



Winter 2017

Volume 16, Number 1

Magazine of the Schoolcraft College International Institute (SCII)

# International Agenda

# Small Planet

## Environmental Challenges in a Changing World



Photo: Kemal Jufri (*New York Times*, Dec. 4, 2016)

These baby orangutans threatened by peat-bog forest fires are being taken to the International Animal Rescue's center in West Kalimantan, Indonesia. In 2015 alone, over 100,000 humans in Southeast Asia died prematurely as a result of peat-bog fires, which create a suffocating smog of fine particles. Many of the fires are set illegally to clear land for palm-oil plantations.

*See pages 6-32 for coverage of Schoolcraft College's Focus project on the environment.*

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# International Agenda

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## International Institute

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 18600 Haggerty Road  
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The mission of the Schoolcraft College International Institute is to coordinate cross-cultural learning opportunities for students, faculty, staff, and the community. The Institute strives to enhance the international content of coursework, programs, and other College activities so participants better appreciate both the diversities and commonalities among world cultures, and better understand the global forces shaping people's lives.

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# Students!



## Enter the Winter 2017 International Agenda Writing and Artwork Contest

First Prize: \$250 Scholarship  
Second Prize: \$150 Scholarship

...in each of the two categories, writing and artwork.

### Winners from Fall 2016

First Place, Artwork: Juria Takei (see p. 19)

First Place, Writing: Leigh Young (see pp. 42ff.)

Second Place, Artwork: Austin McVeigh (see p. 23)

Second Place, Writing: Sasha Gill-Ljunghammer (see pp. 40ff.).

All funds are provided by the Schoolcraft College Foundation.

**Submission Deadline: April 3, 2017**

### Guidelines:

1. Students (or their faculty mentors) may enter essays, research papers, persuasive writing, creative writing, poetry, or 2D or 3D artwork suitable for publication in *International Agenda*.
2. Works may deal with any topic of international or cross-cultural interest.
3. Submit a digital version of the writing or artwork as an e-mail attachment to the address below.
4. Submissions will be judged by a panel of faculty and staff volunteers based on content, originality, and aesthetics.
5. Entrants will be asked to sign a form affirming that the work is their own and permitting it to be used in the magazine.

For copies of the entry form and the complete set of rules, go to [www.schoolcraft.edu/departments/international-institute](http://www.schoolcraft.edu/departments/international-institute) or else contact:

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## Travel-and-Learn Opportunities for Students

- Prof. **Anita Süess Kaushik** (World Languages) is co-leading a Discover Europe trip to Ireland, Scotland, and England on May 22-31. This will be the 10<sup>th</sup> such overseas study tour that Dr. Süess has led to Europe, with logistics handled by Explorica. For more information, see <http://www.anitasuess.com> or e-mail [asuess@schoolcraft.edu](mailto:asuess@schoolcraft.edu).
- Prof. **James Nissen** (Humanities) is leading his HUM 203 class (Art and Music in Western Civilization: Field Study - Italy) on a 12-day trip to Italy in June, with visits to Venice, Ravenna, Florence, Assisi, Rome, and other sites. This will be the 18<sup>th</sup> such overseas study tour that Dr. Nissen has led to Europe. For more info, e-mail [jnissen@schoolcraft.edu](mailto:jnissen@schoolcraft.edu).
- Prof. **Colleen Pilgrim** (Psychology) works with the International Student Volunteers (ISV), which coordinate overseas volunteer and adventure travel opportunities for Schoolcraft and other students. ISV has volunteer opportunities in several different countries, in which participants carry out conservation and community development projects. For more info see [www.isvolunteers.org](http://www.isvolunteers.org), and interested students should contact Dr. Pilgrim at [cpilgrim@schoolcraft.edu](mailto:cpilgrim@schoolcraft.edu).

## Take Our Survey!



After looking through these pages, kindly complete a brief online survey about *International Agenda*. The survey collects feedback about this issue, and the results will help us to further improve the magazine.

The survey can be accessed at this URL:

<https://www.surveymonkey.com/r/JXXGV8F>

## New at Our Neighboring Schools

Effective last Fall, **Wayne State University** has introduced an interdisciplinary Global Studies Program, designed for students passionate about understanding and participating in a globalized world. Students learn about global institutions, issues, and movements, global politics and economies, global health and environment, global cultures and identities, and regional area studies. Coursework also includes language skills and core courses in humanities and social sciences. The director is Dr. Laura Kline, who is also a Senior Lecturer in Russian. For more info, see <http://clas.wayne.edu/languages/Global>.

A multidisciplinary team at the **University of Michigan** converted a 20-by-8-foot customized shipping container into a much-needed ophthalmology clinic for Sandy Bay, a small seaside community on the northwest shore of Jamaica. The idea was to create a clinic environment that would be uniquely self-contained — something that could be outfitted in the U.S., shipped complete, and unpacked with minimal set-up into a functional health center anywhere in the world. Opened in December, the eye clinic was a collaboration between faculty members at UM's Kellogg Eye Center, the College of Architecture and Urban Planning, and the University Health Service. It is part of a larger project, "Deep Impact Monitoring", to develop easy-to-use technology to help patients in underserved regions of the world monitor their chronic conditions without having to travel to a doctor.

## SCII Meeting Schedule

International Institute meetings are open to all who want to learn or to help out. New folks are always welcome. Meetings are on Fridays at 12-2 pm in the Liberal Arts Building. Upcoming meetings are scheduled as follows:

- January 27, 2017 in LA-200
- February 17, 2017 in LA-200
- April 7, 2017 in LA-200
- May 5, 2017 in LA-130.

## GlobalEYEzers Schedule

GlobalEYEzers, a group affiliated with SCII, meets each semester over lunch to discuss current events relevant to international/ intercultural issues. Faculty and staff, as well as students and members of the community, are invited to participate. Meetings are on Fridays at 12-2 pm in the Liberal Arts Building.

The meeting for this Winter is scheduled as follows:

- February 10, 2017 at 12-2 pm in LA-200.

For more info, contact English Prof. Anna Maheshwari at [amaheshw@schoolcraft.edu](mailto:amaheshw@schoolcraft.edu) or 734-462-7188.

# Campus News & Kudos

Below, students gather for the ISO fashion show and potluck on Nov. 18.

The **International Student Organization** had a successful Fall semester of activities, including frequent Friday meetings in the VisTaTech Center; establishing an online chat group whereby international students provide one another mutual support and assistance with practical needs; an Open House in early October; and a Nov. 18 international fashion show and potluck meal in Lower Waterman, “From Village to Runway: Traditional Narrative and the Emerging Global Trends”. The ISO also works with Schoolcraft’s **Language Fellows** program to facilitate Global Companions, in which ESL students are paired with foreign language learners for conversation and companionship to deepen language learning. The ISO is led by student **Hermann Chendjou** as President, and Foreign Languages Prof. **Anita Süess Kaushik** as Faculty Advisor. For more information, visit <https://www.facebook.com/SchoolcraftISO/>.



Photo: ISO Facebook page.

The **Native American Cultural Club** also had an active Fall semester, including hosting Mike Bugaj (a Native American military veteran and Eagle Staff Carrier) as guest speaker for Indigenous People’s Day on Oct. 10; a lunchtime celebration of the Mexican *Dia de los Muertos* (Day of the Dead) festival on Nov. 2, featuring a potluck supper, a traditional *ofrenda*, and a screening of the PBS-TV documentary “Food for the Ancestors”; and a Nov. 28 screening of the documentary by Jay Rosenstein, “In Whose Honor?: American Indian Mascots in Sports”. Prof. **Karen Schaumann-Beltrán** (Sociology and Anthropology) is faculty advisor for the club.

**Joseph Miller**, Reference Librarian at Bradner Library, organized some Fall semester events related to Japanese popular culture at the library:

- Anime Nights were video screenings held throughout the semester. Anime is a Japanese style of animation, often computer-drawn with colorful graphics, vibrant characters, and fantastical themes. These screenings were provided thanks to Crunchyroll.com, an anime website whose outreach program for libraries allows them to stream anime for free.
- Manga Madness was a contest in which students, faculty, and staff voted for their favorite manga (Japanese comic) series. For this event, the library purchased the first volume each of 20 different manga series. Each month, participants voted on which series they wanted the library to continue purchasing. After the three rounds of voting, the winners were *Tokyo Ghoul* (First Place) and *One-Punch Man* (Second Place). In recognition of their popularity among students, both of these manga will have extra volumes added to the collection this year.

The Detroit-based **Michigan Roundtable for Diversity & Inclusion** organized a pair of two-hour faculty workshops on our campus on Sep. 27, “Building Upon Differences: Using Differences to Increase Collegial Growth and Student Development”. The workshops were hosted by Human Resources, the Student Relations Office, and the Center for Aca-

ademic and Faculty Excellence (CAFÉ). In addition last Fall, Dean of Liberal Arts and Sciences **Cheryl Hawkins** and English Prof. **Helen Dituras** took a training workshop on diversity and inclusion at Cornell University’s School of Industrial and Labor Relations. That trip was funded by Human Resources.

“How the World Works: Global Perspectives” has been this year’s Honors in Action theme for the **Phi Theta Kappa** honor society. Our campus’s Omicron Iota Chapter chose to focus on the subtopic, “Peace and War: How Does Conflict Impact People and the Way in Which the World Works?”. With assistance from **Todd Stowell** (Student Activities Office), the chapter organized the first in a series of Schoolcraft Educational Discussions (SED) Talks on Dec. 1. The session included brief talks by Phil Moser on Brazilian-style *capoeira* and how his *capoeira* team helps reduce the level of violence in inner-city Detroit; Prof. Anna Maheshwari (English) on the role of nonviolent protest in the Indian independence movement; Prof. Karen Schaumann (Sociology and Anthropology) on contemporary conflicts and post-election violence in the U.S.; Bill Wenzell of Focus: Hope, on that organization’s methods of helping the Detroit community by lowering violence; youth minister Kevin Szawala (St. James Catholic Church, Novi, MI) on his work as a peace activist; and Prof. Mark Huston (Philosophy) on achieving peace through nonviolent measures.

Congratulations to the **Asian Student Cultural Association**, its faculty advisor **Anna Maheshwari** (English), and **Todd Stowell** (Student Activities Office), who led in organizing Schoolcraft’s 10<sup>th</sup> annual Navratri Garba/Bhangra celebration. All proceeds went to the Schoolcraft Student Food pantry to help students in need. Over 750 students, faculty, and community members enjoyed the event on Friday, Sep. 30 at 7 pm – 12 midnight in the VisTaTech Center. There was a catered dinner, authentic music, costume, and dance, and a marketplace. The Hindu Navratri festival is traditionally a nine-day event at the beginning of Autumn, regaling the goddess Durga in hopes of a bountiful harvest.

# Environmental Challenges in a Changing World

No, drinking and driving don't mix— but interestingly enough, Ford Motor Company has teamed up with the world's leading tequila producer, Jose Cuervo®. Starting this past Summer, the two firms began investigating whether fiber and other discarded portions of the blue agave plant can be used to make a sustainable bioplastic material for interior and exterior automotive parts such as wiring harnesses, HVAC units, and storage bins. American automobiles use an average of about 400 pounds of plastic, and its production gobbles up a huge amount of the planet's non-renewable fossil fuels. If the two firms can figure out how to make vehicle parts from agave, it would not only help pare down the use of hydrocarbons in automotive plastics, it would also help pare down their use at the gas pump because the vehicles would be lighter.

Worldwide, about five billion metric tons of agricultural biomass waste is produced every year, according to the United Nations Environment Program. This isn't the first time that Ford has tried to use agricultural byproducts in its vehicles— in fact, Henry Ford famously used soybean waste to make all sorts of automotive materials in the 1930s, the starting point for his envisioned “chemurgy” movement in which farms would help produce industrial materials.

But for Henry Ford, the issue urgently on the table was how to help American farms and industries get through the Great Depression. For us today, the stakes are far higher: the issue urgently on the table is how to save our planet.

Last May, the International Institute selected the theme of “Environmental Challenges in a Changing World” as a campus-wide focus for calendar year 2017. This focus encourages people to learn about the most pressing issues facing humanity: sustainability, energy, pollution, resource depletion, habitat loss, and climate change.

These focus projects have been hugely educational, challenging, and fun, helping to spread global awareness on campus and in the surrounding communities. From 2004 through 2015, the SCII organized year-long programming on a selected cultural region of the world. Last year's focus on immigration and immigrant communities, our first topical rather than regional theme, was also very successful. For example, a crowd of about 80 turned out at our Public Safety Training Complex on Sep. 26 to hear a talk by Anna and Jim Verhoye, “Social Justice and Criminal Justice: An Exploration of the Relationship Between Immigration, Human Dignity, Poverty, Mental Health, and Education”.

## This Crisis is Global by Nature

The problems that we face in the realm of sustainability and survival are global in their very nature— and so, therefore, must the solutions be global.

Climate change is an obvious example: since a single atmosphere envelops the whole planet, greenhouse gasses emitted anywhere are going to affect billions of people. But there are many other examples that are less well known, highly

interesting, and just as serious:

- In 2015 alone, over 100,000 people in Southeast Asia died prematurely due to the effects of peat-bog fires that create a thick, suffocating smog of fine particulate matter. Many such fires are intentionally and illegally set as part of clearing land for palm-oil plantations. The local landholding companies responsible for the arson could never survive without loans that are extended to them by “legitimate” global banks, including the Bank of America and Credit Suisse (Hiroko Tabuchi, “The Banks Putting Rain Forests in Peril”, *New York Times*, Dec. 4, 2016).
- The over-mining of sand in Africa, Asia, and other regions is wreaking environmental havoc there. But where is all of this sand going? Hundreds, even thousands of miles away: most sand is mined for use in making concrete to build cities and roads. The UN estimates that nearly all global population growth from 2016 to 2030 (1.1 billion more people) will be absorbed by cities rather than rural areas. So the world's pristine beach and estuarial ecosystems are being destroyed in order to sustain an urban lifestyle of towering highrises and congested highways.
- The Great Pacific Garbage Patch, also known as the Pacific Trash Vortex, is a gyre of floating particles in the central North Pacific Ocean discovered in the 1980s. At Kamilo Beach in Hawai'i, for example, an estimated 20 tons of debris washes up on the sands every year, mostly tiny pieces of plastic in many colors and originating in many different countries. These micro-plastics are a major threat to the coral reefs of the world, which support more species per unit area than any other marine environment.

## When “Small” Nations Loom Large

Another unusual aspect of this year's theme is that when we study this crisis, small nations must be as much a focus as big nations.

Many problems of human survival and sustainability are accentuated at the periphery. A stark example is Kiribati, an island nation of about 100,000 people in the central Pacific. Kiribati consists of 33 atolls and reef islands whose very existence above water is threatened by the accelerating rise in sea levels caused by global warming.

The Marshall Islands, another Pacific nation, is not only threatened by global warming but has been called the most contaminated place in the world. That is because the U.S. tested 67 hydrogen bombs there between 1946 and 1958, with effects that have been devastating to the health of the indigenous people.

When we speak of a “small” nation, it's not a reference to the size of the country but to its relative power in world affairs. Thus, England and Japan, although modest in size, are not small countries at the present time. Peru and Mongolia are each several times the size of England or Japan, but today they are “small” nations. We would also have to say that First Nations



Photo: Frank Sedlar, Univ. of Michigan School of Engg., 2016.

About 30% of Jakarta, Indonesia— the second most populous city in the world— lies at or below sea level. A global sea-level rise of just 3 mm/year presents an urgent flooding problem there.

everywhere, including the Lakota people at Standing Rock Reservation, who are making a stand against companies trying to build an oil pipeline that threatens their well-being (see pp. 22-23)— these too are small nations, because the bulk of their power was taken away from them long ago.

One could be callous and ask who cares about a few powerless people who live on small islands or on Indian reservations, or elsewhere on the periphery of the industrialized world? For that matter, who cares about whether we lose the last vestige of an endangered way of life— the Quechua villages on the slopes of the Peruvian Andes, the pastoral herders on the Mongolian steppes?

But just as every language is a priceless part of humanity, these indigenous and now-threatened cultures are also precious. Furthermore, if we ignore these then it's likely that we would be harming ourselves too, because we would be throwing away the possibility of learning crucial things about our past and about our future. There are things of the past— such as traditional herbal medicines and traditional principles of agriculture (see article on pp. 27-31)— that might contribute to our survival. And as the Kiribati and Marshall Islands examples show, these spots on the periphery can also sound alarm bells about the future that we're hurtling toward.

### How You Can Participate

Faculty, students, and other readers can participate in this Focus project in a variety of ways.

Instructors can integrate relevant topics directly into their coursework by developing classroom presentations, course readings and assignments, student projects, etc. Use the concepts and resources contained in this and previous issues of the magazine (see box on p. 33) as a jumping-off point. With a little creativity, instructors in many disciplines can participate fully.

Focus Series Coordinator Helen Ditouras has played the lead role in organizing a free educational speaker series on the Schoolcraft College campus for students, staff, and the general public. Here is a roundup of the scheduled Winter presentations:

- Jan. 30 at 10 am: Yovana Veerasamy (Prof. of Political Science and French, Schoolcraft College), “Environmental Policies in China”
- Feb. 17 at 10 am: Anna Verhoye (Communications Instructor, Dakota County Technical College, Rosemount, MN) and Jim Verhoye (Director of Education, Minnesota Correctional Facility-Shakopee), “Stoves and Sustainability: Environmental Inroads in Northern Thailand”
- Feb. 21 at 3:30 pm: Diane O’Connell (Prof. of Geography, Schoolcraft College), “International, National, and Local Climate Change Adaptation Policy”
- Mar. 14 at 1 pm: Kimberly Lark (Prof. of History, Schoolcraft College), “Just an Average Day”, a look at the global impact of a day in the life of the average American
- Apr. 20 at 1 pm: Dan Yezbick (Prof. of English and Media Studies, St. Louis Community College at Wildwood), “Environmental Racism”.

(Watch for more complete information on the SCII website and on campus bulletin boards). The entire faculty is urged to recommend this series to students as an excellent way to gather insight and information. Some instructors might want to bring an entire class to a given event in the Focus Series; contact Helen at 734-462-7263 or by e-mail at [hditoura@schoolcraft.edu](mailto:hditoura@schoolcraft.edu). Others might want to fold these into extra-credit opportunities for selected students.

The Detroit Film Theatre, at the DIA, is screening two relevant French-made documentary movies on Jan. 27-29:

- “Antarctica: Ice and Sky” (2015), a fascinating portrait of glaciologist Claude Lorius, who discovered the first clear evidence of human-induced global climate change. (Also a matinee showing on Feb. 23.)
- “Seasons (2016), which explores the tumultuous shared history that has bound humankind to the natural world since the end of the last Ice Age. (Also a matinee Mar. 23.)

As in the past, the campus GlobalEYEzers group invites instructors, staff, students, and community members to participate in lunchtime discussions about current events and issues in a global context, with ethnic food provided. See page 4 for more information.

Finally, to supplement these events and the articles in this magazine, you can extend your learning using materials from the Bradner and Radcliff Libraries on our campus:

- The library staff can help you locate a wide variety of resources, including fiction and nonfiction books, and films such as “Years of Living Dangerously”, a recent TV documentary series focused on global warming.
- Bradner Librarian Wayne Pricer has compiled a webliography (a set of links to choice websites). Access it by going to this page:

<http://www.schoolcraft.edu/a-z-index/learning-support-services/library/resources/webliography/>

, then click on such folders as “Alternative/Renewable Energy”, “Earth Sciences”, and “Environmental Studies”.

Let us know how you and your colleagues bring some global and multicultural perspective into your coursework this year!

# The World's Coral Reefs are Threatened

by Sidney Fites

*Sidney Fites of Northville, MI, is a student currently working on a master's degree in social work at Wayne State Univ. He wrote the following as a research paper for an online section of Biology 104 (Conservation and Natural Resources) at Schoolcraft College, taught by Prof. Caroline McNutt in the Fall 2016 semester.*

A few years ago, my family took a vacation in the Florida Keys. While there, we decided to go snorkeling off of the Florida Reef. With great excitement, we packed up and joined a boat filled with many fellow excited snorkelers. Once we arrived at our destination, the boat crew set us free to snorkel with only one simple rule: Do not, under any circumstances, touch the coral reef.

At the time, it seemed like a silly rule to me; why would touching the coral reef bother it? But keeping this rule in mind, I went into the ocean and snorkeled. It was one of the most wondrous experiences of my life. There were schools of fish everywhere, turtles gliding through the water, and even a barracuda lurking near the edge of the reef. This is an experience I will never forget.

Fast-forward a few years and I am watching the news. The TV is showing images of the same coral reefs damaged from bleaching. The Florida Reef is the third-biggest coral barrier-reef system in the world, but the television was filled with images of dead fish and algae and damaged coral everywhere. These were not the reefs that I remembered. So how did they become so damaged and turn from a wondrous, beautiful display into a disaster? The answer was simple: it was our fault, we had meddled with the environment and allowed this to happen. As the environment worsened, these coral reefs were facing irreversible damage.

In recent years, coral reefs around the world have faced extensive threats and damage. We must work together to minimize and reverse this in order to protect the biodiversity that this habitat sustains and to protect the environment.

## What are Coral Reefs?

To understand what exactly is happening to coral reefs, we must first understand what the reefs are and how they impact the environment.

Corals are marine animals closely related to sea anemones, as they all share the polyp structure. A polyp is shaped like a soup can or tin can, but is open on one side. Coral reefs are colonies of corals and are the most diverse of all marine ecosystems (Frost, et al., 2016). It is estimated that almost 25% of ocean species depend on the coral reefs for food and shelter (Frost, et al., 2016). This statistic is such a powerful one because the area taken up by coral reefs equates to only about 2% of the ocean's surface. Coral reefs also provide food,

protection of the shorelines, jobs and revenue based on tourism, and even medicines for us.

