during the experience, credit for coursework completed in-country, and credit for completing assignments after the international experience. Regardless of the format used, the authors recommend that students keep a pre-reflection (sometimes referred to as a pre-trip reflective write-up) journal to capture student thoughts prior to the trip, an in-country reflective journal to capture in-the-moment or day-by-day reactions to their experiences, and a post-trip reflective write-up that synthesizes their personal journey. These are great ways for teachers to gauge student perceptions of their experiences and for students to chronicle the trip's influence on their thinking as they experience different cultures.

Results of the Five Study Abroad Trips and the Impact on Agricultural Education Students

The summer 2009 trip saw the fifth group of students participate in the Jamaica study abroad experience for Purdue University's Agricultural Education students. Group sizes have been 12, 11, 12, 13, and 11 for a total of 59 participants. This has been approximately 50% of the freshman class (the target audience) in agricultural education at Purdue University each year. Several Jamaica participants have taken other study abroad courses including India and Spain. The program has been successful in being self-funding and sustainable.

Tours introduce students to the host country's agriculture.

In the course evaluation, students have responded that the program provides them experiences they could not obtain in the United States. They reported they now know what it feels like to be an ethnic minority. They also reported they have a greater appreciation for the wealth in the United States and have new ideas on how to use inclusive teaching for students of all backgrounds in their agricultural education programs.

Future Plans/Advice to Others

The first year the experience was 22 days inclusive of the two travel days to/from Jamaica. This was too long both financially and pedagogically. Therefore, the next four trips were 17 or 18 days in length. With a more efficient itinerary, this has proven to be an appropriate number of days for what the authors intend to accomplish in the experience.

Jamaica is a country in which transportation outside of chartered services may not be safe and parts of the country, Kingston in particular, are not safe for students to explore on their own. Because of this, all trips and activities including recreational/cultural were conducted as a group. This had the unexpected consequences of bonding the students as a group and encouraging less-adventuresome students to try new experiences. Obviously with younger, secondary agricultural education students, it is highly recommended that all activities be under the careful supervision of authorized chaperones. As with other trips involving young people, additional chaperones can help in the planning, pre-trip organization and in-country experiences. However, budgeting for additional chaperones is important to consider.

The authors discovered that mandatory meetings with students for several weeks or months prior to the experience is a great way to communicate important information to students and parents and provides an excellent format for educational activities in anticipation of the experience. For example, students can be assigned various aspects of the destination country to investigate and report back to the larger group. Topics such as a country's history, geog-

Hands-on activities enhance the learning experience.

raphy, political system, demographic make-up, religion, culture, monetary currency and language are helpful in preparing students to get the most out of their in-country experience by helping them anticipate what they will see, and providing them a context while they are immersed in the country.

Costs/Resources Needed

Each school/institution will have a slightly different structure and set of expectations for study abroad. At Purdue University, the Jamaica study abroad costs each student participating approximately $4,000 using a budget with 12 participants. This covers: airfare; university fees; travel insurance; in-country travel; in-country food; in-country lodging; entrance fees to cultural/recreational activities; instructor travel expenses, salaries and benefits; and CASE classroom and equipment rental. Additional expenses that students incur that are considered out-of-pocket and not program requirements include: passport, travel to the U.S. outbound airport, souvenirs, and miscellaneous expenses. Of course, some costs such as equipment rental or instructor travel are fixed costs whereas airfare, lodging and meals are considered variable costs. As a result of fixed costs, the more participating students that attend the lower these costs are per person.

Regardless of the destination and additional effort required in establishing an international study abroad experience, agricultural education students can benefit from the opportunity to experience new cultures and can gain a new perspective for the importance of agriculture around the world.

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Students Invigorate their Futures in Education with Learning Opportunities Abroad

compiled by Kyle Amore and M. Susie Whittington

Dr. Whittington posted the following question on "international experiences" to a message board for students in agricultural education at The Ohio State University.

Question: The College of Food, Agriculture, and Environmental Science has a goal to increase it's students involvement in study abroad opportunities. You have taken the lead and experienced some wonderful opportunities that you will use throughout your life. How will your study abroad experience influence what you do in your teaching, outreach, or service in your professional careers?

