From Your Editor

Hello everyone!

We have another great issue planned for March and have some really interesting articles lined up! We hope that you found the office hours section of the last issue helpful and hope you are utilizing them! Congratulations to Dr. Sukhdeo for being the first person to respond with the correct answer to where the hidden picture was.

This month we have a guest writer who wrote about the importance of choosing reliable organizations to donate to, so check it out if you are interested in donating to a charity. We are always interested in what our readers and fellow students have to say, so please feel free to write in any time, even if it just a comment or suggestion. Midterms are almost through and we hope everyone has had some time to relax and de-stress. Don't worry, Spring Break is only a few weeks away!

Happy Trails!

Dayna

Visiting Expert Debunks GMO Myths

Genetically modified organisms, or GMOs, have been a global topic of debate for many years. “GMO” often refers to the development of transgenic organisms, including Bt Corn and Monsanto’s RoundUp Ready seed varieties. But transgenic organisms are only one part of a larger industry. Other genetic engineering projects have been used for years without public controversy, such as using radiation to trigger organism mutations. Specifically, transgenic organisms have been in commercial use for over fifteen years. The rapid expansion of this technology has become a controversial topic, with unwavering advocacy on each side of the debate.

Myths surrounding GMO technology was the topic of a lecture by Gregory Jaffe, Director of the Biotechnology Project at the Center for Science in the Public Interest. This lecture was held in the Marine Sciences Building on February 29th, drawing a crowd of professors, students, and community members. While Jaffe covered many different topics regarding GMO technology, I have chosen to highlight a few of the most interesting myths and his responses to them.

The first myth I would like to cover is that genetically engineered crops are more nutritional than standard varieties. According to Jaffe this is simply not true. Genetically engineered crops are neither more or less nutritional compared to other crops.

A second interesting myth is that the United States Food and Drug Administration (FDA) approves genetically modified crops for human consumption. This is also not true. While GMO crop varieties do require approval prior to commercialization, there is no approval processes for their subsequent uses. As long as the GMO variety is deemed “substantially equivalent” to its wild counterpart it is generally recognized as safe by the FDA.

A third and final selection from Jaffe’s set of myths is that genetic engineering is the best way to increase productivity and end world hunger. Apart from China and India, GMO crop varieties are not widely used in hunger-stricken nations of the world, particularly in Africa. According to Jaffe, “Biotechnology is not a silver bullet, it is not a panacea for world hunger.” Instead he recommended more basic improvements to impoverished farming regions. These would include better technology for irrigation, storage, and fertilizer, infrastructural improvements, and better use of local crop varieties. The benefits of current GMO crops simply do not address the problems that cause hunger throughout the world.

So there you have it, a few brief but interesting explanations of popular myths about GMO crop varieties. These few topics barely skim the surface of this controversial issue, and anyone interested in learning more about the topic should visit Gregory Jaffe’s website, www.cspinet.org/biotech. There you will find a comprehensive FAQ page on GMOs, dozens of articles, and links to past and ongoing regulatory actions on GMO technology.

By: Kyle Walsh
Faculty Spotlight

FACULTY SPOTLIGHT: MELANIE McDERMOTT

Professor McDermott is currently teaching Natural Resources Policy, her first course at the Human Ecology Department here at Rutgers. Before coming to Rutgers she was living in Berkeley, California finishing up grad school. In 2000, Professor McDermott came to Rutgers as a postdoc, then became a ‘visiting’ scholar in Human Ecology and eventually also an associate member of the graduate faculty in Geography. This past fall she also became an associate director of the Climate and Society Initiative (climatesociety.rutgers.edu/).

Check out the Trail’s interview with Professor McDermott.

What research projects have you been a part of? Since I came to Rutgers I have done research on NJ fish and risk communication (with Caron Chess), sprawl in the NJ Highlands (with Tom Rudel and Karen O’Neill), and with colleagues outside of HE, on community forestry in the US, economic vulnerability to climate change on the Jersey Shore, and equity in payments for ecosystem services (globally).

What is your favorite thing about teaching on the Cook Campus? Interacting with students who have selected an interdisciplinary environmental major just as I once did, and learning about what concerns and motivates them. I also love biking along the river to campus.

Is there any advice you’d want to give past, current, and future students? That seems to call for a response either terribly witty or terribly trite… Since I’m not so good at witty, I will be trite, but sincere: make the most of your college years, and keep an open and curious mind for the rest of your life.

When you were younger, what did you want to “be when you grew up”? I am still figuring that out! The first coherent career ambition I can remember dates to high school, when I thought I might want to be an environmental lawyer.

What do you like to do in your spare time? Spare time?! It’s all life, all mixed up… meditating, reading, hiking and camping, and travelling and just spending time with my family

If you could travel anywhere in the world, where would you go first? I’ll cheat a bit and give two answers: for Nature – Glacier Bay and the Alaskan interior, for culture – maybe Turkey? but my list goes on....

What is your favorite animal? As a forester I feel it’s my prerogative to select a tree – the coast Redwood.

If a meteor hit the Earth, giving everyone the choice of one super power- what would you choose? How about ‘planetary healing’ -- whereby I could bring about social justice, world peace, and environmental balance with a wave of my magic wand!

Where is your favorite place to eat around Rutgers? Makeda, the Ethiopian restaurant.

Another fun fact about yourself? When I was Peace Corps Philippines I experienced malaria, typhoid (fairly mild cases), a (failed) military coup, a US government-mandated evacuation (I returned) and the eruption of Mt. Pinatubo -- about 15 km from where I lived (I returned there, too).
Want your group or organization's next event posted in the Trail? Email us at epibtrail@gmail.com and we'd be happy to share with our readers!

**EPIB 101**

Still trying to fill your “Experience Based Education” Requirement? Contact the Student to Professional Internship Network Office! Many students do not realize how beneficial the SPIN program is, not only to your education, but to your career after you graduate.

