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College of *Arts and Sciences*

e-News Issue 39: July 2016

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Department of Psychology to celebrate 50 years

Olga Bonfiglio
College of Arts and Sciences staff writer

The Department of Psychology will celebrate its 50th anniversary August 26-27.

Both days will include conferences where alums and community partners give presentations about the history of behavior analysis at WMU and how it has impacted the field and the local community.

A dinner and cocktail party will take place at the new Heritage Alumni Center on East Campus on Friday, August 26 with community tours on Saturday, August 27.

The 50-year event will also kick off a capital campaign to start the Jack Michael Professor of Behavioral Psychology endowed chair position.

"There are few undergraduate and graduate training programs in the world who can boast such a long and enduring focus on behavior analysis as the psychology programs at Western Michigan University," said Stephanie Peterson, chair of the psychology department.

"These programs are often viewed as some of the crown jewels of behavior analysis internationally. We are very proud of our heritage, and we hope to preserve this focus for many years to come. Bringing our alums and faculty back together for this event will make this an historic event both for WMU and for the field of behavior analysis."

The Department of Psychology has produced many fine examples of people who have played definitive leadership roles in developing both the prestigious reputation of the department and advances in the field of behavioral analysis.

Dr. Jerry Shook, the founding CEO of the Behavior Analyst Certification Board, an international certifying body for behavior analysts worldwide, was a WMU alumnus. Shook passed away in 2011. The current CEO is Dr. Jim Carr, former WMU faculty member.

Dr. William Heward '71, is co-author of one of the leading textbooks in behavior analysis; he is former president of the Association for Behavior Analysis International.

Dr. Nancy Neef '72, '75, and '79, was the first woman editor of the department's flagship journal, The Journal of Applied Behavior Analysis.

Dr. Leslie Braksick '87 and '90, was selected as one of WMU's Distinguished Alumni for her work with corporate America.

New Michigan budget includes WMU funding for new geologic mapping

by Cheryl Roland
June 22, 2016 | WMU News

KALAMAZOO, Mich.—The new Michigan budget awaiting Gov. Rick Snyder's signature includes \$500,000 to allow the [Michigan Geological Survey](#) at Western Michigan University to do vital statewide geologic mapping to assess, protect and carefully develop vital natural resources.

The state money will be used to immediately prioritize state needs, begin comprehensive assessment and mapping, and develop collaborations with industry to assess water, aggregate, gas and oil, and subsurface storage capacity. Such assets are critical to helping Michigan rebuild its infrastructure and maintaining a healthy environment.



"Our natural resources are all geologically based," notes **John Yellich**, director of the Michigan Geological Survey, which was formally moved to WMU by legislative action five years ago. "These resources are so important to us we can't afford not to use science to protect them and make decisions about how they can be developed and used."

Michigan Geological Survey

University officials had praise for both the original decision to locate the survey at WMU and the new decision to begin the process of funding the survey in a way that allows it to take full advantage of its potential as both an environmental protection and economic development tool. Matching federal funds, for instance, are being left on the table because the survey does not have the ability to apply for them.

"We were delighted to offer the survey a home five years ago, and our geoscientists have worked hard to leverage the new partnership in a way that has helped manage and protect our natural resources," says WMU President **John M. Dunn**. "But without the ability to take full advantage of external opportunities, the geological survey can not reach its potential. We're grateful that legislators, led by District 61 Rep. **Brandt Iden**, made a wise decision that will allow the survey to make a bigger difference in our state's economy. Reps. **Al Pscholka** and **Aric Nesbitt** also deserve our thanks."

With only 10 percent of the state mapped to date, Michigan is at an economic disadvantage

and has fallen behind neighboring states, says survey director Yellich. To date, Michigan has mapped only about 10 percent of the state's subsurface—much less than comparable states that have invested enough money to take advantage of opportunities to use federal matching funds.

Federal matching funds for mapping have been available for the past 24 years, but Michigan has used that opportunity at a much lower rate than other midwest states. Illinois, for instance, has used more than \$4.7 million in federal matching funds to map 30 percent of its priority areas, while Michigan has used only \$1.6 million in federal funds to map 10 percent of its needed areas over the same period.

