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Fall 2015

### Sustainability@BSU - Fall 2015

Center for Sustainability, Bridgewater State University

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# SUSTAINABILITY@BSU

*The journal of the Center for Sustainability at Bridgewater State University*



## An Organic Garden on Campus

There's nothing like digging in the dirt to connect you to the earth. On a warm day in December, students, faculty, maintenance staff and administrators gathered to do just that, turning two ornamental flower beds near University Park into the beginnings of a demonstration organic garden. It was a collaborative effort. Deniz Leuenberger, President Fred Clark's chief of staff, gathered people from across campus to share ideas and develop a plan; Karen Jason, the director of facilities, found a promising space and found money in the budget; Joel Randall, from the maintenance staff, provided manpower, equipment and know-how. The guiding force was Ron Maribett, part-time professor of geography, part-time organic farmer and full-time advocate of permaculture. Under his guidance, students, faculty and staff alike took turns handling the tools, turning over soil, laying down cardboard and covering everything with mulch. Then we let the soil and sun do their magic. Come spring, we'll be ready to plant and watch this small piece of the earth bear fruit.

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The Center for Sustainability at BSU brings together faculty, students and staff from across the university and members of the surrounding community to foster a cleaner, healthier and more resilient environment.

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## UN Climate Change Talks: BSU Perspectives

*As delegates from around the world gathered in Paris in December, a group of faculty from BSU gathered to share their own expertise on crucial event.*

### Thilina Surashinghe (Biology)

“The climate is changing really, really fast, and we can see it. Scientists around the world can see it. . . . Animals are vulnerable – they only have two choices as their habitats change, to higher in latitude or to move higher in elevation. . . . My own research focuses on some key species that rely on these refuge places. I’ve looked at the green. . . . The key is to build and expand refuges for these species. We need to do all we can to slow effects of climate change if we’re going to have a chance to save many of them.”

### Madhavi Venkatesen (Economics)

“Climate change has always existed; the difference today is that it may move beyond our ability to adapt to it. In fifty years, the Pacific island nation of Tuvalu might be underwater. So might Provincetown. And Louisiana. You don’t see that in the news. Thus the phrase – “We are Tuvalu” . . . . The key phrase from the talks is “common but differentiated responsibilities.” We all had differing abilities to help, and we all have different responsibilities for causing climate change. . . . We are what has caused climate change, and we have to change. We need to make sure our voices are heard by our governments, and we cannot be greedy consumers. We – and especially your generation – has to take on this challenge. The problem grew out of the apathy of the generation before you, but it will be yours to solve.”

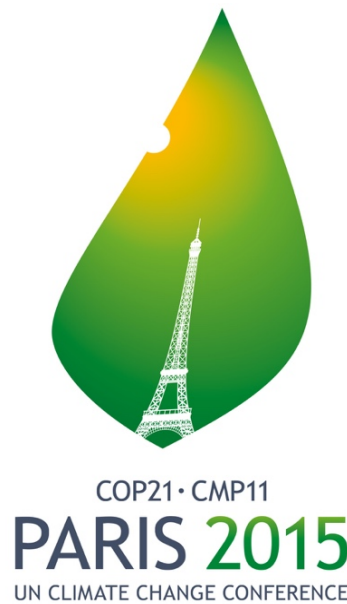
### Jennie Aizemann (CASE)

“Climate change is a huge problem and it’s real, and we have stories everywhere about leaders who claim it’s a hoax. And we know why – a growing economy and addressing climate change seem at odds, and so for many it’s easier to pretend it’s a hoax. It’s happened before, in

the 1960 with tobacco research. How do we address this? First, focus on peer-reviewed science. Over 99% of peer-reviewed articles since 1991 accept it. Climate change is indisputable. Saying it’s not real is like saying moving tectonic plates don’t cause earthquakes. Second, make climate science relevant and include a discussion of possible solutions. What can we do? Lots of small things: Watch how we use energy. Recycle. Commute less. Vote accordingly. Third, educate kids as young as possible. See “[youngvoicesonclimatechange.com](http://youngvoicesonclimatechange.com)” for lots of stories about young people making a difference, including three girls from Lexington who convinced the town to allow solar panels on government buildings.”

### Shaheen Mozaffer (Political Science)

“I’m a friend of these talks, but once I’m done, you may think that with friends like me. . . . Rachel Carson’s book *Silent Spring* is my Bible. I was there for the first Earth Day, with a lot of kumbaya moments. Yet since 1970, the earth has been heating up. . . . My primary message is to lower your expectations of the outcome. I’ve been around too long. We’ve had COP meetings since 1995. After Kyoto in 1997, absolutely nothing happened. The Copenhagen conference was a complete disaster. Now we have Paris. . . . A naïve view of human nature is the heart of the problem. Human beings created climate change and human beings need to solve it, and for that, we need to know how human beings make choices. . . . Agreements are easy; monitoring them and catching cheaters is hard. We need to frank about our self-interest and build them in.”