The Student to Professional Internship Network affords students at the Rutgers School of Environmental and Biological Sciences (SEBS) the opportunity to gain experience related to their course of study or career interests while earning academic credits to fulfill their SEBS experience-based education requirement. Credits are earned through the completion of academic assignments while the student is engaged in part-time or full-time work experience within business, industry, government or non-profit organizations. Students who participate in the SPIN program:

- Work in jobs related to their major or career goals
- Earn 3 or 6 credits per semester (maximum of 6) towards their degree
- May earn partial education costs through paid positions (some are unpaid)
- Gain valuable experience to add to their resumes
- Complete the experience-based education requirement
- Become more prepared for the job market or graduate school
- Make future professional contacts
- Can qualify positions they find on their own for credit

Check out their website at http://sebsspin.rutgers.edu/

**Check out These Events on campus**

**Visioning Science Research on the big Screen Film Series presented by Mary Nucci and Technologies Without Borders**
- March 20 @7PM Arabia
- March 27 @7PM Under the Sea
  - Busch Campus Center—Center Hall

**Extreme Weather and Climate Change - How can we address uncertainty?**
- Wednesday, March 28, 2012, 1:30 PM - 4:30 PM
  - Cook Campus Center

**Seminar: Climate Change, Glacier Retreat and Water Resources In The Tropical Andes**
- Friday, March 9, 2012, 2:30 PM - 3:30 PM
  - Enviro & Natural Resource Sciences Bldg.

**Want your group or organization’s next event posted in the Trail? Email us at epibtrail@gmail.com and we’d be happy to share with our readers!**

**SPIN is committed to strengthening and expanding SEBS’ relationships with local and regional employers, and to providing SEBS students with a springboard from college life to career life by giving them the chance to explore and clarify career choices and goals.**

**Academy Award Nominated Film Screening presented by the director Marshall Curry**
- Wednesday, March 21, 2012 8:00 PM - 11:00 PM
  - "IF A TREE FALLS" - The true story of radical environmentalists inside the Earth Liberation Front, described by the FBI as America’s “number one domestic terrorism threat.”

**Visioning Science Research on the big Screen Film Series presented by Mary Nucci and Technologies Without Borders**
- March 20 @7PM Arabia
- March 27 @7PM Under the Sea
  - Busch Campus Center—Center Hall
Eco News: Agriculture

OP ED: The Future of Food Sovereignty

Part I : MNCs, GMOs, and the Invasion of Iraq

By: Ryan Reed

Common disagreement surrounding the Occupation of Iraq focuses on the assumption that the goal of the United States was to control Iraq’s massive oil reserves. While American planners since the end of the Second World War have cited the need to control the valuable resources of the Middle East, the pursuit of oil only tells part of the story of the American occupation. Hidden within legal orders and statements of a changing economic paradigm lies another reason behind the invasion and occupation: new open markets. From private contracts for military personnel, construction companies, and financial giants, massive American companies have profited from reconstruction of Iraq. Multinational corporations (MNCs) in agribusiness such as Monsanto and Cargill have been increasing their profit and global control of agriculture in the aftermath of the invasion. Going drastically unreported and following precedents established in India and Africa; agribusiness MNCs in the last 8 years have destroyed an agricultural tradition dating back 10,000 years.

The Iraqi agricultural crisis dates back to the Gulf War in 1991. After a short war heavily focused on aerial bombings, Iraq was left in ruins. The US, along with other Western powers, established economic sanctions against Saddam Hussein’s Iraq. The failure and destructive nature of these sanctions has been well documented. With regards to Iraqi farming the sanctions made it near impossible to get material needed to repair irrigation systems broken or destroyed by the bombing campaigns. In addition, materials and parts for water-purification were banned by the US enforced sanctions. The overall effect of the bombings, sanctions, and induced poverty was an Iraq for the first time in its history unable to feed itself.

Into this crisis steps the Coalition Provisional Authority (CPA) and its administrator, Paul Bremer. The CPA was tasked with rebuilding Iraq’s economy and government after the invasion in 2003. Bremer issued 100 orders dealing with the retention of government employees, the future of the Iraqi military, trade policy, and other matters. F. William Engdahl, German American journalist and author of Seeds of Destruction: The Hidden Agenda of GMOs, wrote a report about the effects of these orders called, Iraq and Washington’s ‘Seeds of Democracy’, and focused on the drastic nature of Bremer’s hasty work. “Bremer’s first act was to fire 500,000 state workers, most of them soldiers, but also doctors, nurses, teachers, publishers, and printers. Next, he opened the country’s borders to unrestricted imports; no tariffs, no duties, no inspections, no taxes. Two weeks after Bremer came to Baghdad in May 2003, he cynically declared Iraq to be open for business.” Whose business he didn’t say, but it soon became clear,” (Engdahl Current Concerns, Nov 2005). His 100 orders lowered corporate tax rates, allowed foreign companies to own all non-resource Iraqi assets, and allowed investors to take all profit out of the country tax-free and without a requirement to reinvest. All these paved the way for Order 81, a veiled order involving patent rights and seed usage covered in lawyer jargon.

Order 81 gave patents to giant seed-producing corporations like Monsanto. This forced Iraqi farmers attempting to renew their land to buy seeds at high prices from MNCs. Monsanto was then able to levy numerous fees for the use of these seeds and an additional provision of Order 81 made it illegal for farmers to replant the year’s seeds the following year. “Farmers shall be prohibited from re-using seeds of protected varieties” thus farmers had to buy genetically modified organisms (GMO), most alien to their agricultural lands, every year at elevated prices to have a harvest and provide for their families. Engdahl further laments the loss of the great tradition of seed saving in Iraqi culture. The birthplace of agriculture produced natural, seed variety and kept the seeds in a bank for future and communal use.

Sadly, this seed collection was lost during the latest invasion. With no seed bank and a ravaged countryside, Iraqis were forced to buy from MNCs like Monsanto and introduce untested and unregulated GMOs into their fields.

