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# THE ECLIPSE

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# Local community group grows tree population in East Boston

BY GRACE TUCCERI

When Bill Masterson moved to East Boston in 2019, he instantly noticed a problem: the severely lacking greenery.

"Look around," Masterson, formerly of North Andover, said. "How many trees do I see? Not a lot." East Boston's canopy coverage rate rests at 7%, 20% below the Boston average.

That spurred Masterson to found Tree Eastie, a nonprofit dedicated to planting trees in the neighborhood.


GRACE TUCCERI

**Bill Masterson standing on the corner of Meridian and Paris streets.**

A 2021 report by independent research group Climate Central shows Boston is the sixth hottest urban heat island in the country. The group defines an urban heat island as a metropolitan area with temperatures higher than its surroundings due to excess pavement and a lack of shade.

Masterson describes his current residence as "a bright,

COMMUNITY GROUP
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# Plant-based eatery grows community

BY ANNA FARMER

Sitting on a busy corner in Dorchester is an oasis of plant-based food, art, and above all, a strong sense of love and community.

Owners and married couple Nahdra Ra and Jahriffe Mackenzie, along with business partner Chesterfield Coppin, have perfected the menu of Oasis Vegan Veggie Parlor since it opened in 2017.

Ra and Mackenzie became vegan as teenagers, with Mackenzie opening his first vegetarian restaurant about 20 years ago.

"At that time, there weren't a lot of people like there are now into the plant-based lifestyle," said Ra.

Today, the vegan and vegetarian community in Greater Boston is on the rise.

"I certainly can say that there has been an explosion of interest in plant-based eating, with more restaurants adding vegan options to their menus," said Evelyn Kimber, president of the Boston Vegetarian

PLANT-BASED
*Continued on page 12*


ANNA FARMERI

**Owner of Oasis Vegan Veggie Parlor, Nahdra Ra, poses inside the restaurant.**

GRAYSON RIVERS

**Kharitonenkov speaking with 10-year client Ann Moritz about the fertilizer spray.**

# Sustainability by the Bootstraps

BY CAYLA KWOK

Igor Kharitonenkov buried his hand into a 15-foot bay of worm waste, uncovering a skinny, inch-long earthworm. Many might feel repulsed, not him.

Kharitonenkov is a cofounder of Bootstrap Compost, a subscription-based composting business with facilities in Johnston, R.I. and Everett that convert organic materials into sustainable products.

"Soil compost is a living, breathing ecosystem," he said, explaining that the piles of dirt contain micro bacteria, macro bacteria, and bugs. "It creates that vibrant environment that allows plants and little critters to thrive."

After working in communications and journalism, Kharitonenkov said his trip to Big Bend National Park in Texas inspired him to become a "sustainability warrior."

"It just blew my mind and showed me the beauty of nature and how nature has been here for so long," Kharitonenkov said.

Cofounder Andy Brooks initially hired

SUSTAINABILITY
*Continued on page 11*

# Meteorologist Warning World of Climate Change

BY BRIANNA MEDRANO

Cecy Del Carmen

Cecy Del Carmen remembers her grandmother reusing old seasoning cartons and encouraging recycling. This influence from Del Carmen's childhood led her to spreading awareness about climate change in her professional career.

After studying meteorology at Pennsylvania State University, Del Carmen is now a broadcast meteorologist, telling Spanish- and English-speaking viewers alike about the effects of climate change and how it impacts New England.

The most difficult part about spreading awareness about climate change for Del Carmen was not feeling supported by upper management at the station.

"There are many meteorologists that don't believe in global warming and climate change. They think it's a natural thing that's happening," said Del Carmen.

She continues to be concerned about the effects of climate change on the New England coast. According to the Gulf of Maine Institute, the gulf is the fastest-warming ocean region on the planet. Many sea creatures are starting to migrate North and negatively impact the fishing industry. As a result, New England staples including lobsters and shrimp are becoming harder to find because of the warming waters.

Unfortunately, warming waters aren't the only consequence of climate change. East Boston, which has a sizable Latino community, is increasingly at risk of flooding. Melting ice contributes to rising sea levels despite the lack of rain. In 2000, Boston had six days of flooding, in 2021 it went up to 11. This not only affects the weather but also destroys homes and increases insurance claims.

"If more insurance claims come in, then the insurance premiums go sky high. It impacts so many people and businesses," said Del Carmen.

Del Carmen suggests that in order to mitigate the impact of climate change, older generations must listen to the voices of the youth.

"The youth is a source we can learn from. We need to motivate, empower, and listen to our children," said Del Carmen.

COMMUNITY GROUP

*Continued from page 1*

red blob with less green" compared to neighborhoods like Dorchester brimming with parks.

Tree Eastie strives to unify the community by relying on over 200 volunteers, mainly professionals in their late twenties. On designated "planting days", event attendees pair up, dig holes and heavylift 300-pound saplings into sidewalk plots. Since Tree Eastie's inception in 2020, volunteers have planted nearly 250 trees.

For the first couple of weeks after planting, Masterson drives around with a 275-gallon holding tank to ensure the trees are hydrated. "Trees require 20 gallons a week to survive," he explained.

Masterson's organization frequently promotes public caretaking efforts. Tree Eastie distributes complementary door hangers to East Boston residents with tree-care instructions in English and Spanish. The hangers encourage people to partake in their Adopt-a-Tree program by watering nearby street trees.

Tree Eastie also partners with Eastie Farms, a neighborhood nonprofit urban farm. Last summer, Tree Eastie volunteers planted apple, cherry and pear trees in the Rockies Urban Wild community garden. Once ripe, the fruit was distributed to local families through Boston's Community Supported Agriculture program.

In the future, Tree Eastie envisions more involvement from younger generations for combating climate change.

"The best time to plant a tree was 40 years ago," Masterson said. "The second best time is now. We have to follow that principle."