Meredith Gilbert: Hi, I'm a fourth year student from Curtice, Ohio. I think that my time in Brazil allowed me to reflect back on the United States with a different view and reevaluate my thoughts and ideas from a different perspective. In terms of my teaching, it gave me insight on how students from different cultures and backgrounds feel in a classroom setting. Unless you are on the opposite side of the situation, you will never truly understand the feeling and I know it will help me in my career as an educator. It changed my life in the way that it gave me confidence and a new perspective on the world. (Meridith's international experience was in Sao Paulo, Brazil with the Alpha Zeta Partners.)

Jill Waite and Meredith Gilbert meeting the Carnival King in Piracicaba, Brazil.

Callie Wells: Go Bucks! I'm a senior from Hamilton, OH. My study abroad helped me to learn who I truly am and opened my eyes to the world. I no longer look at everything Americans do as the best or only way to do things. I can see things from a different perspective now. I also find it easier to work with those from differing backgrounds as I now understand that cultures don't all think the same. (Callie's international experience was in the Czech Republic and Chile.)

Callie Wells in the port city of Puerto Montt, Chile.

Jed Bookman: My study abroad influenced the way I view agriculture and how it relates to the world! I'm a third year student from Loudonville, Ohio. Before traveling to Brazil, I never really thought how subsidies and prices affected agriculture on a global scale. Now, I understand how everything fits into the global market. Traveling to Brazil definitely changed the way I think of American agriculture. Now I understand that the U.S. is not the only country that can produce quality products efficiently. (Jed's international experience was in Brazil with the Alpha Zeta Partners Honorary.)

Katrina Swinehart: My Study Abroad to Brazil changed my outlook on global agriculture. I'm a third year student and I have had many unique

opportunities to experience Brazilian agriculture and expand my knowledge. Additionally, I was able to expand my horizons, and gain appreciation for cultural difference between Brazilians and Americans. I enjoyed my trip very much and would recommend Study Abroad to all college students. (Katrina's international experience was in Brazil with the Alpha Zeta Partners.)

Courtney Moenter: Hello, I'm a rank 3 from Pemberville, Ohio. My study abroad trip was the most influential thing I have ever done in my life. While in the Dominican Republic I saw every aspect of their agriculture industry and was absolutely amazed by it. I decided once I start my teaching career I will be implementing a unit on global agriculture focused on developing countries where agriculture is their main source of income. I would like to teach students the importance of agriculture on everyone all over the world and take them on a trip to reenforce that idea. After studying abroad I see everything differently. I appreciate everything we take for granted everyday in the United States and now look to ways I can help those who do not. The trip changed my plans for after graduation as I now plan to go on to graduate school and study international agriculture development. (Courtney's international experience was in the Dominican Republic with the FAES Program in International Development.)

Susie Whittington is an Associate Professor of Agricultural and Extension Education at The Ohio State University.

Ohio State University students spent the day volunteering for a local home building organization helping the needy of Piracicaba, Brazil.

Courtney Moenter with primary school students at a school in Santiago, Dominican Republic.

Katrina Swinehart and Hanna Lemle Sharing Dinner with their Host Family in Piracicaba, San Paulo, Brazil.

Why American Schools Should Study World Agriculture: A Perspective on India

by Hari Krishna Vommi

India is the seventh largest country in the world and the second largest nation in Asia. It has a land area of 3.29 million square km with a coastline of 7,516 km. This country is home to over 17% of the world's population, next only to China.

India is a diverse country. Its diversity is seen in its people, religions, languages, customs and traditions. It is the birth place of various religions such as Hinduism, Buddhism, Jainism and Sikhism. Though, Hinduism is practiced by 80% of the population, Islam is practiced by over 13% of all Indians. Christians constitute 2.3% of population and number over 25 million. The Indian constitution officially recognizes 26 scheduled languages, but reports say that there are over 1500 languages spoken in India. It has six major classical dance forms. The roots of Indian painting can be traced back to the Indus valley civilization. Sculpture first flourished in the Harappan period around 2000 B.C.

India is blessed with a number of world heritage monuments showcasing breathtaking architecture and intricate work. Taj Mahal, a unique master-piece is a wonder in itself. It is an absolute epitome of Indian culture, heritage and civilization. Behind each monument is an underlying sense of mystery, intrigue and romance. Five thousand years of Indian history has given us the treasure of thousands of monuments across the country, monuments belonging to Hindus, Buddhists, Muslims and Christians.