The pattern of state invasion is unique in the Middle East, but the pattern of corporate invasion throughout the world is not. India still struggles against the weight of foreign controlled seed companies. In an interview with Vandana Shiva, a world-renowned environmental leader and author of Earth Democracy: Justice, Sustainability, and Peace, issues surrounding the outbreak of Indian farmer suicides in the last decade were addressed. “Indian farmers have never committed suicide on a large scale. It’s something totally new. It’s linked to the last decade of globalization, trade liberalization under a corporate-driven economy.” (Shiva, Vandana. Interview by Amy Goodman. Democracynow.org. 13 Dec. 2006). Shiva discusses the effect of the same kind of seed provisions ordered in Iraq on Indian farmers. Forcing farmers to buy unregulated hybrid seeds from companies like Cargill and Monsanto has resulted in crushing debt, the loss of Indian farmer sovereignty, and ultimately an unheard of rate of suicides. The same types of nonrenewable seeds are being sold to farmers amid complex contracts forcing these same farmers to buy licenses to use the seeds and prohibiting them from reusing previous year’s seeds. High cost chemicals necessary for the upkeep of the GMOs coupled with the price reduction of the yields due to an unnatural increase in supply have left farmers in debt with nowhere to turn. “Just three days ago, farmers were protesting against low prices of cotton. They went to the government agency, which before globalization used to buy cotton at a fair price. One farmer was shot dead. So we’re not just seeing suicides, we’re also seeing farmers’ protests treated as a new threat to the regime.” (Shiva, Vandana. Interview by Amy Goodman. Democracynow.org. 13 Dec. 2006). A study published annually by Shiva’s organization, Research Foundation on Science, Technology, and Ecology, found 90% of the causes of farmer suicides are linked to desperation from debt, poor crops, and hopelessness.

Africa toils under the same globalization issues. In a statement released by a group of 70 African civil society organizations from 12 different African countries at the World Social Forum in Nairobi, Kenya in 2007, organizations plead to put a stop to a new initiative by a Bill Gates/ Rockefeller Foundation collaboration involving the influx of millions of dollars to update African seed supply to use MNC controlled GMOs. “This push for a so-called ‘green revolution’ or ‘gene revolution’ is being done once again under the guise of solving hunger in Africa.” This push for a corporate-controlled chemical system of agriculture is parasitic on Africa’s biodiversity, food sovereignty, seed and small-scale farmers…Industrial breeding has in fact been driven by the industry’s demand for new markets— not to meet the needs of farmers,” according to statements made at the World Social Forum. These African organizations attempt to counter the belief that higher yield crops are the best defense against hunger. Seed companies argue that the increase of food supply from these modified seeds will result in less hunger and a more improved diet for poor nations. While this logically follows, the train of thought ignores the drastic effect these artificially increased yields have on the market for farmers. Basic economics will show that an increase in supply will lead to lower prices that farmers can sell their crops at, ultimately leaving them in even more debt.

Where does this leave farmers in the United States? In Part 2 we will investigate the effect of this global crisis on American farmers and the future of food sovereignty throughout the world.

INFORMATION TAKEN FROM:
- mindfully.org/Farm/2004/Iraq-Plant-Variety-Law26ap04.htm
- India: democracynow.org/2008/12/13/ vandana_shiva_on_farmer_suicides_the Africa: foodfirst.org/node/1610
Eco News

"B" stands for Benefit

By: Julia Harenburg

Benefit. We look for benefit in everything. We go to college to benefit educationally. We eat certain foods to benefit nutritionally; every decision we make involves the desire for benefit. Often times when we look at corporations, both big and small, we assume that they exist for one reason, to make a profit. We can often benefit from the products that they distribute or the services that they provide but, in general, we do not think that they care about benefiting us individually. What if there were companies that genuinely cared more about benefiting society and the environment than about making a profit? It turns out that there are.

"B Lab" is a non-profit organization located in Berwyn, PA that grants the title of “Certified B Corporation” to qualifying businesses. I’m sure you are all now wondering, what in the world is a Certified B Corporation? The B stands for social benefit. A corporation certified by B Lab has three qualities that differ from traditional businesses: 1. They meet comprehensive and transparent social and environmental performance standards, 2. They meet higher legal accountability standards, and 3. They build business constituency for public policies that support sustainable businesses.

So what does this mean in layman’s terms? In an article published by the Star Ledger at the beginning of February entitled “Growing Community of Social Entrepreneurs Look for Ways to Establish Legitimacy”, the author, Stacy Jones, discusses some examples of what a Certified B Corporation does to establish social benefit. Herbalist and Alchemist, located in Washington, NJ, underwent their first B Lab audit over the summer. Jones reports that Herbalist and Alchemist, “won’t print a catalog until someone orders one, employs a lot of women and makes sure all of its workers have health benefits.”

The mission of B Lab is to “redefine success in business.” Certified B Corporations use the power of their business to solve both environmental and social problems. Social benefit is their success; profit is a secondary benefit. There are over 450 different Certified B Corporations, some of which are very well known corporations. For example, Seventh Generation, the Vermont-based natural household products manufacturer is a Certified B Corporation. Their products are everywhere, including Target, Wal-Mart, and ShopRite. Some other companies that you may know include Patagonia (outdoor apparel), Sambazon Inc. (Acai beverages), and many others ranging from law firms and chocolates to apparel and sunscreen.

B Lab is a very important organization for corporations that want to use their entrepreneurial powers for good, but simply can’t. By becoming a B Corporation, these companies are able to address the issues of corporate law that make it difficult to take social benefits into consideration when making decisions and differentiating between a ‘good company’ and just good marketing. By B Corporations addressing these issues, individuals are going to benefit economically, socially, and environmentally.