RANDALL COLLURA

**The BVS hosts an annual Boston Veg Food Fest.**

# Veganism: Our New Superpower

BY JULES TODD

As climate change seems to be on a steep rise, Boston Vegetarian Society President Evelyn Kimber has come up with a solution - change your diet.

"You know our planet is on fire, and a shift to a plant-based food system is absolutely necessary," Kimber said.

Kimber has been president of the BVS since the early 1990s and has worked to educate the public about the importance of veganism and vegetarianism and how they relate to the environment.

Founded in 1988, the BVS is built by hundreds of volunteers who use their skills to support the organization's activities. The group hosts events with guest speakers at several different vegan restaurants and does cooking demos of vegan dishes. The BVS's largest event of the year, Boston Veg Food Fest, is free for all attendees.

"We partner for events at restaurants so we try to provide a variety of events and cooking demos occasionally," she said. "I feel so blessed because I have this huge vegan community around me. We try to find education, outreach and social support."

The Humane America Animal Foundation has claimed the world has bred a surplus of cattle and other livestock to be eaten because of the mass demand of meat and animal-based products. The animals then emit gaseous and solid waste that not only has contributed to global warming. According to Science Magazine, half of the water and grain supply in the world goes to livestock.

"Raising animals for meat, dairy and eggs contributes more to greenhouse gasses and climate change than the entire transportation sector combined," Kimber said. "That means all cars, all trucks, all buses, all ships, all airplanes."

That's where a plant-based diet comes in.

"Plant foods are filled with nutrients that our bodies need to thrive," she explained. "Not only plant proteins but... all kinds of things that contribute to our best health. Animal foods have many things that are a detriment to good health, like cholesterol saturated fat."

Veganism is changing the scope of food and how important it is to think about the environment. The BVS provides a community of other vegans and resources of vegan restaurants and businesses to support.

One such business is the Oasis Vegan Veggie Parlor in Dorchester. Co-owner Nahdra Ra said she has seen the rise of vegetarian and vegan foods.

"It's great when we find another plant-based restaurant to go to because that means we have a place to go," she said.

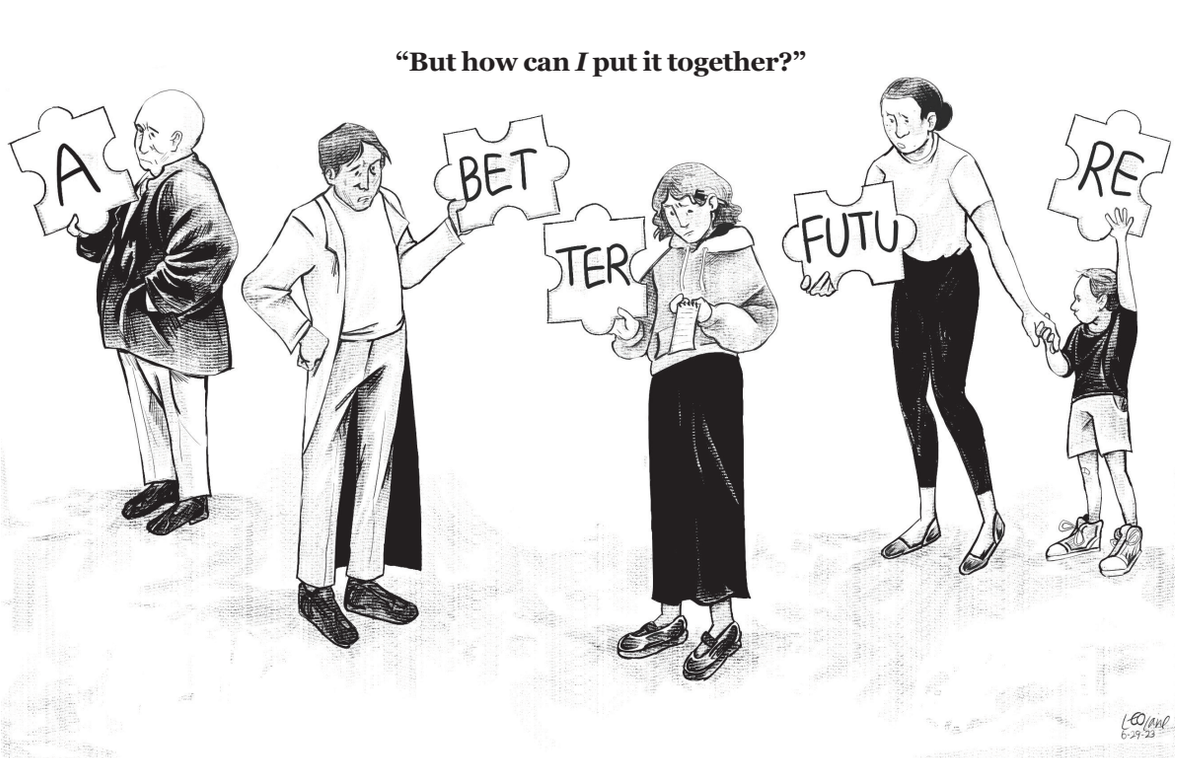



ILLUSTRATION BY LEO LAINE

# *Global Collaboration*

Climate change is perhaps the most pressing issue facing our world today. Greenhouse gas emissions continue to warm our atmosphere and the impacts affect our everyday lives. Extreme flooding and scorching wildfires displace millions and cause heavy casualties. Yet, this imminent problem continues to be pushed under the radar by people in power and large corporations.

During this workshop, we had the resources and each other to combat this by speaking on topics we are passionate about. The Eclipse spotlights people and organizations making positive changes in a moment of darkness.

Much like an eclipse – a rare, natural phenomenon where the light of the sun can be seen radiating around the moon – this newspaper provides a platform for young people with valuable voices to bring to light these beacons of inspiration.

When conducting our respective interviews, we let the experiences of others flourish into entire stories. We spoke with people from a variety of backgrounds and age groups about the tangible efforts they are making to combat climate change. Using our voices as young journalists, we can magnify the impacts of their actions to create the kind of difference we hope to see.