## Careers in Sustainability

A lot of people care about the environment. More and more of us will be making a living doing so. In October, a number of speakers came to share their stories about building a career around sustainability. They included elected official, government scientists, entrepreneurs and educators. And while their careers varied, they were eager to share their experiences with BSU students.

Bruce Tarr, *Massachusetts State Senator*

“Never pass up an opportunity to find common ground. . . . Sustainability is one of the most far-reaching concepts that touches all of our lives. The issue has changed – it’s a dire need we have to confront. In recent hurricanes, we were in a reactive mode, fixing up man-made structures that got damaged. Then coastal resiliency came to the fore, and we started looking at marshes and wetlands as part of the solution. The Great Marsh Revitalization project on the North Shore is one great example – if we can get it healthy, it can help prevent a lot of damage on the coast. It involves people with a whole variety of disciplines. We’re going from a philosophy of reaction to one of action. . . . New Bedford and Gloucester are two of the great resources in the country – they provide jobs and food, and they’re part of the soul of our state. The sustainability of that world is being challenged. Scientists at UMass Dartmouth learned how to manage the scallop grounds to make them more sustainable, preserving the health of

New Bedford. . . . There’s not one issue about sustainability that concerns me more than the energy we need to keep our state going. . . . If you’re thinking about careers in sustainability, we need you!”

Jessica Dominguez, *Environmental Protection Agency*

“We need a lot of people working in sustainability – we need engineers, we need scientists, we need artists, we need politicians, we need lawyers. . . . Brownfields management – cleaning up and safely redeveloping industrial sites – is really interdisciplinary. I’m a remediation restoration specialist, but I’d like to work myself out of job – I work on how to make new development more sustainable so the next generation doesn’t have to clean up our mess. . . . I majored in biology and English – I had it in my head that communication was important. Those two fields have served me pretty well. . . . Always try a job – being open to career paths has taken me in lots of different directions. I took lots of internships – it was one of the best things I had on my resume . . . . In the EPA, we’re a large team of people here in New England; there are lots of needs.”

Chris Hitchens, *Massachusetts Audubon Society*

“When I started, my goal was to get people to play outside. I love science, I love biology, and I found that lots of people didn’t have these outdoor experiences. I

### Marshfield Farmer’s Market, by Emerson Dwyer (2019) *Student Perspectives*

Do you know where your food comes from? The Farmer’s Market in Marshfield is a great place to shop for fresh and organic food sold by local families. There are many fruits, vegetables, and even reusable grocery bags. It is a popular place to get organic food from good people who care very much about the quality of their food. What kind of people show up to the Marshfield Farmer’s Market? Soccer moms rolling up in brand new Range Rovers, young 20-something “hipsters” in their hybrid cars, and other farmers looking to sell their food or just look around. Sadly, I don’t see many of my friends from relatively poor families. Now why is this? Every time that I go it reminds me of how socially and economically divided we are, even when it comes to the quality of food that we eat. Blue collar members of our society can’t afford to go out to spend a lot of money on organic food and would rather settle on cheaply made, unhealthy, GMO filled foods from Roche Bros and Star Market just up the street from the Farmer’s Market. Here in America, organic food isn’t viewed as a human right like it is in Europe, so organic food becomes a luxury that some can’t afford. We need to create a way to make healthy food available to everyone in American, beginning in Marshfield.

grew up using nature to heal; as I began educating, I found that lots of people had lots of other reasons to connect with nature. . . . I love those ‘holy cow’ moments, when people realize they share this earth. I’m interested in conservation psychology – how to get people to understand these larger issues. Animals are a huge tool to connect people to nature. . . . The key is to help people build a relationship with nature. Otherwise, it’s all gloom and doom. Blowing up Humvees isn’t the answer. But it takes time to help people become environmentally literate. And it takes time to connect people to the right resources to really make a difference.

Bob Wells, *New England Biochar*

“I used to grumble about the EPA, because as a small businessman, I had to deal with a lot of paperwork. Then I went to China, and what I thought was fog was pollution, every day; it was thick and hard to breathe. I came back and breathed the clean air, and boy was I thankful for the EPA. . . . I’m something of an evangelist about biochar – we bring the technology across the states and to countries across the world. I get frustrated with the term sustainability – so many of the things we do only slow down the bad things we do. We need to take it in the other direction. We’ve got to do it way better than we’re doing it. Biochar is one of the few ways to take carbon out of the atmosphere – it’s a negative carbon technology. The international biochar initiative has a real chance to make a difference. Every day, I can brag that we’re healing our carbon footprint. It’s beyond organic. I’m hiring people all the time – to sell, to educate, to build machines. There are many, many needs in this industry.”