The survey moved to WMU in 2011 and immediately started to use the Department of Geosciences extensive expertise, research capabilities and geologic resources. Those resources include the Michigan Geological Repository for Research and Education, which is home to an immense collection of core samples taken when water, gas and oil wells have been drilled across the state.

The resources have been instrumental in recent years in enhancing research and educating even more geoscience professionals and in allowing the survey and WMU to:

- Advise the development of oil and gas supplies.
- Protect groundwater resources.
- Identify geological hazards.
- Provide educational opportunities for students and the general public.

In addition, the resources of the survey and WMU geoscientists have led to:

- Discovery of a previously unknown oil field and rediscovery of fields from which oil can still be recovered.
- Rediscovery of a Michigan potash deposit with commercialization potential of \$65 billion.
- Research that led to the largest lease sale in Michigan history as well as natural gas exploration success.
- Development of a long-term carbon sequestration program with the U.S. Department of Energy.

Yellich says the next steps in the survey's work will be to hold a series of meetings with Michigan agencies such as the Department of Natural Resources, the Department of Environmental Quality and the Michigan Department of Transportation. Then a series of meetings with industry to determine collaborative opportunities will help prioritize the survey's next mapping areas of focus.

"We don't need to map the whole state," Yellich says, "but we need to prioritize areas of importance and make smart decisions about important areas such as water quality and the need to discover aggregate deposits that will help us rebuild infrastructure."

For more news, arts and events, visit wmich.edu/news.

Psychology faculty earn awards

Two faculty members in the Department of Psychology at Western Michigan University have recently received prestigious awards.

Alyce M. Dickinson received the Outstanding Mentor Award from the Student Committee of the Association for Behavior Analysis International during ABAI's 42nd annual convention in May in Chicago. The award recognizes those who go above and beyond the call of duty in mentoring graduate students in behavior analysis. This is the third consecutive year a member of the WMU psychology faculty has won the award. Stephanie M. Peterson won in 2015, and Jessica E. Frieder won in 2014. Dickinson's nominators noted that her teaching is legendary in WMU's behavior analysis and industrial/organizational psychology community. They consistently praised her for focusing on student success, giving generously of her time and providing exceptional support and guidance.



Al Poling received the SABA Award for Scientific Translation: Forty Years of Research: Doing a Lot, Learning a Little. Dr. Poling's first publication appeared in 1976 and since that time he has conducted basic, translational and applied research in several areas, resulting in publications in more than 50 different journals. A Fellow of Divisions 3, 25 and 28 of the American Psychological Association, Dr. Poling has published 12 books and roughly 350 articles and book chapters and served as the research advisor of 35 Ph.D. recipients. They, and he, have conducted research and done conceptual work in several areas, including behavioral pharmacology, clinical psychopharmacology (with special emphasis on the effects of psychotropic drugs in people with developmental disabilities), applied behavior analysis, gender issues, animal welfare, quantitative analysis, learning processes and research methods. Dr. Poling was recognized as a Distinguished Faculty Scholar at Western Michigan University in 1996 and as a Distinguished Alumnus of West Virginia University in 1999. In 2003, he received the Western Michigan University College of Arts and Sciences Outstanding Achievement in Research and Creative Activity Award. In addition, in 2016, he will receive a Lifetime Achievement Award from the California Association of Behavior Analysis, a Translational Research Award from the Association for Behavior Analysis International, and an International Humanitarian Award from the American Psychological Association.



Paris climate change agreement: “the world’s greatest diplomatic success”

Olga Bonfiglio
College of Arts and Sciences staff
writer

[The Guardian](#) headline above best sums up their hope for a change to a more sustainable world thanks to the [Paris agreement](#) of December 12, 2015. Some WMU professors agree that the consensus among the world’s 195 nations was an earth-shattering acknowledgement that we all need to do something—and fast.

“This is a sea change,” said David Karowe, professor of biological sciences who specializes in global change ecology.

“It is the first time this variety and quantity of countries agreed that humans must slow down climate change. If they follow through on their agreement, it will be the best two weeks for the planet in the history of the planet.”

The agreement was voluntary and even China and the United States signed on to reduce CO₂ emissions after many years of resistance. It has taken a long time for governments to catch up with the science and to act on their understanding, said Karowe.