A collective problem requires a collective solution. Generational disconnect, political polarization, and systemic disregard have delayed impactful climate action to a point of no return. However, with intergenerational collaboration, we can confront the irreversible damages we have caused and prevent our environment from worsening.

During an eclipse, the Earth, sun, and moon perfectly align, even though they are each physically separated by almost 100 million miles. With a population of 8 billion innovative and ambitious individuals, we already have the pieces we need to align and address the problem we created.

***Using our voices as young journalists, we can magnify the impacts of their actions to create the kind of difference we hope to see.***

**– MICHELLE WANG AND VICTORIA DOLAN**

# E-Bikes Are Leading the Pack

**BY COLIN CAVALLARI**

One of Boston's only electric bicycle shops is setting the pace on the market for the conversion of pedal bikes. Boston EBikes, located in the heart of Brookline, is creating change in transportation to better people and the environment.

E-bikes are battery and motor-powered that spin the wheels of a bicycle controlled through either a throttle or activated through pedaling.

Alex Maiella, a worker at Boston EBikes, said that E-bikes have become more popular. She said that more people are switching from cars to E-bikes for transportation purposes.

Electric bike usage is increasing exponentially and has even more potential for greater use in the future, she said. This is partially due to the ease of having people transition from driving a car to riding an E-bike, rather than converting to a traditional bicycle.

"Food delivery people, police officers, these are groups that are already starting to incorporate electric bikes," said Maiella.

For E-bike riders, the financial benefits and freedom gained without the loss of comfort comes at a minimal cost to the environment.

Maiella referred to the use of E-bikes as a "win win" for both the riders and the environment, saying "E-bikes have become accessible to anyone who want to get to work faster, increase their athletic ability, to be able to get on a bike after 20 years."

The Boston City Council is also paving the way for increased E-bike usage by creating more bike lanes and adding bike racks. Maiella said E-bike riders should know bike laws and safety precautions before getting on the road. These include using hand signals and wearing a helmet, particularly because of the speed of the bike.

According to the Institute for Transport Studies, E-bikes are capable of reducing car $CO_2$ emissions by 24.4 million. The advantage of using E-bikes outweighs the consequences of the potential harm on their creation.

"As more people start to use bikes over cars that's going to be the biggest difference," said Maiella.


COLIN CAVALLARI

**The inside of Boston EBikes.**

***'Food delivery people, police officers, these are groups that are already starting to incorporate electric bikes,'***

ALEX MAIELLA

COLIN CAVALLARI

**One of the electric bikes inside Boston EBikes.**

MARY BOSCH

**Jo Almond, right, listens to a passerby's concern with Climate Change, specifically flooding in Maine.**

# It's Not Just Greta

**BY MARY BOSCH**

No matter where a person in the youth climate movement is from, there seems to be a consensus: Institutions aren't listening and aren't moving to improve the issue of climate change.

At Simmons University and Northeastern University, as well as colleges across the country, students have proposed that their universities divest all money and investments from the fossil fuel industry. According to the International Energy Agency, the fossil fuel industry was responsible for 89% of all greenhouse gas emissions in 2021. However, students said they have not been able to make substantial progress, as they are not able to directly communicate with their board of trustees.

Milena Chaufan, a rising senior and president of the environmental group Sunrise Simmons, has attempted to talk to the board, but the extent of her efforts have only reached Chief Financial Officer Megan Kass. To Chaufan's disappointment "[the trustees] were not willing to commit [to divestment] yet."

Lucas Good, an incoming third-year student and president of Sunrise's Northeastern chapter, has experienced similar struggles working with Northeastern's Sustainability Hub, an administrative office at the university.

"They're definitely . . . interested in hearing us out and want a lot of the same things," Good said. "They just have to really, really think about how they can get that done and keep their jobs."

That same struggle is what drives international climate movement Extinction Rebellion to focus on nonviolent direct action. Since June 5, XR members have been standing outside the Massachusetts Statehouse five days a week to pressure legislators to commit to no new fossil fuel infrastructure. 16-year-old XR activist Jo Almond said, "You want to be able to tell your grandchildren 'I did something,' right?"

Youth leaders also struggle with receiving passive support.

"We need you to not just say that we're great. We need you to help us," Almond said. She used to be a part of a Sunrise chapter but it ended because of a lack of participation. On Northeastern's campus, the student government had 80% support on a fossil fuel divestment bill, but Sunrise still struggles with participation and recruitment.

Chaufan, Good, and Almond all remain frustrated with older generations' pressure on younger generations to find a solution to climate change, but that's not stopping student activists from trying.

"I don't think it is our responsibility, because we were not the ones who harmed the planet this much," Chaufan said. "But also, it's our duty to change it for our future."

# Wind turbine research marks promise for renewable energy systems

**BY GRAYSON RIVERS**

Professor Michael Howland thinks it's time to stop skirting around the climate crisis. His goal: net-zero emissions by 2050.

Last August, Howland's team of researchers from the Massachusetts Institute of Technology finalized a wind farm model capable of directing turbines to work in tandem, increasing efficiency while keeping costs the same. The innovation reflects a shift in climate change mitigation, as researchers change the way they attempt to break reliance on fossil fuels.

"When we have systems that we design, we have to make sure that the individual components in that system are working best together," Howland said. "That's true on a wind farm basis, but it's also true on a wider energy system basis."

The team's new approach to turbine physics came from questioning the cost-effectiveness of wind farms.

At wind farms, machines are packed closely enough for upwind turbines to strip kinetic energy from the air, leaving downwind turbines to generate less energy. While this system works, lots of energy is lost due to how nearby the turbines are to one another.

Howland compares the science of wind turbines to that of aircraft, which need vast amounts of space to work in the air.

"When you put your turbines together, they'll steal energy from one another," he said. "So, it's inherently an inefficient process."