Agriculture in India has a long traditional history dating back ten thousand years. Some historians believe that planned sowing and harvesting of the crops in the fields could have taken place in fertile lands of Egypt, Western Asia and maybe India. Today agriculture is the predominant occupation accounting for 60% of the employment and contributes 17.5% to the country's gross domestic product (GDP).

> *Let's join hands together to erase hunger in this world. Let's teach international agriculture to our youth.* – Namaste

Major agricultural products include cotton, jute, tea, rice, wheat, oilseeds, sugarcane, potatoes, cattle, buffalo, sheep, goats, poultry and fish. India is the largest producer in the world of milk, cashew nuts, coconuts, tea and ginger. It is the second largest producer of wheat, rice, sugar, groundnut and inland fish. It is the third largest producer of tobacco. It also has the world's largest cattle population.

The Indian economy is the twelfth largest economy in the world by nominal value. In 2007, India's GDP has topped 1 trillion USD, with the rupee appreciating to below 41 against the US dollar. It was ranked as the second fastest growing economy in the world in 2008. Economists predict that India is poised to become the world's third-largest economy by 2020.

India has a great wealth of biological diversity in its forests, wetlands and marine areas. It is one of the twelve mega bio-diversity countries in the world. Over 12% of world's bird species and nearly 12% of world's fish species are found in India. India is rich in flora. Available data place India in the tenth position in the world and fourth in Asia in plant diversity. From about 70% geographical area surveyed so far, 47,000 species of plants have been described by the Botanical Survey of India (BSI), Kolkata by 2008. The vascular flora, which forms the conspicuous vegetation cover, comprises 15,000 species. Of these, more than 35 per cent is endemic and has so far not been reported anywhere in the world.

There is global resurgence in traditional and alternative health care systems resulting in a surge in the world herbal trade which stands at 120 billion USD and is expected to reach 7 trillion USD by 2050. About 6000-7000 plant species are estimated to have medicinal usage in folk and documented systems of medicine, like Ayurveda, Siddha, Unani and Homoeopathy. About 960 species of medicinal plants are estimated to be in trade of which 178 species have annual consumption levels in excess of 100 metric tons. The Indian

medicinal plants and their products are exported to a tune of 10 billion Indian Rupees.

India ranks first in fruit production with an annual output of 32 MT which accounts for 8% of the world's production. Major Indian fruits consist of mango, banana, citrus fruits, apple, guava, papaya, pineapple and grapes. The number of Indian fruit vegetables suppliers and fruits vegetables exporters has risen to an all time high over the last decades.

India is the second largest producer of vegetables in the world and accounts for about 15% of the world's production of vegetables. The current production level is over 71 million MT and the total area under vegetable cultivation is around 6.2 million hectares. In case of vegetables; potato, tomato, onion, cabbage and cauliflower account for around 60% of the total vegetable production in the country.

But India loses about 35-40% of the produce due to improper post harvest management. The loss is estimated at 400,000 million Indian Rupees every year which is equivalent to the annual consumption of the United Kingdom. The post harvest technology and service industry is one of the emerging businesses in India that provides opportunities to researchers and investors. With the avowed national policy on agriculture being pursued by the government to derive maximum benefit out of this key economic sector, there is bound to be manifold growth in the coming years. Post harvest will be the key branch where new technology, services and opportunity will emerge with focus on cold storage, logistics and supply chain, and specialty packaging for fruits & vegetables.

India is the world's fastest growing free-market democracy that presents lucrative opportunities for businesses in agriculture sector like hybrid and genetically modified (GM) seeds and pesticides used in agriculture. India produces 90,000 metric tons of pesticides a year. India's pesticide industry is the largest in Asia and the twelfth largest in the world. Indian seed market, estimated at1.1 billion USD, is the 6th largest in the world. Over the years, the Indian seed market has grown at a rate of 12 % compared to less than 5 % growth of the global seed market. Many multi-national agricultural input manufacturing and marketing companies like Monsanto, Bayer and Aventis have established businesses in India.

India is becoming a global research hub in the fields of science and technology. Biotechnology is the name of the day with its applications in the field of plant breeding, genetics, molecular biology, and plant tissue culture. In the last decade and a half, India has produced and grown many transgenic crops resistant to herbicides and pesticides. It is the second largest producer of Bt Cotton in the world.

Business opportunities exist in trading agricultural commodities. India is one of the leading exporters of food grains in the international market. In 2007-08 India's agricultural exports and imports are valued at $19.33 billion and $7.5 billion respectively. Edible oil is the single largest agricultural product imported and accounts for nearly two-thirds of total agricultural imports.

