



FEATURED STORIES

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Climate Legislation: Philippines Investigates Whether Corporations Have Committed Human Rights Violations

OUR TEAM

This newsletter is a monthly publication by EcoPledge of Boston College.

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Eagle graphic courtesy of Zoe Fanning, MCAS '20

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Sustainability Housing Will Move to 2000 Comm. Ave in the Fall

By *Maryana Dumalska*

The Sustainability Living and Learning Community (LLC), which has been located in Vanderslice Hall for the past two years, will move to 2000 Comm. Ave in the fall.

According to Holly Rodden, associate director of living and learning programs, 2000, also known as the Reservoir Apartments, is a better fit for the program. Similar in layout to Edmonds Hall, where the program began, 2000 is an apartment-style building with full kitchens, which allows for sustainable cooking and composting initiatives. Other important amenities are large common areas, which are convenient for faculty presentations, and the surrounding green space and reservoir, which allow for more opportunities for outdoor programs.

The Sustainability LLC was created four years ago alongside the Cross Currents Seminar Program, which instituted a number of one-credit seminar courses. One of these courses is "Thinking About Sustainability," a class that participants in the Sustainability LLC are required to take.

"When it started, there was a side conversation happening with our office about wanting to create programs specific for sophomores in the residence halls," Rodden said. "So they connected that conversation with the Cross Currents initiative and created the Sustainability LLC."

The purpose of the Sustainability LLC is to provide integrated academics into the residence halls. In addition to the one-credit seminar, the program has expanded to include other courses, such as "Sustaining the Biosphere." A number of spaces in the course are reserved for the participants in the program.

Alongside the program's academic focus, the program also incorporates activities involving sustainability that take place throughout the year.



This is the last year members of the Sustainability LLC will live in Vanderslice Hall.

"So far, we've gone apple picking, explored the Boston Harbor Islands, and I am looking forward to kayaking the Charles River and taking a trip to the Museum of Science in the spring," said Nicole Rodriguez-Rowe, the current Sustainability LLC resident assistant and LSOE '19.

Many of the residents are also members of sustainability groups on campus, including EcoPledge, Climate Justice, and Real Food. Brought together through the Sustainability LLC, these like-minded students are able to have relevant conversations about the interdisciplinary nature of sustainability.

Rodriguez-Rowe believes it is important that individuals make sustainable decisions in their everyday lives at Boston College, and the Sustainability LLC is helping guide these decisions.

"The more people with an individualistic mindset that we are able to educate, the more progress we make in protecting the Earth and its resources," she said. "It is empowering to know that even as college students, we can make an impact in our communities."

As for the program's selection process, Rodden and her colleagues look for students who show a serious desire to learn more about sustainability and engage in it in

their daily lives. The Sustainability LLC involves an individual application, different from BC's group housing selection process, which most students are used to.

In this way, she and her colleagues try to ensure that students most interested in sustainability are selected, rather than drawing in groups of students who may not all necessarily be interested in the program and are instead looking to live with friends in an apartment-style room.

Looking toward the future of the program, Rodden envisions an improved academic connection, in which there are more reserved spaces for participants in sustainability-related courses. Rodden would also like to see the Sustainability LLC's RA-planned programs become standardized, rather than varying year to year based on the RA's interests.

Considering the application process for participants, Rodden mentioned the possibility of an interview component, which would better gauge students' interest in sustainability. Rodden also wants the program to be more integrated into the Boston community.

Rodden said she hopes to continue developing this program to engage students in a meaningful way.

BC Research Group Investigates Processes to Create Efficient Solar Energy Storage

By Alex Capozziello

Pushing the boundaries of technology, Dunwei Wang, an associate professor of chemistry, heads a research group at Boston College focused on understanding the science of energy conversion and storage. Wang's research team consists of 7 undergraduate students, 11 doctoral students, and 3 international visiting scholars. Wang hopes the research will provide invaluable knowledge that will contribute to the creation of cost-effective chemical storage technology, which will operate with high efficiency and utilize cost-effective materials.

According to Wang, the price of electricity acquired through solar energy is substantially less expensive than coal. A study performed in 2012 by the National Renewable Energy Lab in Boulder, Colorado found that solar energy in urban and rural areas is roughly six times more accessible than other forms of energy. Yet, solar energy in the United States accounts for less than one percent of energy consumption.

Solar energy is nearly free, and exists in abundance. However, political, economic, and sociological factors have prevented the technology from entering the mainstream energy market.