Improving efficiency is paramount to Howland's goal of replacing fossil fuels with renewables. Already, renewable energy costs less than fossil fuels, and doesn't require a regular influx of resources on top of infrastructure costs. Renewable energy is more sustainable for the climate and the economy long-term.

The cost of implementation isn't as much a limiting factor as the cost of research. Scientists receive grants from a number of public and private agencies, but these sources have varying levels of reliability.

"When there is highly variable funding in a certain area it can be challenging to maintain a strong focus in that direction," said Howland.

Still, when funding is available, research builds into larger sustainable energy productions. With projects in development like the Vineyard Wind Farm, the nation's first commercial-scale offshore wind project, Howland is hopeful for the future of renewable energy. He wants to see even more research geared at continuing to grow renewables' efficiency.

"We get better at doing things when we do them a lot," he said.

ADOBE

**A field of wind turbines.**

# Meet the staff of The Eclipse

## Anna Farmer

Anna Farmer, 17, is a recent graduate of Waynflete School in Portland, ME. She will be attending Davidson College this fall. While at Waynflete, she danced competitively, played varsity tennis and worked with nonprofit organizations. Anna was also selected as a student leader by Bank of America and interned at United Way of Southern Maine. Her interest in journalism stems from her love of investigating current issues and meeting new people. While she isn't sure yet what she wants to do after college, she hopes to continue making a positive impact on the world. **BY VICTORIA DOLAN**

## Brianna Medrano

Brianna Medrano, 16, is a rising junior at John D. O' Bryant High School in Boston. She became a reporter for her school newspaper, the O.B. Observer, to expand on her interest in songwriting and poems. Brianna is also a member of poetry slam, architecture, finer arts and journalism clubs at her school. Outside of academics, she works at the Museum of Fine Arts in Boston. Brianna also enjoys writing poems, drawing, crocheting, knitting and listening to K-Pop. At the workshop, Brianna hopes to gain mentorship from a writing coach and experiment with different writing styles and structures. **BY JULIA LEE**

## Cayla Kwok

Cayla Kwok is 17 years old and a rising senior at Arlington High School. Cayla has been involved with her school's newspaper, The Ponder Page, since her freshman year. She also has been involved with various nonprofits, using her journalistic tools and talent to shed light on current issues in her community. Earlier in high school, she completed an internship with a local nonprofit, Mision De Caridad, where she had the opportunity to write for their website. This spring, Cayla completed an internship with her town newspaper, Your Arlington. **BY ANNA FARMER**

## Colin Cavallari

Colin Cavallari, 18, is a recent graduate of Bristol Central High School in Connecticut. He will be attending St. Bonaventure University for broadcast journalism and digital media this fall. In high school he was both a writer and editor for his school paper, The RAMpage. Colin was also class president and captain of the boys' tennis team. He interned at his local newspaper, the Bristol Press, and worked at Harvest Bakery. Colin's passion for journalism stems from a love of storytelling and learning other people's perspectives. **BY MARY BOSCH**

## Brian Shekhel

Brian Shekhel, 16, is a rising junior at Swampscott High School. He hopes to resurrect his school's newspaper with the help of his English teacher, who introduced him to journalism. Brian heads his school's Model United Nations club. A classically-trained pianist and clarinetist, he also sings and plays the guitar and enjoys going to concerts. He runs on both his school's cross-country and track teams. Brian stays busy during the summer as a camp counselor and has previously spent time as a lifeguard and swim instructor. He plans to double-major in political science and journalism in college. **BY GRAYSON RIVERS**

## Caroline Agola

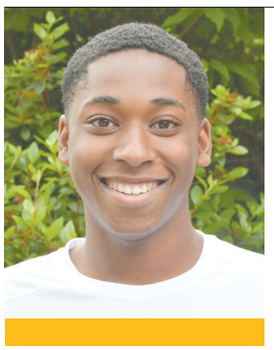
Caroline Agola, 15, is a rising sophomore at Beaver Country Day School in Newton. She is an active member of her school's community, participating on the debate team, and both the volleyball and basketball teams. She hopes to use her skills as a writer to educate others about important issues. Caroline is excited to learn more about climate change and its impact on the Boston community. In her free time, she likes to listen to music, watch movies and read about current events. Caroline also enjoys making pottery and traveling. She hopes to become a writer or a dentist. **BY NICHOLAS YORK**

## Chloe Do

Chloe Do, 15, is a junior at Dexter Southfield High School in Brookline. Chloe writes for her school newspaper, The View, where she reports on stories and helps with publishing. She likes to read, especially fantasy or romance books. Chloe partakes in the school's math, chemistry, and Model United Nations clubs. Since starting high school she has participated as stage crew in all of her school's plays. Chloe also takes piano lessons at the New England Conservatory. She plans to go into medical research after graduating from high school. **BY COLIN CAVALLARI**

## Grace Tucceri

Grace Tucceri, 17, is a rising junior at Franklin High School. She has participated in her school's newspaper, news channel and student government since her freshman year. She has been passionate about filmmaking since the sixth grade, when she started writing script books. Grace wants a larger multimedia presence in journalism to create a balance of written articles with video and audio-based articles. She also enjoys running cross-country and track, eating ice cream, reading and traveling. **BY JULES TODD**



## Grayson Rivers

Grayson, 15, is a rising junior at Hall High School in West Hartford, Connecticut. Grayson is a writer for his school newspaper, The Hall Highlights. He is also on his school's cross-country and track teams. In his free time, Grayson enjoys writing, reading and running. Grayson hopes to be a journalist at the New York Times. He aspires to share the truth and be objective in his writing. He will be spending his summer conditioning for cross-country and editing the back-to-school edition for his school paper. **BY BRIANNA MEDRANO**