Opportunities exist to work with renowned agricultural research organizations like International Crops Research Institute for Semi-Arid Tropics (ICRISAT), working in areas tackling poverty, hunger, gender and health issues. Contributions towards improving mankind can be made by working in many more national and international projects working on food security, livelihood resilience, and poverty reduction. Efforts towards improved environment in the production systems to enhance the performance and effectiveness of priority research programs and responding to the technological needs of farmers, developing models that improve the effectiveness and financial sustainability of the technology dissemination is the need of the hour.

Globalization is the name of the game today. The world is becoming a global village. President Bush, during his visit to India in 2006 signed the US-India Agricultural knowledge Initiative (AKI). The mission of many universities is being redefined from nationalization towards internationalization. Many universities in the US have signed international MoU's and established research agreements with agricultural universities in India. These steps open doors to collaborative research on common interests and to exchange of students and faculty members. It helps in understanding the needs of each other and facilitates cooperative efforts in research and technology for the betterment of both nations. There are many other projects in India in agriculture and rural development funded by USDA and USAID.

India is an inescapable growing market for agribusiness, from agriculture inputs to food service across the value chain largely driven by the growing consumerism and farmers ready to accept and willing to pay for superior technologies. It is imperative that nations across the globe understands and focus on this attractive market to find takers for the already developed and innovative product offerings they have to offer. European and the other Western markets are far less attractive and almost stagnated compared to India.

Global food security is a major concern worldwide today, and is expected to be so in the next 5 decades. According to the International Monetary Fund (IMF), global food prices increased an average of 43% between March 2007 and March 2008. Approximately 1 billion people worldwide sustain on less than $1 per day. According to USDA's Economic Research Service, food security in 70 developing countries is projected to deteriorate over the next decade. The US Secretary of State Hillary Clinton visited India in July, 2009. Her visit to the Indian Agricultural Research Institute (IARI), New Delhi emphasizes the importance of Indian agriculture. Addressing at the National Agricultural Science Center which is a part of IARI, she said "President Obama and I had a signature issue – food security and ending hunger. India is well placed to help us." "I am delighted to be in this prestigious institute and partner India in agriculture. India's experience in agriculture is unsurpassable. With only 3% of the land area, it feeds 17% of (global) people. India's leadership is crucial." She also said that India can play a great role in food processing industry and US administration is happy to partner with India in agriculture.

Career choice is one of the important decisions that challenge everyone in their early adulthood phase. Most career choices are made at the high school level. Most Americans choose careers that keep them close to their place of birth. They often live their entire life in a small radius. They often prefer living entirely separate lives with their own neighborhoods, shops, clubs, newspapers, and even television and radio stations. Kids spend most of their time playing video games, watching sports and movies. They have a propensity for local newspapers and radio stations. They live in their very small world.

Proper exposure to the global environment helps youth make appropriate career decisions. Kids choosing agriculture as their major, think very limited regarding their career choice. The tremendous potential and promising future makes India a good destination for education, employment and entrepreneurship. The ideology and thought process of the top US administrators on the role of Indian agriculture in the world economy and in fighting global food in-security needs to trickle down to the education system in US. The educators and policy makers should take initiatives to include international topics on agriculture in high school curriculum, which I think, will enable the students to get a broader perspective of global agricultural scenario and enable them to think of a career in the promising countries outside United States.

In fact the Nobel laureate, Dr. Norman Borlaug, better known as "Father of India's Green Revolution," was an American Agronomist. He introduced high-yielding wheat varieties in India that provided the impetus to make India self-sufficient in food grains. He was presented the Padma Vibhushan in 2006, India's second highest civilian award. He once said, "*Food is the moral right of all who are born into this world."* Let's join hands together to erase hunger in this world. Let's teach international agriculture to our youth. The best place to start is in the high school – Namaste.

Hari Vommi is a doctoral student in Agricultural and Extension Education at West Virginia University.

Students on Mr. Ricker's study abroad tour witnessed the unloading, blending, roasting, packaging and, of course, tasting of quality Brazilian coffee at Morro Grande Coffee Company outside of Piracicaba, Brazil. Here Matt Rashley (senior, Wauseon), Nathan Woodford (senior, Minnesota FFA), Jacob Schroeder (junior, Wauseon) and Saul Triana (sophomore, Wauseon) show the final product before shipping. *Please see **page 4** for the complete article.*

Teaching in a Shrinking World

by Billye Foster

Ever think about how silly we are in education?

