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International Agenda

Magazine of the Schoolcraft College International Institute (SCII)

Serving the Planet

Young People Step Forward to Confront Environmental Challenges



Photo courtesy of Dr. Luna Khirfan

These two Planning students from the Univ. of Waterloo (Ontario) are surveying residents of the threatened coastal community of Negril, Jamaica, about ways to adapt to climate change. Under the supervision of their professor, Luna Khirfan, the students designed strategies for dealing with beach erosion, rising sea-levels, coral bleaching, extreme weather, and other effects. For Dr. Khirfan's report on the trip, turn to page 14.

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p. 7

International Agenda

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International Institute

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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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Take Our Survey!



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After looking through these pages, kindly complete a brief online survey about *International Agenda*. The survey collects feedback about this issue, and suggestions for future issues.

The survey can be accessed at this URL:

<https://www.surveymonkey.com/r/K3RLK8G>

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:

- September 15, 2017 in LA-200
- October 20, 2017 in LA-200
- January 26, 2018
- February 16, 2018
- May 4, 2018.

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 Fall is scheduled as follows:

- November 3, 2017 in LA-130.

For more info, contact English Prof. Anna Maheshwari at amaheshw@schoolcraft.edu or 734-462-7188.

Campus News & Kudos

The **Civil Rights Action Group** had an active Winter term, sponsoring:

- an Action Day on Jan. 19, including a student and faculty panel discussion on the past, present, and future of civil rights in America; an exhibit of four paintings presented by Tony Bacon (Art and Design); and a poster-making session for the Women's March on Washington
- a screening of the documentary "13th" (2016; dir. Ava DuVernay) on Jan. 26 in the Forum Auditorium. The film explores the 13th Amendment to the U.S. Constitution and the intersection of race, justice, and mass incarceration.
- a screening of the documentary "Let the Fire Burn" (2013; dir. Jason Osder) on Feb. 22 in the Liberal Arts Bldg. The film documents the 1985 stand-off between the Philadelphia police and the Black liberation group MOVE.
- a presentation on the rise of the far right in the U.S. and its historical parallels, held Apr. 12 in Lower Waterman.

Karen Schaumann-Beltran (Sociology) organized an International Women's Day Tea on Mar. 7 at the Hinkle Center. Participants reflected on the social, economic, cultural, and political achievements of women worldwide. The UN theme this year was, "Women in the Changing World of Work: Planet 50-50 by 2030".

About 2600 visitors attended Schoolcraft's 16th annual **Multicultural Fair**, held in the VisTaTech Center on Mar. 30. The fair featured 22 display tables of dress, artifacts, and language from around the world; performances by 10 visiting troupes, from the Academy of Russian Classical Ballet to the Marcus Garvey Academy's African Drum and Dance Ensemble; ethnic food samples; and more. Kudos to the Fair organizing committee: **Helen Dituras** (English), **Kim Lark** (History), **Laura Leshok** (Academic Advising), **Josselyn Moore** (Anthropology/ Sociology), and **Todd Stowell** (Student Activities Office).

The **International Student Organization** held an end-of-semester dance on the afternoon of Friday, May 5 in Lower Waterman, with food, drink, music, and dance, including performances by ISO members. The purpose of the ISO is to help globalize the campus with social and learning opportunities for students, and to make the transition to campus culture enjoyable for everyone. The Faculty Advisor is **Christa Fichtenberg** (ESL/COLLS/CAB).

The **Asian Student Cultural Association** organized "Let's Naacho!", a Bollywood-inspired dance competition and fashion show on May 20 in the VisTaTech Center, with proceeds supporting the Schoolcraft Student Food Pantry. The prize competition included categories for dancers from middle school, high school, college, and the community. The Faculty Advisor for the Association is **Anna Maheshwari** (English).

"The trip went as planned and was wonderful as always" reported **Anita Süess Kaushik** (Foreign Languages) after her 10th annual Discover Europe educational tour on May 22-31. This year, 11 travelers headed to England, Scotland, and Ireland, with sites including Dublin, Belfast, the Giant's Causeway, Derry, Edinburgh, and London. **James Nissen** (Humanities) led his HUM 203 class (Art and Music in Western Civilization:

Field Study - Italy) on a 12-day trip in June, with visits to Venice, Ravenna, Florence, Assisi, Rome, and other sites. This was the 18th such tour that Nissen has led to Europe. •

New at Our Neighboring Schools

Nine **Washtenaw Community College** students and their two instructors were part of an archaeology team that made international news in northern England in late June. They unearthed 25 well-preserved letters written by Roman soldiers on wafer-thin wooden tablets around 100 CE. None of the students had previous experience on such digs; they were part of a four-week WCC study abroad program that includes two weeks of excavation at Vindolanda, an ancient Roman fort. The program is co-led by anthropology instructor Dr. Christopher Barrett and history instructor Dr. Ian Rush, both of WCC.

The **College for Creative Studies** has partnered with FH Joanneum University of Applied Sciences (Graz, Austria) for an annual student exchange program starting this Fall. Each year, each school will send up to two students overseas for a semester of study; money for airfare and other expenses is provided by Erasmus+, an educational initiative of the European Union.

Michigan State Univ. has partnered with the MasterCard Foundation in a program aiming to help 15,000 young Africans aged 18-24 to access job opportunities in the fast-growing horticulture and aquaculture sectors of Tanzania and Nigeria. The agreement entails a five-year, \$13 million collaboration.

Earlier this year, **Eastern Michigan Univ.** launched a campaign to better welcome international students and scholars to campus. The school currently enrolls nearly 1000 international students from more than 80 nations. So far, the "You Are Welcome Here" campaign has led to a dedicated website (<http://www.emich.edu/youarewelcomehere>) and an annually-updated system of 108 light-pole banners featuring EMU international students. Separately, EMU secured a five-year, \$2.6 million U.S. Dept. of Education grant to support and train 300 students in the school's Teaching English to Speakers of Other Languages (TESOL) program. There are currently 90,000 students in Michigan whose primary language is not English, triple the number from five years ago.

Among the interesting books published recently:

- Marketing professor Judy Foster Davis (**Eastern Michigan Univ.**) has written *Pioneering African-American Women in the Advertising Business: Biographies of MAD Black WOMEN* (Routledge, 2016). The book traces the paths of trailblazing African-American women who launched their careers during the 1960s "Mad Men" era.
- Creative Writing professor Peter Ho Davies (**Univ. of Michigan**) has a second novel out, *The Fortunes* (Houghton Mifflin Harcourt, 2016), which won the Chautauqua Prize and the Anisfield-Wolf Book Award. It recasts the story of America using characters from the history of Chinese Americans, including the California Gold Rush, the actress Anna May Wong, the 1982 murder of Vincent Chin in Detroit, and the contemporary adoption of a Chinese girl by American parents.

R U READY 4 THE WORLD?

In today's world, you can get a lot further if you're knowledgeable about other peoples, countries, and cultures. We asked a few successful people to write brief summaries of how international awareness has figured into their careers. Here's what they sent us...

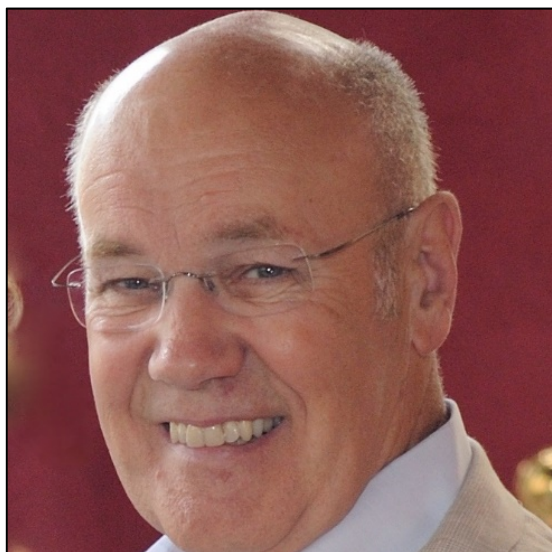


Thanks to having grandparents from Italy, I learned about international awareness at a very young age. My grandparents taught me about the people, the culture, and the way of life in their home country. This helped me in my business career as I started to travel to other countries. I knew in advance that people in other parts of the world are different; they have their own set of customs and way of life and doing business. Their value system also plays a part; it might be quite different from yours. I had to learn how to accept the other person for who he or she is, and understand where they are coming from and what is important to them. Once you've accepted the person for who they are, you have half the battle licked. The rest is just getting down to business and handling the issues at hand.

—Thomas Simo, Schoolcraft graduate and New Business Development Manager at the Detroit branch of PSM International, a global manufacturer

I've had a serious case of wanderlust ever since I was about 12 growing up in Germany. Fortunately, my parents shared my interest in foreign travel, and our family vacations were spent in countries all over Europe. Ultimately, these interests led me to emigrate to the U.S., where I have lived since 1987. In 2015, I was offered a teaching position in China, and when the opportunity came up I had no hesitations thanks to my prior experience living in foreign countries. I am now teaching English as a Second Language at a boarding school in Huainan, Anhui Province. The work is very attractive as I have small classes of only 9 students, all of whom ultimately wish to go to college in America. I get to create all of my own teaching materials; room and board are provided, so my entire salary is basically take-home pay.

—Uta M. Stelson, ESL teacher at Huainan No. 2 Middle School, China



I was always curious about the world. Learning German in college gave me the opportunity to become the first counselor in a German Public school. Further education enabled me to teach college courses at a U.S. military base in Turkey and become superintendent of the Taipei American School. Living overseas gives you a worldview that helps you understand yourself and your own country as well as people from other countries and cultures. It enriches you spiritually, culturally, socially, and financially. International awareness makes you a more interesting person and provides you with a rich trove of stories and experiences that people find interesting and enlightening. International travel not only makes you a more successful and interesting person, it enriches those around you. If you want fun, challenge, and adventure, go overseas. You'll live a happier, more fulfilled life, and your career will blossom.

—Dr. Thomas J. Donahue, retired CEO of Active Learning Systems, Inc., Grand Haven, MI

DIA DE LOS MUERTOS DAY OF THE DEAD



Schoolcraft College Graphic Design major Nolan Dooley of Livonia, MI, created this image, "Day of the Dead", last Winter. A holiday that falls in late October or early November each year, the Day of the Dead is how Mexican and other Latino/a people celebrate the lives of those who have passed away. Popular traditions include creating colorful skulls or *calaveras* out of clay or sugar; hanging a skeleton-shaped *piñata* from a tree; and decorating home altars, or *ofrendas*, elaborately with flowers, photos, mementos, and favorite foods and beverages of the loved ones.

Students!



Enter the Fall 2017 *International Agenda* Writing and Artwork Contest

First Prize: \$250 Scholarship
Second Prize: \$125 Scholarship

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

Winners from Winter 2017

First Place, Artwork: Jocelyn Paul (see p. 36)
First Place, Writing: Richard Furnier (see pp. 40ff.)
Second Place, Artwork: Nolan Dooley (see p. 6)
Second Place, Writing: Leigh Young (see pp. 43-44).

All funds are provided by the Schoolcraft College Foundation.

Submission Deadline: November 13, 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 <http://www.schoolcraft.edu/scii/international-agenda> or else contact:

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Serving the Planet: Young People Step Forward

Kyle Zimes remembers how his life changed in 2011—and he remembers the exact date of the tipping point. He was studying art, music, and design at Schoolcraft College, and dreaming of working someday for the Walt Disney Co. “I existed in a very pleasant world of reflection and creativity,” he recalled in an essay that he wrote the following year, “but that world would not exist for long.”

On March 11, 2011, everything changed. I remember watching the news late into the night, waking up with anxiety the next morning to check the updates and statuses, and telling all my friends about what had happened. My mind was shaken as explosions rocked the facility and panic mounted in the surrounding cities. At Fukushima Daiichi, the greatest nuclear disaster in history was unfolding. This event was threatening all life on earth, and no one knew what to do about it.... All of a sudden art and music didn’t seem so important. I saw the need for creative-minded scientists on the world stage. I began researching the massive problems we had created for the environment. I knew this is what I had to do with my life.

Kyle switched his major to biomedical engineering so that he could learn how to design “organisms that will absorb radiation and toxic chemicals, that will clean the oceans and restore the planet”.

Kyle’s experience reinforces a number of important points for us. First, his generation is paying close attention to events far beyond “the homeland”—in this case halfway around the world, in Japan. Second, the idealism of young people, and their hunger for practical knowledge and experience, is an important untapped resource in our resource-depleted world. Kyle was willing to shelve his previous hopes and dreams when he realized that our planet and our future are in peril. In his essay, he wrote that he’s an example of “huge changes that my generation will have to make, huge sacrifices made for the future.”

Third, students are beginning to sense that environmental dilemmas have become so large and complex that their solution will require discipline, yes, but also creativity comparable to what great artists bring to their work. This looming crisis is not all doom and gloom: there are opportunities for people in every line of work to pour their hearts and minds into a global project in service to the planet. We can predict that there will be, for economic as well as idealistic reasons, some profound shifts in what young people decide to do with their lives, including which subjects they choose to study.

These are some of the reasons that the Schoolcraft College International Institute (SCII) selected the theme of “Environmental Challenges in a Changing World” as a campus-wide focus for calendar year 2017. It encourages people to learn about pressing issues that face humanity—energy, climate, sustainability, pollution, resource depletion, and habitat loss—and the changes that educators, students, and others need to make in their lives and in their thinking in order to grapple with those issues.

The annual focus projects organized by SCII have been hugely educational, challenging, and fun, helping to spread global awareness on campus and in the surrounding communities. For example, nearly 60 people attended the informative Feb. 21 talk by Diane O’Connell, “Adaptation and Mitigation Policy for Climate Change” (summarized on p. 13).

Right on Time: Sustainable Energy and Agriculture

Let’s look at several inspiring examples of young people around the world bringing their ingenuity and initiative to bear on this problem.

On the Italian Riviera, in the mountainous town of Vernazza, Margherita Ermirio, 32, is teaching local high-school students how to restore terraces that hug the steep slopes where



Margherita Ermirio teaches local high-school students in Vernazza, Italy, how to restore stone-wall terraces that are crucial to sustainable agriculture there.

Photo:
Gianni Cipriano/
New York Times,
Jun. 7, 2017.

to Confront Environmental Challenges

food crops were grown for centuries. The permeable dry-stone walls that anchor the terraces started to crumble from disrepair when farmers with the necessary know-how abandoned the land to take better-paying factory jobs in nearby cities. As part of a UNESCO-sponsored youth program, Ms. Ermirio is guiding the students not only in repairing hundreds of spots to prevent landslides, but also in studying the region's terracing from an historical perspective. They compare 18th-Century maps with recent Google Earth images, and create a three-dimensional topographic study of the area. Further north in Trentino, in the foothills of the Italian Alps, a newly-created public school for dry-stone wall building has certified 15 new artisans so far. The need for this is great in Italy, with its estimated 100,000 miles of dry-stone walls. "This is our land" sums up Ms. Ermirio, who returned to help out in her home village of Vernazza after several years abroad.¹ An article in our last issue described lessons recovered from the tradition of terraced agriculture in Portugal.²

In the United Arab Emirates, Nicolas Calvet leads the Thermal Energy Storage Research Group at a new university, the Masdar Institute. The school is at the center of Masdar City, a planned future carbon-neutral community located in the desert a few miles east of the capital, Abu Dhabi. Calvet, an assistant professor of mechanical and materials engineering, is from France, where in 2010 he obtained his Ph.D. in Engineering Science with a focus on Energy and Environment. In one of his projects as Chair of the school's Solar Platform, he and his colleagues designed and built a prototype Solar Beam Down Tower. It uses an array of 33 mirrors to focus enough sunlight to melt the four tons of salt held in a thermal energy storage reservoir; the stored heat can then be used to drive steam turbines. As Dr. Calvet explained, "Storing the thermal energy from the sun during the day to reuse it at night when we don't have sun saves a lot of fossil fuel energy." At the Masdar Institute, he is one of nearly 1000 post-graduate researchers and instructors who are studying sustainable energy.³

Some instructors in North America are taking groups of thoughtful and energetic college students on "green initiative" trips to Third World countries, where they participate in local projects to reduce greenhouse gas emissions or to increase resilience to climate change. On pages 32-33 in this issue, Anna and Jim Verhoye describe taking Minnesota college students on trips to rural northwestern Thailand. There, the service-learning volunteers help build appropriate-technology home cook-stove systems, reforestation greenhouses, etc. On pages 14-18, Planning professor Luna Khirfan at the Univ. of Waterloo in Ontario reports on one of the student trips that she's organized to threatened coastal communities for her course, "Community Climate Change Adaptation in Jamaica and Tobago". They hold small-group meetings to gather knowledge from community members, and combine this with broader surveys of local inhabitants and tourists, geographic information data, site visits, and photography. After returning to Canada, the planning students design a range of intervention strategies, such as modifications to building practices, the deployment of artificial reef to curb beach erosion, and the channeling of additional rainwater to mangrove forests and other wetlands.



In the hot desert of the United Arab Emirates, Profs. Alexander Slocum (left) and Nicolas Calvet flank other research colleagues at their prototype of a Solar Beam Down Tower, which uses the sun to melt a stockpile of salt as a way to store clean energy.

Photo: *AramcoWorld* 68:4 (Jul.-Aug. 2017)

Cleaning and Restoring the Oceans

In Delft, the Netherlands, 22-year-old Boyan Slat is four years into his nonprofit salvage operation, The Ocean Cleanup. He plans to mine plastic from the North Pacific Gyre—a huge floating mass of waste that has accumulated after decades of dumping from countries that border the ocean—and thereby reduce its volume by half in five years. Roughly 50 weighted surface booms, each about one mile long, will be used to trap large pieces of plastic. The plastic will be funneled into tanks and recovered for the manufacture of sunglasses and other branded products, with proceeds plowed back into the enterprise. Slat's first big encounter with marine plastic was a diving trip off the coast of Greece at age 16; he was so disgusted by the problem, and so intrigued by the idea of cleaning by mining, that he dropped out of college to found The Ocean Cleanup. With a staff of about 65 engineers, scientists, and others, he has reportedly raised more than \$31.5 million as startup capital, including major donations from Royal DSM (a Dutch-based multinational producer of plastics) and Peter Theil (co-founder of PayPal). Field tests have been conducted, and the first deployment is scheduled for next year.⁴

continued on next page

At an island resort in the Indian Ocean, the marine biologist Caterina Fattori, shown here with a young guest, is working to regenerate coral reefs damaged by tourism.

Photo:
Outrigger Konotta
Maldives Resort, 2016.



Serving the Planet *continued from page 9*

In the Republic of Maldives, which is a nation consisting of more than 1000 coral islands in the Indian Ocean, young Caterina Fattori is working to repair the erosion and environmental destruction caused by resort development. As the resident marine biologist at Outrigger Konotta Maldives Resort, she participates in Outrigger Ozone, a project that is re-growing the heavily damaged coral reefs nearby. The process involves attaching fragments of coral, broken but still alive, to trellis-like frames; these are anchored underwater as “seeds” for the growth of a new reef, which takes about 10 years. Her collaborators include the German Museum of Oceanography and Fisheries; a local dive team; and resort guests, who are encouraged to roll up their sleeves and help out in a variety of ways.⁵ Caterina is originally from Italy, where her master’s degree research focused on the role of microbes in the origin and spread of coral disease. After graduating, she decided to combine her interests in marine biology, travel, and deep-sea diving by working to conserve and restore coral reefs in Asia.⁶ Major threats to the world’s coral reefs were summarized by Sidney Fites in our last issue.⁷

In Jakarta, Indonesia, recent Univ. of Michigan civil engineering graduate Frank Sedlar is using aerial drones and crowdsourcing to help maintain an online street-level map of flooding in the city. About 40% of Jakarta now lies below sea level. With its 30 million inhabitants, 13 big rivers, and 680 miles of canals, the city is extremely prone to sea-level rise and flooding, especially during monsoon season. Sedlar is from the harbor town of Escanaba, MI, and became fascinated with computer flood modeling as an undergraduate. “We were trying to model flooding in cities all over the world,” he said, “and I remember thinking, what are these cities really like?” He joined a trip to study flooding in Jakarta and other cities, organized by the UM School of Architecture and Urban Planning. “I went kind of on a whim. I really knew nothing about Indonesia,” he recalls, “nothing about Jakarta. I couldn’t even point to it on a map.” As the team began to study and map Jakarta’s flooding

problem, they found that the city has less than two dozen functional sensors measuring water levels, but also one of the world’s highest concentrations of smartphones and social media activity. In Summer 2014, when Sedlar had begun his graduate studies at UM, he returned to Indonesia to work with a new organization, PetaJakarta.org, that monitors flooding by gathering Tweets, photos, and other social-media data, then beams warnings to residents’ smartphones in threatened communities. After completing his master’s in Civil and Environmental Engineering, Sedlar again returned to Jakarta last year on a Fulbright Fellowship to serve as Visiting Researcher with PetaJakarta.org. He commented that in megacities all over the world,

there are people who are completely disadvantaged by the flooding, by the climate change. These are the people who can’t afford to move out of their flooded homes even if floods occur more and more frequently. They have no say. Through the tools we are developing, we are giving voice to the people who are typically extremely excluded and powerless.⁸

High-Tech But Also High-Humanities

Confronting global environmental problems is both a technical and an intellectual challenge. Humanity’s capacity to save the planet will hinge on developing appropriate technologies, but will also be shaped by debates over politics, history, anthropology, literature, and philosophy—thus, youthful and imaginative thinkers are needed there, too.