## Julia Lee

Julia Lee, 16, is an incoming junior at Newton South High School. Julia has spent the last three years writing for her school newspaper, The Lion's Roar. She also participates in her community, playing for her school's tennis and soccer teams while volunteering at a local hospital. She wants to pursue a career that allows her to incorporate both her love of writing and her interest in medicine. In her spare time, Julia enjoys hiking and listening to music. She credits her family as her biggest influence on her worldview. **BY LEO LAINE**

## Mary Bosch

Mary Bosch, 18, is a recent graduate of Boston Latin School and will be going to the University of Wisconsin- Madison. Driven by her curious nature, Mary plans to study journalism. At BLS Mary was on the staff of Argo and was head photo editor her senior year. Mary is inquisitive, interested, and not afraid to ask questions (even to complete strangers.) During her limited free time, Mary enjoys art, theater, traveling, and playing music. In the future, Mary hopes to pursue a career in journalism and possibly teach at the college level to educate others on writing and journalism. **BY CAROLINE AGOLA**

## Nicholas York

Nick York, 18, graduated from Burncoat High School in Worcester this spring. He will be continuing his education at Cornell University after taking a gap year. Nick served as the editor-in-chief of his school newspaper, The Green Revival, and was also an active member of the Massachusetts GSA Student Leadership Council. He also plays the clarinet, saxophone and piano while acting in his school's drama club. Outside of school, Nick enjoys reading classics and literary fiction, watching horror and surrealist films, and Taylor Swift. **BY MICHELLE WANG**

## Jules Todd

Jules Todd, 15, is a rising sophomore at Beaver Country Day School in Newton. Jules participates in multiple school clubs and organizations, including the Black Student Union. They are also starting a creative writing club next year. During their summers, Jules has participated in writing workshops such as the Grub Street Center of Creative Writing. Jules enjoys reading speculative and realistic fiction, along with watching Disney movies and anime. They also love hiking and taking walks on the beach to stay in touch with nature. After high school, Jules hopes to concentrate on creative writing. **BY BRIAN SHEKHEL**

## Leo Laine

Leo Laine, 17, is a recent graduate of Massabesic High School in Waterboro, ME. During his time in high school he enjoyed classes in ceramics and literary composition. He is planning to attend Champlain College in Burlington, Vermont this fall where he will major in graphic design and visual communications. Leo is passionate about visual arts, specifically painting and graphic design. He is also interested in music and how it has the power to invoke feelings no matter the genre. His favorite artists are Fiona Apple, BUSDRIVER and The Smashing Pumpkins. **BY CAYLA KWOK**

## Michelle Wang

Michelle Wang, 16, is a rising junior from Boston. She has attended Boston Latin School since seventh grade and serves on the editorial board for The Argo. Last year, Michelle founded the Anti-Bias Student Committee at her school in order to combat discrimination faced by different groups. Her interests range from reading the latest fantasy novel to traveling with her family to China. She also enjoys learning about the Spanish language and culture and playing her clarinet. Michelle looks forward to taking AP Computer Science next year. **BY GRACE TUCCERI**

## Victoria Dolan

Victoria Dolan, 16, is a rising senior at Hull High School in Hull. She has written for her local newspaper, The Hull Times, since freshman year where she has a weekly column and reports on current events in her school. Victoria turned to journalism to advocate for more student involvement and local change. She also enjoys writing about human interest and politics. Victoria plans to major in political science in college and work in journalism or politics. She is also considering a degree in law. **BY CHLOE DO**

# Urban Forestry seeks help to cool heat islands

BY NICHOLAS YORK

Temperatures are rapidly rising and "heat islands" are developing in Boston's most vulnerable neighborhoods.

Heat islands, areas without the coverage of tree canopies, experience exceptionally hot temperatures and can create dangerous conditions for residents, according to a study by the Museum of Science in 2019. It found that the effects of heat islands in Boston can be fatal, causing more deaths than any other weather event.

Boston's new Department of Urban Forestry, an initiative that values community input and participation in the issues that impact residents most, said the fight against climate change can't be won alone. It is this principle that drives its members.

***'We want people to look at it in a more personal perspective.'***

TODD MISTOR

Led by director Todd Mistor, the department has developed a plan to combat these effects, starting by identifying areas of interest. This summer, officials are working on planting new trees and treating damaged ones in Boston. The on-the-ground work that blossoms from the department's collaboration with residents is most crucial, he said.

"We can plant trees and spend money all day long, but we're not there every day taking care of the trees," Mistor said. "So the residents that pass by, that interact with it most intimately, most often, we want them to have some connection and buy-in."

Boston isn't alone in these efforts. Cities such as Providence and Worcester have started similar initiatives in the aftermath of devastating heat waves. Although the plans follow roughly the same time frame, it's Boston's commitment to community engagement that sets it apart.

The changes aren't instant – the department's plan spans 20 years. Despite this lengthy timeline, there are plans to reach shorter goals in the meantime. In the next five years, the focus will be on strengthening Urban Forestry's relationship with the public and understanding the needs of the community.

Mistor said he hopes that more people will take advantage of the resources the department provides and get involved in taking care of the trees they encounter every day.

"We want people to look at it in a more personal perspective," Mistor said. "Little steps add up to really big changes."

*The Department of Urban Forestry is available via email at trees@boston.*


NICHOLAS YORK

**Damaged ash trees in Brighton.**

NICHOLAS YORK

**Newly planted trees in Brighton.**

# Basil Tree — a sustainability scene veteran

BY CAROLINE AGOLA

Val Shulock never attended culinary school.

Yet for more than 35 years she has been the owner of Basil Tree Catering, a sustainable food service company in Cambridge.

In graduate school at Brandeis University, Shulock was assigned a class project to design a hypothetical business model. She decided to create an eco-friendly catering service. Her department head was ecstatic about the idea and advised Shulock to carry out the concept. Shulock agreed and, in 1987, founded Basil Tree.

Since then, Shulock has worked to find a balance between providing environmental sustainability and finding local ingredients.

"The combination of trying to use eco-friendly materials and also trying to supply with local products is challenging," she said.

