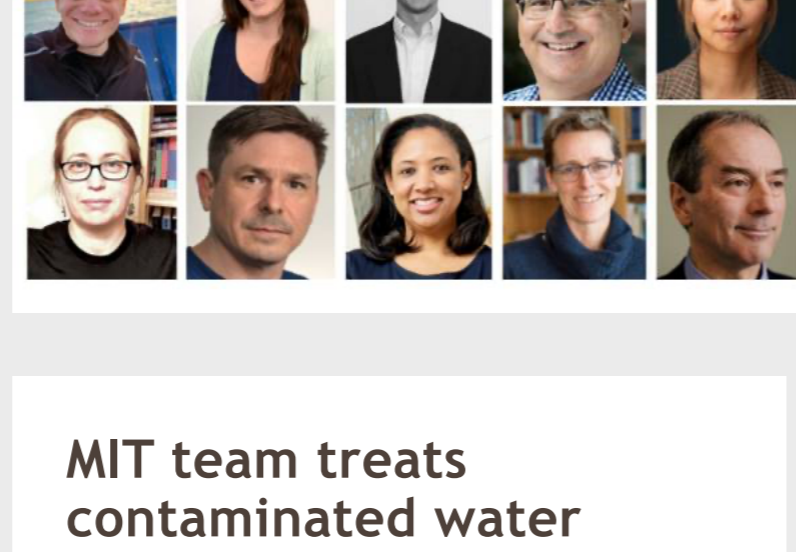


## NEWS & ANNOUNCEMENTS

### J-WAFS awards 2024 seed grants



Seven seed grant projects will address challenges in water and food systems using biology, engineering, social science, and other disciplines.

[READ MORE](#)

### MIT team treats contaminated water

J-WAFS PI Patrick Doyle, J-WAFS fellow Devashish Gokhale, and others designed hydrogel capsules that encapsulate surplus yeast from beer breweries to absorb lead from drinking water.

[READ MORE](#)

### J-WAFS researchers use MOFs for chemiresistors

J-WAFS PIs Aristide Gumyusenge, Heather Kulik, Mircea Dinca, and others built off of J-WAFS-funded research on metal-organic frameworks (MOFs) for PFAS detection to develop a new sensor for toxic gases.

[READ MORE](#)

### J-WAFS PI expands on role of urban gardeners

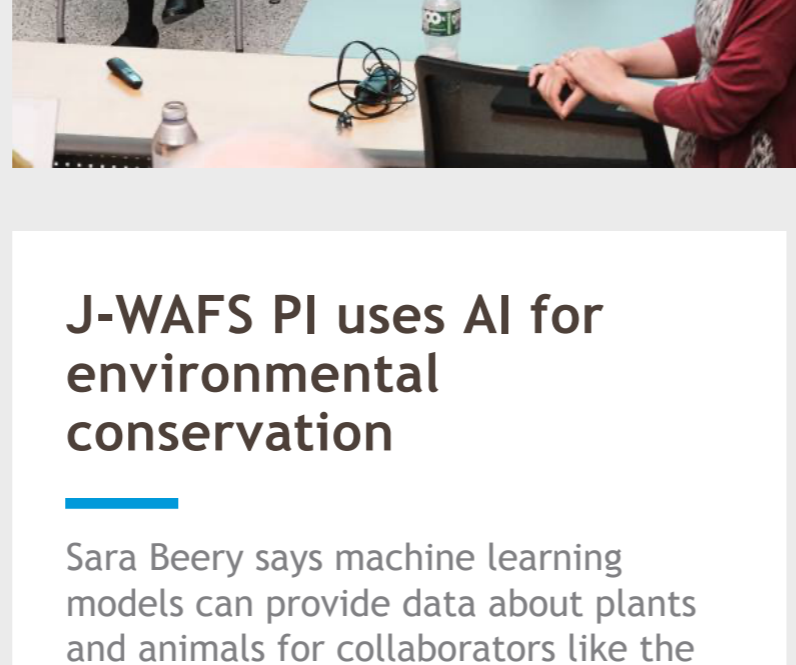
Kate Brown, of MIT's Program in Science, Technology and Society, discusses the most productive agriculture in recorded history, which took place in small gardens on the edge of cities.