Unfortunately, humans are also the reefs' greatest threats. Among the factors destroying coral reefs are certain forms of commercial fishing, including destructive fishing and over-fishing; ocean pollution; global warming; and allowing invasive species to spread. There are some places in the world where coral reefs have been completely destroyed as living creatures, and in many other places the reefs have been severely damaged. A conservative estimate states that more than 20% of the world's coral reefs have been effectively destroyed and show no immediate prospects of recovery (Shah, 2013).

Let us examine the threats to the coral reefs a little more closely.

## The Three Major Threat Categories

There are a number of things that threaten the coral reefs. Direct human activities play a large role, but there are also other factors. The three biggest threat categories that coral reefs face are global change threats, direct human pressures, and the human dimension threats (Shah, 2013).

First, let us take a look at the global change threats. The biggest single global threat to coral reefs is *coral bleaching*. Coral bleaching is what happens when a coral becomes stressed. Temperature changes, light changes, nutrient level changes, or any other changes in their environment can cause corals to become stressed. When corals become stressed they expel all of the symbiotic algae that are living in their tissues, causing them to turn completely white (NOAA, 2016). Coral bleaching in itself does not kill the coral; it is possible to survive a bleaching event. However, after a coral has experienced a bleaching event, it is under more stress and therefore has a much higher chance of mortality. This is why coral bleaching is often associated with coral death. Rising atmospheric levels of carbon dioxide (CO<sub>2</sub>), the major greenhouse gas, represent another type of global change associated with coral death.

Direct human pressures include destructive fishing and over-fishing, sediment deposits, nutrient runoff and other chemical and physical pollution, and commercial development of coastal areas. For example, fishermen sometimes use techniques such as *blast fishing* (in which bombs are used to stun or kill schools of fish for easy capture) or *cyanide fishing* (in which the fish targeted for capture are first stunned by the spraying of a sodium cyanide mixture into their habitat). These practices have been found to be particularly detrimental to the coral reefs. Ocean pollution by micro-plastics is another example of a threat to corals and reefs.

The final great threat to coral reefs is the human dimension. This is just a fancy term that means we are not doing enough to protect our coral reefs. More often than not, we do not see the conservation of the environment being made



Compare the healthy coral on the left with the bleached coral on the right. Photo by Wolcott Henry, from (Frost, et al., 2016).

a priority. Although there are some laws that protect these great reefs, we are still seeing terrible damage being done to them.

#### What We Can Do to Protect Reefs

You do not have to be a marine biologist or an environmental scientist in order to have a positive impact on coral reefs. There are many things that we can do as individuals to help make sure that these amazing ecosystems stay around for a long time and are well protected.

The easiest way to help the coral reefs is to conserve water. By conserving water, we are creating less runoff and waste water that will eventually pollute the oceans (Nature Conservancy, 2009). Reducing pollution is another great way to help the coral reefs. By car-pooling, disposing of trash properly, and being very careful about the chemicals you use outdoors, you can help reduce the amount of junk that ends up in the ocean. Making little changes to your daily routine can have amazing impacts on the environment.

For those looking to get more involved, you can help the coral reefs by pledging to support only reef-friendly businesses. This means that any fishing, boating, hotel, or diving or snorkeling business that you patronize is complying with the federal coral reef regulations, or else you will take your business somewhere else. You can also volunteer for a coral reef cleanup day while on a vacation. Another effective way to help the coral reefs is simply by spreading the word. The more educated that society is on coral reefs, the better we can care for them.

As we have seen, coral reefs play a large role in biodiversity and provide us with many benefits. Without coral reefs, almost 25% of the oceans' species would cease to exist. It is up to us to continue to try to reduce the damage and help protect them. By understanding what is hurting the corals, knowing how to help prevent these issues, and by spreading the word about coral reefs, we can help this ecosystem thrive for many years to come. It is up to us to make a change today. We cannot sit idly by and watch coral reefs slowly die out. I will never forget my experience snorkeling on a reef—it was such an amazing sight. I hope that coral reefs are around for a long time so that everyone will have a chance to experience their wonder and beauty.

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# Sacred Perspectives and Environmental Stewardship in Peru

by Gary L. Hauck

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During Fall 2015, my son Jared and I planned a trip to Machu Picchu and the Sacred Valley of Peru. Fortuitously, I had just attended a week-long workshop on the topic of global stewardship, organized by the Midwest Institute for International and Intercultural Education (MIIE) in Kalamazoo, MI. With those concepts still fresh in mind, I decided to make this a trip to explore the sacred perspectives of the Peruvian people, and how those might have influenced their care of the environment over time.

With a focus on Machu Picchu and Peru's Sacred Valley, my pre-trip study examined the relationship between sacred perspectives and treatment of the natural environment. I discovered that the unfolding of these perspectives seemed to cluster around Peru's pre-colonial, colonial, and post-colonial eras on the historical timeline. Literature seemed to suggest that Peru's precolonial beliefs included the influences of ancient animism and polytheistic deities up to and including the age of the Incas in the Sacred Valley. Colonial ideologies appeared to take into account the theology of the Roman Catholic Church—especially hamartiology and soteriology (the doctrines regarding sin and salvation, respectively)—which was centered in the cathedral of Cusco, Peru's cultural capital during that era. Postcolonial Peruvian constructs, impacted by a syncretism of sacred views and the postmodern interpretation of spirituality, underlie today's struggling trends toward environmental responsibility and eco-awareness in the modern capital city of Lima.

As we embarked on our trip, I established three goals: 1. Understand the sacred perspectives of the Peruvian culture in the pre-colonial, colonial, and post-colonial eras; 2. Be able to explain the relationships between those perspectives and the Peruvians' sense of responsibility to and interaction with nature; and 3. Look for evidences of the interplay between sacred understandings and environmentalism.

My daughter Heidi, and Jared's wife Rachel, joined us as we flew first into Lima for a bike tour of the modern city and surrounds, followed by a connecting flight to Cusco for various walking tours within the high elevation of the old city nestled among the Andes. After touring the Cusco Cathedral, hiking the trail to the famous statue of the White Christ, and making fresh



The heights of Machu Picchu. Such heights were esteemed as *huacas*, or sacred places, by the ancient Incas. All photos are courtesy of the author.

chocolate in the Chocolate Museum, we took the scenic train through the Sacred Valley and ascended Machu Picchu. Our final days were spent driving through the Valley from Cusco to Pisac to Urubamba to Chinchero, and back to Cusco for some debriefing before heading home. During our time, we interviewed several guides and local residents, investigated artifacts, and explored the vegetation, farms, museums, churches, archeological sites, and cultural centers along the way.

## The Earth as Part of the Sun-God's Domain

Just before ascending the 8,000 feet to the magnificent archeological site of Machu Picchu, local tour guide Ricardo Montez explained how the ancient peoples of Peru viewed the earth, water, moon, and sun as deities. According to Montez, the Earth Goddess was called Pachamama; the Water Goddess was Mamacocha; the Moon Goddess was Mamaquilla; and the Sun God was Inti. Because of the divinity of nature, ancient peoples honored their environment as that which gave and sustained life. In fact, it was believed that the ultimate Creator, Viracocha, fathered these divine "children". So, not only were these elements of nature gods and goddesses themselves, they were also "created". This belief was blended with animism, the view that all of these natural bodies or elements also possessed the quality of life. Great care was given to them, lest they be neglected or abused.

High places were viewed as especially sacred places (*huacas* in Quechua, the Incan language). This might be the reason that Machu Picchu was constructed at such a high elevation above the valley below. According to one legend, Viracocha became displeased with the behavior of people living in the area of Lake Titicaca and sent a great flood to destroy them. Perhaps they were abusing or neglecting their divinely-given natural resources. At any rate, he spared the lives of two faithful inhabitants, Manco Capac and Mama



The author and his son, Jared Hauck, at the carefully terraced fields outside Pisac, a village in southern Peru's Sacred Valley region. Since ancient times, such terraces have allowed cultivation to take place on the steep slopes.

Occllo, who repopulated the region and brought forth the Quechua people, later known as the Incas. It was believed that only the highest peaks of the mountains were untouched by the waters of the flood, and thus they were viewed as sacred.

As we walked around the amazing ruins of Machu Picchu ("Old Peak"), we could certainly see evidences of the sacred perspective of harmony with and respect for nature. Agri-terraces graced the steep slopes, showing a creative approach to farming mountains, making use of natural resources in cooperation with their virgin setting. The Temple Precinct, Intiutana Pyramid, Sun Temple, and Southern Cross Stone, all highlighted the relationship between the earth and the stellar bodies. "The Incas worshipped the sun god, and believed that the leader of the Incas, who was called the Inca, was a divine descendant of this god" (Sanz 2015, p. 10).

A stunning feat of ancient engineering and astronomical understanding demonstrates the respect for and celebration of the earth's relationship with the sun. At the top of the Intiutana Pyramid is:

...the ritual stone found in Machu Picchu located at the top of the Intiutana hill, and the name is from the Quechua language meaning to tie up the sun. On March 21 and September 21 at midday, the sun lines up with the Intiutana and there is no shadow cast. When this happens, it looks as if the sun is standing on the pillar (Sanz 2015, p. 44).

A similar event occurs on the day of the Summer solstice when sun rays directly enter the central window of the Temple of the Sun and hit the semi-circular granite rock on the floor. That temple is in the eastern sector of the complex. It seemed that all of the major sites of Machu Picchu emphasized the relationship between heaven and earth.

Our trips to Pisac, Urubamba, and Chichero provided further ancient examples as we saw the steep and massive agri-terraces, the interplay between the sun and earth during equinoxes or solstices, and the ashlar architecture (based on fitting together precisely-cut stones) that symbolizes harmony.

Following the Urubamba River, one of the head waters of the mighty Amazon, we were also reminded of how this river, like Egypt's Nile, was revered by the people as a divine giver of life. As Fernando Salazar explains:

In the Andes the large number of interrelated ecosystems that are housed in this geography, coupled with an unstable climate, fostered through the ages the development of man's understanding and a body of knowledge directed toward finding the necessary means to sustain and create societies in harmony with the uncertain rhythm of its diverse nature; this is why they saw the world as a 'living' and interrelated whole of which man is only one part (Salazar 2005, p. 86).

#### The Earth as Cursed and Redeemed

With the invasion of Cusco and the Sacred Valley by the Spanish conquistadors in the years between 1532 and 1572, the Inca civilization collapsed and the region became a colony of European Spain. Machu Picchu had already been abandoned and was not discovered by the Spaniards, and the old cultural capital of the Quechua people now became the center of colonial culture, power, and thought. Sadly, the population of the Incas declined at a rate of 58 to 1 during these years, because of both slaughter and disease. And the conquistadors did much to pilfer the natural resources, rape the land, and abuse those who were now enslaved to work it. But ironically, the Spaniards also brought with them the Roman Catholic religion and theology. Through their missionaries and colonial churches, this new Christian faith became quickly adopted by the local Peruvians. A massive cathedral constructed in Cusco became the religious center of the new teachings. Construction began in 1554 and was finally completed a hundred years later in 1654.

*continued on page 13*

## Resources on Eco-awareness and Environmental Challenges in Peru

*The following are samples of annotated bibliography items that Gary Hauck's students wrote in locating sources about this subject. The contributions are by William Allington, Andrew Clementz, Hannah Hubbard, Jennifer Jones, Arthur Kurtze, Faith Milewski, and Grace Phillips.*

### **Amazon Conservation Association. "Illegal Gold Mining in Madre de Dios, Peru". [amazonconservation.org](http://amazonconservation.org).**

The major increase in gold prices has caused miners to come to Peru looking for gold. With the overwhelming amount of miners that have come, it has caused deforestation of the rainforest to start taking place. Their destructive mining methods raze trees, devastate habitat, contaminate waterways used by communities and fauna alike, and endanger public health. Estimations are that miners had already cut down over 370,000 acres of forest, and this number only continues to climb. This is becoming a serious problem for the Amazon Rainforest.

### **Beaubien, Jason. "They're Going Door to Door in the Amazon to See Why People Get Sick". National Public Radio, 19 May 2015.**

Researchers have documented that mercury used in illegal gold mining ends up hundreds of miles downstream from the mines. This is causing many people to become ill. The trouble people are having is that one can't see or smell mercury, so it is hard to detect. A major study has been started this year to see if it is indeed mercury that is causing the problem and, if so, to take steps to improve the situation.

### **Beaubien, Jason. "Who Did This to Peru's Jungle?". National Public Radio, 17 May 2015.**

The demand for gold is once again having a profound effect on Peru. As world gold prices have risen over the last decade to record highs, thousands of subsistence farmers from the Peruvian Andes have flooded east into the Amazon basin in hopes of uncovering tiny specks of the metal. "The miners don't care about anything," says Sabina Valdez Rondon. "They don't care if they pollute because they're not from here. They take out the gold and they leave. In contrast, we are from here, we live here, we stay here and we are worried about our environment." Many people are worried that the miners' greed will ruin the Peruvian Amazon for everyone.

### **Corderi Novoa, David. "Deforestation and Property Rights". Dialnet. University de la Rioja.**

This is an analysis of the differences between Spanish colonies and English colonies and how property rights were distributed and the resulting deforestation. In Spanish colonies, they often gave the rights to the natives and let them have control. As a result, the lines were blurred as to who had the rights later on. That, along with the lower prices, contributed to land being cleared completely. This debate over who actually owns the land still continues today.

### **Crowe, Jessica. "Dissertations & Theses - Gradworks", <http://gradworks.umi.com/34/69/3469806.html>.**

This is an abstract from a dissertation by Jessica Crowe that deals with eco-spirituality and an experiment into deter-

mining ways of educating students in the ecology that would evolve into a greater understanding and caring for the environment. "Incorporating spirituality and religious themes in environmental education is a way to link learners to their meaning system" (Crowe). This theory of learning provides real world learning experiences and allows for a better use of that knowledge. An experiment was conducted at a community college in an introduction to environmental sciences class to assess the theory.

### **Garcia-Navarro, Lourdes. "Peru's Natural Gas Rush Threatens Native Tribes, Again". National Public Radio, 18 Aug. 2013.**

This article explains the damaging effects that the new-age natural gas rush is causing for indigenous tribes since the early 1980's when Shell Oil entered the area looking for natural resources. Initially the government acknowledged the problems that this practice was causing but it appears that it would now rather cover up the damage in order to continue making the large profits associated with the natural gas industry.

### **Kearns, Laurel. "Saving the Creation: Christian Environmentalism in the United States". *Sociology of Religion* 57.1 (1996): 55.**

This journal presents the reader with the Christian values linked to environmentalism. The author states that the ideals of Christian stewardship are based on the biblical interpretation that we have, "...a divine charge to be good stewards," of the earth. A second explanation of Christian stewardship is defined as the task of preserving and restoring the integrity of the earth as it was at the time of creation. While this study primarily concerns the United States, it clearly presents the relationship between Christian theology and environmentalism, such as that noted in Peruvian Catholicism and other South American forms of Christianity.

### **Leighton, Paula, "Cusco, Peru Bans GM Products to Protect Diversity of Native Potatoes". [Horizon International Solutions Site](http://horizoninternational.com).**

This article discusses the ban that the government of Cusco has placed on the growth, sale and possession of Genetically Modified Organisms to be used as food sources. This is supposed to be in order to preserve the native species of potatoes that have been grown there for generations. There are about 4000 varieties of the Peruvian potatoes grown in the region. Accompanying this ban is a government project to rediscover the old methods for agriculture in the region.

### **Stavig, Ward. "Ambiguous Visions: Nature, Law, and Culture in Indigenous-Spanish Land Relations in Colonial Peru". *Hispanic American Historical Review* 80.1 (2000): 77-111.**

The relationship between the Spaniards, Incas, and other native groups was not all that it had appeared to be, explains Ward in this scholarly article. The Incas created an empire that conquered and controlled regions around them. When the Conquistadors came the reactions towards the Incas as well as their trades and traditions made a difference in the attitudes towards Spain. For example, whether they cultivated the land or raised livestock made a difference in whether they were receptive to a foreign invasion. These separate uses of the land also determined land rights later on.

## Peru *continued from page 11*

I toured the giant old structure, and learned that the doctrines of Catholicism that came into the region taught that God had created the world, Adam's fall cursed the earth, redemption is possible through Christ, and mankind is responsible to have dominion over creation. However, while the people of Peru were willing to accept and believe these new doctrines, they did not stop believing their old legends and perspectives. As a result, old and new concepts merged in *syncretism*, i.e., a synthesis of previously discrete beliefs. A somewhat comical illustration of this contextualization is seen in the large altar painting of "The Last Supper" featuring a guinea pig on the Passover plate.

Ethnographer Loren McIntyre explains how worship, doctrines, and even religious celebrations merged in an almost seamless fashion. For example, ancient Incas had celebrated Inti Raymi, a festival of music and dancing to honor the sun every June 24 for its role in the harvest:

As Roman Catholic holidays merged with Inca festivals, Inti Raymi came to be observed during Corpus Christi [a Christian feast day falling shortly before Easter]. In other cities as far away as Quito and La Paz, Andean people celebrate June 24—the Day of Saint John— by jumping over bonfires (McIntyre 1986, p. 173).

Nowhere was this blend of religions more vivid to us than in the town of Chinchero, where the colonial Catholic church (still standing and still in use) was built directly on top of ruins of an ancient Incan polytheistic temple. Our tour guide, Martin Martinez, even pointed to several pagan paintings and frescoes that had been reimagined and touched up to more so resemble Jesus or the saints.

In keeping with this synergy, Catholic perspectives gave a sense of stewardship over God's creation. The Incan creator-deity Viracocha was honored as God the Father, and the Incan legend of the flood merged with the stories of Noah's ark. Harmony with earth remained a part of the syncretism, and the inhabitants of the Sacred Valley continued to believe in their responsibility to both care for and respect their natural surroundings.

### Abuse of the Earth and a Struggle for Eco-awareness

To assist my understanding of Peru's post-colonial sacred perspectives and relationship to nature, we spent several days in the modern capital city of Lima. During a city-wide bike tour with guide Dee Hernandez, I learned that in general, many contemporary Peruvians no longer see a relationship between their religious theologies (Catholic, Pro-



This cathedral in the town of Chinchero was built in colonial times directly on top of ruins of an ancient Incan temple.

testant, or syncretistic) with stewardship of the earth. There is no doubt that Peru was affected by the pre-industrial economy and the industrial revolution and its consequences— especially the international market and the focus on consumerism— and that these have helped to shape the thinking of its people. For example, the deeds and misdeeds of the American fertilizer producer W. R. Grace and Co., founded in Peru in the 1800s, are relatively well-known. Such events in the past couple of centuries certainly took the emphasis off stewardship, regardless of religious traditions.

Eco-spirituality, however, is re-emerging among believers and non-believers alike, with a concerted interest in preserving and caring for the environment as spiritual responsibility. Examples of active eco-spirituality include: recycling, introduced at major sites; the goal of environmental preservation; the appearance of organic farms, of which we saw several; natural resources balanced against the needs for prosperity, sustainability, reciprocity, and stewardship; and the eco-friendly construction of Lima's Larcomar subterranean mall. Located in the Miraflores district of Lima, the shopping center is literally in a cliff overlooking the Pacific Ocean. We walked around the mall and also enjoyed strolling the beautiful park on top of it. Developed and owned by a Chilean company, Parque Arauco S.A., the mall is a contemporary example of living in harmony with the environment.

Despite these signs of stewardship among today's Peruvian population, Hernandez was quick to also discuss examples of apathy and environmental abuse. These include

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## Peru *continued from page 13*

the ongoing legal and illegal deforestation of the Amazon rainforest for commercial purposes (Peru has the fourth-largest rainforest area in the world); abuse of the land and use of hazardous mercury by illegal small-scale gold miners; lack of sanitation and garbage removal in many areas of the country; the introduction of genetically modified organisms (GMOs); and apathy in controlling raging forest fires. We witnessed one such forest fire during our van ride from Pisac to Ollantaytambo and our return trip to Chichero. Martin Martinez exclaimed with concern that raging fires often continue without much effort to contain them.

### A Teaching Module

As part of my commitment to the Midwest Institute, I used this study of Peru to create an instructional module on the college level. First I piloted it at Montcalm as part of my own course, World Cultures and Geography, and then I made it available to the MIIIE for distribution and use.

After spending three weeks covering the information summarized above, my students were responsible to submit a typed paper of 4-6 pages comparing Peru's perspectives with Cuba or another Latin American country of their choice. In the paper, they were required to include pre-colonial sacred views and relationships with stewardship, colonial Roman Catholic and syncretistic perspectives, and post-colonial viewpoints.



This Quechuan woman is explaining how she makes cloth dyes in the ancient way, from insects and plants.

In addition, I invited the students to submit an annotated bibliography of additional sources to share with the rest of the class. Some examples are given in the sidebar on p. 12.

### Conclusion

The views toward the physical environment and its stewardship by people in Peru were historically shaped in large part by religious and philosophical ideologies. These began in the ancient era and continued into colonial and postcolonial times.

In the face of modernization and development, there has been a growing disconnect between these ideologies and Peru's care of the land. However, a new strand of eco-spirituality is re-emerging that seeks to re-install the notion of stewardship of the earth.

A study of this material is instructive for students in courses such as world culture and geography.

*continued on page 33*



The park on top of Larcomar, a subterranean shopping mall dug into a cliff overlooking the Pacific Ocean in the Miraflores district of Lima.