***'It is just amazing how much waste can be saved by composting.'***

VAL SHULOCK

Non-sustainable packaging in the food service industry is one of the largest contributors to environmental waste, according to the Environmental Protection Agency. More than 82.2 million tons of containers and packaging are wasted a year, the EPA said.

Basil Tree's paper goods are 100% compostable while all other serving utensils are recyclable. Shulock also created the Basil Bin program that allows clients to return their plates, bowls, lids, and serving utensils to be cleaned and reused. Twenty-five percent of customers use the program, according to Shulock.

Ingredients at Basil Tree are sourced locally, and Shulock works with a California-based company, World Centric, to ship sustainable packaging and cutlery.

The company tries to limit food waste as well.

"It is just amazing how much waste can be saved by composting." Shulock said. "The kitchen composts all food waste, and compostable paper goods can be thrown in there."

The compost is picked up by the city and processed at a waste facility to offset greenhouse gas emissions and improve the quality of local soil.

For Shulock, making good food for customers and following sustainable practices is a labor of love. It's also created bonds with the community.

"I think it was a more novel idea [in 1987], but people were impressed with it then too," she said. "I think the fact that we have been doing it for so long, people trust us."

# Playing against the clock

BY JULIA LEE

Sports and its future are not exempt from the imminent effects climate change will bring.

Mark Clemente, associate director of athletics at Regis College, said with climate change and increased temperature comes concern over athletes' safety.

Mark Clemente

As summer temperatures rise, Clemente said the National Athletic Trainers Association is enacting safety precautions for outdoor sports.

"The NATA put in advisories and protocols where we have heat monitors, even on turf," he explained. "When it reaches certain thresholds, athletes are required to be given hydration breaks."

The heat affects more than just collegiate sports. In the sport of tennis, the 2018 U.S. Open was forced to adapt its match policy to grant players heat breaks during their matches. National Football League teams are building covered stadiums to regulate inside temperatures.

Clemente recently took a trip to the Las Vegas Raiders' new covered stadium.

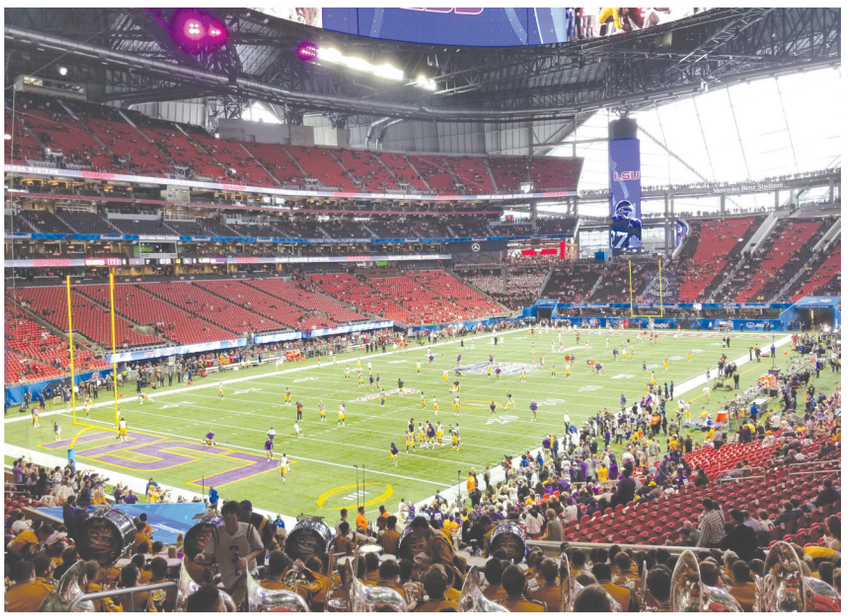
"I can't even imagine what it takes to keep that building cool as far as energy," he said.

For some buildings, it surprisingly might not be much. To prevent the regulated temperature, grass maintenance and spectator transportation from releasing high amounts of greenhouse gasses, sustainable buildings have become a major priority. They preserve water and energy, reduce pollution and are cheaper in the long run.

Mercedes-Benz Stadium in Atlanta is equipped with LED lighting and has 4,000 solar panels on its retractable roof. The stadium uses 47% less water than the average stadium, and even has a pedestrian-friendly path that promotes biking.

On a smaller scale, Clemente said Regis has established various approaches towards increasing sustainability.

"LEDs and new technology for lighting have reduced our power usage significantly. There are also steps that I take as a facility manager," he said. "I don't set lights on a timer, I prefer that our staff go out and turn them off so no energy goes to waste."



JONATHAN HARTT

**The 2019 Peach Bowl LSU vs OU game played at Mercedes-Benz Stadium.**

The athletics department at Regis has also converted most of its grass fields to turf to stay mindful of its carbon footprint.

"Regis only has one natural playing surface, our softball field," Clemente said. "Our turf fields are made of recycled rubber tires, so we're not using any water."

The only certainty about how climate change affects sports is the uncertainty that remains.

"I've been in this role for 10 years, and I think the impact of climate change on athletics is unpredictable," Clemente said. "That's going to create some challenges."

# Boston's Climate Change Initiatives

BY MICHELLE WANG

As a densely populated urban area battling the effects of climate change, Boston has been forced to confront both flooding and heatwaves.

Efforts to address the roots of the issues and adapt to the consequences have already started. Among them are the Building Emissions Reduction and Disclosure Ordinance, the Heat Resilience Solutions plan, and the Climate Ready Boston proposal.

In addition, the city's Environmental Department has recently obtained federal funding to help with climate initiatives.

Zoe Davis

"Funding used to be an obstacle, but with the federal funding, there's been a lot of opportunities for resilience," said Zoe Davis, project manager of the Boston Climate Resilience Team. However, funding is not the only crucial component when it comes to climate action.

The Climate Resilience Team and Environmental Department also work to involve community voices in the development processes. Davis said the city hopes to "gain a better understanding of where vulnerable residents are because the most invisible folks are often the ones in the most danger."