[READ MORE](#)

### J-WAFS PI aims to transform agriculture

Chris Voigt has made strides towards the goal of genetically engineering plants to fix atmospheric nitrogen, achieving advances in modifying N-fixing bacteria to work symbiotically with various crop plants.

[READ MORE](#)



### J-WAFS researchers address MIT alumni

Matt Shoulders, Mary Gehring, and Chris Voigt spoke about their agricultural projects at a Tech Reunion event sponsored by J-WAFS.

[READ MORE](#)

### J-WAFS PI uses AI for environmental conservation

Sara Beery says machine learning models can provide data about plants and animals for collaborators like the U.S. Fish and Wildlife Service.

[READ MORE](#)

### MIT graduate student studies water generation from air

Carlos Diaz Marin develops affordable materials that can extract significant amounts of humidity from the air for drinking water.

[READ MORE](#)

### MIT senior collaborates on water projects

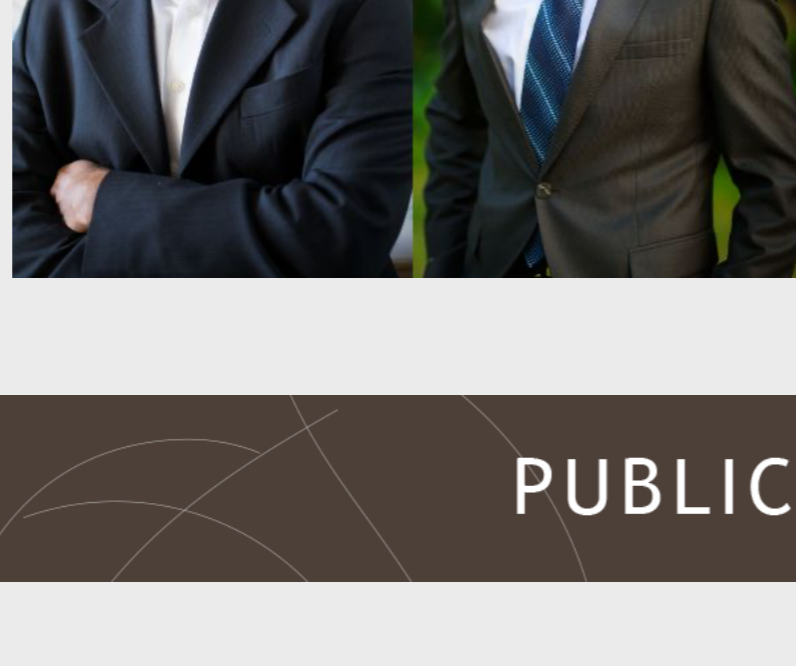
Sophia Chen worked with MIT D-Lab and J-WAFS PI Amos Winter on projects ranging from atmospheric water harvesting, desalination, and clean water and sanitation.

[READ MORE](#)

### MIT professor studies African water issues

Evan Lieberman, from the Department of Political Science, researches climate change in Africa, including the near-depletion of Cape Town's water supply due to drought.

[READ MORE](#)



### J-WAFS spinout profiled in the Economist

AgZen, co-founded by Prof. Krija Varanasi and Vishnu Jayaprakash SM '19, PhD '22, develops technologies to help agriculture reduce pesticide use.

[READ MORE](#)

## PUBLICATIONS

### J-WAFS researchers save water in steel making

Prof. Cem Tasan, postdoc Onur Güvenc, & undergrad Rebecca Lizarde developed a method that reduces water use in processing steel scrap.

[READ MORE](#)

### MIT engineers address water scarcity

J-WAFS PI Evelyn Wang and team use sorption-based atmospheric water harvesting technology to extract water vapor from the air.

[READ MORE](#)

## IN-DEPTH LOOK

J-WAFS RESEARCHER SPEAKS AT VATICAN'S CLIMATE CONFERENCE

### Kenneth Strzepek addressed researchers, policymakers, faith leaders, and the Pope about the impacts of drought on farmers

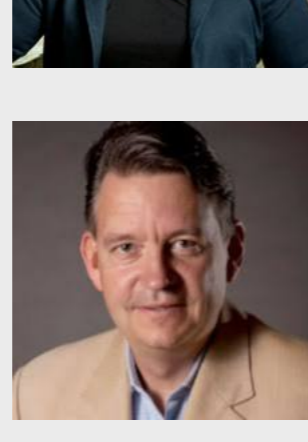
Last month, Kenneth Strzepek, J-WAFS climate, water, and food specialist, attended and spoke at a summit at the Vatican titled, "From Climate Crisis to Climate Resilience." According to the program, the event aimed at "bending the curve and bouncing forward to climate resilience." The summit was presided over by Pope Francis and had four focus themes: water, air, food, and energy.



