



## NEWS & ANNOUNCEMENTS



### J-WAFS awards inaugural Grand Challenge project

The project focuses on RuBisCO—the photosynthesis enzyme thought to be the holy grail for boosting crop yields.

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### Benedetto Marelli improves crop quality

The J-WAFS PI helped create a silk-based microneedle system to deliver controlled amounts of agrochemicals to plants for better crop growth & disease management.

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### New J-WAFS PI studies architected materials

Carlos Portela develops materials that can have customized behaviors, including optimized geometries for water filtration, which his 2023 J-WAFS project will explore.

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### MIT & Community Jameel pilot agriculture project

The Jameel Observatory, an MIT Grand

### MIT researchers manage water & heat

J-WAFS PI Evelyn Wang and others at

Challenge project led by J-WAFS PI Elfatih Eltahir, will help agricultural communities in Bangladesh & Sudan adapt to climate change impacts.

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MIT identified a material that could be used to create a device that harvests moisture from the air for drinking water, even as temperatures rise.

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## Kripa Varanasi prevents fouling in photobioreactors

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The J-WAFS PI created a technology to limit the buildup of algae on the walls of tanks, allowing for more efficient conversion of carbon dioxide into useful products like food supplements.

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## Many J-WAFS PIs assist students in new MIT program

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In the MIT Climate & Sustainability Consortium's Scholars Program, students gain advice on projects like in-field monitoring of water quality and forecasting of climate events.

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## J-WAFS PI participates in MIT-Ukraine program

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Susan Murcott teaches a water and sanitation course that examines war-related issues with water distribution in Ukraine.

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## Water quality issues tied to mining industry

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J-WAFS researcher Scott Odell says that mining causes socioenvironmental, water-related concerns in Latin America.

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## J-WAFS Solutions tech featured in Newsweek

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Jongyoon Han and Junghyo Yoon were listed as tech innovators who are helping to save the planet through their desalination technology.

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## DRINKABLE SEA WATER AT THE PUSH OF A BUTTON

Jongyoon Han  
and Junghyo Yoon  
MIT, NONA

# IN-DEPTH LOOK

J-WAFS ANNOUNCES THE 2023 SEED GRANT RECIPIENTS

## Ninth round of J-WAFS seed grants will support water and food research at MIT

J-WAFS recently announced ten new projects that will receive 2023 J-WAFS seed grants. The grants are designed to fund research efforts that tackle challenges related to water and food for human use, with the ultimate goal of creating meaningful impact as the world population continues to grow and the planet undergoes significant climate and environmental changes. This year's projects will be led by fifteen researchers from seven different departments across campus.



“The seed grant program is J-WAFS’ flagship grant initiative,” says J-WAFS executive director Renee J. Robins. “The funding is intended to spur groundbreaking MIT research addressing complex issues that are challenging our water and food systems. The ten projects selected this year show great promise, and we look forward to the progress and accomplishments these talented researchers will make,” she adds.

The new projects aim to remove harmful chemicals from water sources, develop monitoring and other systems to help manage various aquaculture industries, optimize water purification materials, and more.

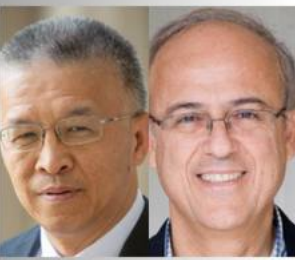
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# AWARDS & RECOGNITIONS



## J-WAFS PI Benedetto Marelli receives tenure

Marelli, of the Department of Civil and Environmental Engineering, was promoted to an associate professor with tenure. His research focuses on designing biomaterials for precision agriculture, food security, and food safety. [MORE INFO](#)



## J-WAFS PIs inducted into NAS

Gang Chen and Greg Stephanopoulos have been elected to the National Academy of Sciences for their distinguished and continuing achievements in original research. [MORE INFO](#)



## Ariel Furst recognized for research and teaching

The J-WAFS PI was named a 2023 Camille Dreyfus Teacher-Scholar for advancing important knowledge in the chemical sciences. Her lab combines biological, chemical, and materials engineering to solve challenges in human health and environmental sustainability. [MORE INFO](#)



## Synthetic nitrogen replaced on nearly 1M acres of farmland

A leading nitrogen innovator, Pivot Bio, cofounded by J-WAFS PI Chris Voigt, demonstrated reduction of synthetic nitrogen on 725,000 acres of farmland, avoiding more than 80,000 metric tons of CO2 equivalent emissions. [MORE INFO](#)

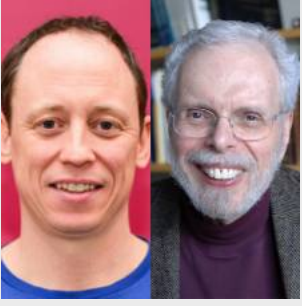


## J-WAFS PI receives NSF CAREER Award

David Des Marais received a Faculty Early Career Development (CAREER) Award from the National Science Foundation (NSF), its most prestigious honor for junior faculty members. He was selected for serving as an academic role model in research & education. [MORE INFO](#)

## J-WAFS researchers launch new website

Eric Verploegen and Leon Glicksman and their team created a website with open-source materials needed to build their evaporative cooling



chambers for preserving fruits & vegetables in hot, dry regions. The chamber technology was funded in part by J-WAFS. [MORE INFO](#)