Jessica van Horssen is a young historian of transnational environmental contamination. She works as a senior researcher in the Dept. of History and Archaeology at the Univ. of Chester, England. Her first monograph, *A Town Called Asbestos*, is based on her doctoral dissertation and was issued in Jan. 2016. She used confidential medical reports to show that for decades, the elite English-speaking owners of the Jeffrey Mine—the world’s largest asbestos mine, located in Asbestos, Quebec, east of

Univ. of Michigan civil engineering graduate Frank Sedlar launches an aerial drone to help monitor flooding in Jakarta in real time.

Photo: Univ. of Michigan School of Engineering, 2016.



Montreal—prevented their mostly French-speaking mineworkers and other townspeople from fully learning about the devastating asbestos-related diseases from which they were suffering. The misinformation penetrated people's minds so deeply, van Horssen showed, that even as medical evidence mounted many victims refused to believe it, continuing to champion the mine out of a sense of "community pride".⁹ Much later, in 1990, the term "environmental racism" was first used, at a conference at the Univ. of Michigan's School of Natural Resources¹⁰; but in the case of Asbestos we need to broaden the concept to *environmental ethnocentrism*, since it was not race per se but instead divisions of class, culture, and language that were involved. In fact, the gradual public awareness of gross mistreatment of the French-speaking population of Asbestos helped give rise to the post-World War 2 Francophone nationalist movement in Canada.¹¹

A new reader, *Energy Humanities*, argues that energy and environmental problems rest, at their foundation, on questions of social values and behaviors, power, and institutions. The collected essays relate a range of energy issues to ethics, philosophy, and ideology, to history and futurism, to literature and aesthetics, and to battles over political power and gender.¹² Similarly, in *The Environment in Anthropology*, specialists in the burgeoning fields of cultural ecology and ethnoecology explore issues involving indigenous populations, biodiversity conservation, environmental management, population growth, large-scale economic development, and mass consumption and globalization.¹³

The following are examples of questions currently being debated by environmental philosophers:

- Should groups and nations that are disproportionately gobbling up finite natural resources be compelled to curtail their consumption?¹⁴
- How should it be decided whether the benefits of geoengineering measures to cool the Earth (carbon dioxide removal, solar radiation management, etc.) outbalance the costs that would occur for certain groups? For example, saving the Greenland ice sheet would mean freezing out northern Russian ports.¹⁵
- Is it possible for scientists to measure biodiversity in a value-free manner, i.e., without incorporating notions of utility, ethics, or human preference?¹⁶
- Should plants, animals, rivers, and other parts of nature be treated not as mere "resources" for human use, but as entities possessing legal rights?¹⁷
- How can natural and social scientists collaborate on matters such as wildlife conservation, given that their disciplines have inconsistent epistemological frameworks?¹⁸

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 coursework and campus programming by developing presentations, course readings and assignments, student projects, etc. Use the concepts and resources contained in this and previous issues of the magazine as a jumping-off point. With a little creativity, instructors in many disciplines can participate fully. For example, in conjunction with Earth Day last April, Jessica Worden (Anthropology) and Karen Schaumann-Beltran (Sociology) teamed up to create a display about water resources for the Anthropology/ Sociology hallway showcase in the Liberal Arts Bldg. The display includes photos documenting the use of water in eight households around the world (created by photojournalist Ashley Gilbertson for UNICEF and National Geographic), as well as posters and other information about the annual Mother Earth Water Walk (an annual trek by the native Anishinaabe people to sound the alarm about threats to the Great Lakes water basin).

Focus Series Coordinator Helen Ditouras has played the lead role in organizing a free, year-long speaker series on the Schoolcraft College campus for students, staff, and the general public. Here is a roundup of the scheduled Fall presentations (watch for more complete information on the SCII website and

continued on next page

Focus Theme Selected for 2018

At the May 5 meeting of the International Institute, we selected our new focus theme for calendar year 2018: "Spirituality and Religion in Today's World". The theme encourages a broad exploration of forms of religious belief, focused on how such phenomena as faith and skepticism, tolerance and mistrust, are helping to shape the modern world.

Ideas and volunteers for writing or speaking on aspects of this theme are welcome. Put on your thinking caps and make a suggestion!

Serving the Planet

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on campus bulletin boards):

- Sep. 7 at 1:30 – 2:30 pm in room F-530: Gerald Hasspacher (Sierra Club Michigan), “Let’s Go Green”, an environmental awareness presentation
- Oct. 10 at 12:30 – 2 pm in room F-530: Lisa Martino-Taylor (Assoc. Prof. of Sociology, St. Louis Community College), “Behind the Fog: How the U.S. Cold War Radiological Weapons Program Exposed Innocent Americans”
- Nov. 15 at 10 – 11:30 am in room LA-200: Elena Past (Assoc. Prof. of Italian, Wayne State Univ.), “Fire and Ice: Thinking Film, Climate Change, and the Environmental Humanities with Paolo Sorrentino’s ‘Youth’”
- Nov. 29 at 12-1 pm in room MC-100: Diane O’Connell (Prof. of Geography, Schoolcraft College), “The Environmental Impact of War: A Global Perspective”.

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 hduitoura@schoolcraft.edu. Others might want to fold these into extra-credit opportunities for selected students.

Three programs related to climate change are scheduled locally this Fall (for more details see the Calendar, pp. 45-48):

- Sep. 5-9 at Oakland Univ.: “World Without Ice”, an art installation, lecture, and concert
- Oct. 2-8 at the Univ. of Michigan: “Michigan and the Climate Crisis”, a conference, activist discussion, art installation, poetry slam, and more
- Nov. 2 – Dec. 23 at the Detroit Repertory Theatre: “Swimming Upstream”, a new comedy.

In addition, there are at least two relevant new movies:

- Now playing is “An Inconvenient Sequel: Truth to Power”, about former U.S. Vice Pres. Al Gore’s global efforts to persuade government leaders to invest in renewable energy and tackle climate change.
- “Flint”, a made-for-TV movie based on the Flint water crisis and starring Queen Latifah, is scheduled to premiere on Lifetime on Oct. 28.

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 3 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 videos such as “Years of Living Dangerously”, a two-season National Geographic TV series of stories about global warming.
- Bradner Librarian Wayne Pricer has compiled a set of links and handy references: see <http://libguides.schoolcraft.edu/> and click on “Environmental Studies Resources”.

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

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4. Erik Stokstad, “Sea Trash Traps Face Doubts”, *Science*, 356:6339 (May 19, 2017), p. 671.
5. Jennifer Billock, “Ocean Resorts Work to Restore Coral Reefs”, *New York Times*, Feb. 26, 2017, p. TR2.
6. Outrigger Konotta Maldives Resort, “Meet the Marine Biologist Caterina Fattori”, <https://www.outrigger.com/stories/maldives-caterina-fattori>.
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9. Jessica van Horsen, *A Town Called Asbestos: Environmental Contamination, Health, and Resilience in a Resource Community* (Vancouver, BC: Univ. of British Columbia Press, 2015), pp. 14-15.
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11. van Horsen, p. 12.
12. Imre Szeman and Dominic Boyer, eds., *Energy Humanities: An Anthology* (Johns Hopkins Univ. Press, 2017).
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17. Eleanor Ainge Roy, “New Zealand River Granted Same Legal Rights as Human Being”, *The Guardian* [U.K.], Mar. 16, 2017.
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Responding to Climate Change

As part of our College's yearlong focus project, "Environmental Challenges in a Changing World", Schoolcraft geography professor Diane O'Connell gave a Feb. 21 campus presentation on "Adaptation and Mitigation Policy for Climate Change".

Prof. O'Connell outlined some of the major anticipated consequences of climate change: severe weather incidents; distress to ecosystems; coastal flooding, largely from sea-level rise due to ice melt-off; and the immediate health effects of pervasive smog and particulate matter, droughts, heat waves, and wildfires.

Although temperature changes will be most dramatic in polar regions— with as much as a 7-8° F. increase from the present day to the 2090s— it is in the urban areas of the world where the causes of the problem are centered and where the consequences will be most felt. Because of soaring urbanization, most of the world's people live in cities, and 90% of world cities lie in coastal areas. Cities account for the vast majority of human consumption and of atmospheric emissions, and their flat roofs and paved surfaces thwart the cleansing effects of rain.

The two categories of response to climate change are *mitigation* (limiting the phenomenon, such as by reducing greenhouse gas emissions) and *adaptation* (learning to live with

the altered environment). A whole array of strategies will be needed, because the problem is complex and multi-scale (international, national, subnational, and local).

Unfortunately, because the science of climate change is still at a beginning level, human interventions sometimes have unanticipated effects. A good example, Prof. O'Connell explained, is the U.S. Clean Air Act of 1963, one of whose aims was to reduce atmospheric levels of sulfur dioxide. But as it turns out, sulfur dioxide is a cooling agent, so its removal actually contributed to warming.

Because of that sort of unpredictability, the *strength* of actions taken is actually less important than their *flexibility* and *resilience*. Examples of flexible actions include: building up the capacity of the emergency infrastructure to be able to respond to any crisis; improving both top-down and bottom-up mechanisms for governance; improving the management of watersheds, drains, and storm sewers; and increasing the degree of local self-reliance, as by mass transit systems, the locavore movement, etc.

The Clean Air Act as amended, along with its successors, exemplify the *command* strategy, whereby standards are set for industrial emissions and other behaviors and are enforced as law. A series of international agreements, including the Kyoto Protocol (1997) and the Paris Accord (2016), exemplify the *incentive* strategy: markets for carbon-emission "trading", incentives for clean energy development, etc. Such agreements are jointly implemented by the signatory nations. Many other opportunities for action lie at more local levels; e.g., over 1000 U.S. mayors have pledged that their cities will scale back to 1990 levels of greenhouse gas emissions. •



Parts of Rotterdam, a major port city in the Netherlands, lie below sea level. This water plaza was created there in recent years to capture floodwater in emergencies. Situated in Spangen, a largely poor and immigrant neighborhood, the plaza includes a soccer practice field, a greenhouse, and other amenities. It is one of dozens of projects in "Room for the River", a national climate-change adaptation program that deliberately surrenders some of the land that the Dutch had drained with dams and dikes over many centuries.

Photo by Josh Haner, from the article by Michael Kimmelman, "Dutch Face Rising Seas. The World Is Watching.", *New York Times*, Jun. 16, 2017

Living in the Age of Climate Change

Adaptation Designs Inspired by the Local Communities in Negril, Jamaica

by Luna Khirfan

Dr. Luna Khirfan is an Assoc. Professor in the School of Planning at the Univ. of Waterloo in Ontario, Canada. Originally from Amman, Jordan, she earned bachelor's and master's degrees in architecture and archaeology, respectively, at the Univ. of Jordan; a master's in heritage management at the Univ. of Birmingham, England; and, in 2007, a Ph.D. in urban and regional planning at the Univ. of Michigan. Her current research project investigates the potential of daylighting (or deculverting) urban streams for climate change adaptation and mitigation in Amman, Jordan, and in Seoul, South Korea.

As debates heat up in the wake of President Trump's decision to withdraw the United States from the Paris Agreement, it is crucial to underscore that especially coastal communities in small island developing states bear the brunt of climate change impacts. One such particularly vulnerable community is Negril, which lies at Jamaica's west end (Fig. 1), where a combination of beach erosion, rising sea-levels, coral bleaching, and extreme weather events, among others, are threatening the stability and well-being of ordinary people.

In June 2014, I took a group of six students (1 Ph.D., 3 M.A., and 2 undergraduate students) from the Univ. of Waterloo to Negril under the umbrella of a research project titled: The Partnership for Canada-Caribbean Community Climate Change Adaptation (ParCA)¹, of which I was a team member. Once there, we were joined by three graduate students (1 Ph.D. and 2 M.A.) from the Univ. of the West Indies at Mona, Jamaica. The team of nine students were part of a research-based design studio that I was teaching that links climate change, urban planning and design, and landscape ecology. Brodie Viissers, one of the Waterloo undergraduate students who joined me on the trip, created a 5-minute video about the research experience, viewable at <https://vimeo.com/214986645>.

As a strong advocate of community engagement, my goal was to deploy the *charrette* as a public engagement tool to envision and propose climate adaptation strategies, and more importantly, to use the design charrette as a method for data collection and a mechanism for knowledge exchange with the local communities—including local experts. The charrette is an interactive and collaborative design exercise among small teams of 8-12 participants with one or two facilitators, at least one of whom is typically a designer versed in design drawing techniques. Eventually, with the help of local and regional organizations like Negril Environmental Protection Trust (NEPT) and CaribSave, I held two day-long charrettes. The first of these was a leadership forum dedicated to local planners and policymakers, in which 17 local experts participated. The second charrette was a public forum open to anyone in Negril, which was held at a local community center and attracted 20 partici-

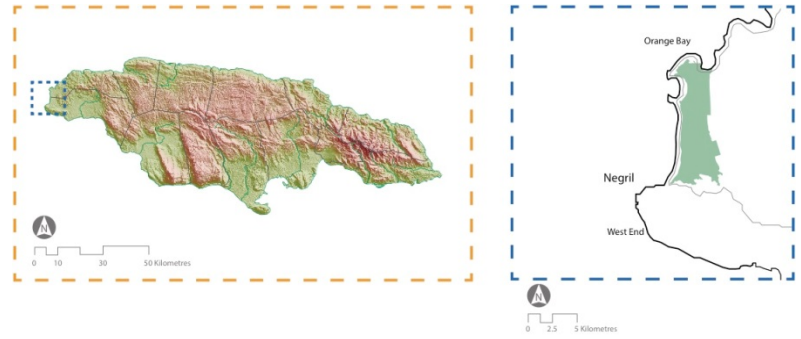


Figure 1: Map showing Negril's location in Jamaica along with the nearly 10-mile stretch of Long Bay, which is sandwiched between the sea and the Great Morass (shaded)

pants including, among others, housewives, musicians, tour operators, and fishermen. Both charrettes started with an interactive activity that encouraged the participants to list what they personally consider the most significant vulnerability threatening Negril—whether related to climate change or not. My students and I acted as facilitators and guided the community participants in transferring these vulnerabilities onto maps (each team had its own map). Then, using a combination of sticky notes, maps, and flipcharts, we guided the participants to propose solutions by encouraging them to exchange their knowledge, expertise, and standpoints regarding these vulnerabilities, specifically, their links to climate change and their impacts on Negril. Throughout these charrette activities, the participants proposed and deliberated solutions for addressing these impacts while my students and I were articulating these solutions into sketches to help the participants visualize them. Each team's deliberations continued by experimenting with an array of design alternatives and then collaboratively agreeing upon a line of action through consensus. After each of these two charrettes, the nine students and I documented visually and in writing the input from our respective teams.

In addition to the charrettes, my students and I also collected data from other sources, including: surveys with local inhabitants and tourists, geographic information data, site visits and observations, and photography. To begin with, and in order to gauge the preferences for Negril's future plans for adaptation among the local inhabitants and the tourists, I designed a survey whose questions focused on three coastal adaptation strategies: retreat, accommodate, or protect. In *retreat*, the coastal zone is simply abandoned and ecosystems shift landward. To *accommodate* the impacts of climate change implies that people continue to use the land at risk but do not attempt to prevent the land from being flooded by sea-level rise. In contrast, to *protect* involves constructing either 'hard' structures such as sea walls and dikes or deploying 'soft' solutions such as dunes and vegetation to protect the land from the sea so that existing land uses can continue. For each of the accommodate and protect categories, the survey provided the respondents with two design options—one based on hard engineering and the other based on soft ecosystem solutions—whereas retreat had only the choice

Figure 2: The images from our survey instrument showing the hard accommodation and protection options (top) and the soft (bottom) retreat, accommodation and protection options



ACCOMMODATION: 1



PROTECTION: 1



RETREAT



ACCOMMODATION: 2



PROTECTION: 2

of a coastal set-back (see Fig. 2 above). The respondents were asked to rank their preferences. In total, we conducted 151 surveys in person, 97 of which were with local inhabitants and 54 with tourists. All respondents were generous with their time and knowledge, providing us with a wealth of qualitative comments about strategies for climate change adaptation.

Moreover, the PhD student on my team (now Dr. Tapan Dhar) led his fellow students on a mission to collect data on beach erosion along Long Bay, a 10-mile stretch of (absolutely gorgeous) sandy beach that the literature and the participants in our charrettes identified as Negril's most vulnerable area. Long Bay is generally low-lying, but its elevation slightly varies, rendering some areas along it, including buildings, more vulnerable to sea-level rise, flood-surge, and flash floods. Using GPS devices and measuring tapes, the students took detailed measurements for 19 sections (and several data points for each section) such as measuring the distances and elevations between the buildings, structures, and roads edges relative to the high-water mark.

Last, and in order to learn from local practices, my students and I visited some local businesses and communities that have been experimenting with green design and sustainable approaches and documented their efforts through note-taking and photography.

Once back in Canada, these visual, qualitative, and quantitative data served as a springboard to conceptualize about solutions for Negril's climate change challenges.

How Climate Change Threatens Negril

Our data, supported by the literature, revealed that Negril's most dense and vulnerable built-up area is Long Bay because it stretches as a narrow strip that is sandwiched between the sea and the Great Morass (Fig. 1). This morass covers over 5,500

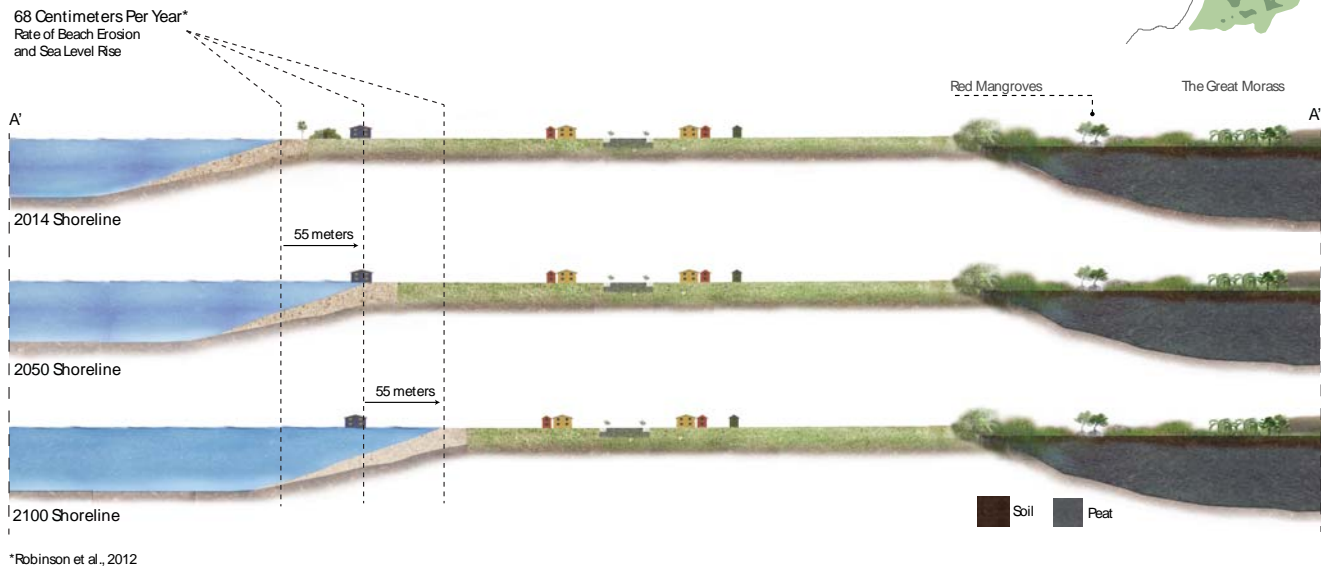
acres and accounts for 20% of Jamaican wetlands. It is a major resource of herbaceous marchlands, swamp, mangrove, and other lowland forest. Additionally, it protects a number of species and local ecosystems. Indeed, the buildings along Long Bay and the ecosystem of the Great Morass are exposed to coastal inundation and sea-level rise, both exacerbated by severe beach erosion. Under normal conditions, beach erosion is considered a natural phenomenon; however, in Negril's case, beach erosion is exceptionally severe due to several factors including the unhealthy condition of seagrass (due to rising sea temperatures and extreme weather events), making beach erosion a major threat in Negril. According to numerous sources (e.g., see Veira² and Robinson, et al.³), the average rate of erosion over the past 30 years has ranged between one to two meters per year; in other words, Long Bay is losing one to two

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Figure 3: The southernmost tip of Long Bay where beach erosion is threatening road infrastructure

Figure 4: Beach erosion, the key threat to Long Bay which is sandwiched between the sea and the Great Morass



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meters of beach annually. At this rate, and taking into account the ongoing sea-level rise, then it is expected that Long Bay will lose 6-10 meters of beach by 2030, and 12-21 meters by 2050 (see Figs. 3 and 4). Indeed, our observations and GPS data reveal that the buildings along Long Bay are especially vulnerable to the impacts of climate change because of their proximity to the sea, with some structures lying 10 meters from the high-water mark, far less than the 45.75 meters required by local regulations as a minimum limit for coastal set-back.