“As a citizen familiar with the science of climate change, I have never seen as big of a disconnect between the strength of scientific evidence and the public’s understanding—except for evolution,” he said.

Even so, Karowe bemoaned that one major American political party still denies climate change.



"They say that the science is not convincing," said Karowe, "even though 97.5 percent of scientists agree that the climate has noticeably changed over the last century and that the rate of change is faster than anything we've ever seen."

Climate scientists have used many different models to calculate the trajectory of current warming trends and although they differ on how many degrees of warming there will be—some as high as 5-6C or 9-11F—they all agree that we will have more heat waves, droughts in the American Southwest and Great Plains as well as the Mediterranean and Central America.

"If, however, the nations of the world institute the Paris agreements, we will increase global warming by only 2C (3.6F) in 2100," said Karowe. "If we don't, we'll face a 4-5C hike, which translates to 7-9F."

Eighty-five percent of America's energy is produced by fossil fuels, he said, but the future is solar and wind, whose technology is now available to us. The switch to renewables is a matter of weaning ourselves off the oil and coal, which happen to be the most profitable industries in the world's history. For example, in just the first decade of this century, these energy producers made \$1 trillion, according to [Think Progress](#).

"Climate change is really a scientific issue but it has been made into a political issue," said Karowe. "It encourages politicians to deny the science. They are putting their personal interests ahead of their constituents, their country and their planet. We need to elect people who put the common good ahead of their personal interests."

Scientists are not typically political activists, but they must start to connect their research to this issue that has become political, said Karowe. Fortunately, more and more of them are realizing they have an obligation to confront the "misinformation campaign" waged by the fossil fuel industry—like a group of WMU professors who decided to take the message of climate change to the campus and into the community.

The Climate Change Working Group, originally founded by Karowe, Dr. Ron Kramer of sociology and Dr. Paul Clements of political science, has increased opportunities for students, faculty and staff to learn about climate change on campus. Many new courses are being designed and several guest lecturers have been invited to campus. The climate change minor was instituted last fall. Karowe designed a new course titled Climate Change Biology, which teaches the basic science behind climate change and the consequences and solutions for the health of humans and ecosystems.

"WMU is one of the greenest campuses in the country," said Karowe. "It plans to be carbon neutral by 2065. President Dunn has been a phenomenal leader for this, and the Office of Sustainability won a national award. WMU students and faculty

should be very proud of the university's record."

The Working Group is also collaborating with several off-campus groups to educate citizens, and have given many public presentations to the Kalamazoo Chamber of Commerce, Phi Beta Kappa, Nature Center, Kalamazoo Wild Ones, Michigan Botanical Society and dozens of other civic and environmental groups. They have also run training workshops for middle and high school teachers and education and outreach coordinators in the local faith community.

The Working Group has created its own [webpage](#) through the [WMU Center for the Humanities](#), which lists various activities, a speakers bureau, resources and members from disciplines across the curriculum.

Other efforts off-campus are taking place.

The Working Group, under the leadership of Denise Keele (Political Science and Environmental and Sustainability Studies), has organized a community reading and discussion at the Kalamazoo Public Library on Thursday, March 31 on the book by George Marshall's titled [Don't Even Think About It: Why Our Brains Are Wired To Ignore Climate Change](#). The book explores why most of us recognize that climate change is real, and yet we do nothing to stop it..

WMU and the inter-faith community came together in 2014 to create [Hope for Creation](#), a series of presentations about climate change and how people of faith might take meaningful action in Kalamazoo. In February, Hope for Creation presented a weekly series of conversations with area clergy to reflect on climate change and religious teachings.

"I'm more optimistic than I've been in a decade—probably longer," said Karowe about the Paris agreements. "It was an incredible feat of diplomacy with John Kerry leading the way for the U.S. and China to agree on emissions reductions before the Paris conference started. It's the first time either country agreed to cut emissions."

Karowe also thinks Pope Francis has played an important role in advocating for the Paris agreement. Prior to the talks in Paris, the Pope said that those who are causing and benefitting from climate change (developed countries) are not the same ones who will suffer the most (poor and developing countries) and that, as a result, minimizing climate change is a moral imperative.