American educators approach students with the concept of "changing" them to fit our style of teaching and classroom management. Yet when given the opportunity to participate in international educational experiences as professionals we spend hours upon hours learning about the country and culture we will be immersed in. We design presentations to meet the needs of our host culture, recognizing if we want to reach them and make any change in their perspectives, we must understand their culture. The average American classroom hosts 44% of its students from cultures and ethnicities other than Northern European/white (New York Times, http://projects.nytimes.com/immigration/enrollment). How much time do we spend learning about those cultures?

In 2005, Thomas L. Friedman published his book, "The World is Flat." Friedman shared his amazement of discovering the reverse concept of the world being round as proven by early academicians like Archimedes of Syracuse (circa 287 BC - 212 BC). Archimedes, a Greek mathematician, astronomer, philosopher, physicist and engineer, spelled out the law of equilibrium of fluids, and proved that water around a center of gravity will adopt a spherical form. However, humankind has always been a skeptical lot, and it was not until adventurers in the 15th Century, i.e., Ferdinand Magellan, proved this concept by sailing around the world. Friedman made a trip to Bangalore, India and discovered through technology the playing field of the world had become extremely flat! Hopefully as educators we will be able to make the transition of understanding cultures in the classroom more quickly than 1200 years.

Educators understand the need for individual identity. Maslow's hierarchy explained the need for self-actualization, which when reached opens the door to accelerated learning for most people. Yet, we seem to put limits on Maslow's theories by assuming everyone's point of self-actualization is the same. In an article on identity negotiation, Ting-Toomey defines identity as "the reflective self-conception or self-image that we each derive from our family, gender, culture, ethnic, and individual socialization process." As educators we know how critical self-image is to students from ages 14 to 24. Countless studies and hours in preparation of new teachers have shown us that humans need to understand who they are before they can determine where they want to go. Still we do not include the study of understanding cultures in our preparation or even continuing education routinely supplied for teachers.

Time to take things in our own hands.

Family is the fundamental communication system in all cultures (Ting-Toomey). Family is definitely our first communication network. The connections and values learned in family environments do not change much until we are old enough to interact with our own set of peers. From that point on the influence of family culture is sustained and edited through peer cultures. If all of our peers come from similar family cultures, our values gained become stronger. However, if we are surrounded with peers from substantially different backgrounds the strength of our perceived identity begins to waiver. At this point any validation of the cultural ideals we have grown with allows us to maintain our self-confidence and remain open to new and different ideas within an educational setting.

> As our world continues to shrink, the need to understand ALL cultures becomes paramount.

As our world continues to shrink through technology and flatten the economic playing field in agriculture and all industries we know today, the need to understand ALL cultures becomes paramount. Providing our students safe, understanding and culturally aware centers of learning should be among our top priorities for improving our teaching strategies. If we seek to try new strategies in this arena, not only will we provide a more effective learning domain for our students, we will also better prepare the next generation to understand the myriad of cultures they will interact with.

Things to try.

Simply recognizing that all your students are unique and bring different gifts to the table is the first step. Help them recognize these unique attributes in each other by providing a venue for appreciation. Try one of the following ideas embedded into lessons, or sprinkled in between lessons.

◊ Culture Swap
- First identify at least one ethnicity for each student.
- Have each student research one agricultural practice of their ethnic origin practiced 200 years ago (or sooner).
- Students can create posters or present a two minute report on their practice.

◊ Taste of ????
- Ask students to bring samples of sweets or foods unique to their cultural origins—sometimes this is just their favorite food from home.
- Divide your class into teams of 5 and have each team bring cultural snacks on Fridays until everyone has had opportunity to participate.
- Remember to be sensitive to economic situations, perhaps there could be a support fund for this activity.

In the world of cultural discovery there are no absolute answers. As long as we proceed with sincerity and respect our students will learn and so will we.

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Innovative Supervised Agricultural Experience Programs for 21st Century Students

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Leadership Skills for All Agricultural Education Students

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Using 21st Century Technology in the High School Classroom

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Service Learning Collaboration to Enrich Agricultural Education

by Jessica (Naugle) McAtamney, Marija Mircevska, Kenneth R. Foster, and Joseph S. Sun

The past 10 years have seen a resurgence of interest among university students in volunteer projects to make the world a better place. Volunteer organizations such as Engineers Without Borders (EWB) have grown dramatically and universities across the country have – to meet burgeoning student demand – instituted many service learning projects. These projects provide many opportunities to enrich agricultural education, as well as the undergraduate experience of many students in universities.