The charrette data also highlighted additional threats including: the degradation of reefs, seagrass, and mangroves; the scarcity of water especially during the dry season; the inadequate waste management strategies, which when combined with the mismanagement of flash floods and rainwater runoff leads to catastrophic pollution like that which took place during the heavy rain that inundated Negril for 10 days in 2010. Local professionals and environmentalists blamed such pollution for aggravating the threats to coral reefs, seagrass, and ecosystems. For instance, damage to coral reefs increases wave energy and, consequently, exacerbates beach erosion. The charrette participants and the local experts also cautioned that the Great Morass is slowly drying out, which is negatively impacting its ability to alleviate floods and to filter nutrients and chemicals—problems that are further aggravated with the overuse of resources, illegal farming in the morass, and deforestation.

Local Preferences for Climate Change Adaptation

Our interactions with the local communities, whether during the charrettes or the visits, reveal the presence of various initiatives to tackle the impacts of climate change on Negril. One of the highlights of our trip was the visit to the Rockhouse Hotel,

a boutique hotel exemplary for its green design (e.g., rainwater harvesting), sustainability practices (e.g., recycling and composting), and community service initiatives (e.g., building a local library) (Fig. 5). We also visited initiatives at the Sandals resort for reef restoration, at Hotel Lazy Days for sand bags and gabion baskets (large wire-mesh cages filled with rocks, concrete, or sand), and at Charella Inn Hotel for coconut-tree planting, all of which are different techniques seeking to curb beach erosion, control flood surges, and rehabilitate the coral reefs. We also visited Orange Bay, a fishing village that had lost over 12 meters of beach to erosion in the last two decades and

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Figure 5: Rainwater harvesting at the Rockhouse boutique hotel in Negril

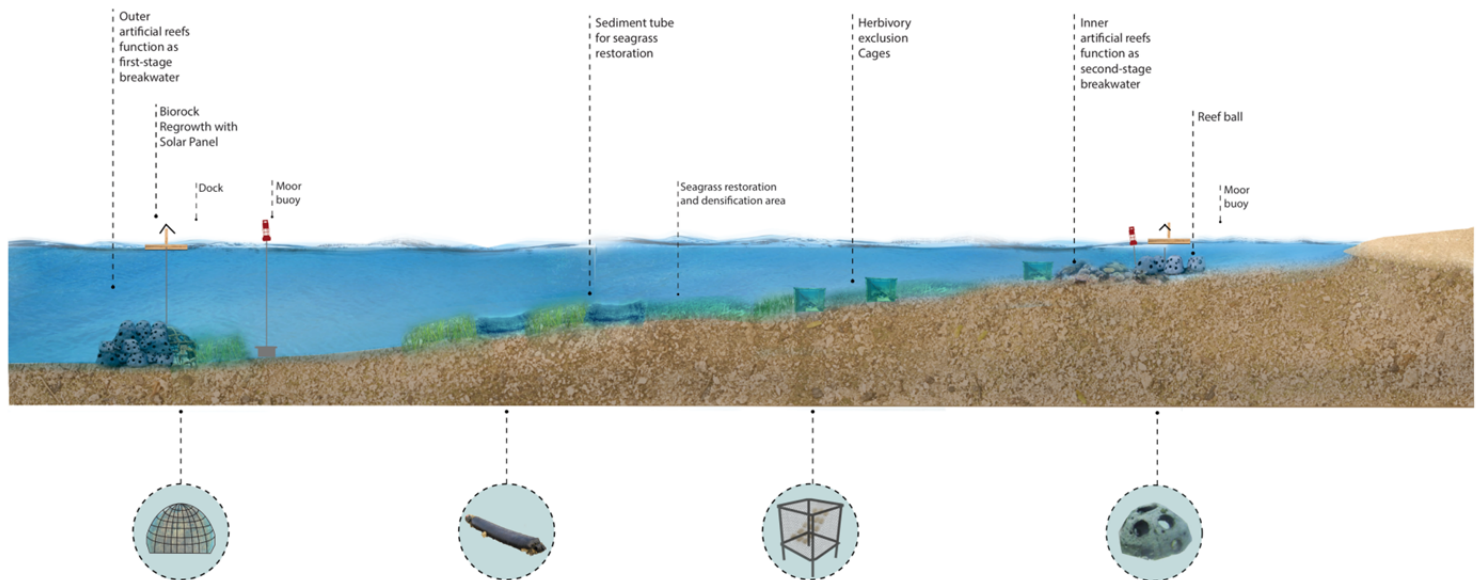


Figure 6: A design proposal for rejuvenating the marine ecosystems through artificial reef and seagrass restoration

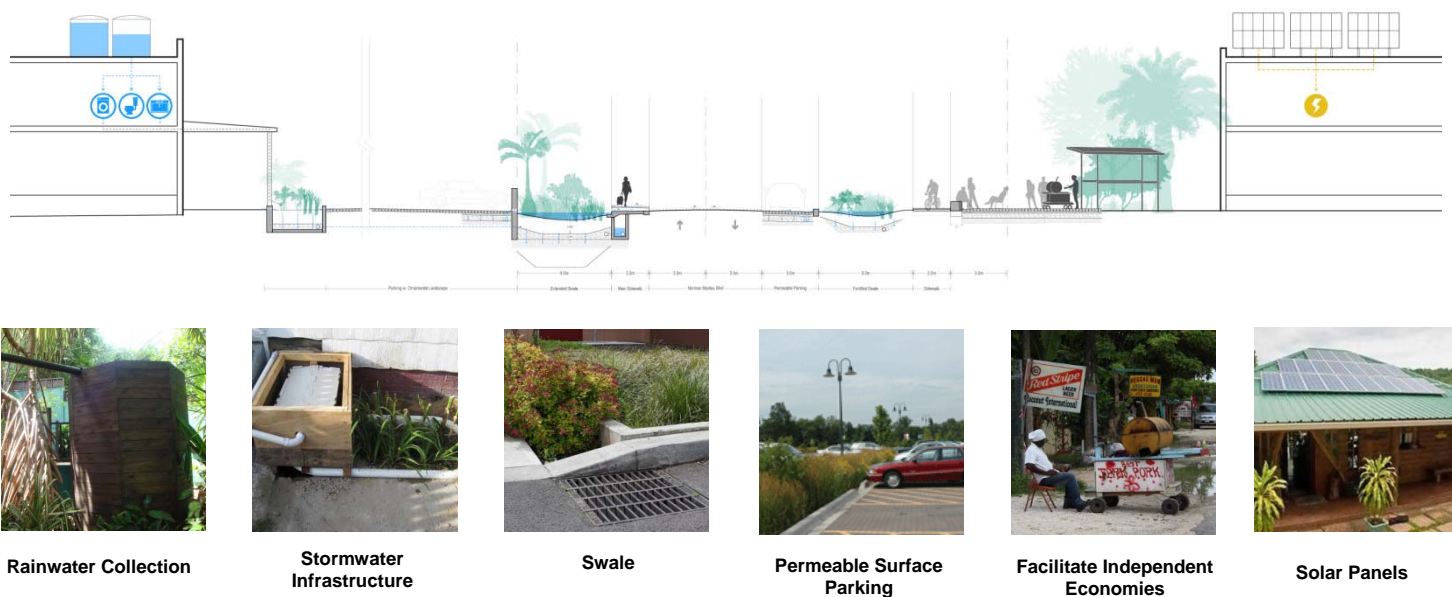


Figure 7: Landscape as infrastructure to enhance the resilience of Negril to the impacts of climate change

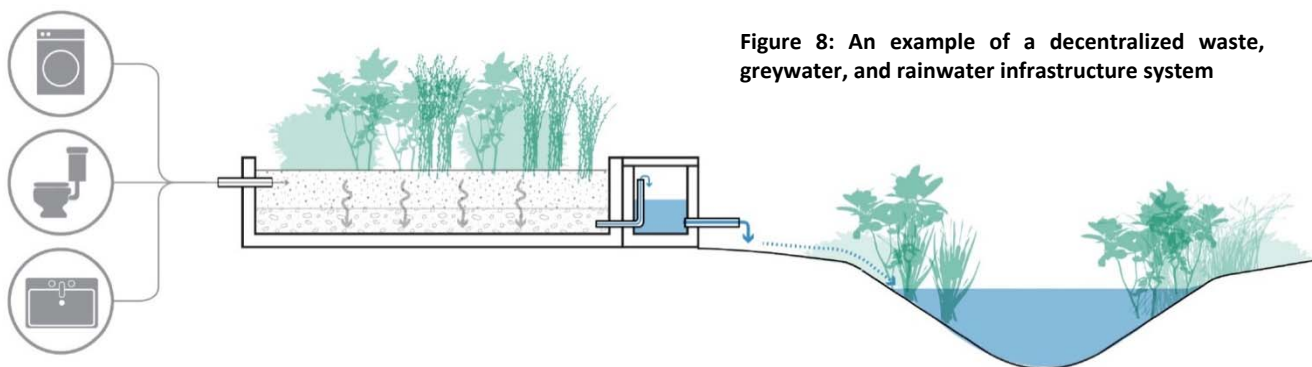


Figure 8: An example of a decentralized waste, greywater, and rainwater infrastructure system

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where, in response, the local community has been restoring mangroves.

At the regional level, there were proposals for off-shore submerged breakwaters for Long Bay that are 3600 meters in length in an attempt to reduced erosion. However, the experts who participated in our leadership forum were very critical of this project because of its irreversible impacts on Negril's environment, marine ecosystems, and tourism development. We also observed some regional-scale soft measures for managing inland flooding and storm water, such as vegetated ditches and drains.

The results from our survey reflect an overall preference for soft adaptation strategies. In particular, the local inhabitants preferred soft protection and retreat strategies, while the tourists preferred soft accommodation and retreat strategies. Similarly, the charrettes' participants referenced Cuba's soft interventions such as beach nourishment, because these would provide room to tackle the set-back problems. Interestingly, notwithstanding the limited space in Long Bay (with it being sandwiched between the sea and the Great Morass), nearly 77% of the locals and 44% of the tourists who took the survey considered retreat their preferred option for Long Bay. Additionally, the qualitative comments from the survey and the charrette discussions reveal that there is a preference for increasing the density of development away from the coast as much as possible. Our study participants strongly opposed large-scale hard engineering and centralized interventions, due to their possible negative impacts on local ecosystems. Instead, our data reveal that there was strong preference among the local community for adaptation measures that are: decentralized and either soft (not engineered) or, if engineered, then small-scaled. These preferences centered on easy to build and maintain approaches, and also on approaches that capitalize on local resources, and ones that are based on reversible strategies.

It was humbling to see how both the locals and the tourists exhibited sensitivity toward balancing environmental and ecosystem protection versus local economic development, especially tourism. As beach-tourism is becoming increasingly challenging due to sea-level rise and beach erosion, the charrette discussions highlighted such options as alternative tourism (eco-tourism) to support local livelihoods.

A Proposal for Negril

Based on these findings and the input from the participants in the two design charrettes, my students and I proposed several recommendations that we hope would be useful for Negril's future planning and design in the age of climate change. I include a sample of three recommendations.

1. The first proposal underscores *integrated coastal adaptation strategies* that are essential for reducing the erosion along Long Bay's beach. These strategies seek to enhance natural adaptive capacity by rejuvenating the marine ecosystems, especially by restoring coral reefs, mangroves, and sea grass which we recommend be augmented with stronger implementation of the set-back

regulations and/or combined with low-impact hard protection measures that can be considered (Fig. 6).

2. The second proposal highlights the potential of *landscape as eco-infrastructure* that can preserve ecosystems. Negril's physical infrastructure, for example, could incorporate bio-swales (drainage courses filled with vegetation or compost) along the highway, integrated with the existing ditches in order to reduce surface runoff and, consequently, the amount of pollutants, entering the sea. Solar panels, rainwater harvesting, and permeable surfaces are all strategies that already exist, albeit sporadically, in Negril. We propose that they become regulated and adopted throughout Negril (Fig. 7).
3. The last proposal to highlight here is related to the previous infrastructure one, but advocates for *decentralized systems* that are more resilient during emergency situations. In a crisis event, such decentralized systems are apt to support and/or replace each other, averting the system-wide crash to which centralization is prone. Such systems can include energy, water, and waste, among others (Fig. 8). •

Any re-use of the text of this article, or of the accompanying figures, must acknowledge Dr. Luna Khirfan as the author.

Acknowledgements

I am grateful for the support that CaribSave and the Negril Environmental Protection Trust (NEPT) provided before and throughout the fieldwork, especially with organizing the design charrettes.

I also thank the students whose contribution was crucial for the success of this research project. From the Univ. of Waterloo the following students (in no particular order): Tapan Dhar, Jinny Tran, Brodie Vissers, Sarah Gunawan, Alex Lavasidis, and Herijadi (Jude) Kurniawan— these students enrolled in a research-based studio that I taught, one component of which was the fieldtrip. The designs presented here are based on their original ideas. From the Univ. of the West Indies, Mona: Shanica Lester, Amal Sealy, and Robert Kinlock joined us for the fieldwork and contributed actively to the design charrettes and the other data collection and management efforts.

Endnotes

1. ParCA received funding from the International Development Research Centre (IDRC) through its Challenge Fund project under the International Research Initiative on Adaptation to Climate Change (IRIACC). In addition to IDRC, ParCA also received funding from the Canadian Research Councils (SSHRC, NSERC, CIHR). For more information, see <http://parca.uwaterloo.ca>.
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Mass Extinctions of the Past—and Their Lessons for Today

by Mike F. Coffin

Dr. Mike Coffin is a Professor at the Institute for Marine and Antarctic Studies, Univ. of Tasmania, Australia. A marine geophysicist, he investigates interactions between the oceanic environment and the solid Earth. After growing up in Maine and studying at Dartmouth College and Columbia Univ., Mike has pursued an international career that reflects the boundless nature of the global ocean. He has worked at Geoscience Australia (1985-1989), the Univ. of Texas at Austin (1990-2001), the Univ. of Tokyo (2001-2007), the Japan Agency for Marine-Earth Science and Technology (2002-2003), the UK's Univ. of Southampton and National Oceanography Centre (2007-2010), and the Univ. of Tasmania (2011-present), and has also held several visiting positions. Mike has led or participated in 32 blue-water research expeditions, focusing mainly in the Southern, Pacific, and Indian oceans.

Mass extinctions constitute a subject that is morbid, but of paramount importance to the future of our species and our planet. By definition, a mass extinction means that at least three-quarters (75%) of the globe's estimated species become extinct over a time span of a few million years or less. In the history of multicellular life-forms on Earth, there have been five mass extinctions. Here, I'll share some insights into those Big Five mass extinction events, and where we stand with respect to a potential sixth mass extinction.

The Geological Clock

Geologists live bifurcated lives; outside of work we operate in the timeframe of human life, mostly in the five generations spanning from our grandparents to our grandchildren. Genealogists look farther back; for example, I can trace my ancestors through my family name 'Coffin' back to the Norman invasion of England in 1066. But to many geologists, 1000 years is inconsequential. At work, geologists typically think on timescales of hundreds of thousands, to hundreds of millions, to billions of years.

The human species is just a tiny thread on the geological clock. Some of the key events in our planet's 4.6 billion-year history include the first appearance of life about 4 billion years ago; the first evidence for photosynthesis 3.5 billion years ago; oxygenation of the atmosphere 2.3 billion years ago; multiple 'Snowball Earth' episodes—when the entire surface of the Earth froze over—between 750 and 635 million years ago; the 'Cambrian Explosion' 540 million years ago, when complex, multicellular life first emerged; the reign of the dinosaurs between 230 and 65 million years ago; and the first appearance of our species, *Homo sapiens*, a mere 300,000 years ago.

It's important to note that extinctions are a fact of life on Earth. As evolution proceeds, extinctions also proceed, usually at a relatively constant "background" level. But *mass*

extinction events are another phenomenon entirely. In the early- to mid-19th Century, scientific debate raged between a leading French scientist, Georges Cuvier, and a leading British scientist, Charles Lyell. Cuvier's view of Earth history was one of *catastrophism*, whereas Lyell favored *uniformitarianism*. Uniformitarians believed that all processes occurring in the Earth's past are occurring today: in other words, processes are uniform over time. In the succinct phrase of Derek Ager, a famous 20th-Century British geologist, Cuvier's concept of catastrophism amounted to "long periods of boredom separated by short periods of terror". Mass extinctions qualify as these short periods of terror.

The 'Big Five' Mass Extinctions

The Earth has experienced five mass extinctions in its past (see Fig. 1), and might be at the start of experiencing a sixth. Each resulted in the disappearance of 75% or more of total estimated species. The first was about 443 million years ago; the most recent, 65 million years ago, ended the reign of the dinosaurs. The extinction marking the end of the Permian period, 251 million years ago, is called the 'Mother of All Mass Extinctions' because 96% of species disappeared.

The 'Big Five' mass extinctions shared certain characteristics. Environmental changes included global warming; high carbon dioxide levels in the atmosphere; depletion of dissolved oxygen in the oceans, called *anoxia*; and ocean acidification. All of those changes resonate with conditions today. While the presence of factors common to all mass extinctions doesn't necessarily imply that those factors are the *causes* of the extinctions, they certainly need to be *investigated* as possible causes.

Even though it is human-induced or *anthropogenic* environmental change that appears to be driving a mass extinction event today, there is much of relevance that we can

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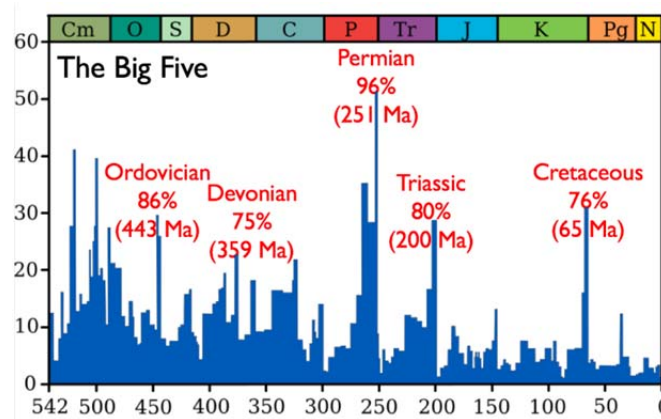


Figure 1. Extinction intensity of marine genus biodiversity for the past 542 million years. For each of the 'Big Five' mass extinctions, also indicated is the percentage of estimated marine species that became extinct and the timing (Ma: million years ago). Source: Wikimedia Commons.



The Svalbard Global Seed Vault is dug 400 feet into the rock and permafrost of Platåberget Mountain on Spitsbergen Island, far above the Arctic Circle in Norway. It stores, for example, 160,000 varieties of rice. All around the world, scientists are racing to establish such repositories of plant and animal materials that could be used to reintroduce populations that go extinct, or to breed new ones able to thrive in a world transformed by pollution, destroyed habitat, and climate change.

Photograph by Spencer Lowell, from the article by Malia Wollan, "Arks of the Apocalypse", *New York Times Magazine*, Jul. 16, 2017.

Mass Extinctions

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learn from previous mass extinctions that were driven by *natural* factors such as massive flood volcanism or asteroid impacts.

Evidence indicates that the most recent mass extinction was triggered by the asteroid impact that created the Chicxulub crater, which is about 175 kilometers wide and is centered just off the coast of the Yucatán Peninsula in Mexico. Globally traumatic, this event some 65.5 million years ago resulted in 'only' a 76% mass extinction, although it caused the demise of the dinosaurs and thus opened niches for mammals, eventually hominids.