# Soil Salinity and the Water Crisis in Western Australia

by Davis Wagner

*This is an edited version of a paper written by Schoolcraft College student Davis Wagner in the Winter 2007 semester for a section of English 102 (Composition 2) taught by Prof. Sam Hays.*

“Australia, the world’s driest inhabited continent, is in the middle of a full-blown water crisis” (Clayton 1996). The increase in the demand and the lack of supply for water has reduced rivers to all-time low levels. The rivers are full of silt, toxic algae, and fertilizer remains. The fish and the wetlands that once were plentiful are now disappearing. City water supplies are at risk and salty ground water is poisoning what little farmland is left. “This storm has been gathering for over 20 years” said Peter Wright of the Australian Conservation Foundation (as quoted in Clayton 1996). Thankfully, however, the water shortage and salinity problem in Australia have several viable solutions.

The Murray-Darling Basin is a large body of water surrounded by land appropriate for farming in the state of Western Australia. Like southern California is to the United States, the Murray-Darling Basin is an agriculture powerhouse, producing 40% (\$6.5 billion) of Australia’s agricultural output. It includes half the nation’s crop land, half its sheep, and more than half its orchards (Clayton 1996). However, the basin is losing 3-5% of its water every year to irrigation, according to the Commonwealth

Scientific and Industrial Research Organization. Clearly this poses a problem for the people living in Western Australia.

## The Salinity Problem

In addition to excess irrigation, another major part of the freshwater shortage problem in the area is the growing salinity of the soil. *Salinity* is the presence of soluble salts in soils or waters. Soil salinity usually results from water tables rising too close to the ground surface (Brough 2007). After the first English colonists discovered the Murray-Darling Basin and settled nearby in the 1830s, they slowly cleared the land of vegetation and stripped it of trees for use in construction. As a result, more rain water seeped into the ground and sank down to the water table. The water table therefore gradually rose toward the surface, dissolving layers of salt left by ancient seas. This layer of pure salt is normally situated between the water table and the topsoil where the roots of vital plant life are found.

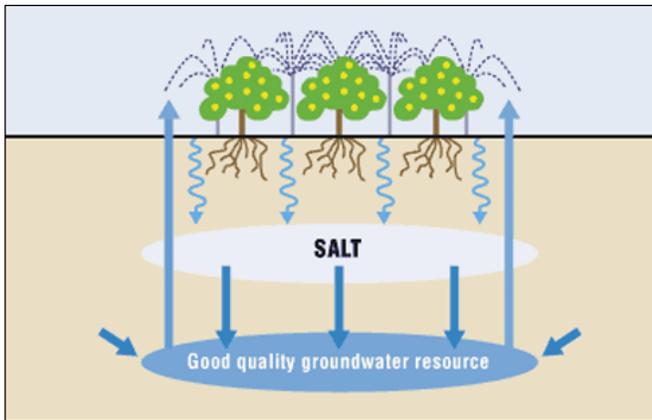
About 3.7 million acres, including 1.2 million acres of prime farmland in the basin catchment, are already poisoned by salted water tables that have risen to the surface, with more land lost every year. Lost farm production due to increasing salinity will cost \$385 million per year by 2050, the New South Wales government reported. At the rate ground water is rising into this salt, all of the irrigated regions in the southwestern basin will have saline water tables at or near the surface by 2020.

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One of two desalination plants providing potable water for the two million inhabitants of Perth, a city in Western Australia severely affected by human-induced water shortages and climate change. Photo: <http://www.sustainabilitymatters.net.au/>, 2014.

## Water in Australia *continued from page 15*



Source: National Action Plan for Salinity and Water Quality, 2001.

Deniliquin is a small town on the outskirts of the Murray-Darling Basin where rice is grown and sheep are raised. These are the only forms of agriculture found in this seemingly water-rich town. The wind blows over the flat land while the dead trees sway in slow decay. As time goes on, the saltwater moves closer and closer to the surface. Another meter and there will be no land in the town safe for agriculture.

Dry and depressing towns like Deniliquin are appearing all across Australia:

More than 11 million acres of farmland have already been rendered unusable by saline “scalds” or seeps. If nothing is done, this “dry land salinity” will expand over the next 40 years to cover as much as 10 percent of the continent, according to government scientists. The water crisis has grown so urgent even politicians have been forced to acknowledge it. In February’s election campaign, both parties pledged millions to reclaim lost farm land. The new conservative prime minister, John Howard, has promised \$244 million over five years and a national “water audit” (Clayton 1996).

The problem of an underground layer of thick dense salt is not one fixed easily, but water audits are a small step in the right direction. A water audit analyzes how water resources are being used overall and pinpoints inefficiencies. Indeed, the inefficient use of water is part of the reason for the crisis in western Australia. For example, because livestock herders are so worried about the dry land, they use more water to maintain grassy fields for these animals to graze on than anywhere else in the world.

Water reclamation in the region has had mixed results:

In 1989, the Australian government spent \$4.6 million to install 1,500 water drains in Western Australia. This water is taken to purification plants, where the water is cleaned and reused through sprinkler systems and sewage... a study in 1991 showed that these water drains allowed for only a 5% decrease in the amount of freshwater used (Bonnis 1998).

Even if the government deemed the price too high for such a small benefit, this is proof that if the government really wanted to, they could play a major role in replenishing Australia’s water supplies.

### Wet Rice-Paddies in a Parched Region

Rice production is a story of success in Australia. It is a \$500 million industry, with over 60% of the rice crop exported. Even dry lands like those around Deniliquin are used for growing rice. The production normally requires paddies of 6-10 inches of standing water over hundreds of acres. Some of the water evaporates, and more of it sinks into the water table. “Some environmentalists wonder what a water poor country like Australia is doing growing rice at all” (Clayton 1996).

To help solve the problem of water lost to high-irrigation crops, the Australian government capped water usage at its 1994 numbers and declared that any excess water used would have a 40% price surcharge. “We will corporatize these [public water] districts and users will pay the full costs of water” said Don Blackmore, chief executive of the Murray Darling Basin Commission. He added, “Rice and pasture production will either become more competitive or they will disappear” (as quoted in Clayton 1996).

Naturally, rice farmers had to find a way to use less water. The major rice distributors spent \$500,000 to have their rice fields precisely leveled, with the aid of a powerful long-range laser. Once the rice fields were leveled within a tenth of an inch, they required 35% less water to cover them. A conventional 300-acre rice farm uses each year 1.2 million gallons of water, the equivalent of five Olympic-sized swimming pools, with a water bill of \$750,000; but the same farm with laser-leveled fields would pay a mere \$200,000. The government believes companies making millions of dollars would be able to afford this laser leveling. Over time it will increase the profits of these companies and help to conserve what little freshwater there is available in Australia.

Many people in Australia, believing that the government isn’t doing enough to help solve the water problem, are helping take matters into their own hands.

A few miles from the Murray-Darling Basin, Robert Meares slams his jeep to a halt near a patch of ground planted with rows of “salt bush”— a salt-tolerant plant that sheep can eat. Mr. Meares is raising 16,000 sheep on his 6,500 acres— 1,000 acres of it reclaimed from a saline scald that once spread across his land (Clayton 1996).

The realization that sheep can be raised on plants that feed on salt showed people that they could help to overcome the salinity problem themselves. There was a statewide movement to increase the growth of this plant and to use sheep herding as a means to make money with minimal use of water.



A commercial rice paddy in the Ord River Irrigation Area in the state of Kimberly, western Australia.

Photo:  
<https://www.agric.wa.gov.au/>, 2014.

People dealing with the salinity problem in other places have decided to take matters into their own hands too. Farmers install drains to reuse water irrigated on their crops, install pumps to lower the ground water, and plant salt bush and trees to draw down the water table. George Warne, a reborn cattle farmer in the Murray-Darling Basin, watched his 200-acre grassland dissolve in the 1990s but eight years of hard work and \$200,000 later he has 120 cattle again. “Thousands of farmers have emerged to form a national grass-roots ‘land care’ program focusing on planting trees and working with the government to preserve their farm land” (Clayton 1996).

Possibly the most useful thing that the government in Australia has done to help solve this problem is really quite basic: it has sent out environmental specialists to test the land all over the country. They tell the owners how much salinity is in the area thus far and how long they have before it spreads to their land. They inform them of the problem and tell them what they can do to help.

The government is giving up on trying to solve the problem itself and has decided that public awareness is the best strategy for dealing with it. Lack of public knowledge about the land severely hampers crop growing. There are several soil types and densities that are good for growing different crops. For example, in the last 10 years apple orchards have become a major part of the Australian economy because apples grow very well with little water in the northeastern part of the country.

Slowly but surely things have begun to change for the people of Australia. Reportedly, the country’s net water usage numbers in 2005 were the lowest in more than 20 years. Clearly, people are starting to come to the realization that this is a serious problem throughout the country. If they don’t continue to move in the right direction, then Australia will be remembered not as a land full of grassy fields and wild animals, but as a dry wasteland. •

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# Lion Killing in Tanzania

by Ashley Johnson

*Ashley Johnson of Garden City, MI, is a Schoolcraft College student planning to major in veterinary science. She wrote this paper in Fall 2015 as an entry in the International Agenda Writing and Art Contest.*

What if, instead of dinosaur bones, it were lions that had disappeared and were decaying underneath the feet of the next generation? Extinction is the state or process of a species, family, or larger group being or becoming extinct: no longer being in existence.

Materials from the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) suggests that around 18,215 lions currently reside in Tanzania, the country in Eastern Africa that has the continent's largest undisturbed wild lands. That translates to approximately 42% fewer lions over the course of the last 21 years, or three lion generations (1993-2014). CITES identifies the overall reason for this decrease in the lion population as Habitat Loss from Depredation and Persecution. Globally, the population trend for lions is also characterized by decrease, and its conservation status is categorized by CITES as "vulnerable".

## Four Types of Killing

As documented in two classes of research records that are kept in Tanzania (District Problem-Animal files and Wildlife Division Hunting records), there are four types of non-natural mortality of lions.

One type of mortality is Problem-Animal Control (PAC). PAC is a legal form of hunting that is associated with livestock loss. For example, if livestock in a village of Tanzania is roaming freely and a lion emerges and attacks, the Maasai or other village pastoralists (people who control the herds) are allowed to defend themselves freely and kill the lion to prevent livestock loss. In areas like Sukuma, men are rewarded with more cattle if they kill a lion and will perform a "lion dance" to demonstrate their bravery. The consequences of PAC is a minimum annual loss of 15 lions in 7 high human-lion conflict districts, according to 2006 studies by scientist Dennis Ikanda in the Ngorongoro Maasai rangelands of northern Tanzania.

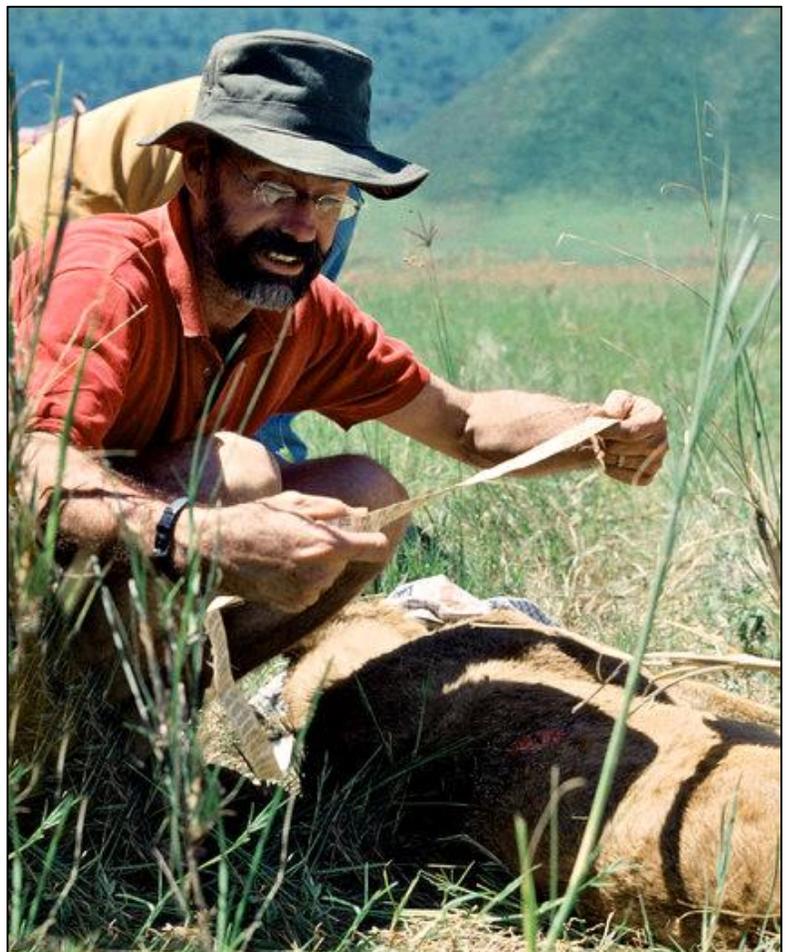
The second type of non-natural mortality of lions is Ritual Hunting. Ritual hunting is an illegal form of lion harvest in Tanzania. In these open rangelands, men from pastoralist communities will go forth and find lions to kill as a socially necessary way to prove their courage and manhood. One example of ritual hunting is Sukuma

lion hunting in Western Tanzania, discovered and revealed by Emily Fitzherbert in 2009-2010. Fitzherbert found that Sukuma men would reside in Katavi National Park to kill an innocent lion, perform a "lion dance" for the Tanzanian villagers, and reap the rewards paid by their relatives. These rewards can include cattle as well as the 'rite of passage' into manhood.

The third type of non-natural mortality of lions is Tourist Hunting. In certain countries, tourist hunting is a legal sport within the specified boundaries of a game reserve. In the Summer of 2015, a Minnesota dentist, Walter James Palmer, was accused of illegal tourist hunting in the killing of Cecil, a famous lion in Zimbabwe further to the south. Jane Smart, global director of the Biodiversity Conservation Group of the International Union for Conservation of Nature and Natural Resources (IUCN), told the *Washington Post* that every year, legal tourist trophy-hunting kills about 600 lions, or roughly 2% of the total lion population of Africa. Hunting groups like Safari Club International maintain that hunting lions helps maintain their populations, and "plays a role in raising the value of the African lion and discourages poaching."

The fourth type of non-natural mortality of lions is Roadkill. Roadkill is a factor in the overall decline of lion

Dr. Craig Packer, a professor of ecology, evolution, and behavior at the Univ. of Minnesota, measures a lion in the Ngorongoro Conservation Area in Tanzania in 2001. He was later banned from Tanzania for exposing corruption in the battle to save the lions of the Serengeti plain. Photo: *New York Times*, Dec. 29, 2015.

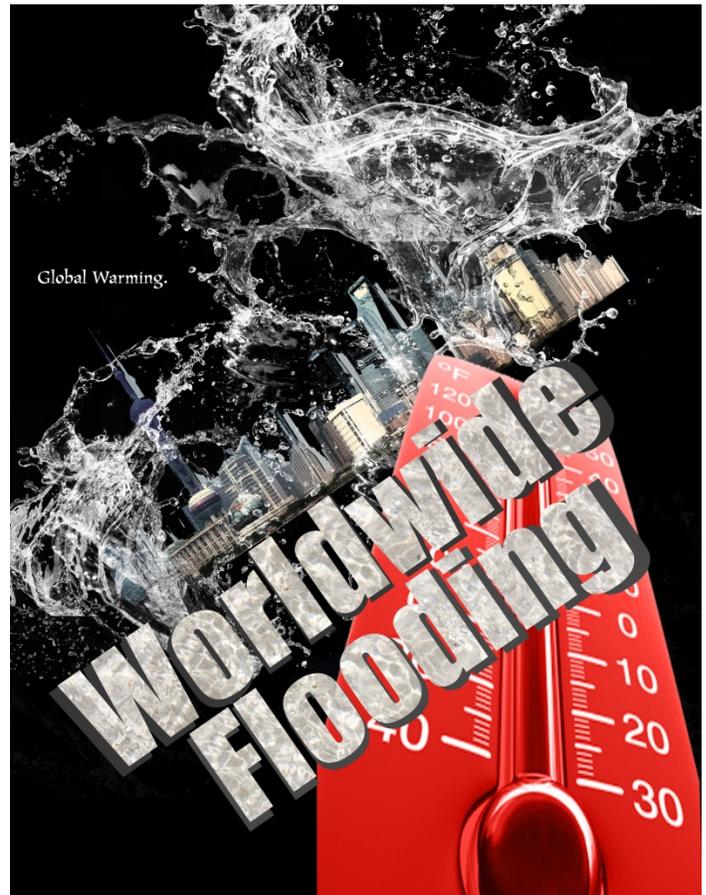


populations, even though not many accidents have been recorded. Because lions inhabit all of the major habitats of Africa where conditions are favorable (a stable prey base, water, and minimal human disturbance), roads and railroads that are built through and between such areas pose a threat to lions, especially at night. The 2008 CITES case study of *Panthera leo* mentioned roadkill incidents occurring on the Mikumi Highway, the Mtwara-Lindi Highway, and the Tanzania-Zambia Railway (TAZARA), an 1,160-mile-long single-track railway linking the port of Dar es Salaam in Tanzania with Zambia's Central Province. However, the case study concluded, "Road kills do not occur in significant numbers and can easily be disregarded."

The lion is a top predator and a keystone species that helps maintain steady population levels of its various prey, which are mostly large herbivores such as the wildebeest, zebra, and African buffalo. Without lions, such species further down the food chain might overpopulate; this, in turn, would threaten the viability of their own food sources, one link down in the chain. Unfortunately, because of human-lion interactions, fewer lions survive today than was the case 50 years ago. Similarly, humans are a top predator species, and have a tendency to protect their territory. Because of the similarities between lions and humankind, lions have decreased their pride while humans increased their resources. In this world it will be up to mankind to fix what it started, and with that, lions will begin to see life again. •

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Schoolcraft College student Juria Takei created the above graphic, "Worldwide Flooding", to dramatize the effects of global warming. The work was a project that she completed in Computer Graphics Technology 226 (Digital Imaging 2—Photoshop), taught by CGT Prof. Michael Mehall in Fall 2016. Juria, who lives in Novi, MI, is majoring in Digital Art.

# Environmental Management at Fujitsu Ten

by Elaine LaPradd

*Schoolcraft College graduate Elaine LaPradd has been employed since 2010 at Fujitsu Ten Corp. of America, a leading supplier of automotive electronics systems. As Facilities Coordinator for the corporate headquarters in Plymouth, MI, and for the Technical Center in Novi, MI, one of her duties is to coordinate the environmental management system (EMS).*

The Environmental Management System (EMS) in place at Fujitsu Ten Corp. of America is part of a global program that includes our mother company, Fujitsu Ten Ltd. (headquartered in Kobe, Japan), and all of its subsidiaries. We also have an EMS policy in place for our locations here in the United States.

## Global Corporate Direction on the Environment

Fujitsu began an environmental protection program in Japan in 1972 by establishing environmental control units at every plant. The corporation often exceeded government-mandated standards on the environment: for example, in 1987 it established an ozone-layer protection committee, and in 1992 it eliminated carbon tetrachloride and chlorofluorocarbons (CFCs) from its cleaning processes. The Fujitsu Group has published annual Environmental Action Plans since 1993. The Group Environmental Report of August 2016 announced that greenhouse gas emissions at the Fujitsu Group's facilities globally had decreased by 35% compared to 1990, including a reduction of about 40 million tons in such emissions through the use of Information and Communication Technologies for Environmental Sustainability (known as ICT Ensure).

"The Fujitsu Way", which is the corporate values statement for the global Fujitsu Group, affirms: "We have made environmental protection a top management priority. ... In all our actions, we protect the environment and contribute to society." It is significant that this vision applies to all of our facilities worldwide—from industrial factories to office environments like those in Michigan. The statement goes on:

In accordance with the Fujitsu Green Procurement Policy, we are committed to implementing Green Procurement throughout our supply chain, which includes our business partners. From the earliest stage of development our products incorporate energy conservation concepts in design and material selection. These initiatives ensure that we provide our customers with eco-friendly products that reduce the burden on the environment.

In order to help customers in their efforts to protect the environment, we are also supplying them with environmental solutions incorporating the know-how and innovative technology we developed for our own environmental countermeasures. In this way, we work together with our customers in protecting the global environment.



The worldwide Fujitsu Group has expanded markedly over the past quarter-century, yet total greenhouse gas emissions from its facilities decreased by 35% from 1990 to 2015. This large Fujitsu Ten factory in Oyama, Japan, which was opened in 1967 and currently manufactures electronic and infotainment devices for automobiles, emits less than 1900 tons per year of carbon dioxide, the primary greenhouse gas.

The Fujitsu Ten global charter includes fundamental principles and policies related to the environment, along with action directives. The guiding principle is to be aware of the environment and the economy and to coexist harmoniously in business, while contributing to realizing a green 21<sup>st</sup> Century by committing to a low-carbon society and sustainable development.

Our global fundamental policy includes:

- pursuing the latest **environmental technology**
- promoting product development and business activities in order to **reduce environmental risk** and continuously improve environmental performance in every area of our business
- promoting effective **environmental preservation** activities rooted in our core business activities by setting mid-to-long term vision and action plans.

And our action directives require:

- maintaining green sites and factories
- saving resources such as paper, water, and electricity and reducing waste
- promoting environmental contribution activities for the community and society.



The Fujitsu Ten Technical Center in Novi, MI, is a 52,000-square-foot facility.