In the water session, Strzepek, an expert in water resource planning, management, and modeling, spoke about droughts. He highlighted the fact that climate change is driving increases in the variability and extremes of droughts. Agricultural drought, when crops are affected due to lack of moisture in the soil, will worsen under climate change, Strzepek noted. This is particularly detrimental to smallholder farmers, who produce around a third of the world's food on farms that are less than 4 acres in size. In Africa, 60% of the population are smallholder farmers, and they produce 80% of the continent's food supply through rainfed subsistence farming. "They are the most vulnerable to drought as they are generally invisible to economic development and resources," Strzepek said.

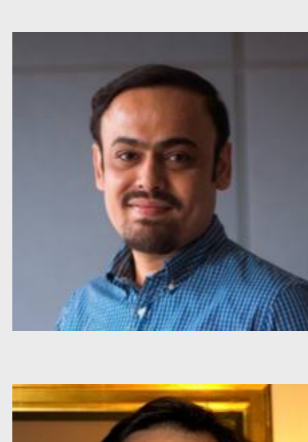
[READ MORE](#)

## AWARDS & RECOGNITIONS



### Terrer receives Faculty Early Career Development Award

An assistant professor in the Department of Civil and Environmental Engineering, Cesar Terrer was awarded by the National Science Foundation (NSF) for his research on the historical loss of soil carbon and its role in climate change. [MORE INFO](#)



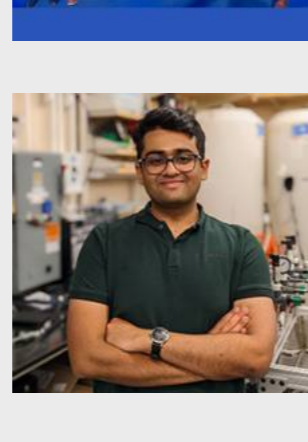
### Ariel Furst's company wins MIT's \$100K competition

The J-WAFS PI started Helix Carbon to further develop technology to convert carbon dioxide into carbon monoxide using a DNA-tethered catalyst. The advancement could substantially impact decarbonization efforts by transforming greenhouse gases into useful chemical products. [MORE INFO](#)



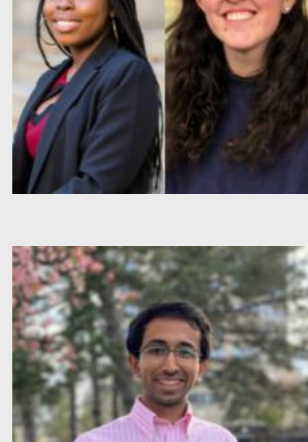
### Olivier de Weck's book named Most Promising New Textbook

Using systems design and engineering expertise, de Weck helps companies strategically plan, linking current technologies to future innovations. His method has been incorporated into MIT courses and is detailed in his textbook, awarded by the Academic Authors Association. [MORE INFO](#)



### Hybrid Systems: Computation & Control awards Saurabh Amin

The past J-WAFS PI received the HSCC Test-of-Time Award for his paper, "Reachability Analysis for Controlled Discrete Time Stochastic Hybrid Systems." The award recognizes research that has proven to be visionary, leading to new directions of research or new applications. [MORE INFO](#)



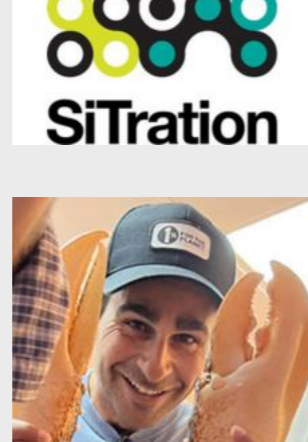
### Antoine Allanore's spinout cleans up steel making industry

Past J-WAFS PI Antoine Allanore and his team at Boston Metal are making steel production cleaner with an electrochemical process that doesn't require water, hazardous chemicals, or precious-metal catalysts, thereby significantly reducing the steel industry's carbon footprint. [MORE INFO](#)