Some of my own research involves extraterrestrial impacts in the ocean basins. A body 10 kilometers in diameter striking Earth at 20 kilometers per second would instantaneously excavate a crater 30 kilometers deep and 100 kilometers wide. If the body impacted in the ocean, the entire water column would be vaporized instantaneously. Some of the ejecta would escape Earth's orbit, and the rest would be deposited globally, inducing earthquakes with magnitudes M_w greater than 11 (the largest earthquake ever recorded was about 9, or two orders of magnitude less); widespread tsunamis sweeping the coastal zones of the surrounding oceans; and large wildfires and thermal damage caused by atmospheric reentry of ejecta. The impact release of large quantities of water, dust, and climate-forcing gases (e.g., sulfur aerosols) would dramatically alter the climate system, initially causing hypercanes (super hurricanes) and then cooling of the Earth's surface for years to decades by up to 10° C. ('impact winter'). Sulfur release would also generate acid rain, severely affecting marine surface waters and/or poorly buffered continental catchments and watersheds. Following settling of the global dust cloud, ozone depletion would cause elevated ultraviolet levels ('ultraviolet spring').

Another focus of my research has been volcanism on a massive scale, which is known as *flood volcanism* and appears to have been the main driver for four of the 'Big Five' mass extinctions. Flood volcanism releases into the oceans and atmosphere large amounts of carbon dioxide, sulfur, poisonous metals, and (if the eruptions pass through carbon-rich sediment and rock) methane. Over a larger timescale of hundreds to hundreds of thousands of years, the volcanism increases atmospheric levels of carbon dioxide, hydrogen chloride, and particulates, resulting in global warming.

Planetary Boundaries

To examine the problem in more detail, it's useful to consider the concept of *planetary boundaries*, those environmental parameters that can lead to thresholds or tipping points for the Earth's biosphere.

Consider an environmental stressor such as carbon dioxide, and a response variable such as Arctic sea ice. A safe operating space or equilibrium exists, where increasing carbon dioxide levels don't have an effect on Arctic sea ice. A zone of uncertainty or increasing risk also occurs, where much change can happen. And a new operating space or equilibrium of high risk beyond the zone of uncertainty is present, which might or might not be hospitable for *Homo sapiens* and other life forms. The concept of these three spaces or zones can be applied to many environmental stressors and responses.

Scientists have defined nine key stressors that have safe operating spaces and zones of uncertainties: climate change, biosphere integrity (in two aspects, genetic diversity and functional diversity), land-system change, freshwater use, biochemical flows, ocean acidification, atmospheric aerosol

loading, stratospheric ozone depletion, and novel entities. We—or perhaps more accurately, planet Earth—are beyond the zone of uncertainty for genetic diversity and biochemical flows (specifically, nitrogen and phosphorus). We are in the zone of uncertainty for climate change and land-system change, and we are in the safe operating zone for freshwater use, ocean acidification, and stratospheric ozone depletion. Boundaries have not yet been quantified for functional diversity, atmospheric aerosol loading, and novel entities (such as chemical pollution).

Today's planetary boundaries provide insight into environmental parameters associated with both the 'Big Five' mass extinctions of the past and the current status of life on our planet. At least four of the 'Big Five' mass extinctions were contemporaneous with flood volcanism; four with increased global temperatures; two with ocean acidification; and two with ocean anoxia. Given that we are currently experiencing increased global temperatures, ocean acidification, and ocean anoxia, the question arises as to whether today's human population is analogous to flood volcanism in its environmental impact?

Extinction Rates and Future Prospects

Extinction rates, and their trajectory over time, allow us to get a sense of how close or far away the Earth is from a mass extinction event. Recall that as evolution proceeds, extinctions also proceed, usually at a relatively constant background level.

The most recent estimate for the number of species on Earth is 8.7 ± 1.3 million, of which 2.2 ± 0.18 million are marine species. Extinction rates are typically expressed as a number of extinctions per thousand species per thousand years, or equivalently, extinctions per million species per million years (see Fig. 2). In those units, the fossil record indicates a background extinction rate of 1 or less in the distant past. The recent past is characterized by a rate somewhere between 10 and 100, and the future somewhere between 1,000 and 10,000. (Future extinctions refer to either future loss of species based on the level of threat that exists today, or current and future loss of species as a result of habitat changes taking place roughly from 1970 to 2050. These are model-derived estimates using a variety of techniques.) Thus, the trend from the distant past to recent past to future appears to be an exponential increase in extinction rate for best-studied species, i.e., marine, mammals, birds, and amphibians.

How does what's happening now compare with what happened during the 'Big Five' mass extinctions? Extinction rates at the time of the 'Big Five' were relatively low, whereas current extinction rates are 10 to nearly 10,000 times as high (Barnosky et al., 2011). In other words, the trajectory of current extinction rates is not promising. The International Union for the Conservation of Nature (IUCN) maintains a red list of threatened species. Scientists have calculated that if all threatened—including the IUCN's categories of critically endangered, endangered, and vulnerable—terrestrial vertebrate species become extinct in 100 years, then Earth will experience a mass extinction in about 240 to 540 years. If only those terrestrial vertebrate species deemed critically

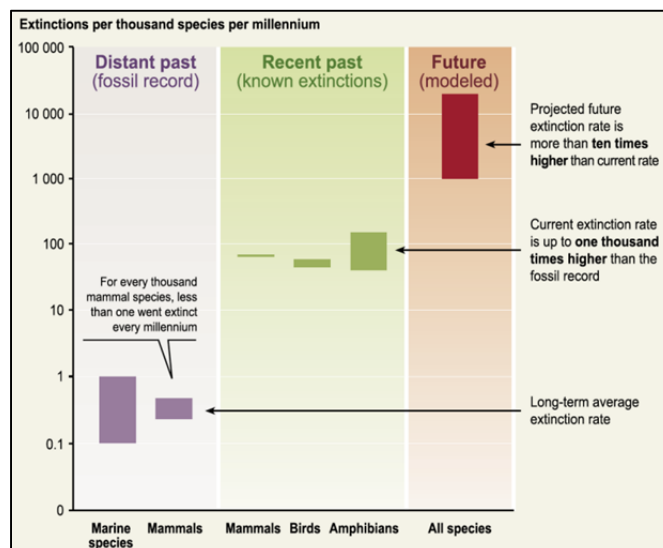


Figure 2. Species extinction rates.

Source: Millennium Ecosystem Assessment, 2005.

endangered become extinct in 100 years, then our planet will experience a mass extinction in about 890 to 2,270 years. Thus, *Homo sapiens* appears to be driving Earth towards a sixth mass extinction through increasing stress on the planet's life support system. The United Nations estimates that the current human population of 7.5 billion will increase to 9.7 billion in 2050 and 11.2 billion in 2100.

Our species, *Homo sapiens*, is the sole lifeform on Earth—in its entire 4.6-billion-year history—to be consciously conducting a planet-wide experiment of environmental change that appears to be driving a mass extinction event. Life will most likely survive this experiment, but not life as we know it. The volcanologist Bill McGuire states: "Instead of a world of gorillas, pandas, birds of paradise, and corals, our descendants will have to make due with rats, cockroaches, thistles, and nettles." The most successful future species will be those that have learned to live with *Homo sapiens*, such as cockroaches, which have been around for 300 million years. He also states that "biodiversity is such a fragile thing—tenderly and incrementally reared by evolution—that it may take 5 million years or more to restore itself... we are actually playing God with evolution itself and the entire future prospects of life on Earth."

What can we do, both as a species and as individuals? Doing all that we can to reduce pressure on the Earth's biosphere is of paramount importance. Novelist and essayist Jonathan Franzen's prescription is unambiguous: "It's true that the most effective single action that most human beings can take, not only to combat climate change but to preserve a world of biodiversity, is to not have children." This prescription might be viewed as extreme, yet it is likely the best opportunity both to avert a sixth mass extinction on Earth and to ensure the survival of our species.

References for this article appear on page 31.

The World's Sand is Disappearing

by Vince L. Beiser

Vince Beiser is a Los Angeles-based freelance journalist specializing in social issues. After earning a degree in Middle Eastern Studies at the Univ. of California at Berkeley, he was employed as a senior writer at The Jerusalem Report and as the Senior Editor at Mother Jones magazine. Beiser is currently working on a book about the global black market in sand. An earlier version of this article appeared in The Guardian (UK) under the title, "Sand Mining: The Global Environmental Crisis You've Probably Never Heard Of" (Feb. 27, 2016). The reporting for this article was supported by the Pulitzer Center on Crisis Reporting.

Times are good for Fey Wei Dong. A genial, middle-aged businessman based near Shanghai, China, Fey says he is raking in the equivalent of \$225,000 a year from trading in the humblest of commodities: sand.

Fey works frequently in a fishing village on Poyang Lake, China's biggest freshwater lake and an essential haven for millions of migratory birds and several endangered species. The village is not much more than a tiny collection of ramshackle houses and battered wooden docks. It is dwarfed by a flotilla, anchored just offshore, of colossal dredges and barges, hulking metal flatboats with cranes jutting from their decks. Fey comes here regularly to buy boatloads of raw sand dredged from Poyang's bottom. He ships it down the Yangtze River and resells it to builders in booming Shanghai, some 310 miles away, who need it to make concrete.

The demand is voracious. The global urbanization boom is devouring colossal amounts of sand, the key ingredient of concrete and asphalt. Shanghai, China's main financial center, has exploded in the last 20 years. The city has added seven million new residents just since 2000, raising its

population to more than 23 million. In the last decade, Shanghai has built more high-rises than there are in all of New York City. That's on top of adding countless miles of roads and other infrastructure. "My sand helped build the Shanghai Pudong airport", Fey brags.

On any given day, hundreds of dredges, some the size of tipped-over apartment buildings, might be on the lake. The biggest can haul in as much as 10,000 tons of sand per hour. A study by a group of American, Dutch, and Chinese researchers¹ estimates that 309 million cubic yards of sand are taken out of the lake annually. That makes Poyang Lake the biggest sand mine on the planet, far bigger than America's three largest sand mines combined. "I couldn't believe it when we did the calculations" says David Shankman, a Univ. of Alabama geographer and one of the study's authors.

All that dredging, researchers believe, is a key reason why the lake's water level has been dropping dramatically in recent years. So much sand has been scooped out, says Shankman— 30 times more than the amount that flows in from tributary rivers— that the lake's outflow channel has been dramatically deepened and widened, nearly doubling the amount of water that flows into the Yangtze.

The resulting lower water levels are translating into declines in water quality and supply to surrounding wetlands that could be ruinous for the lake's inhabitants, both human and animal. Poyang Lake, which sits in a verdant rural area best known locally for a famous waterfall in the nearby hills, is Asia's largest winter destination for migratory birds. It hosts millions of cranes, geese, storks, and other birds during the cold months— including several endangered and rare species. It is also one of the few remaining habitats for the endangered freshwater porpoise. Studies have found that the sediment stirred up and noise generated by sand boats interfere with the porpoise's vision and sonar so drastically that they cannot find fish and shrimp to feed on. And there are fewer fish to be found in the first place, say locals.

"The boats are destroying our fishing areas" said one wrinkled fisherwoman selling plastic bags of crayfish. The dredging destroys fish breeding grounds, muddies the water, and tears up her nets. These days, she says, she's lucky to make \$1,500 a year.

"I've been fishing here for 30 years, and the fish are fewer and fewer" says Tan Jung Hwa, another local fisher, a trim 48-year-old

With sand dredges and barges looming in the distance, fishermen eke out an increasingly threatened livelihood on Poyang Lake in China.

Photo: Vince Beiser for *The Guardian* (UK), Feb. 27, 2016.



Sand for concrete high-rise construction in Greater Noida, a modern suburb outside New Delhi, India.

Photo: George Georgiou for *New York Times Magazine*, Mar. 5, 2017.

in a faded plaid shirt. He's taken to working part time on the sand boats because "I can't earn enough from fishing."

Lake Poyang is a unique place, but the damage being done there is not. Around the world, riverbeds and beaches are being stripped bare, and farmlands and forests are being torn up to get at the precious grains. It's a worldwide crisis that almost nobody has heard about.

The Urbanization of the Planet

The main driver of this crisis is our era's unprecedented urban growth. Cities are expanding at a pace and on a scale far greater than any time in human history. The number of people living in urban areas has more than quadrupled since 1950 to some 4 billion today, with more than half of the world's people now living in cities— and another 2.5 billion to come in the next three decades, according to the UN.

All those new cities require mind-boggling amounts of sand. Just about every apartment block, skyscraper, office tower, and shopping mall that gets built anywhere from Beijing to Lagos is made with concrete, which is basically just sand and gravel glued together with cement. Every yard of asphalt road that connects all those buildings is also made with sand. So is every window in every one of those buildings.

In India, the amount of construction sand used annually has more than tripled since 2000, and is still rising fast. There is so much demand for certain types of construction sand that Dubai, which sits on the edge of an enormous desert, imports sand from Australia. That's right: exporters in Australia are literally selling sand to Arabs.

China in particular is on a city-building spree that beggars anything that the world has ever seen before. Over half a billion Chinese now live in urban areas, triple the total of 60 years ago. That's roughly equal to the entire population of the United States, Canada and Mexico combined. China is also home to the world's biggest urban agglomeration—the Pearl River Delta, across from Hong Kong, bursting with somewhere between 42 and 60 million inhabitants.² Even Nanchang, the unglamorous provincial city that is the nearest major urban area to Lake Poyang, is fringed with fast-growing forests of high-rise apartment blocks.



Building all of those cities requires unfathomable quantities of construction materials. In the past few years, China has used more cement than the U.S. used in the entire 20th Century. Last year alone, the nation consumed nearly 8 billion tons of construction sand, enough to cover the entire state of New York an inch deep.

All of that sand has to come from somewhere. In the region around Shanghai, it came until recently from the bed of the Yangtze River. That turned out to be a bad idea. By the late 1990s miners had pulled out so much that bridges were undermined, shipping was snarled, and 1,000-foot long swathes of riverbank collapsed.

Understandably unnerved by the damage to the nation's most important waterway, which provides water to some 400 million people, Chinese authorities banned sand mining on the Yangtze in 2000. That sent the miners swarming to Poyang Lake, which drains into the Yangtze.

The boats used by the miners to dig up the sand are essentially gigantic floating platforms, fitted with two huge conveyor belts studded with buckets that haul up sand from the lake bottom. The sand is then transferred to transport ships. In one narrow part of the lake, dozens of dredges extend from the shore in a line, leaving only a narrow passageway for a tugboat hauling a barge piled up with yellow sand.

"We used to make more money, but now there is too much competition" complained a crew member aboard one of the dredges. "There are too many people doing this job."

The Costs of Breakneck Mining

Sand mining is causing environmental damage worldwide. In some places, the sand is extracted by the crudest of methods— local people digging out riverbanks

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The World's Sand *continued from page 23*

with shovels and hauling it away with pickup trucks or donkeys. In other places, multinational companies dredge it up with massive machines. Everywhere, the process has impacts on the environment that range from the cosmetic to the catastrophic.

In mid-January 2016, just north of Monterey, CA, several dozen cheering activists performed an odd political statement: they dumped 200 pounds of bagged, store-bought sand onto a beach. They were literally returning the grains back to where they had come from. The sand had originally been mined from that very beach—a beach that, according to researchers, is gradually disappearing as a result.

“This is the fastest-eroding shoreline in California. We’re losing eight acres a year of pristine shore, some of the most beautiful in the world” said Professor Ed Thornton, a retired coastal engineer with the Naval Postgraduate School in Monterey who has been studying the impact of the mine for years and who spoke at the demonstration. “It’s because of sand mining.” (A spokesperson for Cemex, the company that operates the mine, said via e-mail that Thornton’s conclusions “are based on what we believe to be erroneous, speculative data and unsound theory.”)

The beach is the only one in the U.S. that is still being mined for construction sand. Cemex, a global construction firm based in Mexico, operates a dredge that sucks up an estimated 350,000 cubic yards of sand every year. For most of the 20th Century there were many such beach sand mines along the California coast, but in the late 1980s the federal government shut them down because it had become clear that the loss of sand was severely eroding the Golden State’s famous beaches. The Cemex plant, however, is still operating thanks to a legal loophole: it appears to sit above the mean high tide line, putting it out of federal jurisdiction. The protesters want state authorities to step in.

Environmentalists in many places are similarly calling on their governments to rein in sand mining. In Northern Ireland, activists are trying to stop dredging in Lough Neagh, an important bird sanctuary. In southern England, developers want to dredge sand to expand the port of Dover from a stretch of offshore sandbars and shoals, prompting an outcry³ from conservationists who fear that would endanger the many seals, birds, and other marine life for whom the sandbars provide habitat and food.

Different types of sand mining inflict different types of damage. Dredging from river beds destroys the habitat of bottom-dwelling creatures and organisms. The churned-up sediment clouds the water, suffocating fish and blocking the sunlight that sustains underwater vegetation. Kenyan officials shut down all river sand mines in one part of the country a few years ago because of the environmental damage it was causing. India’s Supreme Court recently warned that “the alarming rate of unrestricted sand mining” is disrupting riparian ecosystems all over the country, with fatal consequences of fish and other aquatic organisms and “disaster” for many bird species.

Sand extraction from rivers has also caused untold millions of dollars in damage to infrastructure around the world. The stirred-up sediment clogs up water supply equipment, and all the earth removed from river banks leaves the foundations of bridges exposed and unsupported. A 1998 study found that each ton of aggregate mined from a California river causes an average of \$3 in infrastructure damage—costs that are borne by taxpayers. In Ghana, sand miners have dug up so much ground that they have dangerously exposed the foundations of hillside buildings, which are at risk of collapse.

That’s not just a theoretical risk. Sand mining caused a bridge to collapse in Taiwan in 2000, and another the following year in Portugal, just as a bus was passing over it; 70 people were killed. Another bridge collapse in India in 2016 that killed 26 might have been caused by sand mining, although the local government denies it.

Mining sand from the floodplains near rivers is less damaging, but it can alter the water’s course, creating dead-end diversions and pits that have proven fatal to salmon in Washington State. In Australia, floodplains that are home to the world’s biggest collection of rare carnivorous plants are being wiped out by sand mining. In Wisconsin and Minnesota, farmers fear that a recent boom in sand mining is polluting their water and air. In Vietnam, miners have torn up hundreds of acres of forest and farmers’ fields to get at underground sand deposits.

As land quarries and riverbeds become tapped out, sand miners are turning to the seas. The United Kingdom, for instance, extracts about one-fifth of its new sand supply from the ocean floor. Worldwide, thousands of ships vacuum up millions of tons of grains from the seabed each year, tearing up habitat and muddying waters with sand plumes that can affect aquatic life far from the original site.

Closer to shore, in places like coastal Cambodia, dredging threatens important mangrove forests, sea grass beds, and endangered species like Irrawaddy and spinner dolphins and the Royal Turtle. Up on land, sand miners have devoured whole swathes of beach, from Jamaica to Russia.

The most dramatic impact of ocean sand mining is surely felt in Indonesia. There, sand miners have completely erased at least two dozen islands since 2005. The stuff of those islands mostly ended up in Singapore, which needs titanic amounts to continue its program of artificially adding territory by reclaiming land from the sea. The city-state has created an extra 20 square miles in the past 40 years and is still adding more, making it by far the world’s largest sand importer. The demand has denuded beaches and river beds in neighboring countries to such an extent that Indonesia, Malaysia, and Vietnam have all restricted or banned exports of sand to Singapore.

“It’s the same story as overfishing and over foresting” says Pascal Peduzzi, a researcher with the United Nations Environment Program (UNEP) who authored a study⁴ on sand mining. “It’s another way to look at unsustainable development.” The problem is that the supply of sand that

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Controversy over the Three Gorges Dam Project in China

by Cindy Marriott

Dr. Cindy Marriott is an International Agenda subscriber who lives in Plymouth, MI. She retired in 2007 as an Adjunct Asst. Prof. of Psychology at Schoolcraft College, where she had taught since the 1990s. Cindy has travelled to many parts of the world— from above the Arctic Circle in Norway, to Vietnam close to the Equator.

The Three Gorges Dam, which spans the Yangtze River in China, was controversial both domestically and abroad even before its construction was completed in 2012. Some called it “The Notorious Dam”.

To make way for this massive hydroelectric project, some 13 cities, 140 towns, and 1350 villages were flooded. Over 1.3 million people had to be resettled, not to mention the archaeological and cultural sites that were permanently submerged.

Submerging Nature, Culture, and History

At 22.5 gigawatts, the Three Gorges Dam is the largest power-producing body ever built. But bigger is not necessarily best.

The dam has created major ecological changes, with the potential for significant increases in landslides along the Yangtze River. Currently, 40 million tons of sediment are

deposited into the Yangtze River annually; some estimate that 80% of the land behind the dam is eroding due to deforestation. Crucially, most of this deposited sediment remains upriver behind the dam. That is important because it means that the fields downriver are less fertile, affecting people’s economic survival. Further, the lack of replenishment soil means that the banks downriver are more vulnerable to landslides; about 300,000 people who are imminently threatened by landslides must now be moved. The huge metropolis of Shanghai, which sits on a Yangtze River floodplain, is one of the cities downriver that could conceivably be threatened with flooding as a result of such landslides.