### Helping to Keep Michigan Green

Our local Environmental Management System includes the following policies:

- **Pollution Prevention**  
We will promote prevention of environmental pollution.
- **Social Responsibility**  
We will promote positive contributions to biodiversity conservation in areas where we operate.
- **Continual Improvement**  
We will continually reduce the impact of our aspects on the environment related to our operational activities, products and services.
- **Compliance**  
We will comply with the requirements of the International environment standard ANSI/ASO/ASQ E14001:2015, along with any applicable legal and other requirements related to our environmental aspects.

In Michigan, we follow these policies by setting annual goals and objectives to continually improve our carbon footprint. Being an office environment somewhat limits what we can do. For FY 2016 we chose to reduce our paper consumption by 3%, reduce our electricity consumption by 2%, and reduce our landfill (increase recycling) by 8%. We set up a graph for each goal (calculated per person), and fill in the information each month to track how we are reaching or not reaching our goals to determine how we might improve.

We choose our objectives each year by closely observing our changing business environment and adjusting accordingly. For example, do we have special projects where

more paper will be consumed? Do we have a second shift where more electricity will be consumed? Are we setting up labs where more equipment is being purchased and waste from packing will be recycled? In addition, our employee count is constantly increasing, so we need to make adjustments for that as well. We have in place what we call an EMP, which is an environmental action plan that we follow and which takes all of these factors into consideration.

Periodically, we send out an e-mail message letting employees know where we stand in meeting our quantitative

targets, and in which we also encourage and suggest items to recycle. We have two recycling centers, one in the garage and one in the kitchen. We also have paper-recycling cans at each desk and in all of the common areas. We recycle glass, batteries, ink cartridges, cardboard, plastic, paper, and electronics.

This year we hired a landscape company that uses organic fertilizer and only spot-uses (instead of blanketing) a pesticide for weed control. They also use mowers and other equipment that are powered by battery instead of gasoline.

Each year, we schedule two volunteer activities for our employees to help improve and sustain the environment. As examples, these activities can include harvesting a community garden, pulling invasive plants that are not native to our state's environment, and other activities.

There are also legal requirements, both local and federal, that we must follow. We keep up on any changes by subscribing to an online service called CyberRegs that sends us notifications of any changes in law. In line with legal requirements, we maintain an environmental aspect and impact list where we list all items (aspects) that we use, and rate them as to what the impact on the environment would be in the case of an accidental release. We review this annually.

Fujitsu Ten schedules EMS training for new hires and for annual reviews in order to ensure that all employees are not only aware of our program but are actively involved in helping us to meet our objectives. We conduct annual external and internal audits to ensure that we have an effective EMS program in place, and take into consideration the opportunities for improvement suggested by the auditor(s). Top management is involved in this and is asked for suggestions for improvement with regard to risks and opportunities. We are continuously looking for ways to improve.

## When the Circle of Life is Broken, the First Nations Sound an Alarm

by Randy K. Schwartz (Editor)

In April 2006, then-Senator Barack Obama gave a speech supporting a renewable-energy bill and called attention to the sad fate of Shishmaref, Alaska. In this Iñupiaq village, located on an island near the Bering Strait, residents were seeing the ice that had always surrounded and protected them gradually melting and turning into slush, leaving them vulnerable to damage from storm surges. Finally, with more and more of their land and homes sliding into the sea, the residents reluctantly voted this past August to move and try to rebuild their entire community on the mainland.



Photo: <http://www.manoomin.com>

As shown also by the battle over the Dakota Access Pipeline (see next page), peoples of First Nations tend to be among those who are most vulnerable to climate change and other threats to the environment. Many of them still live close to nature and rely more directly on natural resources than other people. And when their ecosystems are under attack, they are often in a position to sound the alarm.

Not just in the Dakotas but also here in Michigan, oil spills threaten native people's livelihoods. The U.S.-Canadian oil firm Enbridge Energy has yet to comply with agreements that it made with the state regarding structural support for its Line 5, which was built in 1953 and runs along the bottom of the Straits of Mackinac. A Univ. of Michigan study predicted that an oil spill from Line 5 could have devastating impacts on fishing waters guaranteed to Ojibwe and other tribes by a Treaty of 1836. The 1836 tribes are pushing for the aging pipeline to be decommissioned. In July 2010 another Enbridge pipeline, Line 6, ruptured underground, spilling tens of thousands of barrels of crude oil into the Kalamazoo River and fouling water supplies and aquatic wildlife. Line 6 is part of a 3,300-mile pipeline that carries crude oil extracted from the Alberta tar sands all the way to Montreal, crossing the U.S.-Canada border twice in the process. Pipelines that carry the heavy tar-sands crude are notoriously prone to rupture.

The current issue of *Mazina'igan* (Winter 2016-17) includes several articles that describe the Enbridge controversy and other key environmental challenges faced by Ojibwe and other Great Lakes tribes. The magazine is published by the Great Lakes Indian Fish & Wildlife Commission (GLIFWC), which represents the treaty rights of 11 Ojibwe tribes in Michigan, Wisconsin, and Minnesota:

- Aquatic invasive species such as zebra and quagga mussels and the sea lamprey have wreaked havoc on entire food webs, leading to smaller numbers of lake whitefish and other culturally and economically important species.
- The waters of the Great Lakes have been contaminated by substances such as mercury, PCBs, and mining waste. Some of the chemicals end up in the tissues of fish, making them unsafe to consume.

An Ojibwe man harvesting *manoomin* (wild rice) from a canoe.

In the early 1900s, nearly 27 million metric tons of copper-mining waste was dumped along the shores of the Keweenaw Peninsula in northern Michigan. These tailings were produced by giant steam-driven stamping machines, used to crush the mined ore so that copper could be extracted. Even now, a century later, massive dunes of these fine-grained tailings, called stamp sands, accumulate and migrate along shorelines, obstructing spawning grounds for lake trout and lake whitefish. Meanwhile, there are emerging problems with more-modern contaminants such as micro-plastics.

- Smaller lakes have been the ones most highly affected by the nutrient runoff from farm and lawn fertilizers, which can shift the aquatic ecosystem and impair the ability of fish to reproduce. This seems to be a factor, for instance, in declining numbers of walleye in Lac Vieux Desert Lake, which straddles Michigan and Wisconsin.
- Climate change is already affecting plants and animals in the Great Lakes region. Warming surface waters have changed the seasonal cycle of freezing and melting in Superior and other lakes, disrupting the behavior of the lake trout, brook trout, lake whitefish, and lake herring that populate these basins. Hotter, drier Summers threaten most of the plants that are living at or near the southern edges of their respective ranges, such as the paper-birch tree.

The same issue of *Mazina'igan* includes an article about low harvests of *manoomin* (wild rice), written by Peter David, a wildlife biologist with GLIFWC. Manoomin is a sacred food staple among the Ojibwe and other Great Lakes tribes who harvest it seasonally from lakeshores. "Manoomin is a reminder that in the Ojibwe world view," David wrote, "nature is a circle, not a line.... The circle— we hope— has no ending, no 'over', just a rotation to the next phase of the cy-

cle.” But for the past decade, harvests of manoomin have steeply declined at Spur Lake, Wisconsin, where they were previously robust and reliable. The water level in the lake has risen by 1-2 feet in just a few decades, which in itself is more than enough to trigger a decline in rice beds. But this is a complex problem that no one has figured out yet. Recently, tribal representatives met with state and local officials to take initial steps to investigate the conundrum, including low-level drone flights to look for any flow bottlenecks in Spur Lake’s outlet. David concluded with the observation:

It is interesting to consider how worldview might color a person’s perspective on this effort. If one sees life as a linear path, then the loss of a historic rice bed may seem like a natural end point, neither positive or negative perhaps, but just something that happens. For those who see life as a circular rhythm, the same loss might be more likely to be viewed as a disturbance in the natural cycle. •

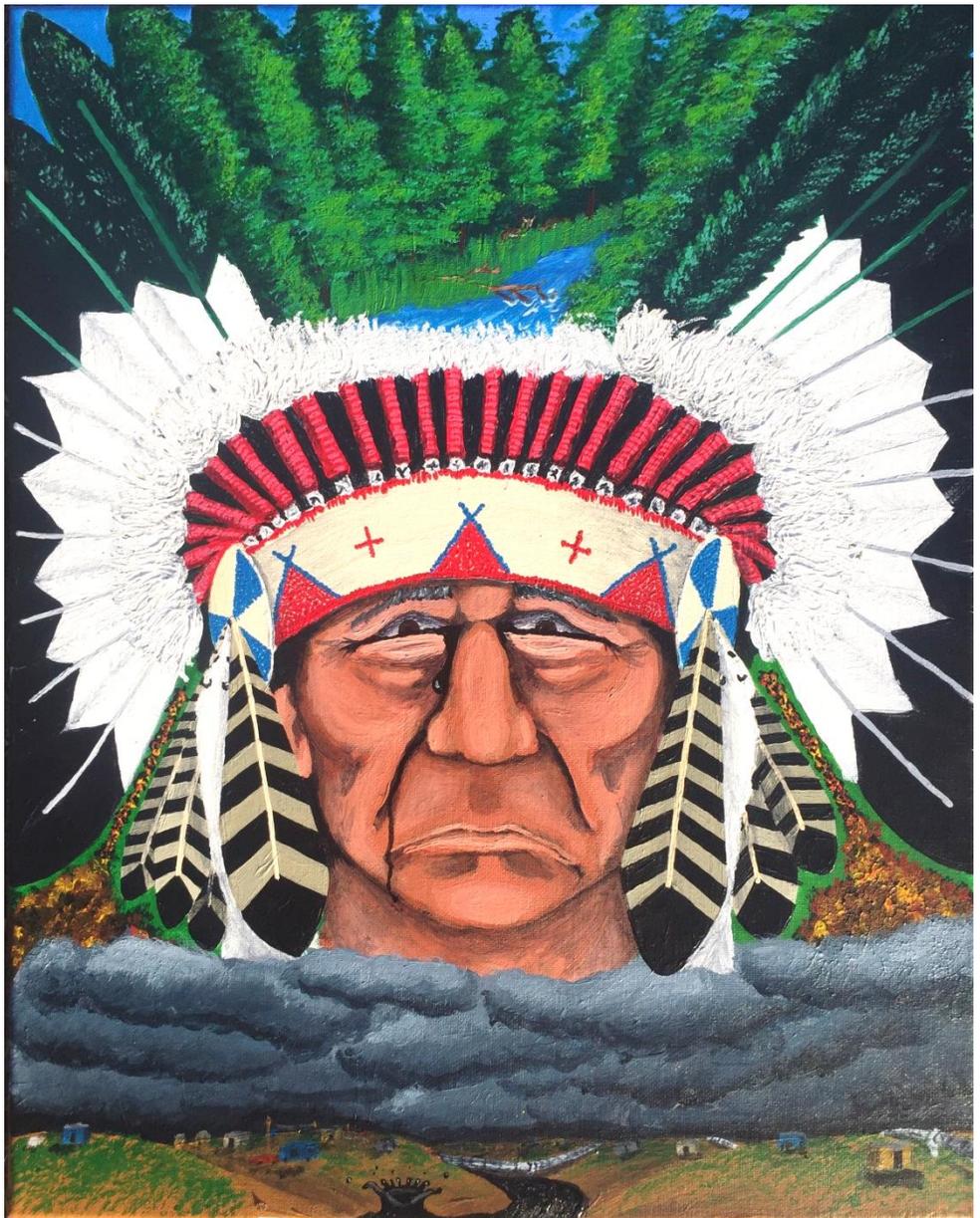
## “Coerced Sorrow”

by Austin McVeigh

*Austin McVeigh of Canton, MI, is a Schoolcraft College student majoring in fine arts. He created the acrylic painting above, and wrote the accompanying artist’s statement below, while he was enrolled in Fall 2016 in a section of Art and Design 235 (Painting 2: Theory and Elements) taught by Prof. Sarah Olson.*

This piece was inspired by the current crisis at the Standing Rock Indian Reservation in North Dakota.

It has been 300 years and we are still treating the Native Americans the same way. We have taken their land, killed their people, killed their game, and broken treaty after treaty with them. Even in 2016, this behavior still continues; we are now breaking even more treaties and disturbing sacred sites, as if we haven’t already done enough to these people.



I am all for an energy-independent and strong America, but in this case I think we can make an effort to respect the rights and wishes of the people that we have slaughtered for centuries. Worst of all, the genocide that was committed against them is often overlooked, ignored, or even celebrated in our history books. Why can’t we just leave the Native Americans alone? We have already inflicted enough damage on them; we do not need to destroy their burial grounds and pollute their water in 2016.

I felt that this was a perfect topic for a work of art because it is the one cross-cultural issue that is frequently ignored, and it is still going on today. This piece shows the change that Native Americans have gone through since contact with Europeans. Their way of life and the world around them went from something beautiful and admirable to something that is absolutely horrid. The environment has been destroyed and they were forced onto reservations, a radical shift that they still struggle to deal with. The black tears speak specifically to the Dakota Access Pipeline and the pollution that could come from it. •

# Sustainable Agriculture for a Crowded Planet

by Barry M. Wauldron

*Barry Wauldron is a Lecturer in Geography at the Univ. of Michigan-Dearborn. In the past he taught Geography courses at Schoolcraft College, including leading a group of his students from Geography 241 (Latin American Field Study) on an eight-day field study trip to Mexico's Yucatán peninsula in June 2005. Mr. Wauldron holds degrees in earth science and urban planning from Eastern Michigan Univ. His areas of interest include energy, transportation and infrastructure, and rebuilding local food systems. From 2009 to 2015, he was a Board Member for the Southeast Michigan Land Conservancy and served as a member of the Conservancy's Farm Committee.*

Not long after homesteaders rolled their wagons into the virgin grassland prairies of North America, discussions of the need for “sustainable agriculture” started emerging in our literature. Around 1900, before the World War 1 explosives research that led to synthetic nitrogen fertilizers, children of the original homesteaders were witnessing the steady decline in productivity from their fields, and awareness about soil fertility grew. These issues were nothing new, of course; they are present throughout the history of agriculture and civilization.

“Sustainability” is one of the most popular buzzwords today. As such, it is frequently misused to describe things that the term “green” used to cover. Often, approaches to being “sustainable” involve token efforts at reducing waste, recycling, changing to energy-saving lightbulbs. These are fine endeavors but they do not make the fundamental activities sustainable. Our “normal” today is so unsustainable that any honest target to transform a modern process, system, or institution into a sustainable one brings the planners to the unavoidable conclusion that it's simply not achievable for a number of reasons. In a highly interconnected world, it's hard to make one part of it sustainable when all of the inputs and network relationships surrounding and supporting that thing are not. Investigating a plan for sustainability usually illuminates the brick walls early on in the process. The short-term cost is too high, the needed changes in rules are too politically unpopular, or the alternative to what we're doing now is considered too radical.

Agriculture is a bit different, as it has been conducted sustainably for long periods of our history and still is today in some places. These places are the exception, to be sure, but they represent stores of knowledge and skill that can be relearned and reintroduced broadly. Additionally, the costs could be reasonable, as we'd only have to change farm policy to subsidize sustainability instead of corn. We spend a lot of money subsidizing corn! Finally, people overwhelmingly want healthier food, farmers want to produce it, and that is what a sustainable food system would offer. Unfortunately, “Big Ag” is currently a more powerful lobby than the American people, but that too can change.

So what would a truly sustainable agricultural system look like? What would need to change? Let's define some basic sustainability benchmarks tailored to agriculture, and then provide some detail about reaching them.

**Over the course of time and natural life cycles, the sustainable system produces more energy than it consumes.**

Growing food is basically a complex energy cycle. We invest energy in the form of labor to grow food. The energy for traditional human and animal labor comes from food and goes into growing or raising more. So our efforts to produce food must result in more energy than we invested to get it. If it didn't, if we spent more calories in labor than we got back from the food we produced, we'd starve. The basis for our food system is primary production (plant growth). Plants utilize the only real form of sustainable energy in this system, our sun. Strictly, it could be said that any sustainable agriculture system is one that gets all of its required energy from the sun or from its direct byproducts like wind and biomass. We fed ourselves within these energy constraints for the vast majority of our history, but relying on solar power alone to run the food system at the global scale we're operating at today is physically impossible.

Skilled and efficient subsistence-level gardeners and farmers were able to produce food at an energy return on investment (ROI) of about 4 to 1: for every calorie expended raising the food, we'd get 4 calories back. Certainly lean times occurred, but we grew successfully as a species and spread across the planet at that ratio. We made improvements along the way, got better at raising plants and animals, but always conformed to the natural limits of the sun, soil, and environment. Then we discovered an unimaginable treasure of stored ancient sunlight in the form of fossil energy.

By definition, fossil energy (coal, petroleum, and natural gas) is finite and non-renewable, making it unsustainable. But, within the debate defining sustainability is the consideration for the projected longevity of the energy sources the system relies on. Even the sun won't last forever. If we had used fossil fuels wisely and efficiently from the beginning, they could have provided reliable energy to do back-breaking work for many centuries. At that rate of consumption and with wise farming practices that sequester carbon in soil, we'd have no climate change to worry about either. Unfortunately we chose to consume recklessly, building the suburbs and facilitating “car culture” for everyone, the greatest and most short-sighted misallocation of energy resources in the history of the world! Now, little more than 100 years into the hydrocarbon era, we have become so heavily dependent on them for farming that we consume an estimated 10 calories of fossil energy for every calorie of food produced. Think about that: we have traded a 4:1 positive ROI solar-based food system for a 10:1 negative ROI hydrocarbon-based food system. The average piece of food in America travels over 1,000 miles to get to our plates, and we expect cheap tropical fruits and bags of coffee from

the opposite side of the planet to be on our store shelves every day of the year. In just a couple of generations we have collectively forgotten that food is a seasonal endeavor, and almost nobody here today knows where their food really comes from.

Fossil energy is prized because of the amount of work it allows us to perform. Nobody wants to go back to a 19<sup>th</sup>-Century system that requires extensive human and animal labor to farm. Our lives have been improved dramatically by relying on machines to do some of the more arduous work of farming. Thankfully, a future that keeps farm equipment running at some scale is not hard to imagine. When we find ourselves having to make hard choices about our remaining oil resources, we should be able to supply needed fuel to farms well after the average commuter witnesses their local gas station shuttering for good. That day is closer than most of us know.

Alternatively, producing bio-fuels for farming could be accomplished with existing technology, would require converting only a small percentage of farmland to growing fuel crops, and would represent a big step in the transition to sustainability. We could never scale bio-fuel production up so far as to run all of our trucks and cars, but tractors and farm vehicles would be a more achievable goal.

Reducing energy inputs and the carbon footprint of our food system is one of the motivations behind the “local food” movement. Ten years ago, “organic” was the driving trend in agriculture; today, it is “local”. Consumers are purchasing more food produced within their home town, region, or state. Even large grocery chains are jumping on the bandwagon, advertising products from local farmers, and the demand is opening opportunities for new small-scale farmers to gain access to markets and customers. The big systems are not yet well adapted to accommodate local and seasonal products, and earning a good living for the farmer is still difficult, but the work of reversing globalization and transforming agriculture to a more local affair has begun. A shift in consumer expectations and the willingness to pay more for a fresher, more sustainable product is now needed to push the trend further toward mainstream.

**The sustainable system meets the needs of the present without compromising the ability of future generations to meet their own needs.**

Just about everything that we think we need to do to feed our population today presumes depleting resources and robbing from future generations. Some studies suggest that this mining of soil nutrients and extensive use of fossil fuels is the only way that we achieved and could presently support the rapid and unprecedented population growth of the 20<sup>th</sup> Century. Others leave room for opportunities to reform agriculture extensively, to farm at a smaller scale, to increase crop diversity, to get millions of more people engaged in farming again, and they suggest that we could then feed everyone alive today. Of course, in that world, food would no longer be cheap; our economy and our supermarket shelves would look much different. If that future is inevitable in any case, however, wouldn't we rather get there in a thoughtful,

planned way rather than through a collapse scenario and mass starvation?

The climate debate also figures centrally here. The effects of climate change represent new challenges to producing food with any level of reliability, therefore making it more difficult for future generations to feed themselves. Also, agricultural practices currently emitting huge amounts of carbon into the atmosphere could be modified in a sustainable system to pull that carbon out of the air and hold it in the soil. This is not hard, not expensive, and we know how to do it. Other than shutting down factories, power plants, and vehicle fleets, it's our best opportunity to lower atmospheric carbon dioxide (CO<sub>2</sub>), the chief greenhouse gas.

So, could we sustainably meet the needs of the present as we shoot past 7 billion people and head toward 8, then 9? Most of the evidence suggests that we cannot, because to feed ourselves today we are denying many other species the space and ability to live, reproduce, and feed themselves. Most biologists agree that we are in the midst of a great extinction event, and much of that is directly related to humans altering ecosystems to practice modern agriculture. If we were to end these practices today, and do all that is necessary to regenerate habitat and threatened species, restore soils and waterways, replant the forests, could we still feed everyone in the process? We are going to need a lot of research to figure that out and we haven't much time, but the math seems problematic. One truth, however, is that although humans can be amazing forces of destruction, we could just as easily be positive forces of restoration and regeneration, speeding up natural processes such as soil development. It's a matter of choice really.

**Sustainable systems are naturally resilient.**

The plants, animals, people, and essential functions of the system should be diverse and function in complementary relationships to enhance resiliency, making the parts of the system stronger and better able to withstand external shocks such as extreme weather, market volatility, diseases, etc.