Governor Chris Christie decided to pass a law similar to B Lab’s mission called the Benefit Corporation Legislation, making New Jersey the third state in the country to do so. The law is still new so there aren’t many companies that have shown interest in becoming a benefit corporation yet. The law will give benefit corporations some legal recognition and it will also create methods for gauging how well the benefit corporations help the community. The law will also protect the businesses from investor lawsuits when their environmentally sustainable or socially benefiting decisions cause them to fail to maximize their profits. A company doesn’t have to be a Certified B Corporation to be a benefit corporation, or vice versa. They are similar entities that are striving for a better way to do business and help our country benefit.

There is a growing demand for corporations that provide more than just good marketing skills. This law passed in New Jersey is bound to influence more good-hearted companies to become benefit corporations. We are making decisions that enable us to benefit, just like we always do.

Log onto bcorporation.net to see the full list of corporations or for more information.

The Possibilities in Conservation

By: Arati Patel

As an EPIB major we are constantly challenging ourselves and taking part in what is good for the environment. The realm of environmental interests expands in a wide variety of areas from conservation of energy, animals, ecosystems, as well as many others. Environmentally conscious students have many opportunities to showcase their skills through programs that encourage environmental protection. SCA is a great conservation corporation to consider for an individual interested in engaging with nature. The goal of SCA is to protect and restore natural parks, marine sanctuaries, historical, and cultural landmarks throughout the United States.

The mission of SCA is to open the door for individuals who have a passion to become conservation leaders. It provides the tools and experiences one can carry with them for a lifetime. SCA provides numerous types of internships, community programs, and volunteering experiences. Internships such as working with field scientists at National Parks throughout the United States and restoring natural habitats, allows students to gain a deeper perspective on environmental issues.

Becoming a SCA member allows students to protect the environment. Sharing policy ideas and working with other individuals who are just as passionate and committed to solving our world’s environmental problems makes the program exciting. Personally, I love to work with animals and have a deep interest in the protection of wildlife habitats. SCA has provided me the opportunity to collect data on the correlation of raptor breeding sites and wild fires that occur within Joshua Tree Park. This is just one of the research opportunities that SCA offers. Internships range from accounting and agriculture to wildland firefighting and working with children. Internships offer a living stipend and educational award upon completion and advisors will work with you to obtain academic credit.

For more information check out their website at http://www.thesca.org/.
Although we may not all be Irish while celebrating St. Patrick’s Day, we can still all be green. Here is a collection of ways you can be your greenest self:

Opt for Environmentally friendly brewed beers.
Greenopia provides ratings for some of the most famous and underground beers. Ratings are based on environmental reporting, production efficiencies, organic ingredients, eco-friendly packaging, efficient transportation, and green building design. The “greenest” beers were New Belgium Brewery, Eel River, and Bison.

According to Greenopia, “New Belgium beers require only 3.9 liters of water per liter of beer (and this number has been improving each year). This is much lower than the industry average of around 5-7 liters of water needed. New Belgium sources its packaging materials locally (which cuts down on its transportation impact) and is in the process of researching new packaging types. New Belgium encourages its employees to ride their bikes to work and has incorporated many elements of green building design in its offices. Lastly, New Belgium Beer uses renewable energy to make its beers and has great environmental reporting, which is somewhat surprising given its smaller size.”

Some of the worst? Guinness, Sam Adams, and Corona. Greenopia explains that it takes about 6 liters of water to make a liter of Guinness while Sam Adams does not brew an organic beer as of this time and hasn’t greened its bottles or transportation fleet.

Check out the entire list at: www.greenopia.com/LA/beers_search.aspx?category=Beers&Listpage=0&i

Skip going out to eat and make this delicious spin on an Irish classic at home: Vegetarian Irish Stew.

This veggie take on a tradition Irish stew from Care2 still has plenty of flavor and is super-hearty but still meat-free; meaning fewer calories, a lower carbon footprint, and easier on the wallet.

**Ingredients:**
- 4 tablespoons olive oil
- 3 medium leeks, cleaned and sliced (or 2 medium onions, diced)
- 1 cup cup parsnips, sliced
- 1 cup carrots, sliced
- 1 cup potatoes, sliced into chunks
- 1 cup turnips or rutabagas, peeled and sliced into chunks
- 1 cup celery, diced
- 4 cups vegetable stock
- 2 cups stout beer
- 1 cup pearl barley
- 1/2 cup fresh parsley, chopped
- A few sprigs each fresh rosemary, fresh thyme and fresh marjoram (or 1/4 teaspoon of each dried)
- Salt and pepper to taste

**Directions:**
1. In a large soup pot or Dutch oven, sauté leeks in the olive oil until translucent. Add the remaining vegetables and cook for a few minutes, stirring to coat the vegetables with oil.
2. Add broth, stout, barley and parsley to pot. Tie together sprigs of fresh herbs with a piece of cooking string and add (or add dried herbs). Bring to a boil, then reduce heat. Simmer for an hour, or until vegetables are tender and stew has thickened, adding water if necessary. Remove herb bundle.
3. Season with salt and pepper, divide among plates and serve with bread.

Enjoy the increasingly warmer weather by looking for some 4 leaf clovers!
Check out http://www.instructables.com/id/4-leaf-Clovers%3a-A-Finder-s-Guide/?ALLSTEPS for step-by-step instructions on how to find and classify a four leaf clover. Find out the best ways to search for a four leaf clover, learn about the even rarer five leaf clover and two leaf clover, and get tips on the best way to collect and display your findings. “Remember, 78% of all statistics are made up. So even though they say there is only one 4-leafer in 10,000 clovers, that’s not entirely the whole story.” Chances are a 15 minute walk through a field could prove to be lucky!

Check out a list of St Patrick’s Day parades closest to you:
http://stpattricksday.com/

Why should you never iron a 4 leaf clover?
Facts Behind Hydraulic Fracturing

By: Eva Pena

Many people in society talk very strongly about their point of view on a variety of topics, but do they really know the facts and science behind their opinion? Do they know how it will affect our natural resources and natural habitats? Discussing the importance of these issues has been overlooked by many, especially by political parties, because those who are in power believe they are making the right choice. However, many of them are not scientific experts. Others only support a side of the issue because it favors them or their constituents and they may not realize how it can potentially affect the overall public.