W. B. Saul Partners With the Ivy League

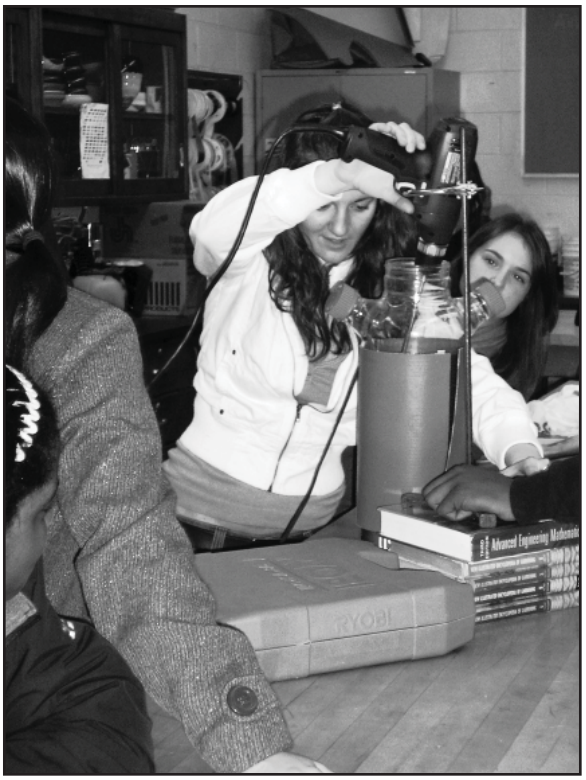
In its spacious campus in Fairmount Park Philadelphia, W. B. Saul High School of Agricultural Sciences is the largest agricultural high school in America. With a graduation rate of 95%, W. B. Saul High School has an enviable record for a big-city school. W. B. Saul High School, however, faces many of the problems of other urban schools around the country including chronic tight budgets and many students from economically disadvantaged families.

About ten miles south of W. B. Saul High School is the University of Pennsylvania, located in the same city but in many respects in a different world. As an Ivy League institution, Penn is among the most selective universities in the country known for its excellence in research and professional schools. University leaders have long recognized the obligation of Penn to contribute to the local community as well, supporting (in the case of Penn's engineering school) many outreach programs to local schools over the years. While the relationship was instigated by Penn Engineering's administration, university students conceived and led the specific projects at W. B. Saul High School.

Penn Engineers at W. B. Saul High School

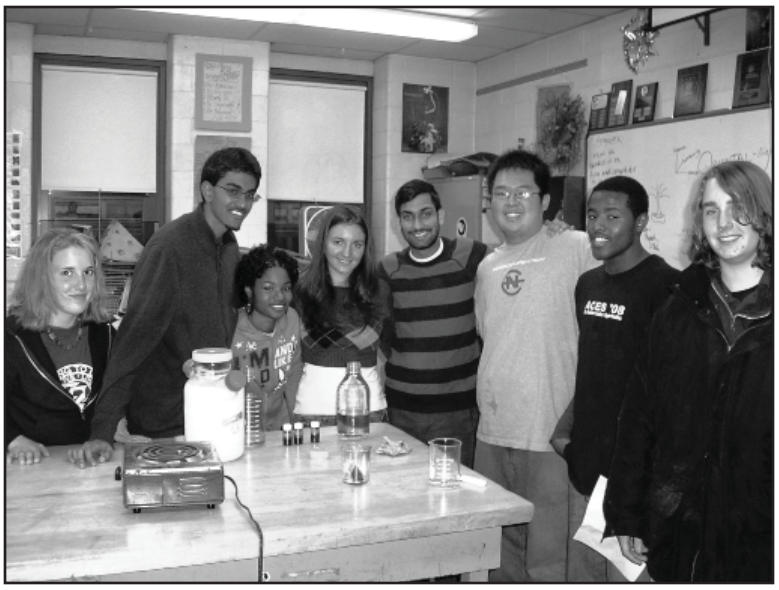
Engineers Without Borders (www.pennewb.org) is an international organization that helps coordinate international development projects by students. In early 2005 Penn Engineering administrators encouraged student leaders of the Penn chapter of Engineers Without Borders (www.pennewb.org) to become involved in local outreach, and approached W. B. Saul High School with an offer for Penn students to develop projects with students at W. B. Saul High School to help teach concepts of sustainable agriculture and sustainable generation of fuels. The Penn students began to work with Jessica McAtamney, a long-time teacher at W. B. Saul High School and one of the authors of this article.