On the surface, the modern practice of mono-cropping thousands of acres and creating ecological vacuums seems extremely efficient. But it's a very weak system, susceptible to disease, predation, and other stresses. Therefore it requires extraordinary maintenance. The result is fertilizer and chemical runoff, watershed pollution, soil depletion, massive carbon footprint, and other negative externalities of the system. Unfortunately, these external costs are never weighed against the yield-per-acre benefits of efficiency.

Healthy, strong animals raised outdoors are resilient. The sick animals that we raise in dense, confined conditions are not. This Concentrated Animal Feeding Operation (CAFO) system seems efficient, but it concentrates waste to toxic levels, treats animals with the utmost cruelty, and speeds the development of antibiotic-resistant microbes. Each day gets us closer to an epidemic that can't be stopped. Is an untreatable killer virus an acceptable price to pay for cheap bacon?

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## Sustainable Agriculture *continued from page 25*

### **Resources are used efficiently, conservation is a priority, and waste is minimized.**

Agriculture is generally dependent on diverse natural resources. The sustainability of agriculture thus is dependent on ensuring the continued availability of these resources. The way resources in agricultural systems are used defines the system as sustainable or not. Resources range from natural resources such as water and soil, to human resources such as labor and professional services. The methods and practices need to ensure that the resources are efficiently used today, and this will guarantee their availability for future generations.

Soil fertility can be not only conserved but regenerated in short periods if we are willing to invest the time and effort. Soil erosion on grazing land can be reversed and deserts turned back into thriving grasslands with modifications to grazing practices. Water conservation measures are more critical in some climates than others, but a drought sufficient to ruin crops can be experienced anywhere in any given year. Sustainable farming systems make efficient use of water and naturally store water in soils and catchments where it can be available to plants, minimizing runoff and energy demand. We know how to do these things.

In terms of waste, we actually throw out about half of the food produced in America, mostly because it is not aesthetically perfect and doesn't meet the demands of American shoppers. There is no shortage of food, only a shortage of common sense, humility, and gratitude. Fear of potential liability often prevents many grocers and restaurants from reselling or donating the wasted food. The easiest, cheapest thing is to throw it in the Dumpster, so this is what we do. A sustainable system would eliminate this massive waste stream by permitting safe reuse in the human food system, reuse in other areas, and redirection to composting facilities and natural fertilizer manufacturers.

Current industrial livestock operations produce mountains and lakes of manure. Reforming these operations to be more humane and sanitary would be part of any sustainable system, but the manure that is polluting our air and waterways could be far better utilized, directing what is not used as fertilizer into bio-gas generators. Captured methane gas from composting animal waste could replace hydrocarbon "natural gas" and propane to produce fuel for farm vehicles, greenhouse heaters, and a variety of other farm energy needs. The Fibrominn power plant in Minnesota produces 55 megawatts, providing electricity to 50,000 homes, running mostly on turkey manure.

### **The system utilizes sustainable economic models that improve rural livelihoods, support humane wages and labor practices, and foster equity and the social well-being of rural communities.**

Sustainable agriculture requires sustainable economics. Farming communities in the American Midwest and around the world have been systematically destroyed by the "Get big or get out" era of farming and the globalization of food systems. In the 1970s, U.S. agriculture policy slowly dismantled support programs that had made midsize family farms viable, including effective supply management through price floors, a crop reserve, and conservation incentives. Instead, Richard Nixon's Secretary of Agriculture Earl Butz famously directed farmers to plant "fencerow to fencerow", flooding the market with grain and driving down prices. If farmers couldn't survive the price drops, Butz encouraged them to "get big or get out". And so they did: the number of U.S. farms dropped from nearly 4.8 million in 1954 to 2.1 million in 1990. Millions of farming families here and abroad have lost their livelihoods, their land, and even their lives to the economics of modern agriculture. In the early 1900s about 30% of Americans were employed in agriculture. Today that number is about 2%. Imagine that: 2% of a population growing food for the other 98%, most of whom

*continued on page 31*



This is one of the barns at Langmo Farms (Darwin, MN), a family turkey-raising operation. Langmo is the leading supplier of wastes for running the Fibrominn biomass power plant near Benson, MN, which burns the waste to generate electric power. Nearly 33 semi-truckloads of manure and litter are pulled out of a single barn every year; in its 12 barns, Langmo raises a total of about one million turkeys annually.

Photo: The Minnesota Project, 2012  
<https://minnesotaproject.wordpress.com/>

# The Wisdom of Peasants

## George Estabrook's Studies of Traditional Sustainable Agriculture in Portugal

by Randy K. Schwartz (Editor)

A treasure trove of lessons about sustainable agriculture and its cultural underpinnings can be found in fieldwork done by George F. Estabrook in the Portuguese countryside. Estabrook (1942-2011), an acquaintance of mine, was a longtime botany professor at the Univ. of Michigan whose interests and activities ranged far and wide.

Trained as a mathematician, Prof. Estabrook soon became a specialist in the diversity and evolution of plants, and a pioneer in applying quantitative techniques to taxonomy and other facets of the life sciences. Also early on, starting in the 1970s, he was influenced by the environmental movement and "green consciousness" in both his professional work and his personal life. In Ann Arbor, he sought out local and organic food, and distanced himself from reliance on motorized vehicles. In the 1980s he became interested in the ecology of the countryside in Portugal, where he had been giving talks and doing research for many years.

It was in 1980 that Estabrook first visited some farming villages in northern interior Portugal. Over the next three decades he lived in that region for periods ranging from a few weeks to several months, including two sabbatical years as an invited professor of anthropology at the Univ. of Coimbra. He began carrying out fieldwork in the remote mountainous interior where there were still remnants of pre-industrial methods being practiced for both subsistence and commercial farming. He learned to speak fluent Portuguese and also, with the help of a tape recorder and interpreter, the rural mountain dialect so that he could talk with both farmers and scientists. He lived with farm families in small villages, made measurements of the terrain, combed through church and civil records to learn the history of settlement and farming in the region, observed and spoke with farmers engaged in chores, cultivated his own experimental farm-plots, and took samples of soil and vegetation to analyze their biochemistry.

Estabrook's goal in observing and analyzing centuries-old techniques was to identify those practices that foster sustainability and that might be adaptable to more industrialized countries. Once, when a student interviewer back at UM kept asking him how he was planning to "help" the Portuguese by teaching them what he knew, he made clear who was learning from whom:

I don't try to teach them anything. I try to learn from them what it is that they do that seems to have worked for the past many hundreds of years. And then I use modern ecological technology to try to



Photo courtesy of the Estabrook family.

understand why it works and how it works and to measure quantitatively the nutrients that are present in the plant and animal matter and in the crops that they produce and the soil that they manage and so on. ... The purpose of this research is to learn from them what it is they do so that we, who are in many cases not getting it very right as we trash our soils and pollute our soils and pollute our crops, cover our farmland with other less appropriate structures; help us understand how this has been done in the past. I'm not there helping farmers at all. I'm there learning from farmers how they've managed to pull this off for the last 800 years (Y1).

On so many levels, we have so much to learn from a professor at a world-prestigious university who was humble and open enough to learn scientific principles from the daily chores of uneducated mountain farmers in a small country across the ocean, and to mine deep truths from "cultural beliefs and practices that appear to be 'old wives tales'" (E4, p. 328).

The procedural, ritualized, unsubstantiated, or seemingly irrelevant explanations that elicit timely or appropriate behavior in self-sufficient farming communities may describe practices that represent a deeper ecological or natural wisdom. The wisdom of these practices (if not of their explanations) may transcend the short term, production orientation of modern agricultural technology, whose development has been in part motivated by the desire to convert natural resources to cash profits as fast as possible. It is becoming clear that many modern agricultural practices cannot be sustained without decimating the very natural resources on which productivity depends (E1, pp. 55-56).

Estabrook was not arguing that we can or should go backwards in time and adopt pre-industrial agricultural practices wholesale. Rather, his point was that by studying these practices, we can discover certain principles that could be creatively adapted as guides toward solving some modern problems of sustainability. Some of the principles that he

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## Traditional Agriculture *continued from page 27*

drew from this work are applicable to a particular type of land, such as methods of terracing and irrigating steep hillsides, and methods to fertilize shale soils or granitic soils. Other principles have broader applicability, such as the importance of maintaining species diversity, or the use of energy inputs that rely ultimately on the sun or other renewable resources.

### Trapping Soil and Water on Steep Hillsides

In the 1980s, Estabrook began studying the pre-industrial, terrace-based subsistence farming that was still being practiced in the state of Coimbra in a set of three tiny villages collectively known as Ribeiros. At the time of his study these had a dwindling population of a few dozen people, down from a high of about 260 in 1940 (E2, p. 24).

The villages lie at an elevation of roughly 2300 feet, in the southwestern foothills of the Serra da Estrela, Portugal's highest mountain range. The deep, twisting valleys carved out by the Pracais river and other streams there are not well-suited to cultivation. The Summers are very hot and dry, the Winters are cold and rainy, and the steep hillsides of crumbly shale are difficult to even walk over. Peasant families had first migrated to this rugged area during medieval times, probably to avoid the deadly exploitation and plagues that were typical of more densely-settled areas at the time (E2, p. 28).

Centuries ago, the settlers had stepped the hillsides with narrow terraces for cultivation. Each terrace is a ribbon of more-level land, 15-30 feet wide, held in place by sturdy stone retaining walls in three different styles and ranging from 3 to 10 feet in height. Tiered in sequences of up to 20 or 30, these terraces were built wherever they could be irrigated with the water that seeps out of the porous shale each Summer (E2, p. 22; E4, p. 321). Every week during growing season, there was a designated time for a given farmer with his hoe to divert water from the irrigation ditch onto his terrace plot for growing rye, corn, beans, squash, potato, collard, or tree fruits and nuts (E2, pp. 23-24; E4, pp. 324-325).

To deter soil erosion on the terraces during the incessant rains of Winter, rushing rainwater is conducted from tier to tier in a gradual way, in some places by drainage tunnels, in other places by stone-lined stepped cascades built into the retaining walls. In addition, a type of grass called "rye grass" is often planted on the terraces to help keep the soil in place. The constant flow of water actually protects this grass from the killing frosts of Winter (E4, p. 324-325).

Winter rainwater flows down the hillsides toward the terraces along manmade channels, bordered on the uphill side by rock outcrop and on the downhill side by a well-planned



A farm woman cultivating a hillside terrace in the village cluster of Ribeiros, in the state of Coimbra, Portugal. Note the traditional stone houses at top right. Photo: (E4, p. 323).

ribbon of living grass and trapped organic matter, forming a mat about one foot tall and wide. Possibly through centuries of co-evolution with these farmers, this particular type of "ditch grass" has very low capability for flowering and dispersal, which means that it doesn't spread like weeds to the terraces, where it isn't wanted (E4, pp. 324, 327-328).

Although botanists often take the presence of a particular plant in a particular area as a "given", Estabrook showed that the introduction and maintenance of plants such as rye grass and ditch grass is a cultural choice, a technology. Even if the farmers themselves are unable to articulate the whys and wherefores, it is up to researchers to uncover the important niches occupied by various plants and animals. A corollary is that our conception of ecology— including autecology, the study of a single organism's niche— needs to go much deeper than the popular conception, which is simply "being nice to nature" (E4, p. 320).

### A Renewable System of Fertilization

By nature, the soil surrounding these mountain villages is so infertile that no important edible plants could be cultivated there without fertilizers. Grains, beans, and other crops need nitrogen and other nutrients, and their growth removes these from the soil. How, then, did the annual harvests of Ribeiros continue for centuries?

The key is the addition of organic matter, principally brush called *mato* in Portuguese, which is sickled from the surrounding wild heathlands and enriched with goat-waste. Traditionally, nearly 30% of each family's total yearly economic effort was devoted to producing and applying these fertilizers (E2, p. 29). Three or four days each week, family members would take the goats to the heath-covered hillsides to graze on the *mato* while they cut and bundled additional *mato* for transport back to the village. There, the *mato* is unbundled and spread on the floors of goat stables for enrichment with their urine and excrement. After a few

weeks the enriched brush, called *estrume*, is removed, piled outdoors, and replenished with fresh *mato*. The farmers use big hoes to dig the *estrume* into the soil of the terraces before sowing their crops (E2, pp. 24-25). Roughly six acres of heathland are used to grow the *mato* needed to fertilize a single acre of crop (E2, p. 28).

This fertilizer is rich in the three key plant macronutrients: nitrogen, phosphorus, and potassium. The shale-derived soils of the region are especially poor in phosphorus and rich in iron, which tends to bind with phosphorus and make it unusable (E1, p. 53). By chemically analyzing the soil and the plants grown in small experimental plots of 1-6 square meters, Estabrook found that goat-wastes approximately double the nitrogen, triple the phosphorus, and multiply the potassium several fold compared to the levels naturally occurring in the *mato* itself. The amounts of organic *estrume* fertilizer applied annually by these traditional farmers in preparing a field for sowing corn was slightly more than what is needed to replenish the levels of all three macronutrients depleted from the soil by the previous year's cultivation (E1, pp. 51-52; E2, pp. 26-27, 30).

Besides supplying nutrients to the soil, organic fertilizer facilitates the penetration and retention of water during irrigation, and it helps bind the soil to resist erosion during the Winter rains. In addition, the goat-waste shifts the carbon/nitrogen ratio downward to a point that encourages growth of the soil microbes that feed on *mato* and rot it, releasing its nutrients; this underground composting (organic decomposition) occurs at a much faster rate than would occur without the wastes. The milk and meat of goats are all but ignored in Ribeiros, but the animals are perfectly suited to fertilizer production since they are sure-footed on the steep terrain and they like to eat the wild brush there, which is an outside input that village chickens and pigs cannot match (E2, p. 29).

It was only about 100 years ago that industrial synthetic fertilizers began to gradually replace manure, compost, and the other natural fertilizers on which farmers had relied for millennia. The industrial production of nitrogen fertilizers and other agro-chemicals is energy-intensive and has entailed burning unsustainable amounts of fossil fuel. In addition, Estabrook wrote, "This new technology will not remain sustainable when it depletes or contaminates the soil and water on which it depends, so that yields fall, or the costs of inputs increase, to the point that profitability is lost" (E5, p. 65).

#### Folk Wisdom and the Diversity of Species

Estabrook found that nine different species of heath shrubs and leguminous plants make up the *mato* of Ribeiros. (Leguminous plants are able to convert high levels of atmospheric nitrogen to a plant-usable form, which they contribute to the soil via root nodules.) One of these, *Erica arborea*, known among the villagers as *mato negral* ("dark *mato*"), has a botanical competitive advantage: left unchecked, it would soon become dominant and crowd out the other species. Yet *mato negral* is not superior to the others in its contribution of nutrients to soil fertilizer. In fact, all nine species make distinct contributions to soil fertility

and to other aspects of the villages' traditional economy (E1, p. 47).

Therefore, to help maintain the presence of all of these *mato* species, the villagers hold in check the dominant species, *mato negral*, by harvesting its woody root-crowns as the preferred fuel for fires used in distilling *bagaco*, a brandy-like alcohol. *Bagaco*, used mostly as a household cleanser and as a sterilizer for cuts, is traditionally made in the Fall from grape skins and pulp left over from fermenting wine (E1, pp. 44-45). When Estabrook asked the villagers why they used only *mato negral* as fuel for the stills, they replied that this is what their ancestors used, and they said that it's the "best" fuel for this purpose. Objectively, however, it is not superior to the other species of brush in this regard (E1, p. 47). Over time, people might well have forgotten the real purpose of favoring *mato negral* because, with its propagation continually curtailed by cutting, its dominance was no longer conspicuous (E1, p. 53).

Similarly, when Estabrook asked the farmers why they spread *mato* on the floors of their goat stables, they didn't identify this as a crucial step in making fertilizer for their crops, but instead told him this is to care properly for their animals by providing them food and bedding. Objectively, however, the goats rarely lie down on the dead, dry *mato* with its thorny sticks and twigs, nor do they eat significant quantities of it. A third example: the villagers consider as "the best" bedding material for the goats a species of *mato* that they call *urze* (*Erica arborea*). Objectively, *urze* is no better than the others as bedding, but upon chemical analysis its real significance became evident: it is much, much higher in phosphorus content than the others (E1, pp. 53-54).

From such observations, Estabrook drew the very important conclusion that scientifically astute practices are often coded in a form of unscientific folk wisdom that is easily remembered and passed from one generation to the next, and that plays an effective "triggering" role in farmers' activities:

An important reason to study a traditional agricultural system where it has supported a population for hundreds of years is to try to determine, from an ecological point of view, how various aspects of its technology contribute not only to the productivity but also to the sustainability of the system. Because traditional agricultural technology is usually developed empirically over generations, ecological explanations for some of the very specific, but seemingly arbitrary, practices are not always apparent in the oral tradition of the contemporary population, especially when these practices are more related to long-term sustainability than to short-term productivity. It is remarkable how the persistent empiricism of human beings, struggling to make their living in nature, results in practices that make ecological sense, even though they may be codified in ritual or explained in ways that seem superficial or not compelling ecologically (E1, p. 44).

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## Traditional Agriculture *continued from page 29*

The preferred explanations of these traditional farmers not only celebrate their participation in the traditions of their community, but also help them remember the details and timing of their practice. Because this technology is informed by culture, its real purpose is placed outside the realm of the responsibility of its practitioners, eliminating the need for a boss or decision-maker to implement it, and protecting it from question during years when yields are low. These cultural explanations help to encode and inform traditional ecological knowledge... for the benefit of its practitioners (E5, p. 67).



A “Bread Basket”  
Thriving on Rocky Soil

Farmers in Sebedelhe parish center, in the state of Guarda, Portugal, transporting *estrume* (shrubs enriched with sheep wastes) to cultivated fields in a cart drawn by two cows, yoked by their horns. Photo: (E3, p. 310).

Prof. Estabrook studied other remnants of pre-industrial farming in several villages located elsewhere in northern interior Portugal, about 50 miles northeast of Ribeiros in the state of Guarda. These farms are perched among high granite mesas and upper erosion valleys, at altitudes ranging from 1500 to 3000 feet. Despite the shallow, rocky layer of soil there, for centuries until the 1980s this area served as a commercial “bread basket”, producing rye and corn for the whole populous region known as the Beira Alta (E3, p. 308).

Here, the key fertilizer is the shrub *giesta*, enriched with sheep-waste in much the same manner as the *mato* of Ribeiros is enriched with goat-waste. The *giesta*, which is a leguminous, broom-like, woody evergreen, appears to be wild to a casual observer. But as Estabrook discovered, local farmers deliberately managed it by allowing or encouraging the growth of two species. The one that they call *giesta negral* (“dark” *giesta*, *Cytisus grandiflorus*) is grown around the edges of cultivated rye fields, while *giesta branca* (“white” *giesta*, *C. multiflorus*) is grown where the soil is most rocky (E3, pp. 310-311). The breeds of sheep that the farmers favored are those that can survive on scanty pasturage, because their main value is not milk, meat, wool, or lambs but instead the wastes that help fertilize cropland. Roughly five acres of cut *giesta* are used to make enough fertilizer for a single acre of rye (E3, pp. 317-318).

Using small experimental plots, Estabrook found that rye plants grown with the waste-enriched *estrume* grow to 2-3 times the size of plants fertilized with *giesta* alone (E5, pp. 60-62). In addition, since a rye field fertilized in this way is continually being replenished with key nutrients, the crop can be intensively grown and harvested for 6-8 consecutive years without fallowing. During the few years of fallow, farmers allow the surrounding *giesta negral* to take over the field, where it grows rapidly and is harvested for later use in making *estrume* (E3, pp. 310-311). Estabrook suspected that in much of northern interior Portugal, fallowing was not even

a traditional practice but arose in the 20<sup>th</sup> Century as a necessary expedient when pre-industrial methods of cultivation were gradually undermined (E2, p. 30).

### Learning from the Decline and Contamination of Farmways

The three decades in which Estabrook did his fieldwork in Portugal were crucial ones, exactly because traditional agriculture there was dying out at the time.

In the Beira Alta region, the steep fall in census numbers for farmers, sheep, and goats reflects how efforts to transform the local agriculture with tractors, chemical fertilizers, and other modern technology has backfired. Even in the short term, shallow soils and mountainous terrain are ill-suited to this kind of farming (E5, p. 66). By 2006, Estabrook observed that “very little agriculture is practiced in Beira Alta at present” (E3, p. 319).

Ribeiros and the other villages of the remote Pracais Valley suffered an even worse fate. After World War 2, modern roads, vehicles, and electrification eased government intrusion into villagers’ lives there, especially in the form of tax collection and military conscription. To escape the Salazar dictatorship (1926-74), many men quit farming and emigrated overseas. The villages rapidly depopulated, and the cultural knowledge that had sustained hundreds of villagers and their traditional agriculture all but disappeared. In the early 1990s, a forest fire swept through the upper reaches of the valley, destroying the trees and the heathlands that are the basis for the old ways of cultivating. By 1997, virtually no more traditional farming was being done in the entire valley (E2, pp. 30-32).

On a more positive note, Estabrook described how the “bungling alterations” that young people made when they returned to “fix up” their grandparents’ farms in Ribeiros had allowed him to learn new things about these farms (E4, p. 323). He went on to observe:

There are some advantages to studying traditional cultures and technologies that may be still practiced by a few people, but that are otherwise severely invaded, contaminated, and disrupted by ‘modern’ influences. ... [S]ome explanations are evidenced more clearly (or at all!) because the culture or technology under study is breaking down. We can take data from fortuitous ‘experiments’ that would be professionally unconscionable to have performed ourselves, and in this way further our understanding, even as we regret their consequences. Thus, we can choose to try to preserve a culture even if its pure, original form has been contaminated by progress, and we can learn from the contamination things that we might never have been able to learn otherwise (E4, p. 328). •

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### Sustainable Agriculture *continued from page 26*

have only vague ideas about where their food comes from or what it takes to produce it. That is not a resilient or sustainable system.