## Small Hydropower in India

India has 1.2 billion people, and they want power. While India has some of the most developed cities and sophisticated technology of any country, much of the country is powered by dirty coal plants, and almost a third of the population has no power at all. How India manages its growing need for electricity will have a huge impact on whether the world can put the brakes on global warming.

Two BSU professors, Dr. Marty Grossman (Management) and Madhu Roy (Geography) have been researching one of the most promising developments in India’s effort to grow sustainably. Small hydropower plants are popping up all over the mountainous northern part of the country, tapping the rivers that flow from the 9575 glaciers that dot the Himalayas. Hydropower is a long-proven source of renewable power that is far more efficient than wind or solar. Small projects promise to avoid the massive environmental disruption caused by large projects like the Three Gorges Dam in China. The Indian government has been vigorously promoting these projects, the field is very understudied, so professors Grossman and Roy took a look.

They found that many projects have a minimal impact – many are “run of the river” systems that avoid the problems caused by dams by diverting water directly from the river. They’re relatively easy to build, they provide cheap power in a region that lacks reliable electricity, and they also help power growing cities without pollution caused by coal. Minimal impact, however, doesn’t mean no impact – the key, Roy and Grossman found, is the cumulative effect on a watershed of dozens of small hydropower plants. More troubling is that many plants are quickly abandoned, the victim of an often corrupt permitting process, high interest rates and problems connecting to the grid. Much of Grossman’s and Roy’s work has centered on developing and refining feasibility analyses for these projects, so investors and regulators can get a better handle on the economic and environmental impact of proposed projects.

India will continue to grow, and whether it can do so sustainably is a question that has global implications. Thankfully, professors Grossman and Roy are working on it.

## On Native Land

Donna Mitchell, an Elder of the Troy/Fall River Band of the Pokanoket (Wampanoag) Nation, lives in a different world from most of us. It's not far from Bridgewater – 35 minutes down Route 24, then a quick exit off of 195 East, then a twisting road past lovely old farms and into the woods. As we enter her driveway – tucked behind a few trees in a large clearing – we view a lovely, old, weathered farmhouse. This is Donna's home – a few acres tucked between a state forest and a neighborhood slowly shifting from farmland to suburbia. The property is what remains of the Watuppa Reservation, established in the 18<sup>th</sup> century and broken up at the beginning of the 20<sup>th</sup>, but while title to this area has been redefined and contested in the past few centuries, the deep ties between her people and their land remain as strong as ever.

Donna's welcome is warm – she's clearly delighted to bring a group of teachers and students to her home. We gather outside, where she asks us to grab lawn chairs and a blanket and sit by her family's Praying Rock, a boulder some four feet high and six wide, tucked on the edge of the grass, surrounded by withered ferns and framed by chokecherry trees. Donna smiles, perches on a chair next to the Rock, and gathers us in a circle. "We pray at this Rock. It was brought here by the glaciers and now it belongs to this land. It's shaped like a woman's womb. It connects us to the Mother Earth." It's cool, late October, but with a brilliant sun in the late afternoon, and we sit quietly while she smudges, waving



a shell with burning sage over each of us in turn as we come forward. The ritual is meant to cleanse us, and a meditative silence settles over our small group. She reads from her journals, from Khalil Gibran's *The Prophet*, and speaks from her heart, gathering us to her as much from the warmth and energy of her voice, the slow, powerful cadences of her speech, as from her words themselves. "Listen", she says. "Understand that

### Don't Settle for Recycling, by Ester Farah (2019)

### *Student Perspectives*

When I think of sustainability, my first thought is recycling. My high school continuously drilled the idea of recycling but never exactly made it clear why it is a good step into a greener friendly lifestyle. So I did research on what exactly recycling does. You can reduce the amount of waste that is sent to landfills, while also conserving fresh air. Recycling can protect natural resources such as timber and minerals. Recycling is the easiest thing people can do every day; however, it is not the only solution to environmental issues. People release CO<sub>2</sub> emissions from their cars every day. Each person has a carbon footprint, and no matter how small the foot print may be, it still affects the entire earth. It's been stated that the average person released 411 grams of CO<sub>2</sub> per mile. People don't like to hear the damage they are doing to the earth on a daily basis, but the truth is, human activities have a real effect. We can help the environment by recycling but hurt it by getting in our cars. CO<sub>2</sub> emissions released by human are a big reason why the environment is in the condition it is. Recycling can help, but we need to do much, much more.

you are part of this. Be open. The birds and animals are watching. Everything has its purpose, even the fallen leaves and the dead trees. My Ancestors tended these lands by leaving it to fulfill its purpose. Be thankful.” We sat and listened and spoke of what we felt until the sun dipped behind the trees, making its ageless journey from East to West, and the air grew cold.