Hydraulic fracturing is a highly debated and controversial issue that it is affecting us both locally and nationally. Natural gas is a fossil fuel that can be formed by decaying plant and animal matter. These gases are considered to be one of the cleanest sources of energy because the byproducts are not as harmful as coal and oil. The byproducts of natural gas are mainly water vapor and carbon dioxide, while the byproducts for coal and oil are more complex molecules that are harsh on the environment and human health. Other possible benefits of natural gas extraction is the reduction in greenhouse emissions and emissions from transportation, as well as, improvement in air quality. There is also the possibility of limiting acidic rain and reducing our dependence on foreign oil.

Although there seem to be a number of benefits to moving our efforts towards natural gas, there are also a number of downsides. Natural gas is more likely to be found at greater pressures, meaning that it is found deeper in the Earth’s crust than oil, which can lead to more extensive drilling than would be needed for oil. Methane is one of the components of natural gas, which is very effective at trapping heat and actually stores more than carbon dioxide! This raises the question: “to what extent is natural gas “cleaner” than oil or coal.”

The extraction of natural gas is the predominant problem of this issue. First, miners have to drill a natural gas well to be able to collect it. Once the well is constructed, they inject millions of tons of water, sand, and 80-300 tons of chemicals. The pressure in the well cracks the rocks and makes a path for the natural gas to go up the well and be collected. One of the most harmful environmental problems is that up to 70% of these chemicals remain in the soil and are not biodegradable. Many companies do not specifically state what chemicals are released, which gives a hint as to how volatile they can be.

Even more dangerous to the environment results from the passing of The Halliburton Loophole, an Energy Bill signed by former President Bush which exempts miners of natural gas drilling from the Safe Drinking Water Act, Clean Air Act, Superfund Law, and other regulations. It also exempts mining companies from disclosing the chemicals used in the natural gas wells. There are chemicals being released into the soil, but the general public has no knowledge of what they are. The problem progresses due to the fact that these companies are exempt from being held responsible for the chemicals in the soil. The companies want to extract the natural gas using the most cost effective method, which typically does not correlate with being the safest or cleanest.

Josh Fox, the director of the documentary Gasland, visited the households of citizens who lived near a natural gas extraction site that have been affected by the drilling. Many of these homes no longer have potable water due to the contamination of unknown chemicals in the soil. Medical issues are on the rise in children who are forced to drink and bathe in these waters. When Fox visited Pennsylvania, he was told by one of the families that the well they were using exploded without a sign of earlier problems or contamination; the same family noticed that they could light the water coming out of their tap on fire! The campaign supporting the extraction of natural gas has progressed and is presently practiced in 34 states. Understandably, laws are quickly being passed to ensure that citizens have the energy needed for their daily lives, but we tend to be reactive instead of proactive. The issue is more complicated than it seems. There are pros and cons to the extraction of natural gas. The pros seem to focus on the laws and how it could benefit the economy. However, they tend to neglect the irreversible environmental impacts associated with the process.

Information taken from:
(1) gaslandthemovie.com/
(2) epa.gov/cleanenergy/energy-and-you/affect/natural-gas.html
(3) eia.gov/naturalgas/
(4) fossil-fuel.co.uk/natural-gas/how-natural-gas-is-formed
(5) youtube.com/watch?v=NDpopfFMci8&feature=fvst
(6) naturalgas.org/overview/background.asp

Rutgers Charging Ahead With Electric Vehicle Technology

By: Scott Sincoff

Greener electric cars are becoming more popular in the mainstream marketplace. Drivers are looking forward to quiet engines and not running out of gas for at least 400 miles. With this in mind, Rutgers University School of Engineering, in cooperation with from University Facilities, have installed two Charge Point Electric Vehicle (EV) chargers outside the Center for Advanced Infrastructure and Transportation (CAIT) on Busch Campus. The EV chargers were originally installed to collect data on both EV usage and environmental benefits.

Monica Mazurek, Associate Professor of Civil and Environmental Engineering and a CAIT member, worked with the Material Science Department and University Energy Conservation’s, Mike Kornitas, to negotiate a deal with Coulomb Technologies to donate the EV chargers to Rutgers. Mazurek said that EV drivers could use the chargers for free through 2013, with a Rutgers University parking permit. She said that the two stations could charge up to four vehicles simultaneously. Mazurek also said that the stations use clean renewable energy to run. All of the electricity that is needed to run the stations and charge the electric vehicles is solar energy generated from Rutgers’ Solar Energy farm on Livingston Campus.

Mazurek said that this is just the beginning of the electric vehicle plan at Rutgers. “This is where the legacy begins for Rutgers as a global cutting-edge institution using and supporting electrical vehicles and renewable power sources,” said Mazurek. The general public is also getting some use out of the EV chargers. EV advocate, Michael Thwaite, said that he charges his electric Tesla Roadster at the stations every week. He said that the EV chargers really helped his family when his house lost power during Hurricane Irene and the October snowstorm.

For more information, please visit: http://news.rutgers.edu/medrel/special-content/2012/rutgers-offers-elect-20120201.
Arielle's Food for Thought:

“We are the Garden State and we need to promote small scale farming,” says Jim Mullen, the general manager of Frog and the Peach Restaurant. The Frog and the Peach is one of several restaurants that functions on a “farm-to-table “ menu. A “farm-to-table” restaurant has a menu that changes seasonally, operating in correlation with what farmers in local areas are growing. Jim explains that “all of our ingredients are local, allowing us to deal directly with the producers cutting out the middleman... giving the food a healthier taste and an aesthetic quality for our customers.”