Farmers in developing countries have been priced out of the profession as cheap commodities from other countries flood their markets and undercut prices. Millions of farmers in Mexico have been displaced by cheap corn from the U.S., leaving them little choice but to pack up and head to a major city where they settle in the growing rings of peripheral slums. Faced with similar predicaments, thousands of farmers in India commit suicide each year. Corporate globalization of food systems pits farmers around the world in a brutal competition for cheap production and profits. Beyond this, the one-sided preference for export-commodity crops is disintegrating models of subsistence farming and destroying the ability of communities around the world to feed themselves, making us all dangerously dependent on a fragile and complex shipping network for our food.

Could a for-profit food system be a sustainable system? I’ll leave that for economists to debate. What can be said with confidence is that our infinite-growth model has to be reformed to more of a steady-state economic model. Financing agriculture today requires that farmers take big loans to run these massive, mechanized operations. Farmers are pawns within this system, incurring huge sums of debt for equipment, proprietary seed, chemicals, etc. Then they’re forced to sell their harvest at prices determined by commodity markets, often getting less than is needed to make a living. Finally, the brokers and other middlemen come through and snatch most of what profit the farmer has left. In the end, after months of hard work, they have to take off-farm jobs for additional income just to service their debt, and this is unsustainable.

After the on-farm activities have concluded and the harvests have been gathered, we will also need new strategies to create sustainable means of transportation and distribution, packaging, preservation, marketing and sales, and finally preparation (cooking). Those topics are beyond the scope of this article, but they will require as much thought, innovation, and change as the production system does.

Most people read the above list of necessary changes and dismiss them as extreme, radical, and impossible. I find it strange that what passed for farming for thousands of years is now considered radical, but the highly destructive, violent, polluting, inhumane, impoverishing systems that we’ve created in just the last 60 years are now considered normal. The modern era of agriculture is really just a petro-techno aberration, doomed to the scrap heap of history. It has given us abundant, cheap food, but the price for that has been environmental destruction, species extinction, and a growing epidemic of obesity, diabetes, and other illnesses. I would submit that what we call farming today is, by definition, extreme and radical. It will be impossible to sustain as fossil fuels run out, as the soils thin, as nature fights back, as the technologies fail, and as people everywhere get louder, push back, demand change, retire the current catastrophes, and reform the systems. •

## Taiwanese Student Sees Good and Bad Sides of U.S.

*What follows is an e-mail interview of Kai Rou Chen, a woman from Taiwan who is attending a community college in Minneapolis. To give the clearest impression of her, we have barely edited her words. The interview was conducted this past October by Marianne Brandt of Northville, MI, an intercultural coach and consultant who recently joined the Editorial Committee for this magazine. To see America, Kai Rou Chen has traveled by bus to 22 states so far. Marianne met her on one such trip and took her around to visit some sites in Detroit and Ann Arbor.*

Q: What surprised you when you arrived in the USA?

A: Before I came to this country I've already know some facts about the United States. However, really being here still shocked me when I witnessed some matters. For instance, homeless people and economic inequality. The first city I've visited in the US was San Francisco. There were so many homeless people and druggies just a block away from the most thriving commercial area, Market Street. After that I've visited several different cities and met people. I'm surprised by the significant difference between rich and poor. I never really saw that in the same way before, because in my country, Taiwan, everyone is pretty average. It's really rare to have someone you know is actually homeless or in a seriously bad condition. But here, I see homeless people every day, I have classmates who are homeless or formerly homeless. Also, I've met people who chose to be homeless. I have other friends from middle or middle-upper class families, but their life is completely different. I found it interesting that different groups of people go to different places, like different grocery shops. The countryside of the US is really very rural. I came from a small island, Taiwan, so it is hard to imagine such a significant difference.

And America is not very progressive like the rest of the world thought, or I should say it doesn't match the stereotype of America. People fight over birth control issues, women still get lower paid than men, there are people who don't believe in global warming, there are people still seriously racist. Another thing is that the social system is, once you make a mistake, you likely will fall into an infinite loop of failure in life. Like if someone commits a crime, it is likely this person will never find a normal job and get housing. Once you get sick, the medical care is so expensive here, your life likely will be ruined completely. This country doesn't give many opportunities for people who don't have money and power, regardless if they hardworking or not.

Q: What do you perceive is the major difference between the Taiwanese and American cultures?

A: Tips. I used to work in bars or restaurants as my part time job, back to the days I still living in Taiwan. I always found it awkward when people tip me, like they do in the US. I think if my job is to serve you, of course I should treat my customers nice and provide them decent service regardless if you going to tip me or not, that is part of my job. Tips make me feel like I'm literally lower than the person who tips me. And we all know America is "land of free" and "everyone is equal"— however, I really disagree with both of those. I feel the strong classism in America. The tip is the most obvious evidence for me. I understand the complex background of the tip thing in the US, the business owner don't pay decent wages for their employees, therefore waiters and waitresses have to make money from the tips. I have sympathy with those workers' situation and sometimes feel upset about the capitalism system.

Q: Did you make friends with Americans? Was it difficult?

A: Yes I made friends, but not much and not close. I think part of the reason is I'm living in Minnesota. Personally, I think people in Minnesota tend to keep a polite distance with new people, it sometimes makes me feel people are a little bit cold. I had the hardest time to build friendships with white Minnesota people— my friends who are white mostly used to live abroad. I asked other people about this problem, they said usually Minnesota people prefer to hang out with their old friends who they were growing up with. Therefore most people like me from other countries or states, their only option on making friends is make friends with people who are also from other places. Among people [from Southeast Asia] are easier to make friends with. However, outside of Minnesota when I travel to or met people from bigger cities like New York or Chicago, it is always very easy for me to get along with them, and my teachers from bigger cities have better relationships and connections with me.

Q: When you arrived in the US and took classes, is there anything that would have helped you with the transition?

A: I really appreciate the advisor system in America. They throw events to gather students and help us to pick classes. So I don't have trouble to pick classes. And there is a website that I could research specific instructor's teaching reputation, which I think is also helpful.

It is great that school in America is a place that if you ask, there are people will help you. School here also teach students how to find resources on our own,

teach students how to be an independent learner, I think that is a lifetime gift.

Q: What do you appreciate about having lived in America for a while?

A: Yes, very much, I think I have eye opened and mind blowing experiences here. I've met people and seen things that I could never meet or see in my country. I learned how privileged I am and I am very grateful. I think my whole life be influence by American culture very much, I learned English from American pop culture, I read news from media in the US. Even though there are a lot of flaws and ridiculous situations occur in the US, I still like this country very much, and it was a dream came true when I finally had the chance to stay here for a while. •

## More from This Magazine on Environmental Challenges

Below is a roundup of materials previously published in this magazine that are related to global environmental challenges. All issues are freely available via the online archive,

<http://www.schoolcraft.edu/department-areas/international-institute/international-agenda>.

- Adren Rice's [article](#), "We Are What We Farm: What Sort of Agriculture Can Our Earth Sustain?" (Fall 2015)
- Ann Emanuelsen's [article](#) on tap water, "*Leitungswasser*: An Untapped Resource in Germany" (Winter 2015)
- Hana Dughman's [painting](#) "Harp Seal Hunt" (Fall 2014)
- Sarah Osen's [poem](#) on micro-plastic pollution, "Plastic Beach" (Winter 2013)
- Randy Schwartz's [sidebar](#), "Russia and the Global Battle for Energy" (Winter 2013)
- Cynthia Jenzen's [book review](#) of *Brewing Justice: Fair Trade Coffee, Sustainability, and Survival* (Sep. 2012)
- Randy Schwartz's [sidebar](#), "Brazil: The World's First Biofuel Economy" (Sep. 2012)
- Randy Schwartz's [sidebar](#), "Oil from Canada: Boon or Curse?" (Sep. 2011)
- Caroline McNutt's [article](#) on saving marine turtles in Brazil, "The Universe and Everything within It is Crying Out" (Sep. 2010)
- Zhanay Sagintayev's [article](#), "Afghanistan and Pakistan: GIS Applications to Help People" (Sep. 2009)
- Anna Maheshwari's [article](#), "A Course Assignment Motivated by the Bhopal Disaster" (Jan. 2009)
- Sam Hays and Randy Schwartz's [materials](#) about Vandana Shiva and the commodification of water and land in India (Jan. 2009).

## Peru *continued from page 14*

A three-week course module created and piloted by the author is available through the MIIE.

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# LESSONS from Working with International Students and Employees

by Marianne E. Brandt

*Marianne Brandt of Northville, MI, is a new member of the Editorial Committee for this magazine. She is originally from Germany, and at age 21 she moved to the U.S. where she has had two sizeable careers, first as an academic services officer for Wayne State Univ. and then as an intercultural consultant and trainer for schools and multinational corporations.*

Nowadays people working at any level of an organization need to have a global mindset. This is as true for employees working locally as it is for those embarking on an expatriate assignment.

A friend who was born in America calls me the “global peace baby”. I had never thought of myself that way before. When I started my own intercultural consulting business more than 20 years ago and had to come up with a name that reflects its purpose, I decided to call it “Global Bonding – Facilitating Global Transitions”.

In the beginning, I was involved in several global projects that made use of my education along with my skills in language, organization, facilitation, and coaching. For the last 15 years, most of my work has been as a subcontractor for several intercultural service providers, working with employees and their spouses on expatriate assignments going overseas or coming to the U.S. I have also had an expat assignment of my own, working with students in China hoping to come to the U.S.

This essay summarizes how I came into this type of work, and it distills the key lessons and principles that I’ve learned over my decades of involvement.

## Immigrating to America

I was born at the end of World War 2 in the northern part of Germany. After the war, my parents would talk very fondly of Americans. Sometimes on our walks we would run into American soldiers stationed as part of the occupation forces, and they were always friendly to us. I think this is how my fondness for America and Americans started. It was further confirmed when I worked for the U.S. Army in Bremerhaven, Germany.

Since both my parents had had only an 8<sup>th</sup>-grade education, they had never pushed me academically. I’d only finished through 10<sup>th</sup> grade, the last two years of study at a commercial school with courses in typing, shorthand, bookkeeping, English, etc. I’d had five years of English and wanted to utilize it, so at age 18 I started

working with the U.S. Army as a translation clerk for officers and enlisted personnel. It was an opportunity to practice my English. And for the first time, I experienced praise and received a certificate for good performance, something which was missing in our German culture. It was great preparation for working in America.

When I left Germany for the U.S. on my own at age 21 in 1965, I wasn’t sure what was in store for me. But I realize now that my love for America and the warmth and kindness of Americans is what gave me the energy and courage to leave my own country. My immigrant story of success is one alongside millions of other people who came before and after me. At the same time, I realize that America and the world have changed a lot since my arrival. And so have I.

In 1965, all that was required for Germans to immigrate to the U.S. was a sponsor. I had been exchanging letters with a pen pal in America for a few years, and his parents agreed to sponsor me and also offered a room in their home. They welcomed me with open arms— including more hugging than any German is used to! Within two weeks, I started working for a Detroit bank, where my supervisor in the Foreign Exchange Department was German. The bank provided tuition reimbursement for my ESL courses at night. After four years, I was able to quit my job and study full-time at Eastern Michigan Univ. where I graduated with a bachelor’s degree in foreign languages, including French and Spanish. I was now versatile in four languages.

I found a job as an assistant for two Wayne State Univ. professors editing a children’s literature journal. While working for them, I also enjoyed helping students who came in to talk to them, and that motivated me to enter WSU’s master’s degree program in counseling. In the course of that program I was promoted to academic services officer assisting students with student services related activities. Eventually I was granted tenure and also earned an MBA at Wayne State.

## Breaking into the International Arena

In the 1980s, the American economy and worldview were becoming more open. We started talking about “globalization”. During a one-year leave of absence from WSU, I worked for a small start-up company whose purpose was teaching languages and providing cross-cultural programs. As part of that, I provided private German lessons to executives and wrote a *Handbook for Language Teachers* to explain the company’s policies.

After Ukraine declared its independence from the Soviet Union, Wayne State collaborated with a school in Lviv, Ukraine, to help set up an MBA program there. I

volunteered to teach aspiring MBA students at the Institute of Management in Lviv. With the help of an interpreter, I taught Management of Human Resources for two Summers in the early 1990s. I found these students eager to learn and excited to come to the U.S. as part of their studies for a 3-week internship. While they were in Detroit, I hosted a few of them who had been in my class in Lviv. I remember taking one of them to a supermarket. She was so overwhelmed that she suddenly told me she needed to leave the store. She was upset because in Ukraine she could not buy the things for her children that were so plentiful in America. I hugged her (yes, I had learned to hug by then) and said, “Lydia, you are going to get used to it”— and she did.

Under the *Glasnost* policy in the USSR in the 1990s, it became easier to travel to Soviet countries. I joined a group called “Global Family” from California that was forming relationships with people in Russia, and we went to visit people in Moscow and St. Petersburg. I remember one of the Russian ladies telling us, “Come to Russia to teach us. Do not have our people come to the U.S. because then they would want what you have, and they can’t have it.”

#### Workshops for Multinational Firms

I wanted to be part of the exciting change that was happening in the world outside my academic setting. Germany had risen from its utter defeat and the ashes of World War 2, taking its place as a peaceful economic giant in Europe and the world, accelerated by the formation of the European Union in 1993. Companies around the world were entering this growing global market, and in order to compete they were looking at its impact on corporate culture. Facilitators speaking foreign languages were in high demand.

One of the connections I had made during my leave of absence offered me a contract job as a bilingual facilitator to help a firm change its corporate culture from hierarchy to cross-functional customer focus teams. I made the huge decision to resign from WSU after more than 20 years there. Following two weeks of training, in January 1994 I was off to Europe to facilitate workshops for the company, first in Germany and then in Switzerland.

It was after this experience that I started my own company, Global Bonding, to provide intercultural programs and language teaching to the rapidly growing field of multinational companies interfacing with people from all different cultures. Because Germany was my major focus in the beginning, I prepared a handbook entitled *Success in Germany* for employees and their spouses assigned there. I also taught German to executives, employees, and family members.

Ford Motor Company offered me a contract position as part of a team working to identify, document, and implement global best practices in product development. This project resulted in multimillion-dollar improvements in efficiency. My initial hire was for six

months, but I ended up working four years at Ford. I traveled to Germany and England and enjoyed working with engineers, whose way of thinking tends to be organized, structured, and linear— just like German people! One engineer returned from an assignment in Germany and called it “an engineer’s paradise”.

As I gained experience and became more comfortable with sharing my knowledge of American, German, and other cultures, more and more of my work involved assisting mostly automotive employees to relocate with their spouses from the U.S. to overseas or vice-versa (more about this below). In addition to two-day workshops for such families, I also provided workshops helping joint-venture companies to create awareness of different working styles among their multicultural employees.

#### Helping Chinese Students Bound for the U.S.

After the 2008 recession, when the business of intercultural training experienced a downturn, I applied for a college counselor position in Shenzhen, China. I was in a group of Western teachers there who set up an international curriculum at one of the top Chinese high schools for students who wanted to study at universities in the U.S. The teachers taught Advanced Placement classes, including English, and my job was assisting these high-achieving Chinese students with the application process to American universities, setting up and computerizing the application process, as well as facilitating several support groups. I had meetings with parents to familiarize them with the requirements and life in America. I also met many admissions officers from the U.S. who wanted to recruit our Chinese students.

My two-year stay in China was one of my most fascinating experiences. I could relate well with the students because of my own struggles long ago: I, too, had studied in the U.S., and English was not my first language. I loved the Chinese students and had the most amazing conversations with them on all levels, intellectually, spiritually, philosophically, etc. I also became aware of how my German values had remained strong, some of them often clashing with Chinese values (more about this below).

#### External and Internal Adjustments

Most individuals moving to a foreign country face adjustments and challenges of two types:

- The *external* or practical aspects of daily life, such as housing, shopping, getting around, meeting the neighbors, and understanding the local language.
- The *internal* or psychological aspects, such as how to fit one’s personal values into those of the host culture. More generally, the challenge here is to make decisions about adapting to the new culture when issues of personal identity seem to clash with those of the host culture.

*continued on next page*

## Working with Internationals *cont'd from p. 35*

Larger companies in the Detroit area usually provide two-day intercultural programs for their employees to familiarize themselves with aspects of the new country. The specific program content is customized to the needs of each family and usually includes the following:

- Understanding culture – general introduction to new culture and developing cultural competence
- Roots of Culture – the history, current events, educational system, and geopolitical influences on today's cultural values
- Daily Life in the New City – practical daily-life challenges, including shopping, transportation, banking, social protocol, and etiquette
- Cross-Cultural Analysis – an exercise for intercultural understanding and self-awareness
- Working in Your New Business Environment
- The Transition Process – description of the normal pattern of cross-cultural adjustment, and identifying causes, symptoms, and strategies for managing culture shock.

These topics are covered by the facilitator in collaboration with two to four resource consultants with experience living and/or working in the host country.

To begin to address the issues of external adjustment, prior to moving a family overseas most firms offer a “look/see trip”. During that time, the family decides where they want to live and explores housing in the area. This trip usually solidifies their decision to take an overseas assignment. But sometimes it does the opposite. A couple of years ago, I was scheduled to facilitate a program for a family moving to Shanghai, China. While on their look/see trip, the whole family got sick and decided not to move. However, in most cases the look/see trip reduces anxieties about the anticipated move.

For families relocating to the U.S., typically a *relocation consultant* helps them upon arrival with settling-in matters such as opening a bank account and obtaining a driver's license and social security number. Other aspects of daily living, such as shopping, restaurants, transportation, medical care, and recreational activities, are typically part of the two-day intercultural program and handled by the *resource consultants* who are part of the program. This is the most helpful part for the non-working spouse.

With regard to issues of internal adjustment, four levels of cultural competence are summarized in the chart in the next column, which is one of several flipcharts that I post on the surrounding walls when I conduct intercultural programs.

**Level 1 – Open Attitude.** How receptive are people to cross-cultural learning and to maintaining an open attitude toward cultural differences? Willingness to adjust is most critical to success in overseas living. Most people going on an international assignment are excited and looking forward to their adventure. However, if ei-



ther the employee or the spouse is not interested nor open to even listening, or there is tension in their marriage, they might return early. Such a lack of motivation and willingness to learn are much more common among the spouses of the employees. Recently, I worked with a U.S. family with three children and I was concerned about their readiness for an assignment in Germany. My concern was confirmed when I was informed that the wife and the children had left the husband in Germany and had returned to the U.S. prematurely after only a few months overseas.

Lessons learned: Just as stress and lack of commitment to a marriage may lead to divorce, I have found that a similar principle applies to families relocating overseas. This also goes for students whose parents want them to study overseas, when the children might not share the same desire or are not ready for it.

**Level 2 – Self and Other Awareness.** A confident *self-aware* person is able to articulate his or her own cultural values, beliefs, and attitudes. He or she also accepts the fact that cultural differences often lead to misunderstanding. The *other-aware* person recognizes the cultural values, attitudes, beliefs, and behaviors of another country in order to develop new cross-cultural skills, especially in business dealing.

Lessons learned: Individuals able to reflect and examine their emotional reaction to incidents and to practice culture-specific responses generally fare better during their stay in a foreign country. It can help to share one's experiences with a “cultural buddy” in the country and to ask for their feedback.



16 regional offices around the world, one of them located in downtown Detroit at the Renaissance Center.)

As a first example, some cultures emphasize tasks above relationships, while in other countries the reverse is true. For comparison purposes, individuals going through an intercultural program might be asked to locate their own country and their destination country at a pair of points on this scale, somewhere between the two extremes along this culture dimension (the figure below and the two on the next page are from the BGRS Expatriate Manual). As a general rule, an American or German relocating to South America or Asia will have a difficult adjustment in this regard. To Germans, the most important thing is to get the job done. Not so for Brazilians and some Asian cultures, where developing and maintaining relationships is more important. Personally, I struggled to adjust to China, where a relationship tends to be valued more than the task at hand. As I saw it, the reason I was hired was to do a job, not to join others going out for dinner after work. Nevertheless, I was able to adapt to the situation.

Cross-Cultural Analysis

A *cross-cultural analysis* is a self-awareness exercise that compares values in the home country and the host country in a number of dimensions, and analyzes how those values relate to the personal values of the expatriates. This is one of the most important aspects of an intercultural program for relocating individuals. When I facilitate programs on behalf of BGRS we use several social and business dimensions, including the following three examples. (BGRS, formerly Brookfield Global Relocation Services, is an international firm with

One of the first questions that I ask my clients coming from other countries to the U.S. is, “What are the things you notice about Americans?” Invariably, people answer: “Americans are friendly.” However, oftentimes Europeans confuse friendliness with friendship, and many are disappointed. Lesson learned: Friendliness does not imply that people want to be friends with you.

In general, people from Asia and South America are less direct communicators than Americans and Germans; and comparing Germans with Americans, the Americans are even less direct. The latter might say, “Let’s get together” or “I’ll call you.” But do they really mean it? Germans take language very literally and expect to receive that call in a day or two— they are disappointed when oftentimes nothing happens. The phrases “See you

*continued on next page*

### Task vs. Relationship

<p><b>A</b></p> <p>In some cultures, focusing on the task is considered essential to get the job done. Results, outcome, target and completion of goals are highly valued. Relationships frequently develop as a by-product of working on a task with someone.</p>	<p><b>B</b></p> <p>In other cultures, good relationships with co-workers are the most important factor in getting the job done. Smooth, friendly and positive interpersonal skills are highly valued. A person gets things done by first establishing relationships with the right people, gaining influence and doing favors for people. Accomplishment of tasks is a consequence of good relationships.</p>
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Where would you place your own country and your destination country on this dimension?