### **JWAFS PI elected to American Academy of Arts and Sciences**

Evelyn Wang is internationally recognized for her work using heat transfer to develop high-efficiency clean energy and water solutions. The American Academy of Arts and Sciences is one of the nation's most prestigious honorary societies. [MORE INFO](#)



### **MIT spinout company awarded at the Global Water Summit**

Gradiant, which was created to implement technology developed in the lab of J-WAFS director John Lienhard, was named Desalination Company of the Year at the Global Water Awards in Berlin. The award recognizes important achievements in the water industry. [MORE INFO](#)



### **Elaine Liu wins Earth Month Poster Session award**

Liu, an undergrad in math, won the “People’s Choice Award” for best poster at our Earth Month student poster session, sponsored by the Climate Nucleus. Her poster described her work on managing failure cascades in wind power systems. [MORE INFO](#)

Credit - Caitlin Cunningham



### **MIT Water, Food & Agriculture Prize awards three startups**

GEARigation works on drip irrigation for farmers; DetoXyFi makes sapwood-based drinking water filters; Sygne Solutions uses boron nitride-based materials to eliminate PFAS from water. All received cash prizes in the competition co-sponsored by J-WAFS. [MORE INFO](#)



### **Bruce Crawford noted as an outstanding MBA student**

Bruce Crawford made the Poets & Quants 2023 Best & Brightest MBA List. Crawford is an MIT Sloan student and member of the J-WAFS Solutions team that launched NONA Technologies to commercialize their portable, solar-powered desalination device. [MORE INFO](#)



### **Sally Kornbluth inaugurated as MIT's 18th president**

Kornbluth joins MIT from Duke University, where she served as provost. In her inauguration speech on May 1, Kornbluth spoke about the importance of driving “a bold, tenacious response to the runaway crisis of climate change.” [MORE INFO](#)



### J-WAFS colleague moves to new role at MIT

J.J. Laukaitis will transition from MIT's Industrial Liaison Program to join the MIT Energy Initiative as director of member services. Laukaitis was instrumental in facilitating J-WAFS' relationship with its first research affiliate member, Xylem. [MORE INFO](#)



### \*Correction from April newsletter regarding Mary Gehring

April's newsletter incorrectly noted that J-WAFS PI Mary Gehring received tenure this year. Gehring received tenure in 2019, however this year she was promoted to full professor in the Dept of Biology. She studies genetics & epigenetics of seed biology in plants. [MORE INFO](#)

## FUNDING AND OTHER OPPORTUNITIES

### J-WAFS Travel Grants for Water Conferences

**Deadline: Aug 16, 2023**

Open to: MIT graduate students

MIT grad students with research in the water sector can apply for funding to attend the UNC Water & Health Conference from October 23-27, 2023 in Chapel Hill, North Carolina.

[MORE INFO](#)

### REACH Water Security & Poverty Conference

**Date: September 20-22, 2023**

Open to: all

Hosted by the University of Oxford, a J-WAFS-led FACT Alliance member, this conference will discuss climate services, sustainable finance, and water quality.

[MORE INFO](#)

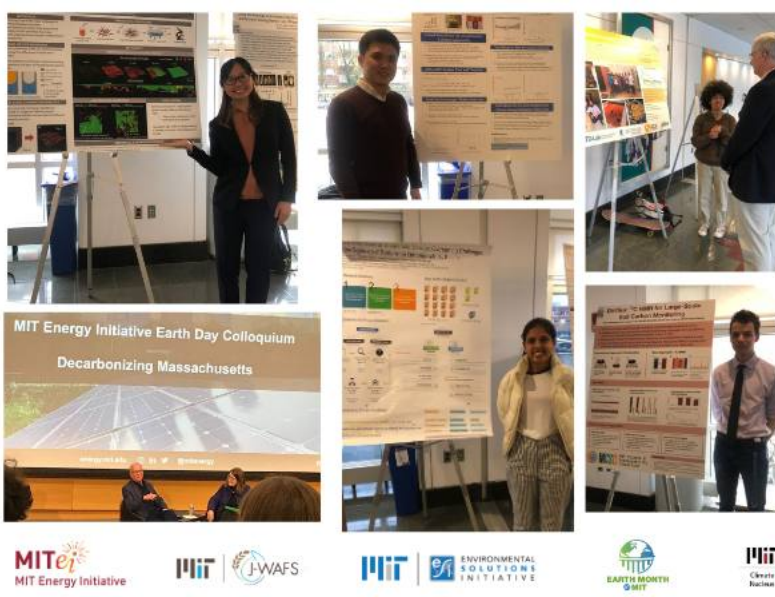
## IN CASE YOU MISSED IT

J-WAFS, MITEI, ESI Earth

## Month poster session

Students presented projects in water, food, energy, & environment alongside a colloquium with Massachusetts State Senator Mike Barrett.

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## J-WAFS student Jonathan Bessette profiled

J-WAFS Travel Grant recipient Jonathan Bessette created a solar-powered desalination system that provides clean water in humanitarian emergencies.

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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.

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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.



“Climate change continues to impact longstanding agricultural practices in every country and a strong global commitment is necessary to face the challenges of climate change head-on and build more sustainable, equitable, and resilient food systems.”

--Secretary Thomas Vilsack at this week's Agriculture Innovation Mission for Climate Summit in DC, attended by J-WAFS' Greg Sixt.



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