This collaboration has continued, in various forms, over the past four years, mostly involving students in advanced placement classes of Ms. McAtamney, as well as extracurricular activities such as the FFA. In addition to formal projects, Penn students have partnered with individual W. B. Saul High School students in email penpal programs and hosted groups of W. B. Saul High School students in visits to the Penn campus.



Marija Mircevska demonstrates the incorporation of KOH into the first test batch.

One project, started in September 2007, involved the design and development of a biodiesel refinery with members of W. B. Saul High School's Biomass Club. Penn engineering students designed the reactor and, in a series of classroom presentations and demonstrations at W. B. Saul High School, explained the process and the practices and techniques needed to make it work. Food trucks and food services on the Penn campus and elsewhere in the city provided the waste vegetable oil, which W. B. Saul High School students, running the reactor, converted to biodiesel fuel and tested its quality. This project, which was conceived, planned, and supervised by PennEWB students, was funded in part from a small donation from PECO



W. B. Saul's biofuels team with EWB mentors.

(the local electric utility company).

In the present academic year (2009-10), Penn students have turned their attention to other renewable energy resources. They are giving talks to W. B. Saul High School's Biofuels Club describing current research in the field and explaining the many benefits of sustainable energy practices. The Penn students are also leading hands-on projects that demonstrate practical applications of basic science and engineering principles related to sustainable energy. For example, they have created a module on solar power that explains the photoelectric effect, how semiconductors are used to capture solar energy, and the optics needed to make solar power systems work. In a few weeks, W. B. Saul High School students will design and build a solar cooker. Through the volunteer efforts of Penn students under the educational leadership of Ms. Jessica McAtamney, all of this has been done at little to no cost to W. B. Saul High School and with some funding and staff support from Penn Engineering.

Choosing an Agriculture High School

It is relevant to mention Penn Engineering's original motivation in approaching W. B. Saul High School was to collaborate in service learning. As Penn EWB student leaders were thinking about potential international projects, faculty advisers suggested that they consider projects in biomass energy technologies for rural communities. As a way to both gain direct experience and provide local outreach, Penn initiated contact with W. B. Saul High School's former principal Tom Scott knowing that W. B. Saul High School had much potential in terms of both biomass resources and high school student interest. So, clearly, W. B. Saul High School's agricultural education component served as a major motivational factor for Penn Engineering.

Impact

To date, more than 150 W. B. Saul High School students have participated in weekly meetings with Penn EWB members, including 59 W. B. Saul High School students during the 2008-9 academic year. At a final get-together for the 2008-09 program held at the University of Pennsylvania in May 2009, students from W. B. Saul High School's Biofuels Club described their hopes and plans after graduation. A number of the students reported they had earned admission to prestigious universities and colleges together with substantial financial aid. The PennEWB students also gained a lot from the project, not least the satisfaction of having contributed in a meaningful way to the education of W. B. Saul High School students.

Opportunities Abound

We have described one collaboration, between students at the University of Pennsylvania and the Walter B. Saul High School of Agricultural Sciences in Philadelphia. Similar opportunities exist for many other agricultural schools as well. Opportunities will grow rapidly in the future. There is a burgeoning interest among university students in service projects. Indeed, students are

Dear EWB members,

The Biofuels team and the AP EE Science class at WB Saul High School of Agricultural Sciences wish to thank all the EWB members for a most spectacular visit this past week. The students had a wonderful time viewing and actively participating in the many labs visited. They also enjoyed the presentation and, of course, the pizza.

While you might expect a group like EWB to be kind and giving, your complete dedication and service to the kids of Philadelphia goes beyond those expectations. All EWB members serve as positive role models and have interacted with Saul students in a professional and engaging manner.

Your group and its service to our school is invaluable.

On behalf of the students- Jess McAtamney

demanding that their universities provide them with opportunities for such experiences.