A system was created to help farmers and chefs of “farm-to-table” restaurants to stay connected. The state is divided into different zones, which functions as a farm distribution mechanism created to serve as a direct link between the farmer and the restaurants. Chef Bruce Lefebvre of Frog and the Peach works with the directors of Zone 7. Each zone works exclusively with the regions' organic and most sustainable farms to help convey information and provide consistency for both grower and customers.

Jim believes that “a new appreciation for local organic food is growing.” This is evident by the increase of popularity in the Frog and The Peach Restaurant. It is up to us to help others realize what the staff of The Frog and the Peach have already discovered: the importance of eating locally and sustainably. When this realization transitions into a popular lifestyle, we will have easier access to eat and live a healthier lifestyle! Hopefully, with the growing food movement, other restaurants and dining facilities at different colleges, hospitals, and schools, like the Frog and the Peach, will begin to incorporate a “farm-to-table menu.” By doing so, people will have better access to healthier and tastier foods, and the relationship between growers and consumers will strengthen.

Sources:
http://www.freshfromzone7.com/
-Interview with chef and Jim Mullen
The Frog and The Peach
29 Dennis St

Retail’s Newest Threat
By: Dayna Bertola

Retailer’s face new challenges every day, but there may be a new problem they may have to face and no, it’s not the recession or competitors pricing. Recently, there has been much debate over whether there should be a charge or tax for the plastic bags a consumer receives after they purchase their goods. Some places want to completely ban the use of plastic bags in general! Could you imagine a shopping experience that does not include finishing check out with the cashier handing you your bag of purchased goods? Most people probably cannot.

However, citizens of San Francisco have been dealing with this reality and on January 31st the city voted to expand its ban on plastic and to include a 10-cent charge for those who opt for the paper bags. Ronnie Volkening, president of the Texas Retailers Association, stated that a ban on plastic bags would cause “chaos and confusion with our customers.” However, there are many examples of areas where the ban has been rather successful.

A survey conducted by the European Union found that 78% of the 15,000 respondents supported the decision to cut the usage of plastic bags, while most of them supported banning them completely. A reason for the support may be due to the recent coverage of the enormous amount of plastic that has begun taking over the oceans. This “plastic soup,” as Janez Potocnik, a European commissioner for the environment, calls it has caused some concern. Although, the banning of plastic bags could benefit the environment, it can be severely detrimental to those who rely on its usages to make a living, for instance, the plastics manufacturing industry.

Thomas Bauwens, a spokesman for the trade group PlasticsEurope, claim that plastic bags are a low energy method to carrying purchased goods and that it is due to “irresponsible littering and a lack of awareness as to the value of plastic bags” that is the true issue. Is he correct in his claim that the irresponsible littering is causing the pollution that is harming the environment? Would banning these bags actually improve the environment?

Although the bans have had positive reviews from most consumers, there is little data on the overall effects it has had on the environment. Without solid data on whether this method is truly effective, cities should be aware of how it will affect all the involved parties before implementing such a drastic change. There should be a consideration of how it will affect the consumers, economy, and businesses. It is a multifaceted issue that requires more studies and information before being enacted. For now, most experts agree that a tax or fee associated with the usage of plastic bags may be a good place to start. In Ireland, it decreased the usage of plastic bags by 94%, but consumers still have the option to use them if they chose. For now the issue is still in the early stages and it is something that may become more popular as the debate carries on. For more information about areas that have already implemented a ban please check out nytimes.com/2012/02/09/business/energy-environment/should-plastic-bags-be-banned.html?pagewanted=1&_r=2&ref=environment.
We are constantly inundated by the dizzying array of pleas asking us to reach into our pockets and donate to various causes. Whether walking outside Brower or through infomercials on late-night TV, organizations seek to appeal to our emotions and compel us to donate. Some of us give a lot, some give a little, while others choose not to give. However, the question of where you give is more important than if you give. Research indicates some charities are up to 10,000 times more effective than others. Yes, 10,000. That means giving one dollar to a highly cost-effective organization can do as much good as giving $10,000 to a poorly managed one.

So how exactly is cost-effectiveness determined? Through extensive research. Givewell (www.givewell.org) is the world’s most prominent charity evaluator. Givewell has looked into thousands of international organizations, and rated hundreds of promising organizations based on four criteria — a strong documented track record, highly cost-effective activities, room for funding, and accountability to donors. Based on these parameters, Givewell currently recommends the Against Malaria Foundation (AMF - www.againstmalaria.com/) and the Schistosomiasis Control Initiative (SCI - www3.imperial.ac.uk/schisto). AMF distributes long-lasting insecticide-treated bednets for approximately $5 per net. SCI focuses on debilitating parasitic worm diseases, and through their interventions, $5 can protect a child for 10 years.

It may come as a surprise that for the cost of 2 Big Macs, you can protect a family of four from malaria for 20 years. This is true because money can go a lot further in developing countries compared to developed ones. Although some may assert that we should solve our problems at home first, the positive impact we can make is disproportionate. For example, suppose we want to help those that are blind. We can help blind people in the US by training a guide dog and teaching its recipient how to best use it; this will cost approximately $50,000. Alternatively, millions in developing countries remain blind for lack of a cheap and safe eye operation. For $50,000, we can completely cure enough people of Trachoma-induced blindness to prevent a total of 2600 years of blindness. For the same amount of money, we can provide a blind person in the US a guide dog or give 65 previously blind people the gift of 40 years of sighted life.

After learning about the great impact individuals can have, I decided to act. I joined Giving What We Can – an organization dedicated to combating extreme poverty in the developing world. GWCC members make a commitment to donate 10% of their income to the most cost-effective charities. So far, GWCC has 5 chapters (including one at Rutgers!), 193 members, and $47,680,000 pledged. In May 2011, I took a pledge to donate 20% of my spending money as a student, at least 20% of my future income, and earnings from seldom casino visits to the most cost-effective charities. I’m in a financially stable position, but more importantly, I already have most of the things I value in life. Through my donations, I can save thousands of peoples’ lives over my lifetime at little personal cost. That’s pretty cool.