The reduction in sedimentation also causes biological damage and reduced diversity of aquatic and watershed wildlife. Of the 6385 species of plants formerly found in the Three River Gorge area, 57% have now been placed on the endangered list.

On top of all of this, the dam sits on a seismic fault. The danger posed by that situation needs no further elaboration.

The Chinese are also building hydroelectric dams on the upper Mekong River, thereby destroying the livelihoods of Vietnamese fishermen who live downriver. It is as if they are saying, “We can do whatever we want because we are bigger, and you smaller nations don’t have any power.”

Environmental Preservation versus “Progress”

When it comes to balancing economic and environmental values, there is a powerful lesson to be learned from the history of dam-building in the American Northwest.

When I was growing up in Seattle, WA, we lived only 231 miles from the Grand Coulee Dam on the Columbia

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The Three Gorges Dam in 2009 during its construction.

Photo:
Le Grand
Portage/ Flickr
via Wikimedia



Antillean Manatees and the Challenges of International Coastal Conservation

by Katherine S. LaCommare

Dr. Katherine LaCommare is a Lecturer in Biology at the Univ. of Michigan-Dearborn and an Adjunct Professor at Lansing Community College. A specialist in aquatic mammals, she holds B.S., M.S., and Ph.D. degrees from the Univ. of Michigan-Ann Arbor, Purdue Univ., and the Univ. of Massachusetts-Boston, respectively.

The world's oceans are unquestionably in peril. Given the extent to which human society depends on marine resources, there is an urgent need to rise to the challenge of conserving them. For the past two decades, biologists have been sounding alarm bells about our alteration of coastal ecosystems.^{1,2} The severity of overfishing and habitat destruction is as "dire as that of tropical rain forests", yet these changes go largely unnoticed.

By piecing together data from paleontological, archeological, historical, ecological, and genetic records, a picture of decline has emerged. Coral cover has been reduced by somewhere between 43% and 93%, seagrass by 50%, and mangrove wetlands by 50%.² Coastal species have faced similar declines. The biomass of coastal fishes has been reduced by 50% to 80%, coastal whale species by 60% to 85%, sea turtles by 87% to 99%, and manatees and dugongs by 90%.²

Even more alarming than the extent of our impact on coastal species and habitats is that these habitats largely exist in countries that are classified as less developed and therefore, political and economic constraints hamper research and conservation efforts. Antillean manatees in the Caribbean offer an excellent case study highlighting the extent of the conservation problem in less developed nations, where lack of knowledge and funding interact to limit recovery efforts.

I first became interested in manatees in Belize after a visit to the country to investigate the possibility of conducting dolphin research there as part of my doctoral dissertation. Once I realized that few people were studying the manatees, I became intrigued by this endangered species. I also realized that a startling difference in resources for researching and protecting manatees existed between the United States and the many developing nations throughout the Caribbean. Because I am interested in the intersection between ecology and conservation, studying the manatees in Belize was a perfect match for my interests.

Manatee Populations

West Indian manatees, of which Antillean manatees are a subspecies, are one of four extant species in the order *Sirenia*, the world's only group of exclusively aquatic, herbi-



These two Antillean manatees off the coast of Belize are grazing a bed or "meadow" of seagrass, their main food source. Their paddle-shaped tails help distinguish manatees from dugongs, which have fluked tails similar to dolphins and whales.

Photo: Katherine S. LaCommare

vorous mammals. The more familiar dolphins, porpoises, and whales are carnivorous and comprise the quite separate taxonomic category known as cetaceans.

There are two types of sirenians: manatees and dugongs. Each is restricted to either the Atlantic Ocean basin or the Pacific Ocean basin, respectively. Aside from the relatively secure population of West Indian manatees in Florida and a handful of dugong populations in Australia, the vast majority of extant manatee and dugong populations are small, isolated, and found in the coastal waters of developing nations. All four sirenian species are listed as vulnerable to extinction on the Red List of the International Union for the Conservation of Nature (IUCN). They are also listed as threatened with extinction in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which bans the international trade of specimens. Based on best estimates, there are 6700 Antillean manatees scattered in small populations from Mexico to Brazil, and 6300 Florida manatees (the other subspecies of the West Indian manatee) in Florida.

We know that throughout the Antilles and Central and South America, populations of manatees are small, scattered, and fragmented, but we don't know the true extent of either population declines or status. Archeological evidence suggests that Caribbean manatees were hunted for sustenance



This manatee is host to several remora fish, a mutualistic relationship. Photo: Leszek Karczmarski, Cetacean Ecology Lab, Univ. of Hong Kong

by coastal Maya, but that significant reductions in population sizes are attributable to post-Columbian hunting for both sustenance and trade. Although it is difficult to establish a true estimate of declines, writings of explorers and naturalists since the 15th Century suggest that large numbers of manatees were removed from the Caribbean and that perhaps only 10% of the original population remains.¹ This implies that there were once as many as 60,000 manatees throughout the Caribbean.

Knowledge of current status is also sparse. Determining status—population size and trends—for a solitary, elusive species that lives in murky coastal waters is difficult in the best of circumstances. Even in Florida, where the tools available to researchers for determining trends are vast in comparison to the underfunded researchers and managers in the Caribbean, it has taken decades to establish robust population size and trend estimates. In Florida, teams of airplanes fly synoptic surveys (multiple airplanes obtaining minimum counts in a single day). These data, in combination with decades of radio and satellite tracking, mark-recapture, and necropsy data, have been used to develop somewhat robust measures of population size and growth trends. It is a starkly different scenario for manatee researchers in the Caribbean. Here biologists do their best to stitch together information from broad-scale countrywide aerial surveys (flying over the entire coastline in a day or two), boat surveys (traversing coastlines in boats), and interviews (determining frequency of sighting animals by talking with fishermen and others who might regularly see the animals) to determine distribution and minimum population counts. These minimum counts are combined with expert knowledge to determine very rough estimates of population sizes and trends.

Based on these techniques, we can say that the population status of the Antillean manatee ranges from extinct in some of the smaller islands near the Greater Antilles to as high as 1500 in Mexico. Most countries in the wider Caribbean harbor populations of about 100 animals and are thought to have populations that are declining. For

these reasons, I personally became interested in developing boat-based survey techniques that would allow conservation managers to detect trends in population. As part of my research I asked: Can we determine, with some certainty, whether a given manatee population is increasing or decreasing? The answer is: Yes we can, but only on a very localized scale.

Threats to Manatee Survival

We understand the threats facing Caribbean manatees better than we do their population numbers and trends.

Firstly, the size, fragmentation, and lack of connectivity of these populations is itself a threat. Small, fragmented populations are at risk of extinction due to lack of genetic diversity, which can lead to health problems. Small populations also face a greater risk of extinction from a chance event, such as a disease or natural disaster swiftly killing the small number of individuals.

Secondly, anthropogenic sources of mortality also threaten each of these populations. Manatees continue to be killed both deliberately for food and incidentally in fishing nets in coastal communities that rely on subsistence hunting for protein and nutrition. For example, in Cuba a substantial number of manatees are found stranded each year as a result of entanglement in fishing gear. In countries with substantial tourism, boat strikes kill and injure manatees. In Belize in the last five years, manatee fatalities from boat strikes have multiplied by a factor of about 2, and strandings from boat strikes have multiplied by a factor of more than 6.

Thirdly, habitat loss and degradation is pervasive throughout the manatee range. Stranding of calves in Brazil is thought to be the result of loss of reproductive habitat.³ A recent article in the *New York Times* (Feb. 21, 2017) noted that the seagrass meadows of the world, which are a key source of food for manatees and many other marine animals, “are vanishing at the rate of a football field every 30 minutes.”

Culturally and economically, manatees are significant for a wide variety of reasons. Their value to most local and indigenous cultures has traditionally extended beyond that of subsistence. Ancient Mayas used manatee parts for spiritual purposes: ear bones were used as protective amulets, and a specialized drying process was used to make a manatee meat product that was believed to bring men strength and virility. In the Dominican Republic, Puerto Rico, and Hispaniola, bones had value as medicines and as ceremonial implements. In South American cultures, a variety of manatee parts had magical and spiritual significance, and manatees themselves were thought to be water spirits.⁴

In regional ecology, manatees and dugongs hold a unique niche as large, grazing herbivores. Sirenians and green turtles are the only large vertebrate species that extensively graze on seagrass beds. Research on captive and Florida manatees has established that a single manatee consumes as many as 90 pounds of seagrass per day. Despite this unique role in the ecosystem, virtually nothing is known

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Antillean Manatees *continued from page 27*

about what this might mean to the seagrass ecosystem. It is very likely that Sirenians are the equivalent to wildebeest on the Serengeti or the American bison on the Great Plains: large “grazing machines” that shape the ecology of these vast grasslands. Large, hooved, grazing vertebrates impact the diversity, succession, growth, productivity, and nutrient cycling of temperate grasslands. Manatees and dugongs likely play a similar ecological role in seagrass beds. We might not actually know what a healthy, functioning seagrass meadow looks like because so few manatees exist today in comparison to historical numbers.^{1,2} With such few numbers remaining, it is not clear if we will ever truly know.

Conservation: Successes and Challenges

Due to the status and the ecological and cultural significance of this species, the Antillean manatee is protected throughout its range within the Caribbean. It is protected by national legislation in every country except Haiti. Every country except Haiti is also signatory to the above-mentioned CITES and to the Convention for the Protection and Development of the Marine Environment, a treaty that established regional policies and protocols for protecting both marine species and their habitats throughout the Caribbean.⁵

Developed nations such as the U.S. have developed an effective suite of top-down strategies to protect endangered species and manatees. These include approaches such as establishing habitat protection areas, called marine protected areas (MPAs); establishing and enforcing boating regulations; establishing regulations against poaching; and educating fishers about entanglement and the importance of manatees. These types of programs, effective in developed nations, are often less so in developing nations where lack of funding and buy-in can render regulations and protected areas meaningless.

Belize, a small Caribbean country nestled below Mexico on the Yucatán Peninsula, has developed particularly effective conservation programs through public-private partnerships. Manatees have been legislatively protected in the country since 1981 through the Wildlife Protection Act. But conservation efforts have been led by the Coastal Zone Management Authority and Institute, a quasi-governmental organization that spearheads and coordinates manatee management, conservation, and research activities. Belize also has several highly functioning MPAs that are managed, in part, via cooperation with local non-governmental organizations (NGOs). In the central part of the country, Friends of Swallow Caye, a local non-profit, was instrumental in establishing and now managing Swallow Caye Wildlife Sanctuary, which was established in 2002 with the explicit purpose to protect manatees. This MPA includes important secluded habitats in which manatee foraging areas (seagrass beds) are adjacent to bedding areas (depressions in the sea-bottom topography, called resting holes).⁶ Due to its location, it also protects manatees from boat strikes. In the southern portion of the country, the Toledo Institute for Development and the Environment (TIDE) and the Southern Environmental Association (SEA) work tirelessly to ensure funding for wardens and outreach programs for protected

areas in southern Belize.

These government/private partnerships have been a crucial component of success in Belize because local communities are often not only a source of anthropogenic mortality but also rich sources of knowledge about wildlife status and natural history. It is for this reason that successful research and conservation strategies need to incorporate the communities as stakeholders. Often, local communities derive economic benefit from exploiting manatees for food and/or selling meat. Mortality can be incidental to traditional fishing practices. And, occasionally, these communities might still use manatees for long-established cultural traditions. Therefore, developing strategies that incorporate local communities in a “bottom-up” approach is essential to effective conservation. Other countries that have used this as a successful conservation strategy include Colombia and Thailand, where natural resource managers have incorporated local community members into their programs as researchers, wardens, educators, and community spokespersons.⁵

Antillean manatees, like many other species in our ocean and coastal ecosystems, are in danger of extinction. Understanding status, threats, and targets for recovery is a prerequisite for successful conservation programs. However, successful international conservation, both research and management, will need to employ different tactics for acquiring knowledge about status and trends and ultimately, reducing threats. Funding needs to be channeled to these countries and to the researchers and conservationists working there. New, more effective tools must be developed to determine status and trends. Perhaps most importantly, local communities need to be included at all levels of conservation and research projects.

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Where Have All the Bees Gone?

by Chelsea Bantau

Schoolcraft College student Chelsea Bantau, 24, wrote this paper as a term project for an online section of Biology 104 (Conservation and Natural Resources), taught by Prof. Caroline McNutt in Winter 2017. Chelsea plans to transfer to a university and pursue her goal of becoming a science teacher. She lives in Dearborn with her two small children and her husband, an Iraq War veteran.

In recent years, we have seen a dramatic decrease in honey bee populations in countries around the world including the United States, China, Brazil, and many European countries. Since the 1970s, the total number of honey bee colonies in the U.S. has dropped from 4 million to 2.5 million (Nature Conservancy, 2017).

Just this year, on March 21, an important pollinator called the rusty patched bumble bee (species name *Bombus affinis*) was added to the list of endangered species maintained by the U.S. Fish and Wildlife Service (FWS). This is the first time in history that a species of bumble bee has been declared endangered in the United States. Since the late 1990s, the populations of rusty patched bumble bee have decreased by 87%. Now the bee covers only about 0.1% of the range that it used to cover (U.S. Fish and Wildlife Service, 2017). If nothing were done to save them, it is likely they would become extinct in the near future, followed by other species of bees. FWS Midwest Regional Director Tom Melius said, "Our top priority is to act quickly to prevent extinction of the Rusty Patched Bumblebee. Listing the bee as endangered will help us mobilize partners and focus resources on finding ways right now to stop the decline." Now that the species is declared endangered, the Service is required to formulate a recovery plan. More broadly, this helps bring the importance of pollinators to the people's attention and will hopefully encourage everyone to help.

Natural and Human Factors Impair Bee Colonies

The decline in bee populations is caused not by just one factor, but by a combination of many factors. Most of them are related to the growing and expanding human population.

The factor making the biggest impact is our use of pesticides. When these harmful chemicals, such as neonicotinoids, are applied to crops, honey bee colonies can be severely damaged. The pesticides can also drift from the crops and settle onto nearby flowering plants that bees are attracted to. When seeds coated in pesticides are planted, a dust is released in the process. This dust has been shown to contain high levels of insecticides that can harm bees (Gillis, 2017). Bees can be exposed to pesticides while flying, by eating pesticide-contaminated pollen, or by drinking contaminated nectar and water. Pesticide poisoning affects the entire colony of bees. It does not kill them, but damages their abilities to communicate and to forage, and it disrupts their immune functions, making them more susceptible to disease.



A western honey bee (*Apis mellifera*) is pollinating a golden ragwort in this "Protect Pollinators" stamp, one of a series of five issued by the U.S. Postal Service on Aug. 3. Populations of this species, the leading agricultural pollinator in the world, are severely threatened by pests, diseases, and insecticides.

As the human population grows, our demand for resources increases. We clear fields, forests, marshes and other habitats and build farms, factories, houses, and roads. The destruction of natural habitats takes a toll on many species, including bees. Bumble bees like grassy areas with an array of native plants to feed on. They often find this type of habitat on the edges of farms and yards, or in grassy ditches alongside roads. These habitats are often destroyed when we do landscaping around human developments (Nature Conservancy, 2017). Many of the weeds that bees feed on are removed by humans. Sometimes this habitat loss means that the bees' nutritional needs go unmet due to the lack of available plants to forage. The rusty patched bumble bee, mentioned earlier, used to be common in 28 states across the U.S. but now can be found only in small populations in 9 states (U.S. Fish and Wildlife Service, 2017).

Bee populations are the primary victims of a parasitic pest, the varroa mite (species name *Varroa destructor*). These mites are an invasive species brought to the U.S. accidentally in the 1980s. The mite enters a brood cell of a beehive, where a bee larva is growing, and lays its own eggs there. The eggs hatch and feed on the bee larva's hemolymph. The mites then move to another cell or attach to the bees and spread to another colony. When the infested larva grows into a bee, it may be smaller than average, have an abnormally short abdomen, or useless, disjointed wings (Honey Bee Program, 2017). The varroa mite attacks only honey bee colonies. Once infested, the entire colony is likely to die within one to two years. The varroa mite is known to increase a bee's risk of contracting a bee virus or fungal infection (Steering Committee, 2012). Viruses known to affect bee colonies include the Acute Paralysis Virus, Black Queen Cell Virus, Kashmir Bee Virus, and the Deformed Wing Virus. Unfortunately, the mites have developed a resistance to all miticides used against them so far.

Colony Collapse Disorder Affects Farming

Pesticides, pathogens, pests, loss of habitat, and poor nutrition contribute to the phenomenon called Colony Collapse Disorder, or CCD. This occurs when most of the worker bees in the colony disappear, leaving behind a queen, food, and a few bees to care for the queen and any young

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Honey Bees

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bees. The bees left in the colony are not enough to maintain it. CCD was first reported in 2006 when beekeepers noticed a dramatic increase in colony losses (U.S. Environmental Protection Agency, 2017). Over the past few years, the number of honey bee colonies has been decreasing by about 30% per year (Gillis, 2017).

The endangerment, and possible extinction, of bees not only affects the bee populations, it impacts the entire ecosystems and all of the species within them, including us! Bees are pollinators and they have an important job to do. Pollination occurs when pollen from the male part, or anther, of a flower is transferred to the female part, or stigma. Fertilization occurs and a seed is formed. Around one or more seeds a mass of tissue grows to form the fruit. Because the plant parts do not move themselves, many pollinating plants rely on insects, such as bees, to carry pollen from the anther to the stigma. It is crucial to have enough pollinators present during bloom to produce a sustainable crop. Fruits that are not pollinated properly may be unusually small or misshapen (Lee, 2017).

In the U.S., about 150 crop species rely on bees or other insects for pollination. These pollinators have an estimated value of \$20-40 billion per year in increased crop yield (Primack, 2012, p. 61). As the human population continues to grow, so too will our agricultural demand and the demand for pollination.

Different plants and crops vary in their reliance on bees as pollinators. Currently, the California almond crop alone requires over 60% of all managed bee colonies in the U.S. (Steering Committee, 2012). A few of the other U.S. crops that bees pollinate are cucumber, peach, cherry, blueberry, blackberry, raspberry, pumpkin, squashes, and melons. The crops that are pollinated by bees include not only many used for food, but also others used for spices, fibers, or medicines (Gillis, 2017). Farmers and agribusiness firms growing bee-pollinated crops generally maintain annual contracts with professional pollination services. These are beekeepers who transport their mobile hives from one property to another.

If the health and number of bee populations increase, crop yields will also increase. Without bees, agriculture would suffer greatly and we would not have enough crops to support our growing population. Plant species that rely on bees for pollination would also be driven into extinction following the extinction of bees.

Measures to Protect Pollinators

In June 2014, Pres. Obama, the Dept. of Agriculture, and the Environmental Protection Agency created the National Pollinator Health Strategy. The main goal is to promote the health of pollinators, including bees (EPA, 2017). In 2017, the EPA promulgated measures designed to protect the hives that are maintained by pollination services from contamination by sprays, dusts, and other pesticides. It has banned the use of some neonicotinoid pesticides in areas where bees are present, expedited the review of varroa mite control products, and is developing new bee exposure and



Photo by Jim Cane, from (Lee, 2017)

Fruits pollinated improperly may be unusually small or misshapen. The left and middle raspberries were self-pollinated, while the berry on the right was bee-pollinated.

effect testing for pesticide products. The EPA has provided farmers with information regarding the length of time a pesticide will remain toxic to bees after being used on crops (EPA, 2017). It is also working with the manufacturers of pesticides to help reduce their effects on bees.

In addition, there are many things that we ourselves can do to help the bees:

1. Reduce the amount of herbicides and pesticides that you use in your yard.
2. If you find a beehive in your yard, leave it alone if it is not bothering anyone.
3. Create a bee habitat by planting flowers that bees are attracted to and by leaving a bare spot in the dirt near your garden. About 70% of native bees nest in the ground rather than in an above-ground enclosure, or hive; leaving a clear patch of earth gives these bees a place to burrow (Nature Conservancy, 2017).
4. Plant a variety of plants that bloom throughout the year to ensure that bees get food for a longer period. Plants that bees like include sunflowers, poppies, marigolds, hyacinth, honeysuckle, raspberries, cucumber, lavender, and rosemary.

If we all get involved, we can help to save and protect the bees.

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The World’s Sand *continued from page 24*

can be mined sustainably is finite— but as the great urbanization boom is proving, the demand for it is not.

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Three Gorges Dam *continued from page 25*

River. Construction of this huge concrete dam was started in 1933 during the Great Depression, when jobs were desperately needed to boost the economy. However, the vision for this dam was larger than just its role as a labor-force expander. It was described as being the biggest dam ever built, a project that would fulfill Pres. Franklin D. Roosevelt’s vision for a “planned promised land where hard-working farm families would finally be free” from the vagaries of the environment, drought, and flooding.