Agricultural education provides many subjects for service projects, such as sustainable energy and biofuels. These have great interest, both to agriculture students and to the members of the wider university communities. Teachers in the agricultural field should take advantage of partnership opportunities with local universities. Such collaborations can be very rewarding, both for students and teachers alike.

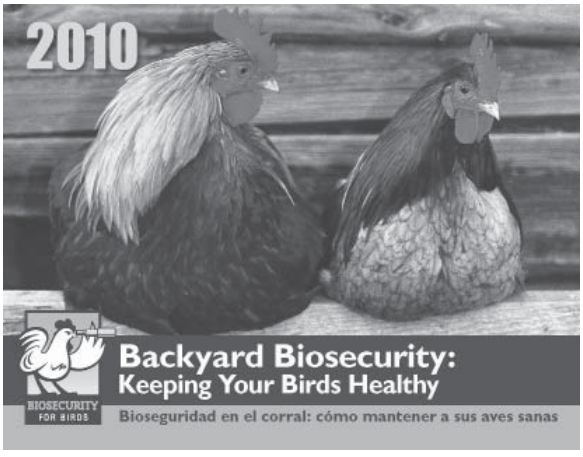
Jessica McAtamney is an Agricultural Teacher at Walter B. Saul High School of Agricultural Sciences.

Marija Mircevska is a junior at Penn, majoring in Chemical & Biomolecular Engineering. She is the leader of the current project with W. B. Saul High School.

Kenneth R. Foster is professor of bioengineering at Penn, and serves as Faculty Adviser to PennEWB.

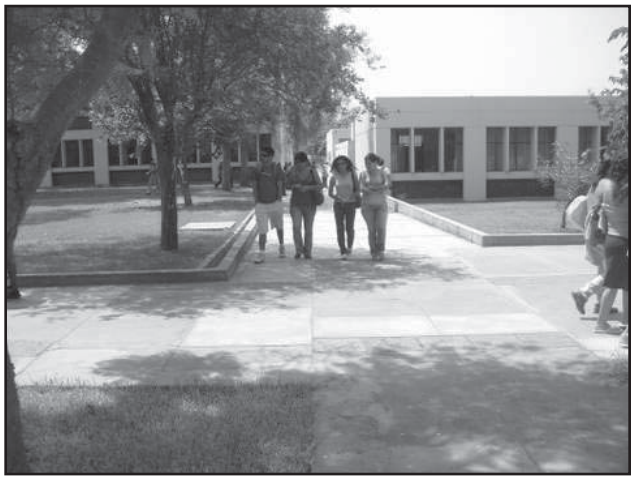
Joseph S. Sun is Vice Dean for Engineering Academic Affairs at Penn, and leads the school's international and service learning initiatives.

Joe Felder inspects his biodiesel's progress.



As part of its ongoing efforts to educate backyard poultry owners about what they can do to protect their birds against infectious poultry diseases, the U.S. Department of Agriculture is offering a free and informative calendar for 2010. The Backyard Biosecurity: Keeping Your Birds Healthy calendar features full-color photos of poultry and other birds each month. It contains useful information about protecting poultry from disease and includes tips on what to do should poultry owners suspect that their birds are infected with a disease such as avian influenza.

Those interested in receiving this free calendar can go to http://healthybirds.aphis.usda.gov and click "2010 Backyard Biosecurity Calendar."



Photos (clockwise from top left)

Herat Afghanistan has vocational-technical education in agriculture that is similar to U.S. education models of the 1950s. They are seeking better methods and curriculum materials.

The Universidad Nacional Agraria La Molina was recognized as a national agricultural university in 1963. The Peruvian university is working to improve the teaching and research capacities of the faculty.

Students in international universities have similar aspirations-to make tomorrow a little better than today for themselves and their families.

Because of a lack of storage and cold-chain systems, most people buy food every day. Many spend 40 percent of their income on food and water.

Back Cover:

Photo 1: *The Ministry of Agriculture, Irrigation and Livestock in Jalalabad Afghanistan is working to improve the livestock and the livelihoods in the province.*

Photo 2: *Agricultural markets lack grading standards, cold storage or uniform pricing information. A substantial amount of the vegetables spoil in the market place.*

Photos on this page, as well as the front and back covers, were provided by Glen Shinn.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Ministry of Agriculture, Irrigation and Livestock (MAIL)
د ننګرهار د کرنې، اوبولګولو او مالدارۍ ریاست
Nangarhar Agriculture, Irrigation
and Livestock Directorate (NAIL)