In an ideal world, every human being would have access to clean water, nutritious food, healthcare, and education regardless of economic standing. Instead, 2.5 billion people live on less than $2 a day. More than 1 billion lack access to clean drinking water. More than 800 million go to bed hungry each day. And the statistics go on. The world is an unfair place with lots of suffering. Through monetary donations to the most-effective organizations, we as individuals can dent these statistics. I’m not here to sermon you into donating. Rather, I seek to provide information on the importance of cost-effectiveness. For those who seek to do some good through donations, I ask that you give your money to the organizations that will get the most bang for your buck. Together, we can do some amazing things.

**For those interested in charity and cost-effectiveness, check out Giving What We Can – Rutgers’ Facebook page or our website at://www.givingwhatwecan.org/rutgers/. Feel free to contact me via e-mail at mbang@eden.rutgers.edu, or have a chat with me. I’m interested in hearing others’ viewpoints and learning more.**

Millions of children live without shoes. Because of this, they are exposed to injury and disease each day, and many are not even allowed to go to school without proper footwear. It has been proven that children who are healthy are more likely to be successful students. Shoes provide the opportunity to stay healthy by protecting against diseases such as podoconiosis, a debilitating and disfiguring soil-based disease, hookworm which can cause intestinal pain, weakness and cognitive impairment, and can ward off jiggers which are burrowing fleas that cause painful infection. This year, One Day Without Shoes is April 10, 2012. It is one day we can raise awareness of the impact a pair of shoes can have on a child’s life by taking our own shoes off. Join the thousands of supporters worldwide who are raising awareness by going barefoot! Visit toms.com for more information.
Eco News

Drink up! A Pest’s Guide to Getting Rid of Pests  By: Rebecca Noah

We all know them. We all hate them. Their arrival warns us that something in our home has gone bad. The common household fruit fly (Drosophila melanogaster) is a pest that the majority of us have unfortunately encountered.

The life of the fruit fly seems pretty dull. Adult flies search for old fruit to lay their eggs on. The eggs hatch into larvae and begin to eat the yeast and bacterium that cause the fruit to rot. The larvae grow into adult fruit flies that repeat the process immediately and then die in about a month.

In fact, the lives of fruit flies are not as boring as they have been made out to be. Fruit flies are constantly fighting off their own parasitic pest. Tiny wasps lay their eggs within the body cavity of the fruit fly. The wasp eggs hatch and the larvae begin to consume the fruit fly from the inside out. The fly is defenseless against these horrifying parasites and continues to be eaten away until all that remains is a wasp pupa.

However, the fly is not completely helpless if it can get its hands on some booze. Dr. Todd Schlenke, a biologist at Emory University, recently discovered that fruit flies use the alcohol produced through fermentation of the rotting fruit to ward off pests and sometimes kill them in a gruesome way. Fruit fly larvae are hatched in a pool of alcohol, with an alcohol content of 4-6%, similar to that of a beer. The flies are able to survive because they possess a specialized enzyme that allows them to detoxify and breakdown the alcohol at an astonishing rate.

Wasps are not as fortunate. The study found that wasps laid 60% fewer eggs in fruit flies that were in the presence of alcohol than those that were not in the presence of alcohol. The reason for this behavior is unknown, but Dr. Schlenke believes it is likely that the presence of alcohol makes the parasite ill. The study showed that wasp eggs would grow normally if the fruit flies were not consuming alcohol. If the fruit flies that were consuming alcohol, 65% of the wasps died. Dr. Schlenke discovered another interesting, yet dreadful detail regarding how the wasps’ died; its guts would shoot out of the body.

Several other examples of animals that self-medicate by eating certain foods or consuming toxic substances as an anti-predation technique have arisen in past years. The reason that this finding is particularly interesting is because Dr. Schlenke is the first to uncover an animal that uses alcohol to ward off parasites. In addition, this finding not only adds to the scientific database of animals that use food to increase survival outside of nourishment, but this study also has implications for human beings as well.

Humans and flies share many genes. In particular, the similarities can be seen in alcohol sensitivity and immune system responses. Dr. Schlenke hopes that this research could aid in forming studies on human parasite prevention and treatments. However, he also pointed out that even though fruit flies have a higher resistance and better ability to process alcohol, too much is detrimental to the animal and results in problems similar to the ones seen in alcoholics.


 PEOPLE NEED NATURE TO THRIVE

Doing my homework at Starbucks in Washington D.C has been a different experience for me since I started interning for Conservation International (CI) this semester. Within my first week on the job as a due diligence researcher in the Center of Environmental Leadership in Business, I was assigned to update the longstanding partnership profile CI has with Starbucks Coffee. The research template covers a variety of topics such as finance, corporate geography, values and history, philanthropy, campaigns against and the much-emphasized environmental footprint, supply chain and labor violations. I am delighted to say that it is my pleasure to give Starbucks my business in purchasing their coffee after researching and learning about their transformation to be "green" since the 1980’s.

CI is a non-profit organization that was founded in 1987 by Spencer Beebe and Peter Seligmann. Headquartered in Arlington, Virginia, CI offices can be found in more than 45 countries. In 2010, the organization shifted their mission from focusing solely on protecting biodiverse hotspots to include human ecology and public health.

Through science, fieldwork and partnership with the government, private sector and NGOs, CI demonstrates that people and nature can live harmoniously. CI educates potential partners about the economic incentives of going green and creating proactive policies that avoid expensive disaster clean ups and lawsuits. The money donated to CI from partners is then used for international conservation projects in the areas that those partners have impacted. Major donations from its partners support long term projects such as reforestation, intercropping, building wells for clean water etc. CI is dedicated to education reform; unlike many other nature conservancies, it does not discriminate against the partner’s environmental and labor track history. CI is willing to help as long as the partner is genuine about changing their policies, investing in green technology and giving back to the communities and natural landscapes they have previously impacted. On the Wal-Mart website a manager stated, “CI worked with us when no one else would”. Thus far I have completed due diligence research on Nike Inc., Gap Inc., Monsanto, Darden Restaurants, Illumination Entertainment and Urban Outfitters.