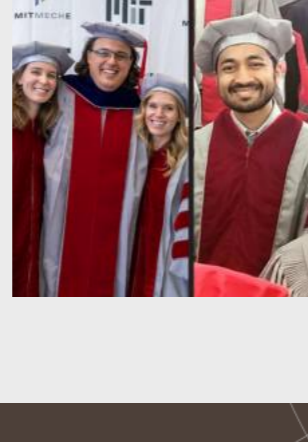
### MIT spinout featured in Boston Globe for PFAS technology

Gradient, a company launched to implement technology developed in the lab of J-WAFS director John Lienhard, developed a system to remove commercial and polyfluoroalkyl chemicals, known as PFAS, and destroy them on site at municipal water utility facilities. [MORE INFO](#)



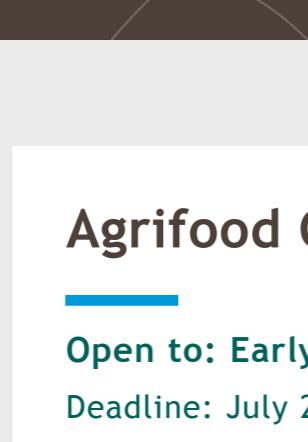
### J-WAFS Fellow wins 1st place in MIT's de Florez Competition

Aditya Ghodgaonkar was awarded for his 1D fluid-structure interaction models that speed up the design of drip emitters used in irrigation for agriculture. The emitters are compact, low-energy, clog-resistant, and help to make water-efficient irrigation more globally accessible. [MORE INFO](#)



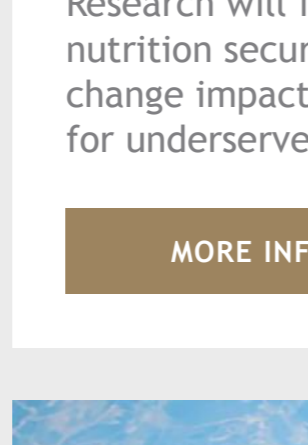
### J-WAFS students named 2024 MIT Martin Fellows

J-WAFS travel grantee Chyma Mays (left in photo) is using biology to create a sustainable platform for producing critical elements. Julie McDonald (right) is working on a J-WAFS Grand Challenge project to engineer photosynthetic enzymes in crops to enhance their performance. [MORE INFO](#)



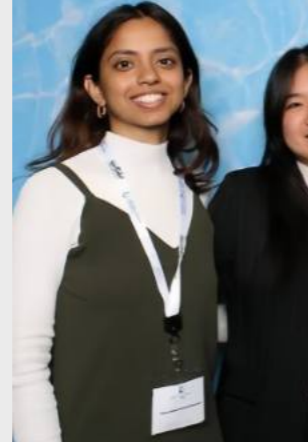
### J-WAFS Fellow awarded a 2024 Kavanaugh Fellowship

Arjav Shah, a PhD candidate in MIT Chemical Engineering, received the honor from the Department of Materials Science and Engineering to help commercialize J-WAFS-funded work that uses hydrogel microparticles to clean water polluted by heavy metals and other contaminants. [MORE INFO](#)



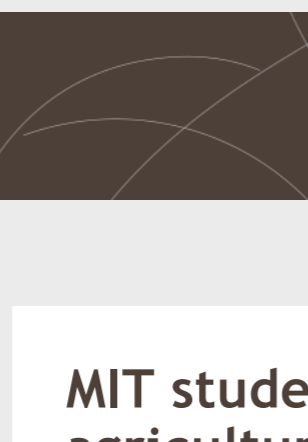
### Jameel Observatory highlights dryland resilience and action

Early career researchers from the Jameel Observatory and partners convened to share insights into their research on topics like water, food, the impact of community-based conservation on pastoralists, and quantifying livestock diet composition in Kenyan livestock systems. [MORE INFO](#)



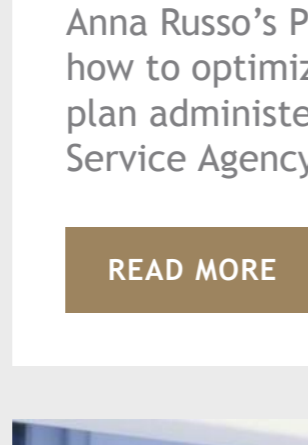
### J-WAFS spinout SITration raises an \$11.8 million seed round