"It's another reason to love this Pope," said Karowe. "He is not concerned about the political consequences of his position but instead focuses on the ethical consequences of doing nothing about climate change."

The more voices that join in to do something about climate change, the more likely humanity will do the right thing, said Karowe. If nothing is done, however, the prognosis for the Earth is dire.

Scientific studies have predicted that, with no action to slow climate change, by the end of the century there will be a 200-fold increase in the frequency of heat wave in 12 Midwestern cities. Chicago, for example, in 1995 lost 700 people due to extreme heat. With a 4° C rise in temperature, it is predicted that Chicago will experience 27 similar heat waves per decade. That translates to almost three heat waves per summer for Chicago and two per summer for Detroit. According to the study, implementing the Paris Agreement to keep warming to a 2° C could prevent almost 300,000 deaths heat related in 12 Midwestern cities.

Generating electricity by burning coal causes 20,000 heart attacks and 13,000 deaths in America each year, and the Monroe Power Plant in Monroe, Michigan, is consistently rated as the [deadliest coal fired power plant in the United States](#). It was up and running in 1974, and it is the second largest plant in the United States after Plant Bowen near Cartersville, Georgia.

In January 2009, the Institute for Southern Studies ranked the [100 top polluting U.S. electric utility facilities](#) in the United States in terms of coal combustion waste (CCW) stored in surface impoundments and the Monroe Power Plant ranked number 5 on the list, with 4,110,859 pounds (1,864,654 kg) of coal combustion waste in 2006, based on EPA data. The J.H. Freeman Plant on Lake Michigan is another high polluter and Kalamazoo is downwind from that plant.

"We should absolutely stop burning coal ASAP," said Karowe, "and instead manufacture wind turbines in states that mine coal so that those people have work."

However, Karowe admits that part of the problem of marshaling action to fight climate change is the difficulty of quantifying its costs, like the expense of storm damage or coastal flooding, , which is predicted to create 6 million climate change refugees per year by the middle of the century.

"Look at the disruption in the world with 1 million Syrian refugees!" he said.

Climate change could lead to water wars between India and Pakistan—both of which have nuclear bombs. Water from the Indus River flows through northern India before reaching Pakistan, where it provides 80% of the water used for irrigation . What cost would we be willing to incur to prevent war between them, asks Karowe?

Perhaps, suggests Karowe, we could more clearly see the benefits of emissions reductions if we had an ethical discussion on the value of human life, or the value of lost wages or the value of species extinction. (The Paris Agreement could save 10 to 30 percent of species on the planet.)

Meanwhile, scientists have calculated that [sea level rises](#) would affect 28,800 square miles of land on the East Coast of the United States, home today to 12.3

million people. In 2013, [Ceres](#), a coalition of investors, companies and public interest groups dedicated to sustainable business practices, published [Inaction on Climate Change: The Cost to Taxpayers](#). In 2014, [Governing magazine](#) reported on how cities are facing climate change. And, the State of Florida has estimated that it will spend \$300 billion per year to avoid infrastructure damage and hindrances to its tourist industry due to climate change.

"When people talk about the cost of minimizing climate change, they should also talk about the benefits of doing something," said Karowe. "They should talk about the advantages of a 2° C rather than 4° C rise in temperatures, for example."

However, to make progress as a nation, Karowe warned that it will be necessary to remove the confusion the fossil fuel industry has largely perpetrated and to let climate policy become a voting issue so that leaders will be elected by whether or not they support policies based on sound science.

"About 20,000 people benefit enormously from continued use of fossil fuels, said Karowe. "They are CEOs from the industry and large shareholders. And, they are willing to sacrifice the welfare of 7 billion people on earth in order to make their short-term profits."

Karowe believes the world will end up with solar and wind generating its energy. In the near future, we will shift many of our activities to electricity, including transportation.

"We can already produce wind and solar energy at 40 times more than we all currently use," said Karowe. "Paris is the first real signal that the world is ready to try to minimize the damage it has done. But it has to be implemented by all the nations to work. Americans, too, need to tell their elected representatives that the most ethical and least expensive option for us is to implement the Paris agreement."