Over 3000 Washington residents had to be resettled, and at least 11 towns, 9 railroads, 4 sawmills, and 14 bridges were inundated in the construction. Also of real consequence were the ancestral sites and cemeteries of the native American Indians of the region. Many grave sites were relocated, but 2000 were not and were thus covered with water.

Neither Grand Coulee nor the Chief Joseph Dam further down the Columbia River were provided with fish ladders. Thus, not only were 21,000 acres of prime bottomland inundated— wiping out traditional hunting grounds of the Indians— but also the salmon essential to Indian livelihood were unable to travel upstream to their natural spawning areas. Thus, 1100 miles of natural spawning habitat were eliminated. The Indians estimated that their yearly catch was reduced by 600,000 salmon, while the U.S. Army Corps of Engineers said the figure was closer to 1,000,000. In June 1940, the Indians of the region held a “Ceremony of Tears” marking the end of fishing as a traditional way of life.

There are more than 60 dams in the combined Columbia and Snake River watershed. Allowing water to spill over the tops of these dams would enable fish to swim past them and to spawn and survive, but would also reduce the amount of hydropower generated. This represents a direct conflict between environmental preservation and short-term economic “progress”. But in March 2017, a judge did order a program of more spill over the Columbia River dams in order to help the endangered salmon and steelhead species.

The Itaipu Dam, on the Parana River between Brazil and Paraguay, is considered the physically largest dam in the world. Its construction displaced 10,000 families. To create safer navigation around the dam, in 1982 the builders dynamited the submerged rock face over which flowed the Guairá Falls, which was the largest waterfalls in the world by volume. The dynamiting wiped out these beautiful falls, along with the possibility of ever restoring them in the future.

A common theme found in the Grand Coulee Dam, the Three Gorges Dam, the Itaipu Dam, and many other dam projects is that they crystallize how civil engineers view the world and the environment. What I have learned from exploring this information is that engineers are interested in larger dam structures, taller dam structures, dams with more turbines— without understanding that unforeseen consequences occur, affecting thousands of people and the environment in which they live.

Improved Indoor Stoves for Rural Thailand

by Anna and Jim Verhoye

Dr. Anna Verhoye is a Communications Instructor at Dakota County Technical College (Rosemount, MN) and is founder/director of the Learning Through Serving Consortium, in which students from more than eight colleges and universities in Minnesota, Missouri, and Pennsylvania get involved in service-learning projects. Dr. Jim Verhoye is Director of Education at the Minnesota Correctional Facility-Shakopee. Below, Anna and Jim describe some of their work with La Paz International, a group that takes college students and community members to countries such as Thailand, India, Tanzania, Guatemala, and Haiti to learn first-hand about critical issues of poverty, environmental and economic justice, genocide, and war crimes. The couple spoke about La Paz at Schoolcraft College this past Feb. 17 as part of the Focus Presentation Series.

It's a warm summer morning in the remote hills of northern Thailand, and several thousand people are beginning their day. Their morning routine is centered on their first meal of the day, and it involves starting an open fire inside their residence in a chimney-less stove area.

Typically, the house or hut in which this occurs is a 15' by 15' structure made of cement-block walls that are covered in black smoke from the lifelong residue of uninhibited burning, with a corrugated aluminum roof overhead that is also covered in layers of accumulated soot on the inside. After a few minutes smoke fills the dwelling, producing irritation to the eyes, nose, and throat of the residents, many

of whom are young children. One can only imagine what is happening to their lungs.

According to the World Health Organization, or WHO (<http://www.who.int/mediacentre/factsheets/fs292/en/>), poverty forces over 3 billion people throughout the world to cook and heat their homes using open fires and simple stoves burning biomass (wood, animal dung, and crop waste) or coal. WHO estimated the resulting impacts on health:

- About 4.3 million people per year die prematurely from illness attributable to household air pollution from cooking with solid fuels.
- More than 50% of global premature deaths due to pneumonia among children under 5 are caused by the particulate matter (soot) inhaled from household air pollution.
- Exposure to household air pollution accounts for some 3.8 million premature deaths annually from noncommunicable diseases, including stroke, ischemic heart disease, chronic obstructive pulmonary disease (COPD), and lung cancer.

"Having an open fire in your kitchen is like burning 400 cigarettes an hour" says Dr. Kirk Smith, a Professor of Global Environmental Health at the Univ. of California at Berkeley. "Unfortunately," he continues, "we have not made a lot of progress in the past decades and household air pollution is still the largest single health risk factor for Indian women and girls." Research shows that the situation in Thailand, particularly in the poorest areas, is just as bleak and improvements have not advanced significantly in recent decades.



Li Chao and his wife (also called Chao) cook supper over a traditional open fire pit in northwestern Thailand. A layer of sand keeps the heat from igniting the floor of their home, a wooden hut on stilts. The couple grows rice and cattle in Pok Bun, a village of about 120 farmers of the Karen ethnic group, which is one of the "hill tribes" of Thailand.

Photo: *The Furrow*
(John Deere and Co.),
Apr. 2017

In addition, the inefficient use of solid fuels for cooking damages the atmosphere and contributes to global warming by releasing soot (black particulate carbon), carbon dioxide, and methane, three of the key constituents in the planet's greenhouse effect.

So what can be done about this practice, which has detrimental effects on health and the environment? Is it possible to reduce these harms, while also reducing the enormous amounts of time for the (primarily) women and children who do the gathering of wood and other biomass fuels for this type of indoor cooking and heating—time that children could be in school?

Since 2002 La Paz International, the brainchild of Dr. Anna Verhoye, has been leading peace and justice education journeys to developing countries in an effort to better understand a variety of local practices that impact health and the environment. From the Lake Atitlan region of Guatemala, where reforestation efforts are having a positive impact on the people and their community, to the northern hills of Thailand, where assisting locals with creating a social enterprise engaged in sustainability has been very successful, Dr. Verhoye believes change can and does happen.

The change process begins with trying to understand the culture of the local community, instead of imposing a new or different framework onto the local people. This understanding, forged through *the reciprocal sharing of lives* by travelers and locals, leads to a mutually beneficial plan for how to work within the existing cultural practices to support the local people in *living the lives they want to live*, while providing educational opportunities for travelers and locals alike.

Over the last several years the efforts in northern Thailand have focused on sustainability, the ecological principle involving ongoing efforts to maintain the diversity and productivity of a given environment. One project in particular has focused on assisting locals with creating a sustainable social enterprise that supports healthier cooking through the building of more efficient indoor stoves. The goal of this project is to assist a local entrepreneur and his family in their efforts to expand their social enterprise in ways that support the local economy and environment. Along with building more efficient stoves with smoke stack-style chimneys that reduce and divert the exhaust, there is a new initiative involving the construction of greenhouses that can be utilized for reforestation efforts and other “green initiatives”.

For more information about the La Paz International Foundation (a 501 (c) (3) nonprofit organization), its social enterprise projects, or its future peace and justice education journeys, contact Dr. Anna Verhoye at anna.verhoye@gmail.com. •



Above: Chimneying a stove through the aluminum roof of a cement-block house in a village in Chiang Mai Province, rural northwestern Thailand.

Below: A Thai resident surrounded by Anna and Jim Verhoye and young La Paz volunteers, who have led construction of an appropriate stove and chimney.

Both photos: La Paz International



Giving a Helping Hand to Syrian Refugees

by Mercy Ingraham

Mercy Ingraham is a retired psychiatric nurse who lives in Bucks County, just north of Philadelphia, PA. She lives in an 18th-Century home with a cooking fireplace and teaches open-hearth cooking there. Mercy tells us, "Although not usually a politically active person, I feel compelled presently to do as much as possible to return our country to the humanitarian principles that used to characterize it." She can be reached at mercyingraham@gmail.com.

I am a descendant of immigrants. My ancestors arrived in New Paltz, NY, in 1688, having left a homeland where it had become intolerable for them to stay. They were French Huguenots and had suffered decades of religious persecution in Europe because their concept of God was different from those who lived around them. They were considered troublemakers.

I grew up in an all-white suburb and thought that the rest of the world was just like my neighborhood. Then my best friend in grade school told me about the Holocaust. She was the daughter of the only Jewish family in town, and World War 2 was still going on. That's how I knew about the Holocaust before my parents did. Later in life I learned that my country's refusal to allow more Jews to immigrate during that time led to their deaths.

When I graduated from high school I went to nursing school in a big city, and it was there that I first met people

who were poor, or were Black, or who didn't speak any English. The concept of immigration and the reality of prejudice became more visible to me. The sheltered world where I had grown up had deceived me and I felt betrayed.

The immigrant experience continues to have an impact on my life. My daughter married a man who was born in the Caribbean and had been brought to this country as a young child. Shortly after they married, he was deported because he could not prove that he was in the U.S. legally. He was never allowed to return. He died after many years of illness that my daughter's American medical insurance would have helped to treat. This is why I have no grandchildren.

When I see photos of all the refugees being torn from family and home, my heart goes out to them. I live alone in a house with two bedrooms. Couldn't I offer to share it with a needy refugee family? But I cannot take on the financial support of another family, and that fact has kept me from acting.

Until now.

Fusing Together a Core Team

About a year ago, a friend of mine was strongly moved to do something about the humanitarian crisis in Syria. She contacted a mosque, several synagogues, and various Christian churches, outlining what would need to be done to help settle an immigrant family in our area. We formed an



War-torn ruins in Aleppo's Old City. In 2016, the U.S. admitted about 15,000 Syrian refugees; Canada admitted more than 25,000.

Photo: Sebastián Liste/Noor Images, for *The New York Times*, May 28, 2017

interfaith coalition, and many people made the commitment to join us. We now have an e-mail list of over 300 names.

Volunteer groups such as ours initially work under the aegis of a non-profit sponsoring agency. These non-profits have contracts with the federal government and are responsible for overseeing the settlement of newly arrived refugees. They will not assign refugee families to the volunteer organization until these volunteers have shown that they have a long-term commitment to this endeavor—defined as having 10 people who pledge to work with the family for a minimum of two years, and who have \$10,000 in the bank. These people are known as the Core Team, and act as the leaders and organizers of the broader group of volunteers.

I work closely with a refugee woman, whom I will call Alya, from a small village near Damascus in southern Syria. (Many Syrian refugees are still fearful of retribution, and will not allow their photos or their real names to be published.) She arrived as a 32-year-old widow with two sons, aged eight and ten. She and her sons had witnessed the killing of her husband during the war, and they had to flee their home four years ago. The rest of Alya's large extended family from her ancestral village now live in Jordan, where she says Syrians are hated. Alya talks daily to her mother on a cell phone; they cannot find jobs or go to school in Jordan, and Alya worries about those she left behind there. Sometimes, when she talks to other relatives who are still in Syria, she hears gunfire in the background. During one conversation, the building next door was bombed and people she knew were killed.

We are fortunate that Alya can speak English quite well. (Our first family arrived in this country speaking no English.) She went to college in Syria for two and a half years and was an English Literature major. When we get stuck trying to communicate, she will look up a word on the translator app on her cellphone. She is bright and hardworking, and currently learning how to drive in the U.S. She had driven before in Jordan, but never on a road wider than two lanes. Someone donated a 1997 Saturn to our group, and she is learning to drive with that. It will not be long before she is ready to take the exam for her driver's license.

Alya's sons are doing amazingly well and are learning English in school. They take karate lessons twice a week, and both play in the local soccer league (I have become a "soccer grand-mom" in my old age). We are making plans for them to attend a Summer day camp that features life on a farm, growing vegetables and taking care of animals. Alya shows me photos of the boys in a beautiful vegetable garden back in their home village in Syria. They are very excited about going to camp.

Her younger boy seems to be picking up English well and is bright and energetic. He is amazing to watch on the soccer field because he is so fast, and stays focused on the ball and on scoring points. The older brother is also a talented soccer player, and weekends are largely spent outside at the huge soccer park a few miles from their apartment. We try to offer both boys the experiences that their peers enjoy, like going to the movies, or to the trampoline park, or to the aquarium, or the museum of science. They attend Sunday



Alya and her two sons, a family who fled their ancestral village near Damascus, visit an aquarium near their new home in Bucks County, PA. Photo courtesy of Mercy Ingraham.

school at the mosque and recently had a graduation ceremony. Other children are learning to speak Arabic there, but of course our boys are at the head of the class in their native language.

I do not understand why people are afraid of Syrian immigrants. The vetting process that applicants go through to immigrate to the U.S. is rigorous. Each person must be interviewed and approved by five different government agencies before they are allowed to enter the country. The process takes between 18 months and two years.

Advance Preparations

What do our volunteers do? In a word—everything. Our first task was to secure affordable housing. We live in a suburban area about a half-hour north of Philadelphia. It is expensive and there is little public transportation. Members of the mosque researched reasonable apartment options and signed the leases on behalf of both families.

The second task was to furnish the apartment, and we were given a list of the basic items that have to be in place prior to a family's arrival. New mattresses, with accompanying linens, were required for all family members. The kitchen must be set up and stocked with basic pots, pans, and cooking utensils. The sofa and chairs must be in the living room along with table lamps if there are no overhead light fixtures. Windows must be covered with blinds or curtains to allow for privacy. We partnered with two local thrift stores, and they allowed us to choose what we needed from their stock of available furniture items. They also donated several hundred dollars' worth of Winter clothing for our newly-arrived families.

Other volunteers researched available jobs, schools, and transportation options. I offered to coordinate furnishing and setting up the apartment. All of the family members must apply for a social security number. This entitles them to apply for cash assistance, food stamps, and medical insur-

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Syrian Refugees *continued from page 35*

ance. A series of appointments is made so that any health problems can be identified and treated. Children and adults frequently need immunizations despite the fact that they have already had thorough medical exams prior to coming to this country. Volunteers are needed who are able to drive them to medical appointments and sit in doctor's offices while they are being seen. In fact, in our suburban situation drivers are an essential part of every activity.

The mosque laid in a month's supply of food, which for Muslims needs to be *halāl*—a set of food restrictions similar to kosher. No pork. No alcohol. Meat is slaughtered in a religiously appropriate way. After an 18-hour plane trip, the family is greeted at the airport by representatives of the contracting agency and brought to their new home. They are given a day to rest, and then the flurry of appointments begins.

Making a Home for the New Arrivals

Our first family arrived in November and was composed of a young couple (both 21) with two daughters, aged one and four. The second family came in January, and consisted of Alya and her sons.

We wanted to have a welcoming party to thank all of the donors who had helped us to set up the apartments or had contributed money to our families. We planned to introduce both of the families to the donors so they could say thank-you in person. We asked for an RSVP to the invitation, and 50

people said they would attend— but 150 showed up! One donor family brought two brand-new bikes for the boys, and someone else brought them helmets and a lock for each bike. Another person had a large-screen TV they weren't using, and donated that. Even the local Republican Congressman Mike Fitzpatrick came with his aide and promised to support our activity. The young father in our first refugee family had trouble comprehending the outpouring of help from all of our various religious groups. He kept asking, "Why do they do this?"—suspecting that we wanted something in return. His experience in Syria and Lebanon had not prepared him to experience people from other faiths working so well together for the good of another.

Temporary financial support is offered to immigrants when they first arrive. But this is time-limited, and within six months of arrival, immigrants are expected to begin paying back the \$1000 per person that they received as a loan to pay for their airfare. They must join the workforce, and their benefits are gradually reduced as they begin to earn more money.

Once the families were settled into their apartments and the basic medical and legal tasks were accomplished, we embarked on the more difficult task of helping to integrate our families into this society and moving them toward financial and social independence. This will be the most challenging task of all.

Our next immediate challenge is to help Alya find a job so that she can support her children. When she went to



This graphic, "Immigration Ban", is by Jocelyn "Jay" Paul of Commerce Twp., MI, who is majoring in Computer Graphics Technology (CGT) at Schoolcraft College. She created the work last Winter as a project in CGT 226 (Digital Imaging 2), taught by Prof. Michael Mehall.



Ahmad Mohamed Zein and part of his family, who fled civil war in Aleppo, Syria, and were resettled in Lancaster, PA., enjoy a traditional Syrian breakfast in their new home. Photo: Todd Heisler/ *New York Times*, Feb. 6, 2017

college in Syria, she had planned to become a teacher, and she still wants to do that. She will need to begin her career as a teacher's aide, and the salary will not be sufficient to support two boys. We explained this to her and she is willing to work an extra job, and also work from home at nights to make ends meet. When I asked her why she decided to leave her family and come to this country she said, "So my children will have a future."

We Hosts Get Back More than We Give

One of the most joyful side-effects of this whole endeavor for me has been the reaction of people to the needs of our Syrian refugees. It seems that whenever we need anything for them, all we have to do is ask. It is helpful that we live in an affluent community and are surrounded by people with considerable material means. Time after time, our Core Team looks at a need—such as child safety seats for riding in a car—and someone has some to donate, or a local hospital provides one for the infant for free. For me, this is one of the great comforts of our work. I am daily reminded that there are good people in this country who want to help those who are less fortunate.

Of course, not all of our challenges are easily accomplished. The families have experienced incredible traumas that we can barely imagine, and they each carry those scars with them. They have difficulty blending into our

society, and they struggle to function in the absence of the extended-family network that is central to life in Syria. Minimal ability in English is still a barrier for most of them. I wake up at four in the morning and start thinking of new ways to address their current problems. Sometimes I do my best thinking at that hour.

As a member of the Core Team, I probably spend about 20 hours per week working with other volunteers and helping our families either directly or indirectly. We depend heavily on our pool of volunteers, and the eventual goal is that our Syrian families will become self-sufficient. All of us continue to be totally in awe of these courageous people who have left everything they know and love, to come to a strange country to begin their lives all over again. This long Syrian civil war and ethnic conflict has cost them their country, their homes, their culture, their families, and all that they loved about their lives. The parents will probably always live on the edge of poverty here, but their children will have opportunity—something they would not have had in Syria or Jordan.

And what do I get out of this? It feels like much more than I am giving—truly. One of the developmental tasks of aging is to see your connection to the continuum of life, and to carry forward that which is of value into the future. Since I will never have grandchildren, this is my opportunity to give something to the next generation. Even though I have not

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“Americans Like to Squeeze Every Hour Out of the Day”

What follows is the text of an e-mail interview with Charlie Miles, a student from Brighton on the south coast of England. The interview was conducted in May by Marianne Brandt, a member of the Editorial Committee for this magazine. Charlie graduated that month from Schoolcraft College and transferred to Madonna University.

Q: In what year did you come to the U.S. from England?

A: I originally arrived in Summer 2013, in Chicago as a soccer coach. I arrived in Michigan in January 2016.

Q: What made you decide to come study at Schoolcraft College?

A: My friend from Chicago was a former student here, and once he heard that I was interested in studying in the U.S., he helped me with the process.

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

A: The transition was quite easy, but of course there are cultural differences. I am still surprised by how friendly and hospitable people here are. There were lifestyle changes also, as Americans like to squeeze every hour out of the day. I very much enjoy the American way of just getting things done. English people shut down at 5pm, eat dinner, and watch TV. That isn't common here!

Q: What career direction are you thinking of, and why?

A: I will be taking a marketing degree. In my time here many people have advised me to enter the business field. I enjoy connecting and networking with people, so it seems a natural transition.

Q: What do you like about studying at Schoolcraft?

A: It has without doubt served a purpose, and has helped me set the foundation to move on and earn my degree. I have enjoyed coming to campus and seeing regular faces, quite like a small community.

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

A: When I first arrived I had no idea what a GPA was, and had no idea as to how classes would be. I left school at 15 in England, so I wasn't entirely sure whether I would enjoy it and therefore complete what I had set out to do. My friends, other students in the class, and professors made a big effort to help me, and I haven't looked back since. I am very determined, and motivated, but without that help I think I would have struggled to adjust and thrive like I have. I don't think there is any better way to



learn than being thrown into the deep end, and I don't think I could have done anything differently to prepare.

Q: What do you perceive are the major cultural differences between England and America?

A: While I am a college student in the U.S., everything seems very fast-paced, which is quite the opposite to England. England is 9-5 during the week, and the weekends are for relaxing. The American way does not allow for much relaxing! Also, customer service does not really exist in England. The American culture is extremely convenient in that sense. The humor is of course a big difference also.

Q: Did you make friends with Americans? If so, what made it easy or difficult for you?

A: I made friends with many Americans right away! Americans are the most hospitable people I have ever known, so it was extremely easy for me. When I first arrived I had two numbers on my cell phone: my boss, and an American friend of my brother. It's slightly more now! I now have a handful of very close American friends, and it feels very much like home.

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

A: There are many opportunities to thrive and be successful here. I have been very fortunate since arriving and have met many people that have influenced me in a positive way. I really appreciate the opportunities that people have made for me and I hope one day to be able to pay that back, or forward. I have always really enjoyed the American importance of education, and being proud

of it. Since I learned this, I have always wanted a degree of my own to be proud of. One day I'll get there!