SITration was co-founded by MIT alum Brendan Smith, who was a part of a J-WAFS Solutions team with Professor Jeffrey Grossman. They engineered low-cost, fouling-resistant, nanoporous membranes for a variety of applications, including treating wastewater in the mining industry. [MORE INFO](#)



### MIT Sloan alum featured on TV show for food entrepreneurs

Jeffrey Tedmori was a contestant on a television show called Gordon Ramsay's Food Stars, where he represented his company E-Fish, a digital marketplace connecting restaurants and consumers directly to seafood harvesters. [MORE INFO](#)



### Students in the J-WAFS community graduate from MIT

J-WAFS sends a hearty congratulations to MIT's graduating class of 2024, including J-WAFS students Georgia Van de Zande and Carolyn Sheline, who received PhDs in mechanical engineering, and Devashish Gokhale, who received a PhD from the Department of Chemical Engineering. [MORE INFO](#)

## FUNDING AND OTHER OPPORTUNITIES

### Agrifood Challenge

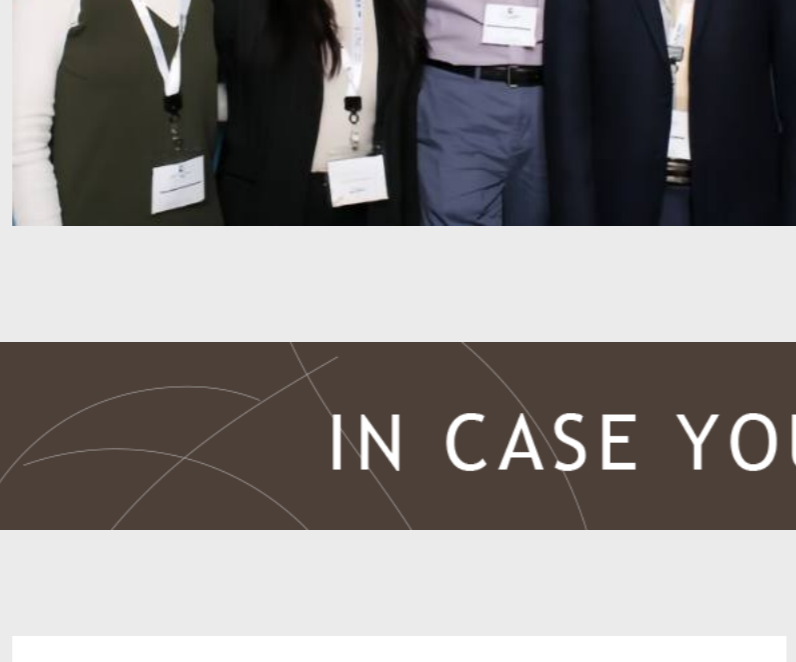
**Open to: Early-career scientists**  
**Deadline: July 29, 2024**  
 The U.S. Dept of Agriculture and the Foundation for Food & Agriculture Research will fund projects to advance nutrition security, mitigate climate change impacts, and advance equity for underserved communities.

[MORE INFO](#)

### MCSC 2024 Seed Awards

**Open to: MIT PIs**  
**Deadline: August 1, 2024**  
 The MIT Climate and Sustainability Consortium seeks proposals related to the U.S. Dept of Agriculture and the Foundation for Food & Agriculture Research will fund projects to advance nutrition security, mitigate climate change impacts, and advance equity for underserved communities.

[MORE INFO](#)



### J-WAFS Travel Grants for Water Conferences

MIT graduate students with research in water can apply for funding to attend the UNC Water & Health Conference in October. Apply by August 12, 2024.

[MORE INFO](#)

## IN CASE YOU MISSED IT

### MIT student addresses agricultural issues

Anna Russo's PhD research includes how to optimize a land conservation plan administered by USDA's Farm Service Agency.

[READ MORE](#)

### J-PAL spotlights Nigerian agricultural economist

Through J-PAL's African Olowogbon Program, Toyin Samuel Olowogbon explores the impact of digital platforms on farming practices.