At the moment, solar energy has only been used as a secondary energy supplement in the U.S. Wang, from the perspective of a scientist, sees an important technological reason for solar energy not being utilized—the seasonal variation of solar panel energy absorption is about fifty percent. The average rate of electricity intake, therefore, only functions at half its maximum efficiency in the winter months. This weather variation makes solar energy intake uncertain, making its implementation as a primary energy

resource in the U.S. difficult.

Wang and his team are not interested in implementing solar energy storage as a secondary energy storage source. Rather, the team is interested in implementing solar energy as the primary source of energy in the U.S.

"We need [solar] energy the most when the solar electricity is the least," Wang said.

In response, a possible solution would be to create an energy infrastructure that could equalize the supply of solar energy throughout the year, Wang said.

Wang and his research team have focused on investigating the chemical processes which have the potential to solve this problem and create an energy storage system which will allow for the year-round balance of energy distribution. Fossil fuel resources such as coal and natural gas are currently utilized by the U.S. as year-round energy providers. However, as fossil fuels, these resources exist in limited quantities and are expensive to produce, therefore making them unsustainable as well as dangerous to the earth's atmosphere. Through the storage of solar energy, excess energy collected in high production seasons could be redistributed in seasons of solar deficiency, which would allow for a sustainable alternative to take the place of fossil fuel energy sources in the U.S.

Technology that can harness and store solar energy does currently exist. According to Wang, Tesla has created a product known as the Powerwall, which consists of a solar panel with a battery attachment. This device is expensive to manufacture, and not enough material resources exist to produce enough of these devices for the entire world. While Tesla's product offers a solution to energy storage, it is expensive and unsustainable. Wang and his team are research-



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ing alternative, efficient, and low-cost methods to achieve a similar storage technology.

Wang's research examines energy storage at the terrawatt level. Such a large storage of energy would enable solar energy to be implemented at a nationwide scale, thus replacing fossil fuels as the U.S.'s primary energy source. The current research being done by Wang and his team is best implemented for energy decentralization and distribution.

The immediate goal of Wang's research is to provide knowledge of the most efficient and cost-effective chemical processes that will enable the creation of solar energy storage technologies.

"Our focus has been mostly to study these fundamental processes, to provide answers to the fundamental questions that will eventually lead to the implementation of this technology," Wang said.

Through their research, Wang and his team have found iron oxide to be an abundant, cost-effective and efficient material. In 2015 they demonstrated that the production of hydrogen through iron oxide could be done entirely by sunlight, without externally supplied energy. Since then, Wang and his team have focused on increasing the efficiency of this procedure, continuing to use iron ox-

ide as the primary chemical compound.

Wang also said that the BC administration has been supportive of his research, along with receiving additional funding from the federal National Science Foundation and the Department of Energy. Through these donations, Wang and his team can continue working toward answering the fundamental questions involved in the creation and implementation of solar energy storage technology.

Wang's team is also in communication with the larger scientific community that is working to find solutions to create efficient energy storage technology. Scientists have not yet been able to make a practical storage prototype. Through the discoveries made from the research, scientists hope to soon determine which chemical processes will be most efficient for developing a prototype.

Looking forward, Wang and his team plan to continue to tackle the fundamental questions that will enable the nation to move away from fossil fuel dependence.

Wang is appreciative of his team's progress, confident in its research, and hopes it will start a meaningful conversation in the wider scientific community on how it can contribute to further research efforts on solar energy storage.

EVENTS THIS MONTH

Mon. March 12 Kristin Groos Richmond, co-founder and CEO of Revolution Foods and BC '97, will speak at 4:30 p.m. in the Fulton Honors Library.

Wed. March 14 Natasha Trethewey, who served two terms as the 19th Poet Laureate of the United States, will give a lecture titled "Beyond Katrina" at 7 p.m. in Gasson 100.

Thu. March 22 EcoPledge's "Sing it to Puerto Rico" event featuring the Commontones and the Madrigals will be held in Cushing 001 at 7 p.m. Tickets are \$7 through Robsham.

Tues. March 27 The Environmental Studies Department will host Green Careers Night in The Heights Room from 6 to 8 p.m. Students will be able to network with representatives from green businesses and other organizations.

Are Corporate Interests That Harm the Environment Violating Human Rights?