Q: George Bernard Shaw once quipped that Americans and Britons are cousins "separated by a common language." Are there some expressions that you had difficulty understanding?

A: I understand Americans a lot better than they understand me! For the most part, I did not have trouble. We also use expressions like "give me a ballpark figure" and "step up to the plate", so I knew what those two meant. Of course, there are exceptions; occasionally I was thrown off by the use of different American words, so I have had to adjust to them. I still use a lot of my own but mostly American! I recently heard myself saying "dude" and "man", and I thought "oh no, it's started".

Q: Is there anything you are missing from England?

A: I miss the English foods, and the sweets (candy)! My mum sends me chocolate, biscuits, tea, and other English bits so that I have some home comforts, and that's always nice to have. Besides that, I obviously miss my family

dearly. My niece has just been born, and I am currently watching her grow up on Facebook and that's tough. I am very close with my family so sometimes I feel guilty for taking myself so far away, but I like to think they all understand!

Q: What is your opinion about Brexit?

A: Politics aren't my thing. My opinion is that regardless of the final decision, people have to adjust to the changes, and always seem to. There are pros and cons about both outcomes, either way, it's happened. Pull together and get on with it. I try not to have discussions about politics, and it's not because I don't care, it's just that I find they are always conversations with no ending. I appreciate everyone's opinion, and why they vote for certain people. Nobody is right or wrong, so why does my opinion matter?

Q: Are there any comments you would like to add in regards to living in the USA?

A: I can't wait to travel around the different states!

Syrian Refugees

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personally experienced being an immigrant, my admiration for these brave people can bring me to tears. The daily courage I see exhibited by our families moves me deeply, and puts my petty concerns into perspective.

My son-in-law's family brought him here from the Caribbean as a child so that he could have a better life, but he could not overcome the prejudices of our current society. Religious persecution has never ended, and now some people who do not understand Islam are afraid of it. I hope that the presence of our Syrian refugee families and others like them will help such people see Muslims in a new light. My activity with this group has helped to diminish the pain that I feel about living in a country that currently tolerates so much racism and xenophobia. And every day I learn something new. As Thomas Merton once said, "The only certain sign of life is growth." And at the age of 78, the process of helping these families is also helping me to grow.



Ahmad Mohamed Zein took copious notes in Arabic in preparation for his driving test.

Photo: Todd Heisler/ *New York Times*, Feb. 6, 2017

A Narrative and a Contrary View: America's WW2 Campaign Against Japan

by Richard Furnier

Richard Lonson Furnier, 86, of Canton, MI, is a returning student at Schoolcraft College. After a 40-year design career at Ford Motor Co. and 20 years of retirement, he got bored and decided to take a Continuing Education course, "Writing Refresher". He credits his CEPD instructor, Frank Harrison, for igniting his new love of writing. Since then, Richard has audited English classes taught by Profs. Ellen Hunley and Anna Maheshwari.

In recent years TV, radio, and newspaper articles have become increasingly critical of the United States for placing Japanese people, whether American citizens or not, into detention camps during World War 2. Similarly, we are seen as villains for using the atom bomb to put an end to the Pacific campaign. Today, Japan, along with Germany and Italy, are among America's staunchest geopolitical allies. But this was not the case in WW2, as these nations formed America's Axis enemies.

It's important to note that most of the accusers that we've heard from were not alive 75 years ago in 1941, when these events began. They've taken a narrow view, blaming America, while ignoring the dilemma we were facing. The memoir that I am offering below is in the first person. I was alive; therefore, my account will be unapologetically visceral. No *mea culpa* will be found here.

In brief, I'll write about: The Rising Sun, Impact (Fear), Internment, The Bomb, A Cogent Thought, and A Final Word.

The Rising Sun

For some time resentment had been building between Japan and America. Japan, an industrializing island nation, was unable to meet its need for raw materials; it was dependent on the U.S. for many items, especially oil and steel. Seeing Japan repeatedly attacking China, the U.S. feared Japanese expansionism and began embargoing the shipment of these resources. Here were Japan's choices: continue to exist as importers, living in peace; or find a way to acquire the resources and continue to attack China and the Pacific islands.

The choice was made to destroy the only barrier to oil, steel, rubber, etc.: the American fleet docked at Pearl Harbor, on the island of Oahu in Hawaii, a U.S. territory at the time. There are various opinions regarding Japan's decision to choose war. To those favoring the attack on Pearl Harbor, Japan was seen as the natural leader in the Pacific, and should be allowed to impose its manifest destiny over East and Southeast Asia. The United States, on the contrary, saw



Japanese Prime Minister Shinzo Abe and U.S. President Barack Obama at Pearl Harbor, Hawaii, last Dec. 27, at ceremonies marking the 75th anniversary of the attack that brought the U.S. into World War 2.
Photo: Carolyn Kaster/ Associated Press

Japan's aggression as an unjust attempt to control the western Pacific Rim, i.e., Korea, China, Malaysia, the Philippines, Indonesia, and beyond.

Sudden Impact (Fear)

On Saturday December 6, 1941, we knew them as the "Empire of Japan". The next day, Sunday December 7, hearing of the sneak attack at Pearl Harbor with the loss of more than 2400 servicemen, every American deeply felt, "those dirty Japs". Why a sneak attack? The U.S. did not expect military intervention, as talks were ongoing in our nation's capital with the Japanese envoy. On Monday, December 8, Americans sat huddled in front of their radios as President Roosevelt (FDR) addressed Congress, saying, "Yesterday, December 7th 1941, a date that will live in infamy, the United States of America was suddenly and deliberately attacked by naval and air forces of the Empire of Japan." FDR continued to speak, but nothing he said could change the matter; America was at war with Japan.

The Pearl Harbor attack came as a complete surprise to the U.S.; all the talk was about whether we should enter the war against Hitler's Nazi juggernaut that was terrifying Europe. There is no doubt that we were caught unprepared, and had to scramble to face this devastating force from the Far East.

Born as I was in 1931, what could a 10-year-old boy know about war? FEAR!! It was everywhere, starting with the worried looks on the faces of the adults; fear swept the nation. We had just been attacked in a well-rehearsed way, by the most devastating naval air force ever.

There are 5000 miles between Japan and our west coast, and with almost nothing left to defend us against this inexorable force, we were living in fear of an attack, followed by an invasion. Here's that word FEAR again, it was so powerful that it drove some living on the coast to pick-up and leave their homes and jobs, seeking shelter in states to the east. This was the daily tension we lived with, as our young men (affectionately known as the boys) were

leaving for the front. Uncertainty and fear aptly described our daily lives— that is, until a great victory at sea centered on the remote Pacific island of Midway, June 6, 1942.

Internment

To understand the internment of Japanese civilians that has recently come under sharp criticism, you have to know how the military planned the attack on Pearl Harbor. With a large number of Japanese living in the harbor, it was easy for a single spy named Takeo Yoshikawa, who had studied the U.S. Navy for some time, to move freely as he amassed intelligence. He gathered detailed data regarding the U.S. Fleet docked in the harbor, along with the air force defending the ships. Yoshikawa would then, over time, send coded messages to Tokyo via Western Union, a medium that by today's technology seems almost primitive.

A troubling adage: "Fool me once, shame on you; fool me twice, shame on *me*." The knowledge of Yoshikawa's spying at Pearl Harbor makes the case for internment. With 120,000 Japanese— among them Japanese Americans, their parents and grandparents (foreign nationals)— living on our west coast, who among them might be communicating with Tokyo? While today internment seems cruel to many, remember once again that America was gripped with the fear of an invasion in early 1942. Advanced intelligence, which had worked so well at Pearl Harbor, would have been invaluable in attacking the U.S.— this could not be ignored. With the Navy close to nonexistent and our west coast vulnerable, there was no time for introspection and deliberation; rather, it was time for survival. How does the saying go— "Desperate times call for desperate measures"; thus, the internment camps. At this point, just about everything having to do with Japan was seen as barbaric. There was no sympathy for anything Japanese.

Note: Today the epithet "dirty Japs" is clearly a racial slur. However, this narrative speaks to actual conditions 75 years ago when it was *meant* to be, with force, a racial slur.

My personal view: It should be noted that those accusing America of an inhumane and unlawful act in establishing the camps are blaming the wrong nation. No attack, no camps. Japan's unprovoked attack at Pearl Harbor sealed the campers' fate.

The Bomb

*Here, my first-person views come
to an end. The rest is history.*

Was the use of the atom bomb justified? It depends on which side you're supporting. In Hiroshima, it has become an annual event on August 6 to hold a solemn ceremony at Peace Memorial Park. At 8:15 a.m., the exact time of the bomb drop, temple bells ring throughout the city. There are speeches calling for the preservation of peace. In the evening there are dazzling candlelit lanterns floating on the Motoyasu River carrying handwritten messages, in the belief that they will help guide the 140,000 departed souls to the spirit world. A similar ceremony is held in Nagasaki on August 9 to remember the 80,000 lives lost to the bomb.

It isn't an entirely solemn occasion— I've seen film of Japanese reporters shoving a microphone into the faces of Americans attending the event— not asking, but demanding, an answer to the question "do you feel guilty?" Somehow Japan's hypocrisy holds forth. There has never been any mention of their savage attacks on civilians from Korea to the southernmost Pacific Islands.

It must have been a horrible, lingering death by radiation for those who survived the bomb; and for those who perished, many were turned into carbon in a second. It may be disputed, but had we invaded Japan, death by a bayonet ripping into the gut would seem just as agonizing. If only the Japanese would have surrendered. They did not. We have learned that to the Japanese, civilian or military, death is preferred to surrender— it's a matter of honor.

Our military Chiefs of Staff had informed President Truman that if we invaded Japan, we could expect to lose 500,000 U.S. servicemen, and into the millions for the Japanese defending the homeland. In addition, more pressure was endured by Japan as Russia, hoping to share in the occupation of Japan, invaded what was left of Japan's army in Manchuria. Russia's meddling was also troubling to the U.S.: after almost four years of war with Japan, America was not going to share Japan's future with the late-coming Russian communists. It was at this point, with the Japanese unwilling to surrender, and with pressure coming from Russia, that President Truman said "we can wait no longer". He ordered the bomb dropped immediately. The war with Japan had ended.

A Cogent Thought

After he attended the formal surrender ceremony in Tokyo Bay in Sep. 1945, conducted by Gen. Douglas MacArthur on the battleship USS *Missouri*, Toshikazu Kase, a dignitary of the Japanese Foreign Ministry, remembered, "I could not help but think, what if we had the bomb, wouldn't we have used it?"

A Final Word

History writes many stories, but none with a better outcome than America's WW2 defeat of Japan. Gen. MacArthur was given the responsibility to democratize and modernize a nation that had a near-feudal system. Knowing the widespread reverence for the Emperor, he allowed Hirohito to stay on the throne, provided that he would renounce his status as a divine ruler over his people. He did renounce, and from then on Hirohito was no more than a figurehead. Elections were held; women came out of the shadows, taking their place in society, although the struggle with a male-dominated society continued. In 1947, government and banking were restored, and the Diet (Congress) elected the country's first postwar Prime Minister. In 1951, Japan had once again become a sovereign nation.

Having completely disarmed, Japan formally renounced war as a means of settling international disputes. The United

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Midwest Institute Meeting at Ohio State ATI

by Helen Ditouras (English)

Along with my colleague Kim Lark (History), I attended this year's conference of the Midwest Institute for International and Intercultural Education (MIIE). It was held in Wooster, OH, on April 7, at the small but lovely campus of Ohio State University's Agricultural Technical Institute (ATI). MIIE members from Michigan, Ohio, Illinois, and beyond, gathered for a weekend of thought-provoking presentations on the nature of global education in these economically and politically challenging times. Next year's MIIE conference has been scheduled for April 2018, with a date and location to be announced in September.

The presentation themes in Wooster included renewable energy, international trade, global representation, spirituality, food security, and study abroad, among others. Faculty members also presented curriculum modules that resulted from participation in either the annual MIIE Summer Workshops at Kalamazoo Valley Community College, or the MSU-MIIE Africa-Asia Project. The latter is a three-year partnership between the Midwest Institute and the African and East Asia Studies Centers at Michigan State University, and is funded by the U.S. Dept. of Education Title VI program.

The first evening ended with a lively networking reception in Ohio State's beautiful Miller Pavilion, located in the Sequester Arboretum, a popular campus and community attraction. Along with regular sessions, this year's conference also included presentation of the fifth annual MIIE Contribution Award to Prof. Jeff Dykhuizen, Global Peace Studies Coordinator at Delta College (University Center, MI). A veteran faculty member at Delta in the Peace and Conflict Studies program, Prof. Dykhuizen also helped establish the framework that has supported the MIIE for several years, and he has made outstanding contributions as an MIIE Coordinator and Board Member. In Wooster, he also delivered a memorable talk on "Meditation and Prayer: The Science of Spiritual Experience". Dykhuizen will reprise that presentation to help kick off SCII's theme project, "Focus: Spirituality and Religion in Today's World" in Winter 2018 (see sidebar, p. 11).

Below, I summarize a few of the many outstanding workshops and presentations:

Stamps of Hope: Syrian Refugee Travelling Art Exhibit 2017-2018. Fellow MIIE Board member and colleague, Prof. Rihab Sawah (St. Louis Community College, Florissant Valley campus), unveiled this emotionally moving exhibit of paintings and portraits of life in Zaatari, a refugee camp in Jordan where approximately 80,000 Syrians are living. The pieces were created by several professional Syrian artists who are refugees in the camp, such as Mohammad Amari, who directs Studio Collar Jasmine Art, a workshop for children there. With aid from the United Nations, Amari and

other artists have helped bring the world of art to other refugees in the camp as a means of inspiration, creativity, and hope. International Relief and Development, a non-governmental organization recently renamed Blumont (Madison, WI), connected with the Zaatari artists to assemble this exhibit of about three dozen of their works and to bring it to New York City. Prof. Sawah, a Syrian immigrant herself, became fascinated by the show and is organizing its tour around the U.S., which runs through next April. The SCII is collaborating with the Arab American National Museum (Dearborn, MI) in hopes of hosting the exhibit. All of the exhibited pieces are for sale, with 100% of proceeds going back to the Zaatari refugees.

Collectivism, Individualism, and Action. Dr. Sherri DeBoef Chandler (Muskegon Community College, MI) presented a Social Psychology curriculum module that she created as part of the above-mentioned MSU-MIIE Africa-Asia Project. The module introduces students to ways in which collectivist and individualist goals vie with one another in various cultures, often entailing conflict, negotiation, and resolution. As a primer, DeBoef Chandler asks students to complete an Individualism-Collectivism Scale in order to think about their own ideas and biases around collectivism and individualism and to explore their cultural underpinnings. The module also uses such resources as a Social Psychology Reader; an article by Shinobu Kitayama and Jiyoung Park, "Cultural Neuroscience of the Self: Understanding the Social Grounding of the Brain"; and an interesting NPR podcast, "What is the Effect of Asking Americans to Think About the Greater Good?"

Good Atoms/ Bad Atoms: Iran Nuclear Program and U.S. Policy Options. Dr. Mohsen Khani, an Iranian-born Prof. of Geography at Sinclair Community College (Dayton, OH), outlined the unit on Iran featured in his Geography of the Middle East course. The issue of Iran's nuclear program is a very controversial one and generates much discussion among his students. He approaches the topic with contextual materials, such as a map of the entire region, so that students can better understand the role that surrounding countries play. He also screened "History of Iran & USA in 10 min", a riveting YouTube video that he shares with students and that summarizes America's involvement in Iran to provide background. It is so provocative that the audience immediately started asking questions about how students react to the video before Khani could continue his presentation! Once he engaged the audience, he continued to share assessments and materials from his course, such as one of his course texts, *All the Shah's Men* by Stephen Kinzer, which describes America's role in the 1953 overthrow of the democratically-elected Pres. Mosaddegh. The students generate final research group presentations in which they explore four U.S. policy options: (1) Destroy all nuclear plants in Iran; (2) Authorize a military overthrow of the Iranian regime; (3) Encourage the normalization of relations with Tehran; (4) Scale back tensions and avoid war. Khani said that the objective of his unit on Iran-U.S. relations is to dispel some of the myths surrounding Iran's nuclear program and to provide students with a more in-depth understanding of historical and contemporary relations between the two nations.

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His Choice

by Leigh Young

Leigh Young, of Canton, MI, is an English major at Schoolcraft College. This past Winter she completed English 102 (Composition 2) and won the English Department Prize for 2016-17. Her story "The Reckoning" appeared in our Winter 2017 issue. Leigh wishes to thank Dr. Steven Dolgin, her instructor in English 206 (Creative Writing), for his encouragement and guidance.

“Just relax, okay? Try just to breathe... deep breaths... in... and out.”

The nurse’s voice was soothing, velvety and practiced—she had obviously done this many times before. I felt my body stiffen as the instrument invaded me, the muscles in my legs fighting against the Valium as tiny beads of sweat trickled down the sides of my arms.

“It’s okay, dear, just hang in there” her voice instructed again. “It won’t be long now.”

I forced open my green eyes, determined to focus on her face. She stood over me as she stroked the curly, dark hair off my forehead, using a rough tissue to soak up the sweat that was now running in salty streams down my face. I looked up to her, my gaze locking for a second on her kind, round eyes before I began my inspection. She looked to be in her 40s, her skin creping and thin, but still possessing some of its once youthful glow. Her mousey brown hair was what my mother would call “inappropriately long”, falling near to her elbows before flipping out at the frayed edges. The lines above her lips gave away her secret smoker’s shame, yet she smelled not of cigarettes and tobacco, but of lilies and talcum powder.

“There, see? All done. You did great, sweetheart.”

I grimaced as the instrument was removed from inside of me, its cold, slick surface leaving behind a dull, aching reminder in my womb. A younger nurse helped me to my feet and led me down a hall to the recovery room. The lights were dimmed and there were cots filling the entire space, many of them occupied with women; women like me.

“Here you go, dear” she said as she helped me onto the cot. “Lay down now, try to rest.”

Patting my leg, she walked to a shelf filled with thin, scratchy blankets and pillows that time had yellowed around the edges. I did as she asked, curling my knees into my chest, as I found myself in an ironic fetal position. I looked around the large room, taking in the random art that hung on blue walls, and vases full of bright yellow tulips that were scattered across the tables. The nurse returned after several minutes, with the blanket and a couple of pills.

“Take these” she said, offering me a small plastic cup. “This is Vicodin, it’ll help with the pain.”

She pressed the Vicodin into my tiny palm and gave my hand a gentle squeeze. With an encouraging smile, she turned and left, leaving me and five other women alone with our thoughts. I climbed as deeply as I could under the blanket, until it covered everything but the top half of my face, leaving my eyes staring out at the now seemingly bleak world. Would it always feel like this? I wondered. Tears began to pool as I thought about what had just happened. It wasn’t regret, exactly, more... sadness. Sadness that this was the only choice I saw.

“It’s okay, honey” a voice whispered from one of the cots.

I turned to my left and locked eyes with an older, friendly-looking woman.

“It’s okay” she repeated. “You’re young. You can have other babies. It’ll be okay.”

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This graphic, “Resist!”, was created last Winter by Kelsey Cunningham of Livonia, MI, a graphic design major at Schoolcraft College.

His Choice

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She gave me a sad smile, and then closed her eyes as she laid her head back down on the pillow. I was quite surprised to see someone of her age in this place. I watched her for a bit, taking note of how relaxed she seemed; how her breath came in slow, deep, rhythmic patterns. She was slightly overweight, with short blonde hair that she wore neatly combed behind her ears. Her battered, gray sweat-suit reminded me of my mom and it was comforting.

Turning back, I looked towards the clock; shaped like a flower, it had bright pink petals with a yellow center, the numbers all a deep, forest green. I felt my tears dry, as I took solace in the effort the women had taken in trying to make this room one of peace and calm. Their efforts were wasted, though, for no woman who ever visited this room would find serenity. The clock grinned at me, its rainbow smile assuring me my time was almost up; I could leave soon.

As I laid back, I closed my eyes and I saw him—the one who had done this to me. I saw the way his smile, both cocky and warm, invited me into his world. How it promised me that for so long as we were together, everything would be okay. He smiled that lie at me the first night, as I searched his deep, brown eyes for understanding, and brushed the wavy black hair off his face. I saw that smile turn sinful as I watched him from above, using my hips to silence him until I demanded that he cry out. The clock whispered my name again.

“Just a few more minutes” it called out.

My hand instinctively went for my belly, my long purple nails leaving their mark across my alabaster skin as I remembered that there was nothing left to find. As the last seconds ticked by, I used all my strength to push that last day with him out of my mind; to banish him from my head as I had banished his seed from my body. Never again did I want to see the look that had taken over his face as I told him my news. I refused to remember the stiffness his body had embraced as I reached out for him, or the confusion that took over as I realized what he wanted me to do.

“Sixty more seconds” the clock sang to me.