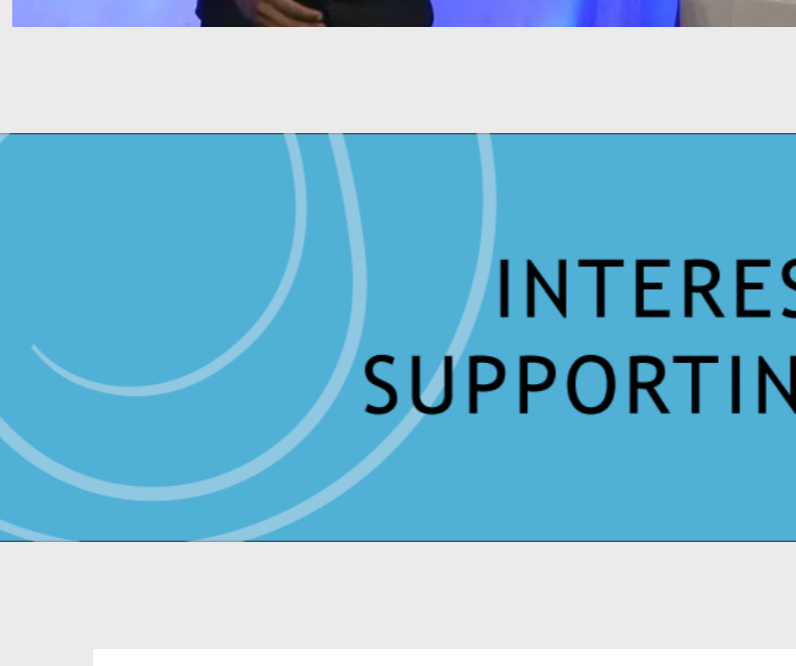
[READ MORE](#)



### J-WAFS researcher studies plant enzyme

In a video by Grist, Robbie Wilson discusses his work to boost agricultural productivity, a project supported by a J-WAFS Grand Challenge Grant.

[WATCH NOW](#)



### MIT student gives TEDxMIT talk

Runako Gentles speaks about groundwater pollution from bauxite operations in his native Jamaica.

[WATCH NOW](#)

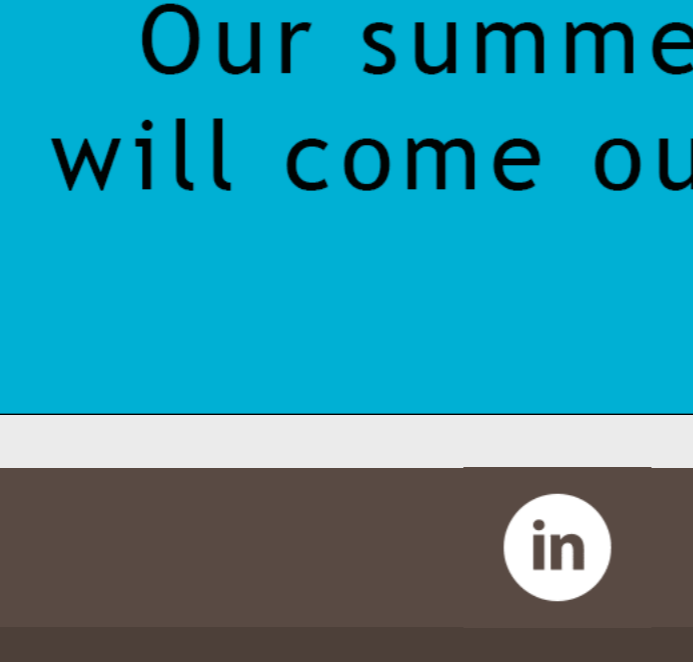
## INTERESTED IN SUPPORTING J-WAFS?

When you make a gift, you are making an investment in both the future of J-WAFS and our institute-wide work to improve the productivity, accessibility, and sustainability of the world's water and food systems.

[DONATE ONLINE](#)

FOR MORE INFORMATION ABOUT SPONSORSHIP OPPORTUNITIES, CONTACT:

RENEE J. ROBINS  
 Executive Director, J-WAFS  
[rrobins@mit.edu](mailto:rrobins@mit.edu) or (617) 324-6726



J-WAFS is an Institute-wide effort that brings MIT's unique strengths to bear on the many challenges our food and water systems face. Our program catalyzes MIT research, innovation, and technology for ensuring safe and resilient supplies of water and food while reducing environmental impact, to meet the local and global needs of a rapidly expanding and evolving population on a changing planet.

**Our summer newsletter will come out in late July!**