The principal short-term goal of CI is to work in different countries with diverse stakeholders to structure sustainable economy models that primarily value, protect ecosystems and biodiversity. Cross communication is very important to them because it helps them understand what approaches are effective, inherently increasing their value as advisors to their partners. In the long term, CI wants to change the global development paradigm that would guarantee food and water security, environmental justice and a green sustainable market. The Center of Environmental Leadership in Business (CELB) aims to amplify sustainable production, consumption, and policy to create a green economy. CELB believes in education reform in the private sector. Once private sector corporations learn the economic incentives and humane benefits of going green, they can set new standards and precedents for environmental policy that can be further strengthened by incorporating such precedents into environmental laws and regulations.

In a depressed economy, fundraising can sometimes pose difficulties. To address this challenge, CI holds large fundraising events to get potential partners excited about their cause as well as emphasize the benefits of going green. The organization does a lot of promotion for their partners and their new green products as well. For example, it has the key to the success of Starbucks’ organic coffee line. CI does their best to maintain strong partnerships to do multiple projects while developing new partners; it has an extraordinary track record and is paving the way to improve environmental stewardship globally.

By: Katie Fudacz
Mind Controlling Parasites

A calculating and stealthy predator is increasingly capturing the attention of scientists around the world—parasites. However, their clandestine operations can lead not only to the familiar pirating of resources, but even to a perplexingly effective control of behavior, effectively creating a subservient host for the parasite.

One astounding display of manipulation occurs between the orb-spider, * Allocyclosa bifurca*, and the parasitic larvae of the wasp, *Polycephala gut/reundi*. Once this wasp has scouted out its choice target, it ambushes the spider and then paralyzes it so that it can attach an egg to the spider’s abdomen. The spider recovers, gets on with its daily routines, and neglects to suspect that the small addition to its abdomen is in fact a dormant, yet menacing threat. After a few days, the larva emerges from the egg, and begins to feed on its host. Throughout this time, however, there’s been another change—one even more bizarre than the larva draining the spider of vitality. The shape of the spider’s web has changed. It is no longer spinning a circular, symmetrical web. Instead, it has begun to weave a web with just the right specifications to camouflage the cocoon of its parasitic captain. Once the web is complete, the larva kills its host and conceals itself in the center its made-to-order stronghold.

Taking a page from the family tree, the parasitic wasp *Glyptapanteles* is also a master of forcefully enlisting the cooperation of its host. This wasp goes for a more direct approach, and plants its eggs literally inside the body of the *Thyrinteina leucocerae* caterpillar. Ever the gracious host, the caterpillar accommodates its guests by increasing the amount of food it consumes. Once the larvae have grown sufficiently, all but one or two gnaw their way out of the caterpillar with specialized teeth for just that purpose. Those remaining larvae sacrifice their lives to man ship for their siblings. The remarkably still alive caterpillar has a new mission—defending the pupating larvae from predators. Unable to resist being manipulated by the parasites, the caterpillar spins a protective cocoon over the larvae and vigilantly stands guard over them until it starves to death.

It’s not just insects that are in danger of being subject to the demands of parasites. In 2011, Czech researcher Jaroslav Flegr, along with several others published a paper entitled, “The distribution of *Toxoplasma gondii* cysts in the brain of a mouse with latent toxoplasmosis: Implications for the behavioral manipulation hypothesis.” Although mice will usually fearfully react to the smell of cats by fleeing the vicinity, in their research, the scientists found that mice infected with *Toxoplasma gondii* were counter intuitively attracted to the smell of cats. To the pleasure of both parasite and cat, the mouse virtually offers itself up as food, completing the parasite’s life cycle.

However, where this research has garnered most attention has been in its implications for humans. The *Toxoplasma gondii* parasite has also been known to infect humans, leading the Czech researchers to wonder: Are we all subject to parasite mind control? Through their research, the scientists found that those infected with the parasite are more reckless and anxious. In women, this manifested as being more outgoing, while men tended to be more suspicious and inclined to disregard rules. What’s more, in a study of the general population, the researchers found that those with the parasite were two and half times more likely to have been in a car accident. In a subtle way, it seems that the parasite may also be affecting the apprehensions of humans.

Don’t grow mistrustful of cats just yet. In addition to *Toxoplasma gondii* being more common in outdoor cats than indoor cats, molecular parasitologist Dr. Boulter cautions that few groups have extensively studied the parasite yet—more investigation is still needed for these findings to be confirmed. However, thinking of the influence the wasp parasites exerted on their host insect leaves me wondering—are we really immune to being subtly influenced by parasites, or is it vanity that keeps us from believing it’s possible?

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By: Kimber Ray
The 547-acre FBI Academy on the grounds of Quantico (Va.) Marine Base houses a firing range on which about a million bullets a month are shot by agents in training, but it also happens to be a de facto wildlife refuge for the simple fact that the academy is off-limits to Virginia hunters. Thus, according to a December ABC News dispatch, deer learn that, despite the gunfire (sometimes at astonishingly close range as they wander by the targets), none of them ever gets hit. The academy is also a “sanctuary” for foxes, wild turkeys and other critters.

Mayor Jim Preacher of the town of Norway, S.C., was pulled over by a state trooper in January for speeding. Preacher was unable to convince the trooper that his speeding was necessary in the performance of a mayoral duty, and their encounter apparently ended bitterly. As soon as the trooper drove off, the mayor turned on his own blue lights, chased the trooper down and accused the trooper of speeding. (Norway disbanded its police department last year, and a question remains whether the mayor has police powers.)

Two men were arrested in Albuquerque in January after being caught in the act of a home burglary by a neighbor, who called the police. The men were apprehended with various burglarized goodies as they made their getaway in a grocery store shopping cart.