MARY BOSCH

**Christopher Columbus Waterfront Park**

She noted the city's efforts to host open houses and idea sessions, as well as attend local community events and cooperate with local organizations when it comes to resilience.

Currently, Boston is working on the building emission ordinance, which allows the city to set emissions standards for large buildings. Buildings are responsible for about 70 percent of all greenhouse gas emissions. The ultimate goal is to reduce emissions to net zero by 2050.

However, "even if we continue to mitigate risk and climate impacts, we're still going to need to adapt to the changes that climate change is going to bring to Boston so both of those things need to happen in tandem," said Davis.

Last year, Mayor Michelle Wu announced a series of heat resilience solutions designed to better prepare Boston for extreme heat events. She presented numerous strategies to help communities manage increasing temperatures, such as reducing heat exposure and addressing heat sensitivity, according to the city's website.

One success has been the city's renovation of Langone Park and Puopolo Playground in the North End as a waterfront park. Renovations included raising athletic fields out of flood zones, elevating the harborwalk, and making the sea wall more structurally sound.

"Everything that we do is for the residents, the communities and others that call Boston home," Davis said. "Anytime we're planning for infrastructure, we have to take into account the lived experiences of everyone."

# A New Life for Old Things

BY BRIAN SHEKHEL

At his former job, Sam Palmer noticed a problem: Excess clothing had created an abundance of wasted materials for companies.

In 2012, Palmer co-founded ReFleece, a lifestyle company focused on upcycling other businesses' wasted or excess materials, with Jennifer Feller. Their goal was to take items that were seemingly unusable and use their materials for something new.

According to the Environmental Protection Agency, 17 million tons of textile waste was produced in 2018 alone.

Palmer got inspiration for ReFleece by observing textile waste at Patagonia, his former employer.

"It would be like 'Raiders of the Lost Ark,' just bales and bales and bales of material," he said.

However, Palmer said that Patagonia was not trying to throw out any material, but instead looking for ways to upcycle the worn and out-of-date clothing. With Patagonia's environmentally-conscious philosophy in mind, Palmer sought to find a solution to their abundance of wasted materials.

After working with Patagonia for three years, Palmer started working on ReFleece during his time at IDEO Global Design and Innovation company.

"Working with them really opened up my understanding of what a business could be," he said.

The results of ReFleece's trials started with Kindle cases, and expanded into other items such as tote bags, wallets, and iPad sleeves. Now, ReFleece has expanded to an online marketplace with multiple collaborators. On their marketplace, Palmer said any item that is not worn enough to need recycling could be sold on the platform. Users can also choose a percent of the price to go to environmental nonprofits.

Each product is designed using recycled materials from one of Palmer's partners. Once they have this material, their team sorts all the fabric by color. Each product is individually sewn together from those materials. Because ReFleece uses recycled materials, each product is slightly different in color.

As ReFleece gained traction, more companies began to reach out to Palmer to find use for their wasted items. They also made connections at conferences where other outdoor retailers would come together, helping them expand their list of affiliations.

"We're looking to inspire other companies to reuse their materials as well," he said. "It would be great for not only brands, but consumers, to think of us, and say 'let's get it to another life.' "

CHLOE DO

**Clean Room at MIT.nano**

# MIT develops thin solar cells that could change the future

BY CHLOE DO

Massachusetts Institute of Technology scientists have developed solar cells, the powerhouse inside solar panels, that could be a solution to climate change.

These ultrathin cells, thinner than a human hair, are the main component in solar panels, and are able to turn any surface into a powerful energy source. Because of the flexible and light nature of the solar cells, they can be installed in places such as walls and floors where heavy solar panels cannot.

All of this work is going on at the MIT.nano Laboratory. Jeremiah Mwaura, research scientist at the laboratory, said the technology will help open up opportunities where solar energy can be used.

"You can buy solar panels right now, but there are some areas or some spaces where you cannot apply the available solar panels," said Mwaura.

He said in the next three to five years, solar cells will be available in the market.

The cells are printed using a rare technique similar to how designs are added to T-shirts. They are copied using electronic inks and then laminated onto thin materials such as tent fabric, providing renewable energy during natural disaster recovery.

Because the cells are printed, the product can be manufactured quickly, allowing the technology to reach global markets.

The cells produce more than 18 times the power of traditional silicon panels per kilogram. Weighing about 100 times less than conventional solar cells, this innovation would add only around 40 pounds to the roof of a house.

With the solar fabrics filling in the gaps where traditional solar panels fail, a world independent of fossil fuels is possible, according to Mwaura.

This innovation could be a solution to implementing renewable energy. There are many people already dedicated to manufacturing the product on a global scale, and MIT's tight knit community is a large factor in the cells' success. The 10-year project still presents some challenges, and the team is currently working on a solution to make the solar fabric more efficient while decreasing the cost of materials.

"But the sun is everywhere. It will be the cheapest form of energy," said Mwaura.

# Grant provides funds for resilience in the Caribbean

**BY LEO LAINE**

Northeastern University is preparing to embark on an international two-year, $1 million grant program provided by the U.S. International Development Agency.

The funding, announced by Vice President Kamala Harris on June 8, will be targeted at reducing the risks of extreme weather associated with climate change in the Caribbean. The grant will go into effect July 1 and will be a collaborative effort between Northeastern's Global Resilience Institute, the University of Hawaii, and the University of West Indies.

The first phase of the project is to train the team of students and staff how to effectively engage with three communities in Dominica and Barbados.

"We figured out, basically, there are indicators of resilience," said GRI Founding Director Steven E. Flynn. "They fall into basically four buckets."

The "buckets" Flynn refers to are the physical and natural environments, community economics, social capitals and governance. These factors will be evaluated for the second phase of the project, a process the GRI calls a Community Resilience Baseline Assessment.