Poet Alison Swan reimagines the freshwater heart of North America in a literary way

Olga Bonfiglio
College of Arts and Sciences staff writer



Many people end up in roles they hadn't anticipated. Alison Swan is among them.

In 2001 Swan co-founded the Concerned Citizens for [Saugatuck Dunes State Park](#), which was a founding member organization for the [Saugatuck Dunes Coastal Alliance](#). The Alliance is "a coalition of individuals and organizations working cooperatively to protect and preserve the natural geography, historical heritage, and rural character of the Saugatuck Dunes coastal region in the Kalamazoo River Watershed," according to its website.

Swan teaches in the WMU environmental and sustainability studies program. She is an MFA, a poet and environmental writer, as well as an activist. She's been a writer for a long while, but she wasn't an activist until 16 years ago. A situation occurred that made her into one: the Saugatuck Dunes located on Lake Michigan at the mouth of the Kalamazoo River became threatened land.

Lake Michigan's sand dunes are home to one of the rarest, most fragile ecosystems in the world, interdunal wetlands. The Saugatuck Dunes cover 2,000 acres of forested, grassy and sandy hills that are also home to a number of endangered and threatened plant and animal species. They are home to two ghost towns, one of America's oldest summer art schools, [The Oxbow School](#) and to [Saugatuck Dunes State Park](#) and Natural Area.

The combination of the dunes' easy accessibility and their allure for people looking for fun, vacation space or just a meditative walk has put unusual pressure on the land without enough consideration of the cost to the land, said Swan.

In 2001, Swan was working on an anthology of creative writing about the Great Lakes when she discovered that Saugatuck Dunes State Park was being considered for a new water intake and treatment facility by both the City of Holland and Laketown Township. She with her partner, David Swan, became activists to save the land from this development. And, they did.

In an essay titled ["Enough"](#) published in the Michigan Quarterly Review, she used

her writing skills to recount this experience and to protest excessive and abstruse development on such precious wild land.

Three years later, billionaire businessman, Aubrey McClendon of Oklahoma City, bought 400 acres of the dunes on both sides of the Kalamazoo River and announced plans to build a luxury resort that would include a nine-story hotel, luxury homes, a seventy-slip marina, a golf course, and an equestrian center.

Another project that came out of Swan's activism was [The Saugatuck Dunes: A Freshwater Landscape](#), a fine art book that was designed to bear witness to the land and to some of the art that has been made in response to knowing it.

"We hoped the result would encourage people to reconnect with that fundamental human ability, need—gift, maybe—to listen to the land," she said.

The Saugatuck Dunes Coastal Alliance published 2,500 copies of [The Saugatuck Dunes](#) that sold for \$35 each. Local businesses also helped support the book that became, among other things, a coalition-building tool to give to influential people like then-Governor Jennifer Granholm, former Governor William Milliken and the directors of the Department of Natural Resources and the Department of Environmental Quality.

"We paid the book designer and the printer," said Swan. "But all the artwork, including the maps, the writing and editing, distribution and promotion were donated."

For example, a museum curator and art professor volunteered to select the artwork, and they each wrote introductory essays for the book. A professional photographer made high-resolution digital files. Swan wrote the introduction and jacket copy and edited the artists' statements.

"I tried to give readers something like the experience of being in the dunes, but I tried not to tell readers what to think about them," said Swan.

The book project rallied people around the dunes in an apolitical way.

"People who love the dunes but did not want to associate themselves in any way with the controversy could buy the book and display it prominently in their homes," said Swan. "We succeeded in making something that served to bring people together."

Seven years later the book remains a timely and substantial calling card. It has inspired a similar book about the Sleeping Bear Dunes further north on Lake Michigan in Leelanau and Benzie Counties.

As for Swan, she says activism has strengthened her conviction that we need to

heal our relationships with the land and with one another if we are to get anywhere we ultimately want to be.

And the Saugatuck Dunes? One hundred and seventy acres of Aubrey McClendon's original acquisition was purchased from him and, in 2012, dedicated as the Saugatuck Harbor Natural Area. The rest of it, Swan notes, has seen the construction of a new access road, and remains under threat, but no houses have been built.

Swan spoke at the Lee Honors College Lyceum series on water titled "Our Blue Marble."