EcoPledge's theme this year is "Environmental Health is Human Health." In the fall, we focused on the importance of healthy, sustainable food options and how eating local food is better for both you and the environment. This winter, we are focused on environmental justice. The following piece is about climate justice issues in the Philippines.

By Mira Begovic

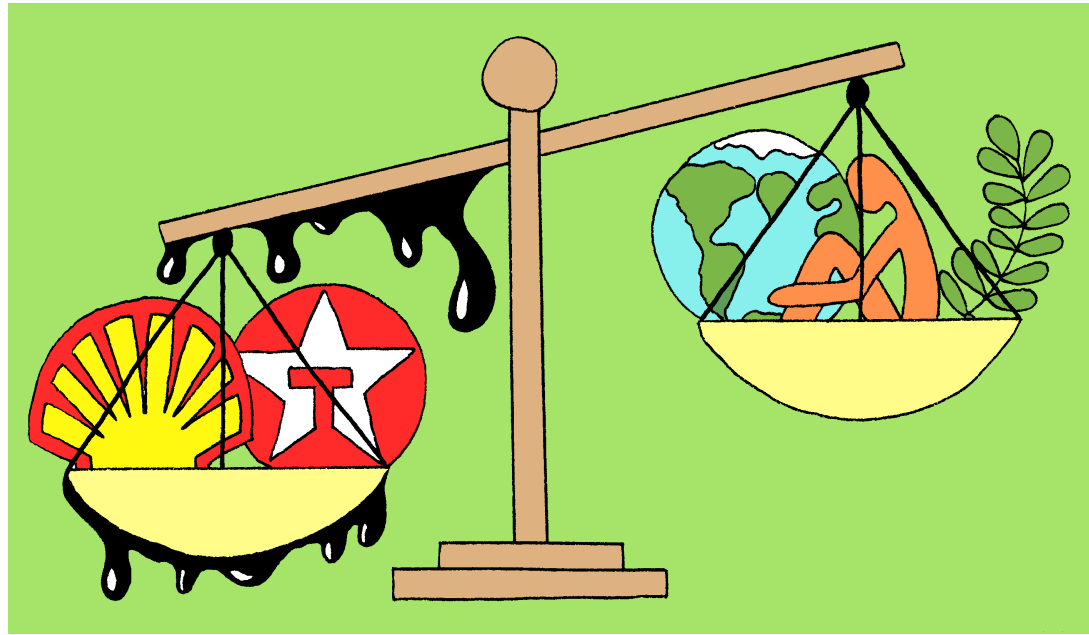
According to the Mary Robinson Foundation, "climate justice links human rights and development to achieve a human-centered approach, safeguarding the rights of the most vulnerable people and sharing the burdens and benefits of climate change and its impacts equitably and fairly." Climate justice not only incorporates the nature of the climate event itself, but also its political and economic consequences, most often affecting marginalized

communities.

A political hot topic in the Philippines is whether human rights law can be used as a way to help further climate legislation and the degree to which human rights are involved in the climate change discussion. This debate became widespread after the Philippines Human Rights Commission's decision to investigate the Carbon Majors petition.

According to the European Journal of International Law, the Carbon Majors petition originated in 2016 when Filipino human rights groups asked the Commission to investigate whether 47 oil, coal, gas, and cement companies committed human rights violations that resulted in the impacts from climate change. Many corporations have failed to take sustainable action despite their knowledge of the harmful effects of climate change. This reignites the issue of whether companies have a social responsibility to act ethically in their pursuit of profit.

The investigation by the Philippines Human Rights Commission involves research and



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public hearings in order to determine whether multinational corporations have committed human rights violations that are associated with climate change. This is a crucial decision because it would be a big step toward comprehensive climate legislation.

This is just one situation in which the actions of companies are being questioned. Only recently have many oil companies been brought to court in the United States to determine their

responsibility for actions that contribute to climate change. Slowly but surely, corporations are becoming more accountable for their actions and some are facing the consequences of their decisions.

The potential for climate legislation in the Philippines is just one of the many stories that involves human rights and climate change and shows how corporate interests can ultimately hurt the Earth and the most marginalized communities that inhabit it.

EcoPledge Presents:

Sing It To Puerto Rico

Featuring:
The Common Tones and
The Madrigals

Thursday, March 22
7:00pm
Cushing 001

Join us for a night of music to raise money for Puerto Rico's climate refugees. All proceeds will go to Heart to Heart International relief fund! Tickets are \$7 through Robsham