I gathered my things as I saw the young nurse approach with my paperwork, and I reached into my purse for the money *he* had given me. Blood money; that’s what it was.

“Ready?” she asked, almost hesitatingly.

I nodded my head yes, not yet ready to speak to anyone and started for the door. I neared the exit and then I turned back and I looked. The woman who had spoken to me was lying there, watching. She smiled again, giving me a small nod of goodbye. Holding her gaze for a moment, I searched her eyes, seeking her truth. There was nothing. I turned my back on her and that damn, smiling clock and quietly shut the door. •

WW2 and Japan

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States is now Japan’s protector, providing naval, air, and missile bases in Japan. In terms of lives lost in the Pacific theater of war alone, the price of peace was 3,150,000 souls. Thankfully, 75 years after the start of the war, our nations still live in peace.

For most of us, history starts when we are born. It’s all about the now, and what lies ahead. World War 1 (1914-18) ended thirteen years before I was born, and I had lived several decades before I had the curiosity to find out why Europe had erupted and found itself at war back then. I bring this up, thinking that most readers of this narrative probably were not born until well after WW2. Therefore, if you have even the smallest desire to find out how America was drawn into that war, and how it turned what appeared to be certain defeat into victory, I’m suggesting you see two movies:

- “Tora! Tora! Tora!” (Tiger! Tiger! Tiger!) (1970), an outstanding drama that shows how Japan prepared for, and carried out, the attack on Pearl Harbor
- “Midway” (1976), which has a colossal ending, shows how the U.S. turned the war in its favor.

Midwest Institute Meeting *continued from p. 42*

University of Illinois Center for Global Studies. The Center for Global Studies is a federal Title VI National Resource Center located on the Urbana-Champaign campus. Its Outreach Coordinator, Jeremie Smith, shared information regarding their International Studies Research Lab (ISRL) and other resources. The ISRL can assist community college faculty with professional development for globalizing curricula, and can submit grants on their behalf. More broadly, it supports the internationalization of community colleges nationwide and provides housing fellowships and research honoraria to selected community college instructors and librarians. Each year, it organizes a Global and Area Studies Summer Research Lab (GAS SRL) Fellowship program, whose participants are granted access to expert research librarians and a wide range of materials related to globalization and global/ regional studies. The International and Area Studies Library (IASL) provides access to print, digital, and microform collections and resources, including current issues of over 1000 world periodicals. Upon completion of their research and curriculum modules, participants publish their modules on IDEALS, an online database accessible to all community college instructors. Schoolcraft Psychology professor Colleen Pilgrim participated in the GAS SRL Fellowship in 2016, and wrote an article about the experience in *International Agenda* (Winter 2017). I am pleased to report that I was accepted as a GAS SRL participant this past Summer and stayed at the Urbana-Champaign campus on July 17-20, researching the culture and cuisine of the Sichuan region of China. I plan to use that research to develop a curriculum module for infusion into my English 102 sections that are themed to Food and Research Writing.

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

Feb. 3 – Sep. 3, 2017: “Tutankhamun: ‘Wonderful Things’ from the Pharaoh’s Tomb”. A collection of 131 replicas by artisans of the Pharaonic Village (Giza, Egypt) and the Metropolitan Museum of Art (New York). Cranbrook Institute of Science, 39221 Woodward Ave., Bloomfield Hills. For more info, see <https://science.cranbrook.edu/>.

Mar. 21, 2017 – Jan. 14, 2018: “Finland 100: The Cranbrook Connection” is an exhibit of Finnish influence on the arts in America, including architectural renderings by Eliel Saarinen (designer of Cranbrook), weavings by his wife Loja, and furnishings designed by his children, Eero and Pipsan. Peggy DeSalle Gallery, Cranbrook Art Museum, 39221 Woodward Ave., Bloomfield Hills. For more info, call 248-645-3323 or visit the website artmuseum@cranbrook.edu.

Jun. 1 - Sep. 24, 2017: “Safar: A Journey Through Popular Arab Cinema” displays vintage film posters and memorabilia from the Arab World, collected by Beirut-based Abboudi Bou Jaoudeh. The exhibit challenges western stereotypes while also revealing early Hollywood influence on Arab cinema. Lower Level Gallery, Arab American National Museum, 13624 Michigan Ave., Dearborn. For more info, call 313-582-2266 or see <http://www.arabamericanmuseum.org/>.



Jun. 17 – Oct. 22, 2017: Exhibit of “Harper’s Pictorial History of the Civil War (Annotated)”, a series by Kara Walker recently acquired by TMA. Walker challenges the conventional one-sided account of abolition and the Civil War in her 15 black silhouette figures in silkscreen layered over enlarged wood-engravings of scenes from Harper’s *Pictorial History* (1866). Gallery 18, Toledo Museum of Art, 2445 Monroe St., Toledo. For more info, tel. 419-255-8000 or see <http://www.toledomuseum.org>.

Jun. 22 – Dec. 29, 2017: “Stitching History from the Holocaust”, on loan from the Jewish Museum in Milwaukee, exhibits eight beautiful dresses made from designs created by Hedy Strnad, who with her husband Paul perished in Nazi Germany. Holocaust Memorial Center, 28123 Orchard Lake Road, Farmington Hills. For more info, see <http://www.holocaustcenter.org/>.

Jul. 8 – Oct. 1, 2017: “Epicenter X: Saudi Contemporary Art in Dearborn, MI” features diverse artworks that challenge stereotypes and give voice to Saudi artists exploring urbanization, globalization, religion, and the impact of American popular culture. Main Floor Gallery, Courtyard, Second Floor Atrium, and The Annex, Arab American National Museum, 13624 Michigan Ave., Dearborn. For more info, call 313-582-2266 or see <http://www.arabamericanmuseum.org/>.

Jul. 8 – Oct. 1, 2017: “The Berlin Painter and His World”, organized by the Princeton Univ. Art Museum, focuses on the anonymous Fifth-Century BCE Athenian artist known as the Berlin Painter. It gathers 84 vessels and statuettes of bronze and terracotta, with painted subjects ranging from athletic and musical performance to Greek myth and epic. Canaday Gallery, Toledo Museum of Art, 2445 Monroe St., Toledo. For more info, tel. 419-255-8000 or see <http://www.toledomuseum.org>.

Jul. 16 – Sep. 19, 2017: “Fabric of Survival: The Art of Esther Nisenthal Krinitz” exhibits 36 works of fabric art by a Polish Jew who evaded the Gestapo and later emigrated to the U.S. and trained as a dressmaker. Janice Charach Gallery, Jewish Community Center of Detroit, 6600 W. Maple Road, West Bloomfield. For more info, call 248-432-5579 or see <http://www.jccdet.org>.

Jul. 23 – Oct. 22, 2017: “Art of Rebellion: Black Art of the Civil Rights Movement” exhibits powerful works by African American art collectives formed during the 1960s-70s Civil Rights Movement. This and the exhibits “Say It Loud” and “Detroit 67: Perspectives” (see Jul. 23 below) are part of the Detroit Historical Society’s community-wide reflection on the 50th anniversary of the 1967 rebellion. Detroit Institute of Arts, 5200 Woodward Ave., Detroit. For more info, call 313-833-7900 or see <https://www.dia.org>.

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Multicultural Calendar *continued from page 45*

Jul. 23, 2017 – Jan. 2, 2018: “Say It Loud: Art, History, Rebellion” is a two-part exhibit that commemorates the 1960s rebellions, observes the 50th anniversary of the 1967 Detroit Rebellion, and compares the uprisings of the past to the upheavals that shocked our nation in the 21st 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/>.

Jul. 23, 2017 – 2019: “Detroit 67: Perspectives” looks at the complex factors at work across metro Detroit during the 50 years prior to the 1967 Detroit Rebellion, the unrest that occurred in 1967, the progress and setbacks in the next 50 years, and a perspective on what lies ahead. It is based on hundreds of oral histories, the latest historical scholarship, and the assistance of many partners and diverse groups. Booth-Wilkinson Gallery, Detroit Historical Museum, 5401 Woodward Ave., Detroit. For more info, call 313-833-1805 or visit the website <http://www.detroithistorical.org/>.

Aug. 25, 2017: Concert by Indian singer Shreya Ghoshal backed by a symphony orchestra of distinguished musicians, singers, and dancers. She is one of the leading singers in the Bengali, Hindi, Kannada, Malayalam, Marathi, Punjabi, Tamil, and Telugu languages. 8 pm. Fox Theatre, 2211 Woodward Ave., Detroit. For more info, call 313-471-6611 or visit the website <http://www.olympiaentertainment.com>.



Sep. 5-9, 2017: “World Without Ice”. Musicians, composers, and artists Michael Gould, Stephen Rush, and Marion Tränkle have collaborated with renowned Univ. of Michigan geophysicist and climate scientist Henry Pollack to create this multimedia installation about Earth’s changing climate. The art installation, along with Henry Pollack’s free opening lecture and Q&A “Confronting Climate Change: What are the Challenges?” (Sep. 5 at 7-9 pm) and the concert (Sep. 9 at 8-10 pm, \$14 general admission, \$8 students), are scheduled in Varner Hall, Oakland Univ., 371 Varner Dr., Rochester. For more information, contact Jeffrey Insko at 248-370-2253 or insko@oakland.edu, or visit the event website worldwithouticeinstallation.com.

Global Fridays

Global Fridays is a monthly series showcasing the finest in world music, dance, film, and performance art. Except where indicated, 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://arabamericanmuseum.org/GF-Fall-17>.

September 8, 2017:

Grateful Crane Ensemble, “The Camp Dance” (musical theatre set in the Japanese Internment), preceded at 6 pm by a Town Hall on the Japanese Internment and the Muslim Ban.

October 20, 2017:

Samer Saem Eldahr, “Hello Psychaleppo” (concert of Syrian electro-*tarab*), preceded at 6:30 pm by an artist talk.

November 17, 2017:

(Free event at Detroit Film Theatre at the Detroit Institute of Arts, 5200 Woodward Ave.)

Classic silent films of Egyptian director Mohammed Bayoumi, featuring an original live score by the National Arab Orchestra, plus discussion by Egyptian scholar Mohannad Ghawanmeh.

December 8, 2017:

Noor Theatre, “Dead Are My People”, a staged reading by Ismail Khalidi of a story of Lebanese immigration to the U.S. in WW1, accompanied by music by Hadi Eldebeek, preceded at 6:30 pm by a gallery stroll of “THEM: Images of Separation” (a traveling exhibit from the Jim Crow Museum of Racist Memorabilia) with light reception.

Sep. 8 - Oct. 14, 2017: “Vital Signs for a New America”, an interactive exhibit of Native American art. The gallery will become a common space for storytelling and tea drinking with *métis* Ojibwe artist, activist, and scholar Dylan Miner (Michigan State Univ.), artist Sheryl Oring, and performance collective The Hinterlands. On view Saturdays 1-3 pm, plus opening reception Friday, Sep. 8 at 6-8 pm. Penny W. Stamps Gallery, Univ. of Michigan, 201 S. Division St., Ann Arbor. For more info, see <https://events.umich.edu/event/41897>.

Sep. 15, 2017: Fourth annual conference of “Welcoming Michigan: Building Immigrant Friendly Communities”. Welcomers from around the state share best practices on immigrant integration. 8:30 am – 4 pm. Morris Lawrence Bldg., Washtenaw Community College, 4800 E. Huron River Dr., Ann Arbor. For more information, see <http://tinyurl.com/WelcomingConvening>.

Sep. 16, 2017: Festival of India, organized by miindia.com. 11 am – 9 pm. Southfield Pavilion, 26000 Evergreen Road. For more info, see <http://www.miindia.com/>.

Sep. 16-17, 2017: Fifth annual Ann Arbor Russian Festival, featuring authentic culture, food, entertainment, and shopping. St. Vladimir Orthodox Church, 9900 Jackson Road, Dexter. For more information, see the website <http://russianfestival.stvladimirami.org/> or contact Nathan at nathanlongan@gmail.com or 734-678-8042.

Sep. 21-23, 2017: “Seeking Social Justice in South Asia”, a conference on struggles to address religious and ethnic polarization, gender inequality, caste politics, minority rights, urbanization and displacement, and media and information access. Hosted by the UM Center for South Asian Studies. Tisch Hall, Central Campus, Univ. of Michigan, Ann Arbor. For more information, visit the conference website <http://ii.umich.edu/csas/news-events/events/conferences/seeking-social-justice-in-south-asia.html>.

Sep. 23-24, 2017: “Rasa Dance Festival in Michigan” presents six new Indian classical and contemporary works by local and invited dance companies. Riverside Arts Center, 76 N. Huron St., Ypsilanti. For info and tickets, call 734-223-5615 or e-mail sreyashi@akshara-arts.org, or see rasadancefest.eventbrite.com.

Sep. 24, 2017: Navratri Garba celebration with live music and catered dinner. Schoolcraft’s version of the Hindu festival that traditionally marks the beginning of Autumn and celebrates the goddess Durga. All proceeds go to the Schoolcraft College Food Pantry to help students in need. Sponsored by the Student Activities Office and the Asian Student Cultural Association. 6-11 pm. VisTaTech Center, Schoolcraft College, 18600 Haggerty Road, Livonia. For advance tickets (\$15), e-mail sao@schoolcraft.edu or call 734-462-4422.

Sep. 25, 2017: “Lessons from the Ojibwe, 400 Years Ago”. Robert Downes (Traverse City, MI) presents his video on the historical research behind his novel, *Windigo Moon* (Blank Slate Press, 2017), which is set among the Ojibwe of the Upper Great Lakes. 7-9 pm. The Scarab Club, 217 Farnsworth St., Detroit. For more info, call 313-831-1250 or see <http://www.scarabclub.org>.

Sep. 27, 2017: “Asia Education in Michigan and Our Identity”, part of the Simply the Best (STB) Asian Culture & Education Seminar Series organized by the Council of Asian Pacific Americans (CAPA). 5:30 – 8:30 pm. Oakland Community College (location TBA, either Royal Oak or Auburn Hills campus). For more info, see <http://www.capa-mi.org/stb> or e-mail stb@capa-mi.org or snail-mail CAPA at P.O. Box 407, Northville, MI 48167.

Oct. 2-8, 2017: “Michigan and the Climate Crisis”, a conference featuring a keynote address by Bill McKibben on the human forces of climate change, a Saturday Morning Physics discussion about climate change science, a political panel of student groups and activists for fossil-fuel divestment, an art installation led by science writer and activist Sandra Steingraber, and an

informal poetry slam. Organized by the UM Science for the People chapter. Dana Natural Resources Bldg., Central Campus, Univ. of Michigan, Ann Arbor. For more info, see <https://events.umich.edu/event/40697>.

Oct. 3, 2017: Concert by Ustad Shafaat Khan, who brings Indian classical *sitar*, *surbahar*, and *tabla* to broad audiences. 8 pm. The Ark, 316 S. Main Street, Ann Arbor. For info and tickets, call 734-761-1800 or see <http://www.theark.org/>.

Oct. 11, 2017: Omar Sosa and his touring band, Quarteto AfroCubano, fuse an array of jazz, world music, hip-hop, and electronica with Afro-Cuban roots. 8 and 10 pm. Jazz Café, Music Hall Center for the Performing Arts, 350 Madison Street, Detroit. For info and tickets, call 313-887-8500 or see <http://www.musicall.org/>.



Photo: Tom Ehrlich via allmusic.com

Oct. 13 – Nov. 12, 2017: “Ofrendas: Celebrating el Día de Muertos”. On the Day of the Dead in late October or early November, Latino/a people celebrate the lives of loved ones who have passed away by placing their favorite foods and mementos on elaborate *ofrenda* altars. Detroit Institute of Arts, 5200 Woodward Ave., Detroit. For more info, call 313-833-7900 or see <https://www.dia.org>.



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Multicultural Calendar *continued from page 47*

Oct. 14-22, 2017: “Rigoletto”, Verdi’s opera of treachery and sacrifice updated to 1950s Little Italy, Manhattan. When a mafia boss seduces the daughter of his bartender, Rigoletto, it leads to vengeance and tragedy. Sung in Italian with English supertitles. Detroit Opera House, 1526 Broadway, Detroit. For info and tickets, call 313-961-3500 or see <http://www.motopera.org/>.

Oct. 22, 2017 – Mar. 4, 2018: “Monet: Framing Life” focuses on a DIA painting by Claude Monet, “Corbeille de fleurs” (Rounded Flower Bed), formerly known as “Gladioli” and recently retitled based on new research. It is displayed alongside 10 others by Monet and Renoir, all part of the 1870s birth of Impressionism in the Paris suburb of Argenteuil. Detroit Institute of Arts, 5200 Woodward Ave., Detroit. For more info, call 313-833-7900 or see <https://www.dia.org>.

Oct. 24, 2017: Univ. of Michigan poet Lorna Goodison gives the annual Maurice Brown Memorial Poetry Reading. Recently named the Poet Laureate of Jamaica, Goodison engages the language, lives, landscape, and history of her homeland, often focusing on women’s social and cultural roles. 5-7 pm. Oakland Room, Oakland Center, Oakland Univ., 312 Meadow Brook Rd., Rochester. For more info, contact the OU Dept. of English at 248-370-2250, or Cynthia Ferrera at 248-370-2251 or ferrera@oakland.edu.



Photo: Univ. of Michigan

Oct. 26, 2017: An Evening with Erik Love, a Dickinson College sociologist and author of *Islamophobia and Racism in America* (New York Univ. Press, 2017). Organized by the UM Arab and Muslim American Studies Program. 4-6 pm. Gallery Room 100, Harlan Hatcher Graduate Library, Central Campus, Univ. of Michigan, Ann Arbor. For more info, see <https://events.umich.edu/event/41620>.

Oct. 28, 2017: Irma Thomas, The Blind Boys of Alabama & Preservation Hall Jazz Band Legacy Quintet (see also Oct. 29, below). A very special evening of jazz, soul, and spirituals. 7:30 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/>.

Oct. 29, 2017: Irma Thomas, The Blind Boys of Alabama & Preservation Hall Jazz Band Legacy Quintet (see also Oct. 28, above). 8 pm. Main Stage, Music Hall Center for the Performing Arts, 350 Madison Street, Detroit. For info and tickets, call 313-887-8500 or visit the website <http://www.musichall.org/>.

University Musical Society

International music, dance, theatre, and humor are 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/>.

Oct. 13-14, 2017: Albert Camus’s “L’État de Siège” (The State of Siege)

Oct. 18, 2017: Amir ElSaffar’s Rivers of Sound Orchestra (jazz and Iraqi *maqam*)

Oct. 20, 2017: Ragamala Dance Company, “Written in Water” (S. Asian)

Nov. 1, 2017: Zakir Hussain and Dave Holland, “Cross-currents” (jazz and classical S. Asian)

Nov. 6, 2017: Bassem Youssef, “The Joke Is Mightier than the Sword” (Egyptian satire)

Jan. 12, 2018: Urban Bush Women, “Hair & Other Stories” (African Diaspora).

Nov. 2-12, 2017: The 66th annual Jewish Book Fair, oldest and largest of its kind in the U.S., with authors from Michigan and around the world engaging audiences totaling more than 20,000 people. Jewish Community Center of Detroit, 6600 W. Maple Road, West Bloomfield. For more info, call 248-661-1900 or see <http://www.jccdet.org>.

Nov. 2 – Dec. 23, 2017: “Swimming Upstream”, Rich Rubin’s comedy that won the Todd McNerney Playwright Award at the 2016 Piccolo Spoleto Festival. Jen is a young marine biologist whose life is in turmoil: her boss won’t let her report how climate change is affecting the world’s salmon; her new boyfriend thinks the salmon’s life-story is eerily similar to Superman’s; and her mother tries to help by repeatedly quoting Ronald Reagan. Detroit Repertory Theatre, 13103 Woodrow Wilson, Detroit. For info and tickets, call 313-868-1347 or e-mail DetRepTh@aol.com or see <http://detroitreptheatre.com/>.

Nov. 11-19, 2017: “The Marriage of Figaro”, Mozart’s comedy, in which Figaro and Susanna need to overcome plotting and jealousy to make it to their wedding day. Sung in Italian with English supertitles. Detroit Opera House, 1526 Broadway, Detroit. For info and tickets, call 313-961-3500 or see <http://www.motopera.org/>.

Nov. 17-19, 2017: 24th annual Ann Arbor Polish Film Festival. Michigan Theater, 603 E. Liberty Street, Ann Arbor. For more information, visit the festival website <http://www.annarborpolonia.com/polish-film-festival/home>.

Jan. 13, 2018: Moscow Festival Ballet. The highest Bolshoi and Kirov traditions are seen in Sergei Radchenko’s independent classical ballet company. 8 pm. Main Stage, Music Hall Center for the Performing Arts, 350 Madison Street, Detroit. For info and tickets, call 313-887-8500 or see <http://www.musichall.org/>.