We followed Donna inside, past the portraits of her Grandfather, William Perry, a renowned herbal doctor who died at the end of the 19<sup>th</sup> century, and his wife, who came here from Mashpee. It was her Grandmother, Fanny Perry who single-handedly fought off the city of Fall River when it claimed one half of the larger trust lands for its reservoir and watershed. The brief for the City of Fall River (written by Charles DuBuque in 1907) notes on page 11 that the land “was to be held for Indian Natives as long as there were any of them left, but the Indian Natives have now disappeared.” Fanny Perry disagreed, and managed to secure this allotment for her family. “The women”, said Donna, as we sat around her table, “are the Keepers of the Land. They’re with us. . . . And they’re so pleased to welcome visitors.”

She spoke about the house, of the wood stove that sat in the corner, of the effort it took to cut wood and heat water for a bath, of an economy built on barter rather than cash. The old apple and peach trees, Donna told us, were payment for her Grandfather’s cures. She brought out a tub of pear-apples she had been given, picked from local trees, a bit blemished but clean, crisp and sweet. The house was at once old and new – a modern kitchen and worn hardwood floors; horsehair plaster and new heating. She clearly relished the old, the memory of living with the old ways, and she told of a visit from an energy reader who saw the figure of a thin, tall man at Donna’s side. Donna knew very well it was her Grandfather Perry, though he had died long before her own birth. “There are lots of us in this circle around the table, more than we can usually see. Your job is to keep that circle growing, and to keep reminding everyone in it that their job is to tend Life.”

It was time to go, and Donna briefly told us about some of the things on her altar – artwork given to her by

friends, a red alabaster carving of her Grandfather, and, in a place of honor, a drawing by her Granddaughter, now ten years old, of a simple house set amidst grass and trees, a bright sun shining overhead. She and her mother had lived with Donna for a couple of years, and though they now live in another area of Southeastern New England, Donna knew they never left, and would always be part of their sacred native world.

## Food Security in Africa

Dr. Agnes Mwang’ombre, a professor of plant biology at the University of Nairobi, Kenya, visited Bridgewater on November 9<sup>th</sup> and spoke on many different issues in Africa. She touched not only on sustainability issues, but also the issues of young women in the country. Her principle theme is that these issues are woven together. To meet her goal of food diversity for people living in poor, rural communities in West Africa, she needs to improve the safety of women and fight gender inequality. Women in traditional African communities do much of the farming. If they have the resources and best information about how to plant the nutritious and productive crops, they can be raise their villages out of poverty. Dr Mwang’ombre also made it a point to highlight the importance of food diversity and how a healthy and sustainable food diet is crucial, and empowering women is the key. Dr. Mwang’ombre is a colleague of Dr. Sandra Faiman-Silva, from BSU’s anthropology department, and her university has a partnership with BSU.

- Ester Farah



## Vegetarian Cooking to Save the Earth

Eating right is good for you and good for the planet, and as BSU art professor Ivana George demonstrated recently, vegetarian cooking can be fun and delicious, too. About a dozen people gathered in the kitchen of Woodward Hall to take part, and in a little over an hour we whipped up some truly incredible vegetarian mushroom burgers. Along the way, we talked a bit about the larger implications of eating. Meat, particularly beef, requires a huge amount of water and carbon, and eating lower down the food chain means having far less impact on the climate. Organic vegetables, too, are full of nutrients that don't make it into more processed foods. They also give you an opportunity to eat locally – our meal included a number of ingredients from Professor George's own garden.

It was one of the more fun lessons in sustainability. Everyone took turns chopping onions, mushrooms and herbs; we stirred the pans, gleefully combined the ingredients and formed them into patties. By the time we were ready to eat, the crew was down to a few stalwarts who tucked into the burgers with gusto. I'm not at liberty to share the recipe, but I can assure you, based on my personal research, that mushroom burgers made with herbs, cashew butter, salted radish and chickpea flour, served with chipotle aoli, is perhaps the tastiest way yet to live sustainably.



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### Sustainability Week: April 19-22

Watch for events, speakers, service opportunities and class presentations.

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