The assessment, Flynn said, will give the Institute "a cartoonish view of the community, a caricature of the community. And what you need is a fine portrait, but you can't get a fine portrait without actually talking to the community."

Flynn's timeline puts a strong emphasis on community involvement with the goal of introducing enough resources to create self-sustaining processes even after the funding period ends.

"We're not going to solve climate change in two years," he said, "We can help to define the path and hopefully find some model projects. But it's gonna take a community, like all of us need, to work at this for a long time."

UK DEPARTMENT FOR INTERNATIONAL DEVELOPMENT

**A view of Roseau, the capital of the Caribbean island of Dominica, seen from the window of a government building the day after Hurricane Maria struck by DFID.**

Flynn understands that the project may not go completely according to plan.

"We're hopeful, but... It's a big, complicated, messy challenge," he said. "And so we may just learn from our failure."

Flynn recognizes that many people experience anxiety around the perceived inevitability of climate change. He also points out many of the solutions will have to be local ones, like conserving water. These seemingly-insignificant changes won't completely solve the problem, Flynn concedes.

"But they're empowering," he said. "If nothing else, they bring us together as a community."

Flynn said that the motivation for projects like this one should be clear.

"The world's falling apart," he said. "We should do this because we need to," he said. "The outcome, even if we never have a disaster, would be better for it."

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**SUSTAINABILITY**

*Continued from page 1*

Kharitonenkov for marketing but soon after invited him to work as a business partner.

Bootstrap collaborates with households, schools, restaurants, and businesses to support sustainability. The company provides buckets with compostable liners and collects them on either a weekly or bi-weekly basis.

Ann Moritz has subscribed to Bootstrap for the past 10 years.

"I feel like I am getting multiple benefits from investing in this," she said. "I'm just really supportive of what they are doing."

Moritz led all 38 units in her condo building to participate; the residents now provide a bucket or two of compost every week for Bootstrap vans to pick up.

Once Bootstrap collects the compost, their facilities convert the scraps into different products, including soil and fertilizer spray. A system of 20,000 worms help decompose layers of compost scraps into rich soil.

"One of the things we do is create a very potent nutrient-rich fertilizer called worm castings," Kharitonenkov said. "It's literally worm poop."

Twelve years after its founding, Bootstrap Compost now employs nearly 40 employees and has hired a third partner named Stom Cadet. The company serves more than 3,500 clients in Greater Boston, Worcester, Providence, and the Berkshires.

"There's nothing more fulfilling than knowing that you are able to provide for another family's finances and education," Kharitonenkov said. "We're making a difference in people's lives and on the planet."


MARY BOSCH

**A view of Long Wharf. Implementation of the Wharf District Council's climate resiliency plan would create more open space and help prevent flooding in this area.**

# Can flooding mitigation be appealing and affordable?

**BY VICTORIA DOLAN**

A new climate resiliency plan from the Boston Wharf District Council offers the seaport a chance to protect against flooding caused by rising sea levels - if they can find funding before time runs out.

The Wharf District Council was created to address planning and development issues by unifying neighborhood stakeholders, and covers the wharfs and surrounding land. This area, spanning from Quincy Market and Boston Harbor to Congress Street, is at a particular risk from the impacts of climate change, as rising sea levels worsen flooding.

To combat this, the council published a final Conceptual District Protection and Resiliency Plan in May. The plan identifies several mitigation strategies to reduce the risk and impacts of flooding, and examines the costs and processes required to implement those strategies.

**Construction costs are estimated to take more than $800 million, and much of the burden may fall on taxpayers.**

However, the main problem with this plan is its price tag. Construction costs are estimated to take more than $800 million, and much of the burden may fall on taxpayers. While there may be state or federal grants available to contribute to funding the project, approval processes are lengthy.

"I think the purses are going to get tightened," said Bud Ris, who helped create the council. Ris is also chair of advocacy group Boston Harbor Now and a senior advisor of the Boston Green Ribbon Commission.

A recent national increase in government spending means that moving forward, government agencies may be more hesitant to approve funding. Funding approval processes will take longer, and it may be difficult to gain public support for spending taxpayer money for the project.

The goal of the plan is to "keep the water out in a graceful way," said Ris. The plan recommends new groundwater management systems, improved storm drainage, elevated park space, and a new harbor walk. This will not only protect pre-existing property, but create new recreational opportunities and encourage visitation.

When it comes to this project, the seaport does not have time to spare. The sea level may only rise at three inches a decade, but one bad storm can cause two or three foot waves that flood properties and risk lives. "It's quite urgent," said Ris.

For now, the Wharf District Council is planning its next steps. First, they'll continue holding public hearings to get continuous community input. A new board may be created to organize funding projects and oversee construction and maintenance.

"The last thing we want to do is build something like this and forget about it," said Ris.

**PLANT-BASED**

*Continued from page 1*

ANNA FARMER

**A portrait and a row of pine cones and plants inside Oasis.**

Society.

A highlight of the restaurant is Ra and Mackenzie incorporating dishes from various countries. Among the most popular of their dishes are the Vegan Mac-N-Cheese and the Miser Wat, a spicy Ethiopian lentil dish. However, Ra feels that the significance of Oasis goes deeper than its food.

"We develop our recipes from the heart – love is the root," Ra said. "If you have a plate of food, you have enough to share."

Not only is the restaurant grounded by its love for food, but by its appreciation of art and music.

"Food and music, they're beautiful languages...we don't even have to speak the same verbally, we don't have to come from the same country," she added.

Inside the restaurant, the sound of upbeat reggae music and the smell of burning incense fill the air. The walls are covered with paintings, almost all of which have been gifts from customers as signs of gratitude. The largest painting shows the meeting of the four streets outside the restaurant, highlighting the intersection of "Peace" and "Love."

When looking toward the future of the restaurant, Ra envisions the connections to come.

"We definitely want to expand," Ra said. "Expanding of course could mean more locations, but expanding in the sense that we could reach more communities. That's what I would love to do. Gather more of our community together."