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Working with Internationals *cont'd from p. 37*



## Friendship

**A**

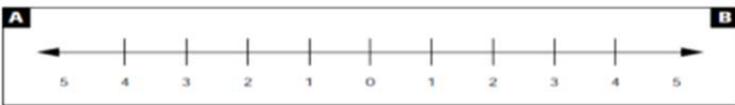
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In some cultures, people should be friendly to everyone. Having a wide circle of friends is valued, but it is relatively easy to move in and out of relationships.

**B**

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In other cultures, mutual commitments slowly increase as familiarity increases; strong, long-term loyalty to a small number of close personal friends is appropriate and desirable. Little effort is made to be friendly toward people in general.



Where would you place your own country and your destination country on this dimension?

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## Directness

**A**

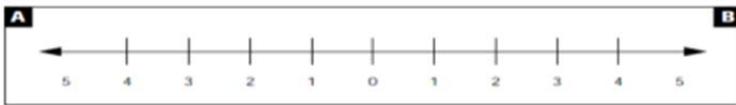
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In some cultures, directness, getting the facts on the table and dealing with them openly and honestly, is important in working relations. Frankness, even to the point of bluntness, is valued. It is felt that people should “speak their minds” clearly and plainly without “beating around the bush.”

**B**

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In other cultures, dealing with matters indirectly—with concern for the feelings of and relations with others—is important in working relations. Tact and diplomacy are considered essential to avoid giving offense to others. Therefore, people tend to be subtle and indirect in their communications.



Where would you place your own country and your destination country on this dimension?

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later” or “Talk to you later” usually mean to the German that they will see or hear from you later that same day; by contrast, the American simply means “goodbye”. I tell clients to give a test: Say, “We get so busy, let’s get out our calendars and set a date right now when we’ll get together.” Depending on the response, you will know what was meant and hopefully you will not be too disappointed. Lesson learned: Don’t make any assumptions. Ask questions when you are not sure how to interpret what is being said.

Common Challenges People Face

*Language, language, language.* Based on my work with people coming to the U.S. from all over the world,

their speaking and writing skills in English are vital for their success.

When I worked as the director of student services at one of the top high schools in China helping students prepare for studies in the U.S., our major concern was their command of the English language. As a supplement to the faculty teaching English courses, I started a “Conversation Circle” so that the students could practice their conversational English to prepare for successful studies in the U.S. The biggest challenge for such students— as for myself when I first studied in the U.S. long ago— is that homework assignments require at least double or triple the amount of time. Term papers written in English are a real challenge.

An employee coming to the U.S. from overseas usually knows English well enough, but his or her spouse or child might not know the language well or at all. Generally, in these cases the intercultural program would have to be conducted in their first language with the help of an interpreter (or in the case of Germans, I can conduct the program in German myself without need of an interpreter). I can also try to find resource consultants who speak the family's first language. But in addition, firms often provide language lessons for employees and their spouses.

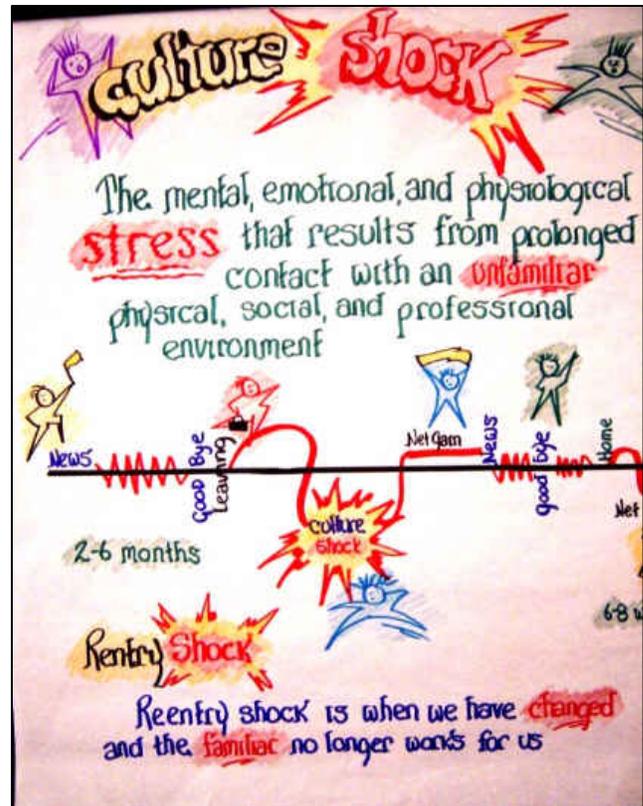
Americans going on assignments abroad rarely speak the host country's language. As a result, work meetings might have to be held in English. While most professionals around the world speak some English, they might not be fluent in it, causing some frustration for them. For the American spouse and children, language difficulties make it especially challenging for them to get around in the host country, although most of them manage. When I was in China, I did not speak the language, and it was important that I had my Chinese business card with me at all times so that I could always take a taxi back to my apartment.

*Food.* Mostly people coming from Asia have a hard time with the food in the U.S. Luckily, in southeastern Michigan there are enough grocery stores and restaurants selling Asian food. After I returned from China, I visited several of the Chinese students who were studying in universities in the surrounding states, and one of their major complaints was that the cafeterias did not serve Chinese food. As a result, one of the students did her own cooking in the dorm room. On the other hand, one of the larger universities that I visited had a sizable population of Chinese students and offered a menu featuring Asian foods.

*Transportation & Weather.* Getting around in the Detroit area without one's own car is very difficult. Many international students and spouses do not own vehicles and/or do not have driver's licenses. Some of the spouses might not even know how to drive. The weather is an additional concern for people who come from semi-tropical or tropical climates and might never have experienced snow; thus, preparing them for a cold Winter with snow is all-important.

Recently, I talked to Khalid, one of the international students here at Schoolcraft. He was born in Jordan, lived for five years in Vienna, Austria, where he attended secondary school, and then studied in Hungary for two years before coming to the U.S. to study at Schoolcraft. He told me that one day he arrived in class all drenched from the rain. The teacher asked him, "Why are you so wet?" "I walked" he responded. "How long did you walk for?" she asked. "One hour" he said. "Why?" she asked. When Khalid replied, "I like to walk, and the rain doesn't bother me", the teacher and students were aghast and could not understand why he didn't ask for a ride. He shared with me that in Austria, unless it got too cold, he would walk for hours rather than taking public transportation, and it was not a big deal for him.

*Transition issues and culture shock.* As noted above, an expatriate employee usually adjusts well to the host country, but the adjustment is more challenging for spouses and for students. If the spouse gives up his or her job to accompany their partner, then it might be especially difficult. *Homesickness* is a major concern. Many students call their parents every day, which can be a challenge due to the time difference.



Six months is usually a good timeframe for judging whether people are successfully adjusting to a new culture. Those who understand how to work with cultural differences will succeed, and those who don't might have to do some honest reflection to find the cause.

During the transition period, each time one comes to grips with a new and previously unfamiliar aspect of the local culture, it helps to think about this framework involving three alternative strategies:

- Adapt: tweak the local custom to fit into your own value system
- Adopt: incorporate the local custom more or less unchanged
- Affirm: decide that "I am who I am and I am not changing."

In selecting among these options, one's personal comfort level is very important, balancing it with flexibility.

When I was struggling at times in China, one of my friends wrote: "Teaching about cultures and having cultural knowledge doesn't translate to adaptation, and we have to know ourselves well enough to judge what is beyond our comfort level or willingness to embrace." •

# Manchus and Mongols:

## How Two Kinds of Outsiders Tried to Run the Chinese Empire

by Sasha Gill-Ljunghammer

*Sasha Gill-Ljunghammer is a Schoolcraft College student from Plymouth, MI. She wrote the following paper during the Fall 2016 semester and wishes to thank her Chinese 101 instructor, Li Zhang, for her encouragement and guidance.*

The vast, culturally diverse, and resource-rich area that is today known as China has been a target of conquest eyed by many great powers since the beginning of history. Two such empires of foreign origin, the Mongol and Manchu empires, were able to successfully unify the Chinese and establish grand dynasties.

The Mongols, originating from Mongolia, managed to overtake the previously reigning Song dynasty, unify China and establish the Yuan dynasty (1271-1368), which was the first to be controlled by non-natives.

One dynasty and 276 years later, the Manchus, originally based in Manchuria, came to power following the fall of Ming rule, supplanting it with their own Great Qing dynasty (1644-1912), the last imperial dynasty of China.

Although separated by nearly three centuries, these dynasties ruled China with some surprising similarities as well as important differences.

### Who Holds the Reins of Power?

When the Mongols, led by Kublai Khan, consolidated power and officially founded the Yuan dynasty in 1271, they needed to massively expand their governing apparatus. To do so, they brought in officials from foreign states. This strategy reflected the Mongolian ideology that city-dwellers, in this case the Chinese merchants and intellectuals, are inferior to nomads such as the Mongolians. Because of this, their rise to power was particularly bloody. The foreigners, mainly Turks, Tibetan Buddhist monks, and Central Asian Muslims, filled many key roles in the Yuan government. This also showed a deep mistrust for the native Chinese people and would cause further tensions later on in their reign. Still, some Yuan rulers appointed Chinese advisors who helped preserve ancient Chinese history.

Mistrust of the Chinese is additionally shown by the Mongols in the form of their 'four class system' that developed during this time. This classification scheme separated the population into four main groups. The most privileged of these groups were the Mongols themselves, followed by the other foreigners, then the northern Chinese (*han ren*), and lastly the southern Chinese (*nan ren*). Due to this system, foreign government officials, for example, were considered higher-ranking than their Chinese counterparts.

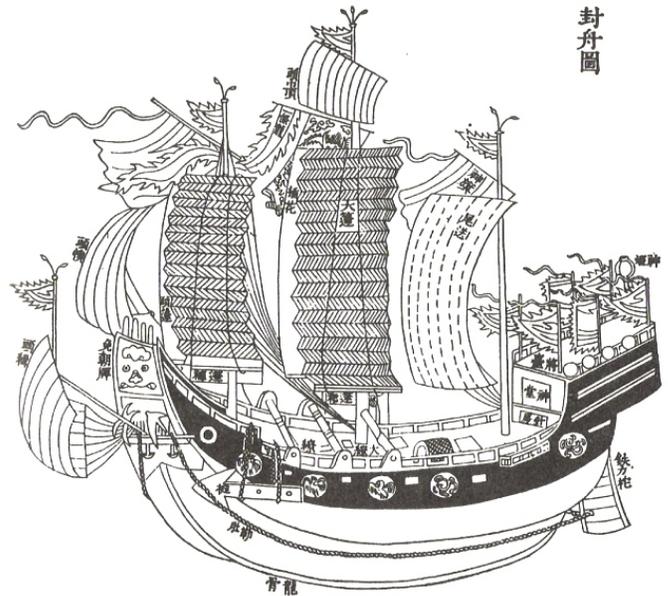


Image: Public domain via Wikipedia

This Yuan-dynasty print from the 14<sup>th</sup> Century depicts a *junk*, a wooden sea-vessel with fully battened sails made of bamboo matting. Such ships often had crews of hundreds of men.

This system clearly discriminated against the Chinese and spawned much resentment among them.

The Yuan approach is starkly contrasted by the Qing dynasty's method of filling official government positions. As the Manchurians established their dynasty in 1644, they placed many former Ming government leaders in new official roles. This was a measure to help the new government control the former Ming-ruled regions. Although the Ming officials were never given Qing imperial positions of real power, the roles in which they did serve symbolized a great Chinese loyalty to the Manchu government.

Another aspect of rule in which the two dynasties differed was their respective methods of replacing an expired emperor. Breaking with the Chinese tradition of naming a son as heir, the Mongols followed a practice of having a council of notables select an acclaimed male member of the current emperor's family. This process, while meant to ensure the alignment of a proficient heir, caused political unrest each time a Yuan emperor died. This set an unusually weak foundation for such a massive empire, which spread out over most of Asia.



Image: Public domain via Wikipedia

Dorgon, also known as Hošoi Mergen Cin Wang, ruled the Qing dynasty as prince-regent during 1643–1650.

In variation to this Mongol tradition, the Manchus followed the earlier Chinese tradition of appointing sons as heirs. However, if the heir was of a young age, the power could temporarily be handed to an unrelated faction. An example of this within the Qing dynasty occurred with the death of its first great emperor, Dorgon. Dorgon had appointed four officials to govern until his seven-year-old son came of age. This proved a flawed system as well, inasmuch as these four officials changed and undid much of what Dorgon had worked for over his lifetime. The primary alteration was the equality between Manchus and Chinese that had been attempted by Dorgon, as the officials began a harsher rule of Manchu power.

#### Cultural and Economic Exchange

Despite the resentment caused by employing foreigners in government roles during the rule of the Mongols, the practice did contribute to contact with other cultures and furthered the growth of the empire. To develop the economy, Yuan officials began a more open trade policy. As more ports were opened, not only did the export of Chinese goods increase, but China imported a greater quantity of specialty items from other regions, notably spices and medicines. Trade along the Silk Road was especially encouraged during this time period, which contributed to the Yuan dynasty becoming one of the wealthiest powers at the time.

For its part, the Qing dynasty adopted a rather *laissez-faire* approach to trade and enforced minimal regulations. This is despite the common view that the Qing dynasty was an “anti-merchant” dynasty and attempted to limit trade with exceedingly heavy taxation of the merchants; the facts do not seem to support that. Even though traditional Manchu culture was decidedly rural, based on settled farming and advanced agriculture, under Manchu rule both the number of markets in China and the portion of the Chinese population living near markets grew exponentially. This is considered to have contributed to a large economic growth up until the Opium War in the 1840s, which would prove disastrous for the Qing economy.

#### Peasants and the Burden of Taxes

The Mongols initially attempted a lenient form of taxation, in which the peasants were taxed twice a year based on their real estate and profits. On the other hand, the majority of the riches stemming from trade did not flow into the countryside, and therefore the wealth gap between the Mongol elite and the Chinese peasants grew enormously during the Yuan dynasty. Furthermore, due to the devastating military defeat of attempts to extend the Yuan empire into Japan, taxation was increased greatly in the later years of Mongol reign in China, causing a political unrest.

Like the Mongols, the Qing adopted a lenient form of taxation. In fact, the Manchus demanded some of the lightest taxation the region had ever seen. Taxation was reduced even more in the event of a famine or natural disaster in order to protect the peasants. Furthermore, the majority of the tax money was invested in infrastructure and public works. This, coupled with increasing trade, was cause for a period of peace following the Manchu consolidation of power.

#### An Overall Assessment

Ultimately, historians believe that the fate of the Yuan dynasty was sealed by its heavy taxation, which in turn increased class aggression; by the political unrest that resulted upon the death of each leader; and by the four class system which increased racial tension. Being further weakened by natural disasters and crippling imperialistic failures, the dynasty met its end at the hand of a peasant uprising in 1368.

At the fall of the Yuan dynasty, China was impoverished and weak. However, the political foundation that had been built by the Mongols made it possible for another dynasty to take over rule of a unified China rather than fragmenting the region into multiple states as had existed prior to Mongol rule. The Yuan dynasty also was a time of cultural diversity and great growth of knowledge.

While it is rather safe to say that the Manchu rule of China was much more successful than that of the Mongol, the Qing dynasty was likewise plagued by miscalculations. Being the first dynasty to accept influence from the western world, the Manchu struggled to find peace with the West and ultimately failed, resulting in the Opium Wars with

*continued on page 43*

# The Reckoning

by Leigh Young

*Leigh Young, of Canton, MI, an English major at Schoolcraft College, wrote this story during the Fall 2016 semester. For his encouragement and guidance she wishes to thank Dr. Steven Dolgin, her instructor in English 206 (Creative Writing).*

The doorbell was harsh, more like a buzzer than a bell. I hadn't been dressed for company; my shorts were so tiny that my ass hung out of the bottom, almost as if it were begging to be squeezed. The bell sounded again, more insistent this time, as I headed to let the police in.

I swung the door open harder than I intended, and gestured for the two men standing behind it to come in.

They were typical-looking cops, mid-30s maybe, both of them average height and mildly overweight. I

saw that one of them used to be slimmer; instead of wrapping securely around his ring finger, his wedding band now hugged onto it like a toddler to its mother's leg. It was strange how I noticed these details, how fixated my brain was on all of the little things around me. Not strange because I was typically unobservant—I wasn't; I noticed everything. Strange, I guess, because I had just killed my husband.

"Ma'am", the first one acknowledged me as I gestured for them to come inside.

I closed the door not bothering with the deadbolt, and watched as the police took in the filth. This dump had been chosen at my husband's insistence, and I don't think I had ever quite forgiven him for making me move here—this 500-square-foot rat hole complete with stained carpets and missing ceiling tiles. Roach traps were set out, not because I had ever actually seen one, but because I just knew they were here, somewhere. My husband had been more than willing to overlook the decaying bathtub and rotted-out kitchen cabinets, in favor of being closer to the drug-addicted customer base he served.

The officers were standing awkwardly in the living room, shifting from one foot to the other as they waited for me to make clear their reason for being here. My 911 call had been vague, me simply asking the operator to



The late Farrah Fawcett as Michigan housewife Francine Hughes in the TV movie "The Burning Bed".

send a unit to 1432 Burgess Street, before disconnecting the line. I gestured wordlessly for them to follow me into the bedroom, past the kitchen where beer was still sticky beneath your feet, a result of the last argument we'd had.

"Ma'am? What's going on here? Why did you call for police assistance?" the married one asked, sounding nervous as he placed his hand on his belt, near to where his department-issued gun was holstered.

I didn't answer him, just pointed to the side of my bed, and then I waited; waited for him to see. My mind wandered in that moment, back to the beginning when I had first met my husband. Back to the Fourth of July pool party, where I wore a tiny purple bikini that clung to my perky young breasts and my round bottom. Back to the day when he decided he would have me, that he was entitled to me.

The officers had seen it now, seen him lying there on the floor, his arms and legs splayed in such a way, an unnatural way, a way that let you know instantly that he was dead. I looked at his arms, those tanned and muscular arms, and thought about the first time he had used them to hurt me; how he had gathered all of the strength that he had in those arms and sent me flying backwards into the wall. Thought about the fist-sized purple lump that his strength had left on my pretty, unsuspecting face.

The officers were radioing for backup now: A male, aged 35-45, deceased, foul play suspected. Foul play. That sounded about right. I remembered the time he dropped me off at the hospital emergency room and then drove off, telling me to call him when I was done. How I went into the hospital with a fractured jaw and dislocated shoulder and told the doctors I had fallen; off what, I can't now remember. I remember, though, how he left me there for hours. Me just sitting on the side of the curb until nightfall, waiting for him to return in my purple Saturn. How he deposited me back to this filthy roach-infested apartment before leaving to spend the night with his mistress.

I absentmindedly popped my shoulder in and out of its socket, hearing it click as I watched the police backup arrive into the apartment. Or crime scene. I guess that's what this is now. But didn't I always know it would end this way? Didn't I know that tonight, when he got home drunk and angry like always? When we started arguing about my shorts, my purple 70s funk shorts that I wore only around the house— around him. When he started accusing me of being a whore, because only a whore would wear these shorts. Didn't I know it when he raised his arm, his giant hand poised, ready to strike me again? Only instead of his hand connecting with my face— my tired worn-out face, my face that had aged and weathered in the three years we had been together— the gun went off. As the police officers took out the handcuffs, I remembered the expression he had. How surprised he had looked as the bullet entered his chest and he fell

backwards, until he was on the floor choking out the last of his life. I thought about how we were destined for this, him and I, as the handcuffs were fastened around my tiny wrists, and I was escorted out of the apartment.

The years of our lives shone in my mind as the officers called the station to tell them they had a suspect in custody, that we'd arrive shortly. The door closed, on the apartment, on us. The officers were careful as they led me down the battered staircase and out to the car. They were gentle as they lowered my head into the backseat, taking care not to harm me, at least not more than I already was. The neighbors were streaming out of the other apartments now, gawking at the three of us as the car started to move; away from this place, away from him. The married one turned around to look at me, his pity obvious without words. I held his gaze for a minute or two, and then I spoke,

"Now what?"

### Manchus and Mongols *continued from page 41*

Britain. As a consequence, the Manchus lost control over Hong Kong. The Manchus were pressured not only by European imperialism but also by Japanese aggression. Being spread too thin and occupied in other affairs, the dynasty was vulnerable to rebellion. In combination with young and weak leaders, revolution marked the end of the last Chinese dynasty in 1912.

Despite its defeat, in sheer longevity the Qing dynasty outlived the Yuan dynasty nearly threefold. Many would accredit this to their willingness to work with the Chinese people. Although they did enforce differences between the native Chinese and themselves, they allowed previous Ming leaders to keep their positions in government and refrained from destroying Chinese cities. Where the Mongols lost support by employing foreigners to rule the Chinese, the Manchus utilized already-trusted native Chinese officials. Furthermore, the Manchus caused a great growth in the region. The spread of knowledge and trade increased, infrastructure improved, the peasants were taxed fairly, and there was minimal internal conflict until the dusk of the empire.

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# Global and Areas Studies Summer Fellowship at the Univ. of Illinois

by Colleen Pilgrim (SC Psychology Dept.)

This past Summer, I was fortunate enough to participate as a Global and Areas Studies Summer Research Lab (GAS SRL) Fellow at the University of Illinois at Urbana-Champaign (UI). In what follows, I will describe my experiences and why you might consider participating in the program.

The Center for Global Studies is designated by the U.S. Dept. of Education as a National Research Center working to globalize UI's research, teaching, and outreach missions. The Center has as its mission to "develop teaching resources, professional training opportunities, and public programs in global studies for researchers, educators, students, business leaders, media, governmental agencies, civic organizations, and all members of the public concerned with understanding and solving global problems" (Center for Global Studies, <http://cgs.illinois.edu/summer-research-lab-for-community-college-faculty/>, 2016).

The GAS SRL Fellowship, which is part of Title VI funding, grants visiting faculty from community colleges full access to the extensive UI library collections. This Fellowship program is a joint initiative between the Center for Global Studies, the International and Area Studies Library, and the Russian, East European and Eurasian Center (REEEC).

My fellowship targeted the need to globalize curriculum across the Schoolcraft College campus. Specifically, I researched materials for a cross-cultural course in the Psychology Dept. as well as supplemental teaching modules for classroom use across disciplines.

As a GAS SRL Fellow, I was encouraged to arrange individual meetings with librarians and other library support staff to help research and gather information within my chosen topic. In addition, fellows are provided with names and contact information for UI faculty members who are conducting research and teaching in areas similar to those of the proposed project. Indeed, my meetings with Timothy Wedig (Assoc. Dir. of LAS Global Studies), Andiara Schwingel (Assoc. Prof. of Kinesiology and Community Health), and Kelsey Cheshire (Behavioral Science Librarian and Asst. Prof.) were extremely helpful in sharing of research and teaching ideas as well as exploration of resources for my work and the classroom.

The CGS and REEEC also held a joint workshop that allowed us to brainstorm with other fellows and to hear UI faculty and researchers discuss their efforts and

insights relative to global education. One of the major benefits of the program, in addition to library resources, was the exchanging of ideas with my fellowship colleagues who themselves are engaged in global education at their colleges.

To encourage community college faculty to apply for the fellowship, UI covers travel costs, housing, parking, and a \$200.00 honorarium. Support is provided for one week, and fellows were able to choose their arrival and departure dates within a two-week window. Applicants must obtain institutional support for their proposed project. Mine was supported by Assoc. Dean of Sciences Charles Hayes and Vice President and CAO Rich Weinkauff.

I welcome anyone interested in applying for the GAS SRL Fellowship as well as those interested in curriculum globalization efforts on campus to contact me. Currently, a "mini-grant" is being reviewed by the Center for Global Studies to further help with the completion of this project. •

April  
MIIE  
Conference  
in Ohio



The Schoolcraft College International Institute cordially invites faculty members to join us at the upcoming 24<sup>th</sup> Annual Conference of the Midwest Institute for International/ Intercultural Education (MIIE). The conference will be held April 7-8, 2017 at Ohio State University – Agricultural Technical Institute in Wooster, OH. This gathering will draw educators from throughout the Midwest and beyond.

For more information, contact Helen Ditouras, our MIIE representative, at 734-462-7263, or [hditoura@schoolcraft.edu](mailto:hditoura@schoolcraft.edu). You'll also be able to download the registration forms and other information at <http://www.miiie.org>.

# It's a Multicultural World— Right in Our Backyard!

**Sep. 20, 2016 – Apr. 30, 2017:** “I See Me: Reflections in Black Dolls”. This exhibit features an array of Black dolls dating from the late 19<sup>th</sup> Century to the present, including babies, fashion dolls, hand-crafted, art dolls, and the largest collection of Leo Moss dolls ever assembled. Charles H. Wright Museum of African American History, 315 E. Warren Ave., Detroit. For more info, call 313-494-5800 or see <http://www.chwmuseum.org/>.

**Nov. 12, 2016 – Apr. 19, 2017:** “Drawing in the Diaspora: Comic Art and Graphic Novels by Leila Abdelrazaq”. This exhibit features a variety of excerpts and original illustrations from Abdelrazaq’s books, zines, and activist work based on her experiences as the Chicago-born daughter of a Palestinian refugee. Lower Level Gallery, Arab-American National Museum, 13624 Michigan Ave., Dearborn. For more info, call 313-582-2266 or see <http://www.arabamericanmuseum.org/>. Two events in conjunction with the exhibit, free with RSVP:

- a talk on design in comics with Dearborn graphic designer and illustrator Aya Krisht, 2:30 pm on Feb. 25
- a workshop on comics + zine-making with Leila Abdelrazaq, 2-4 pm on Mar. 4.



**Nov. 19, 2016 – Jul. 30, 2017:** “Art of Jade”. Drawn from the FIA’s permanent collection, this exhibit features objects from China that range from the Neolithic period to the Qing Dynasty (1644–1912) and from Mesoamerican cultures dating back as early as 2100 BCE. Ann K. Walch-Chan Gallery, Flint Institute of Arts, 1120 E. Kearsley Street, Flint. For more info, call 810-234-1695 or see <http://www.flintarts.org/>.

**Dec. 16, 2016 – Apr. 16, 2017:** “The Edible Monument: The Art of Food for Festivals”. Organized by the Getty Research Institute in L.A., this exhibit includes about 140 prints, rare books, and serving manuals that illustrate delectable monuments and sculptures made of food, which were an integral part of street festivals and court and civic banquets in Europe from the 16<sup>th</sup> to 19<sup>th</sup> Centuries. Detroit Institute of Arts, 5200 Woodward Ave., Detroit. For more info, call 313-833-7900 or see <http://www.dia.org>.

**Jan. 1 – Jul. 29, 2017:** “1967 Detroit Home Movies”, weekly public screenings dedicated to observing and reflecting on the 50<sup>th</sup> anniversary of Detroit’s 1967 rebellion. To uncover and exhibit home movies made around 1967 depicting everyday life in diverse Detroit communities, the DIA collaborated for

one year with the *Detroit Free Press*, Charles H. Wright Museum of African American History, WSU’s Walter P. Reuther Library of Labor and Urban Affairs, Detroit Historical Society, and *Bridge* magazine. Selected films will be included in a program created by the *Detroit Free Press* for the 2017 Freep Film Festival (Mar. 3 – Apr. 2), and a marathon screening of films will be presented as part of the 2017 DFT Summer schedule, beginning on Jul. 29. Detroit Institute of Arts, 5200 Woodward Ave., Detroit. For more info, call 313-833-7900 or see <http://www.dia.org>.

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## Detroit Film Theatre

Among the films kicking off the forthcoming DFT season, the following were made (and/or set) in the regions indicated. This venue is located at the John R. Street entrance to the Detroit Institute of Arts, 5200 Woodward Ave., Detroit. For details and tickets, call 313-833-4005 or visit the website <http://www.dia.org/detroitfilmtheatre/14/DFT.aspx>.

**Jan. 6-8, 2017:**

“Tampopo” (Japan, 1985)

**Jan. 13-22, 2017:**

“Old Stone” (China, 2016)

**Jan. 20-22, 2017:**

“Fire at Sea” (North Africa and Italy, 2016)

**Jan. 28, 2017:**

“Burn!” (Caribbean, 1969)

**Feb. 3, 2017:**

“The Flying Ace” (African-American, 1926) and

“Dirty Gertie from Harlem U.S.A.” (African-American, 1946).

## Global Fridays

Global Fridays is a monthly series showcasing the finest in world music, dance, film, and performance art. Programs are at 8 pm in the Lower Level Auditorium of the Arab-American National Museum (13624 Michigan Ave., Dearborn). Supported by Ford Foundation, DTE Energy, Comerica Bank, and others. For info and tickets, see <http://www.arabamericanmuseum.org/GF-winter-2017>.

**February 24, 2017:**

Sinkane (funk/rock) + youth workshop

**March 24, 2017:**

Rahim Alhaj: Letters from Iraq with Michigan Philharmonic

**April 21, 2017:**

Sammy Deleon & His Latin Jazz Ensemble (salsa)  
+ salsa dance workshop

**May 26, 2017:**

Oddisee (hip-hop).

## Multicultural Calendar *continued from page 45*

**Jan. 14, 2017:** “La Amistad Revolt”, kicking off the Winter 2017 season of the Liberation Film Series. Presenting this film will be the great-great-grandson of revolt leader Joseph Cinque (Senghe Pieh). 2-5 pm. General Motors Theater, Charles H. Wright Museum of African American History, 315 E. Warren Ave., Detroit. Films in this series continue every weekend; for more info, call 313-494-5800 or visit the website <http://www.chwmuseum.org/liberation>.

**Jan. 14 – May 28, 2017:** Art exhibit, “Transitions of Walter Bailey: A Retrospective”. Born in Dublin, GA, in 1948 and raised in Hartford,



CT, Walter A. Bailey progressed from a 1960s Classical Afro-Centrist to a self-evolving artist of the 21<sup>st</sup> Century “with an aRT Vision for the 22<sup>nd</sup> Century”. Charles H. Wright Museum of African American History, 315 E. Warren Ave. For more info, call 313-494-5800 or see <http://www.chwmuseum.org/liberation>.

**Jan. 20 – Jun. 4, 2017:** “Anne Frank: A History for Today”. This exhibit, developed by the Anne Frank House in Amsterdam, includes photos of the Frank family and the other occupants of the Secret Annex and shows how people were persecuted by political decisions and by the actions of individuals. The story of Anne Frank is juxtaposed against world events before, during, and after the rise to power of Adolf Hitler and the Nazi party, including the events leading up to World War 2 and the government-directed killings of Jews, Gypsies, the disabled, Slavs and others. Holocaust Memorial Center, 28123 Orchard Lake Road, Farmington Hills. For more info, visit the website <http://www.holocaustcenter.org/>.



**Jan. 21, 2017:** “Mosaic: A Night of Music and Solidarity”. TAKE ON HATE presents a free night of live music, poetry, art, and networking in the spirit of standing together in solidarity and peace while acknowledging the challenges that our communities face. 5:30 p.m. The Annex, Arab-American National Museum, 13624 Michigan Ave., Dearborn. For more info, call 313-582-2266 or visit the website <http://www.arabamericanmuseum.org/>.

**Feb. 3-12, 2017:** “Harriet Jacobs”, a play by Lydia R. Diamond about the author of *Incidents in the Life of a Slave Girl* (1861). Wayne State Univ., Bonstelle Theatre, 3424 Woodward Ave., Detroit. For more info, call 313-577-2972 or visit the website <http://theatreanddance.wayne.edu/>.

**Feb. 3 – Sep. 3, 2017:** “Tutankhamun: ‘Wonderful Things’ from the Pharaoh’s Tomb”. Ten years in the making, from the artisans of the Pharaonic Village in Giza, Egypt, and the Metropolitan Museum of Art, this is a dazzling collection of 131 replicas of Tutankhamun’s legendary treasures. Cranbrook Institute of Science, 39221 Woodward Ave., Bloomfield Hills. For more info, visit the website <https://science.cranbrook.edu/>.

**Feb. 8-12, 2017:** Lorraine Hansberry’s “A Raisin in the Sun”. Wallace Bridges directs this production of the iconic play, which examines a Black family struggling to retain their dignity as they face racism when moving to an all-white neighborhood on Chicago’s South Side in the 1950s. Sponberg Theatre, Eastern Michigan Univ., Ypsilanti. For more info and tickets, call 734-487-2282 or visit the website <http://www.emich.edu/cmta/productions/>.

**Feb. 11, 2017:** “Yalla Eat!: Coffee, Tea, and Sweets of the Arab World”. Presented in conjunction with the DIA’s “Bitter|Sweet: Coffee, Tea & Chocolate” exhibit, this interactive evening introduces a delightful array of sweets, coffees, and teas representing various Arab traditions. Taste and learn more about the cultural significance of coffee, tea and dessert among Arab Americans and the nations of the Arab World. In partnership with Hashem’s and Mocha Café. Free with RSVP. 7-8:30 pm. Arab-American National Museum, 13624 Michigan Ave., Dearborn. For more info, call 313-582-2266 or see <http://www.arabamericanmuseum.org/>.

**Mar. 3-5, 2017:** Stage presentations of “The Butterfly”, a Persian fable of survival, bravery and sacrifice. Originally adapted by Bijan Mofid, this touching new translation by Pirooz Aghssa is presented as a staged reading. Facing a life or death challenge from a dangerous spider, a beautiful butterfly must go in search of insects to bring back, or she become the spider’s next meal. On her path she discovers new adventures and an inner strength, leaving a part of herself with everyone she meets. Sponberg Theatre, Eastern Michigan Univ., Ypsilanti. For info and tickets, call 734-487-2282 or visit the website <http://www.emich.edu/cmta/productions/>.

**Mar. 4, 2017:** Fifth annual Motor City Bhangra Competition. An Indian dance contest featuring more than a dozen of the best *bhangra* teams from North America. Organized by Pind Productions. 6 pm. Pease Aud., Eastern Michigan Univ., Ypsilanti. For info and tickets, telephone Gary Khehra at 734-968-4125 or e-mail [Motorcitybhangra1@gmail.com](mailto:Motorcitybhangra1@gmail.com) or see <http://www.motorcitybhangra.net>.

**Mar. 8-11, 2017:** Conference marking the centennial of the Bolshevik uprising, “Revolutionary Longings: The Russian Revolution and the World, 1917-1929”. Organized by the UM Weiser Center for Europe and Eurasia. Rackham Amphitheater and Tisch Hall, Univ. of Michigan, Ann Arbor. For more info, see <http://ii.umich.edu/wcee>.

**Mid-Mar. 2017:** Sixth annual Ann Arbor Palestine Film Festival. Showcasing films about Palestine and by Palestinian directors to amplify the voice of the Palestinian people as a nation and a diaspora. Various venues; for more info, visit the website <http://www.aapalestinefilmfestival.com/>.

**Mar. 14-16, 2017:** “Dar He: The Story of Emmett Till”. Presented by Mike Wiley Productions, this riveting play chronicles the 1955 murder of Emmett Till— a 14-year-old African-American youth from Chicago visiting the Mississippi Delta— and the trial and unbelievable confessions of the accused murderers. Macomb Center for the Performing Arts, 44575 Garfield Road, Clinton Twp. For info and tickets, call 586-286-2141, or see <http://www.macombcenter.com/our-season/Events.html>.

**Mar. 19, 2017:** “Shaolin Warriors: The Legend Continues”. This troupe brings gravity-defying feats of *kung-fu*, stunning acrobatics, and dazzling athletic prowess from China. The performance reflects the Buddhist theory of the cycle of the seasons. 4 pm. Macomb Center for the Performing Arts, 44575 Garfield Road, Clinton Twp. For info and tickets, call 586-286-2141, or visit the website <http://www.macombcenter.com/our-season/Events.html>.

**Mar. 24-26, 2017:** Conference, “Waypoints and Watersheds: Arab American Activism and Memories”, marking the 50<sup>th</sup> anniversary of the 1967 War. Arab-American National Museum, 13624 Michigan Ave., Dearborn. For more info, call 313-582-2266 or see <http://www.arabamericanmuseum.org/>.

**Mar. 30, 2017:** 16<sup>th</sup> annual Multicultural Fair, a vibrant celebration of the international cultures on our campus. 10 am – 3 pm. DiPonio Room, VisTaTech Center, Schoolcraft College, 18600 Haggerty Road, Livonia. For more info, contact Josselyn Moore at [jmoore@schoolcraft.edu](mailto:jmoore@schoolcraft.edu).



**Apr. 22, 2017:** 37<sup>th</sup> annual Dance Recital of the Polish National Alliance Centennial Dancers Lodge 53, a children’s Polish folkdance ensemble serving the Polish-American communities in Wayne, Oakland, and Livingston Counties. The dancers wear colorful costumes authentic to the region from which they are performing. 2 – 5:30 pm. Village Theater, 50400 Cherry Hill Road, Canton. For more info and tickets, call 734-394-5300 or see [www.cantonvillagetheater.org](http://www.cantonvillagetheater.org).

**May 2017:** 19<sup>th</sup> annual Lenore Marwil Jewish Film Festival. Organized by the Jewish Community Center of Detroit. Berman Center for the Performing Arts, 6600 W. Maple Road, West Bloomfield. For more info, call 248-432-5658 or e-mail [ruskin@jccdet.org](mailto:ruskin@jccdet.org) or see <http://www.jccdet.org>.

**May 6 – Jul. 30, 2017:** “Auguste Rodin: The Human Experience”. This exhibit features 50 bronzes by Rodin, generally considered the father of modern sculpture. Hodge and Temporary Exhibition Galleries, Flint Institute of Arts, 1120 E. Kearsley Street, Flint. For more info, call 810-234-1695 or see <http://www.flintarts.org/>.



**May 13-21, 2017:** “Cyrano”. This three-act opera, with music by David DiChiera and libretto by Bernard Uzan, is based on Edmond Rostand’s celebrated play “Cyrano de Bergerac”, about a man skilled in both sword and pen but whose enormous nose leaves him a swashbuckling lonely heart. Sung in French with English supertitles. Detroit Opera House, 1526 Broadway, Detroit. For info and tickets, call 313-961-3500 or see <http://www.motopera.org/>.

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## Multicultural Calendar *continued from page 47*

**May 20, 2017:** "Let's Naacho!" Bollywood Dance Competition & Fashion Show. All proceeds support the Schoolcraft Student Food Pantry. Organized by the Asian Student Cultural Association. VisTaTech Center, Schoolcraft College, 18600 Haggerty Road, Livonia. For more info, contact Prof. Anna Maheshwari at 734-462-7188 or [letsnaacho@gmail.com](mailto:letsnaacho@gmail.com) or [amaheshw@schoolcraft.edu](mailto:amaheshw@schoolcraft.edu).



**June 1-11, 2017:** Cinetopia International Film Festival. Over 50 films shown at a dozen venues in Detroit and Ann Arbor. For info and tickets, see <http://www.cinetopiafestival.org/>.

**Jun. 2 - 25, 2017:** "Dream Deferred: Detroit, 1967". Honoring the 50<sup>th</sup> anniversary of a formative event in Detroit history, this original production unearths, for the first time, real interviews recorded in the aftermath of that Summer's uprising. By honing in on the experiences and perspectives of a cross-section of Detroiters, the play shares voices and stories from this moment that still reverberates half a century later. Matrix Theatre Company, 2730 Bagley Street, Detroit. For info and tickets, call 313-967-0599 or see <http://www.matrixtheatre.org>.

## University Musical Society

International music and drama is featured in the following selections from the UMS season, scheduled at various venues in Ann Arbor. For info and tickets, call 734-764-2538 or see <http://www.ums.org/>.

- Feb. 18, 2017:** Ping Chong + Company, "Beyond Sacred: Voices of Muslim Identity"
- Mar. 9-11, 2017:** "The Beauty Queen of Leenane" (a play set in Ireland)
- Mar. 29, 2017:** DakhaBrakha (Ukrainian folk-punk)
- Mar. 30 – Apr. 1, 2017:** "The Encounter" (a play set in Brazil)
- Apr. 15, 2017:** Sanam Marvi (Pakistani Sufi)
- Apr. 15, 2017:** King Sunny Adé (Nigerian)

**Mid-July 2017:** 25<sup>th</sup> annual Concert of Colors, metro Detroit's free, five-day diversity festival bringing together the area's communities and ethnic groups. Musical acts from around the world, ethnic food and merchandise, musician-led workshops, a Forum on Community, Culture & Race, and a large children's tent. Organized by the Arab Community Center for Economic and Social Services (ACCESS) and partners. Midtown Detroit. For more info, visit the website <http://www.concertofcolors.com>.

## Spring/Summer Ethnic Festivals in Southeastern Michigan

**Early April:** Dance for Mother Earth PowWow. Skyline High School, Ann Arbor. <http://www.umich.edu/~powwow>.

**Memorial Day weekend:** Saint Mary's Polish Festival. Saint Mary's Orchard Lake campus. <http://www.stmaryspolishcountryfair.com>.

**First Saturday in June:** Romanian American Heritage Festival. Saints Peter & Paul Romanian Orthodox Church, Dearborn Heights. <http://spproc.org/festival/>.

**First Saturday in June:** African American Downtown Festival. East Ann Street & North Fourth Avenue, Ann Arbor. <http://a2festival.org/>.

**Second weekend of June:** Ya'ssoo Greek Festival. Saint Nicholas Greek Orthodox Church, Ann Arbor. <http://www.annarborgreekfestival.org>.

**Mid-June:** Dearborn Arab International Festival. Warren Avenue between Schaefer and Wyoming Avenues, Dearborn. <http://www.americanarab.com>.

**Mid-June:** Motor City Irish Fest. Western Graham Field, 14841 Beech Daly Road, Redford Township. <http://motorcityirishfest.com/>.

**Mid-June:** Carrousel of the Nations multicultural festival. Riverfront Festival Plaza, downtown Windsor. <http://www.carrouselofnations.ca/>.

**Second weekend of July:** American-Polish Festival. American Polish Century Club, Sterling Heights. <http://www.americanpolishfestival.com>.

**Mid-July:** Saline Celtic Festival. Mill Pond Park, W. Bennett Street, Saline. <http://www.salineceltic.org/>.

**Late July or early August:** Arab and Chaldean Festival. Hart Plaza, downtown Detroit. <http://www.arabandchaldeanfestival.com>.

**Late July or early August:** Highland Games Scottish Festival. Greenmead Historical Park, Livonia. <http://www.highlandgames.com/>.

**Early August:** Detroit Caribbean Cultural Festival. New Center Park, 2998 W. Grand Blvd., Detroit. <http://www.myccco.org/>.

**Mid-August:** African World Festival. Hart Plaza, Detroit. <http://thewright.org/african-world-festival>.