

NEWS & ANNOUNCEMENTS



Article in *Science* notes J-WAFS food trade project

Researchers Greg Sixt and Ken Strzepek are developing the Jameel Index for Food Trade and Vulnerability.

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Past J-WAFS PIs work to improve agricultural practices

Professor Daniel Frey and MIT D-Lab founding director Amy Smith are working with Guatemalan farmers and others to enhance agricultural value chains in Central America.

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J-WAFS PI co-authors study on land-use & food security

Jennifer Morris finds that with changes in policy and land management there is enough land to meet demands for food, ecosystem services, and climate mitigation.

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Recent MIT grad advances water test kits

Mitali Chowdhury '24 is working with J-WAFS PIs Susan Murcott and Benedetto Marelli on *E. coli* water tests in Nepal, which were originally developed with the help of J-WAFS.

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MIT researcher gives ag talk at COP29

Sergey Paltsev of the MIT Center for Sustainability Science and Strategy and the MIT Energy Initiative spoke about increasing the efficiency and sustainability of agriculture.

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MIT spinout offers hope to farmers facing water scarcity

Harmony Desalting, founded by Quantum Wei BA '15, SM '17, PhD '21, a former student of J-WAFS director John Liendard, is building a farm-based pilot desalination system.

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MIT engineers model water filters on aquatic rays

The filter-feeding mechanism of the mobula ray inspired MIT mechanical engineers to design a simple water filter that mimics the ray's plankton-filtering features.

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J-WAFS researcher interviewed by USA Today

Scott Odell notes the water-intensive nature of mining for renewable energy and its risk of contaminating local drinking water sources.

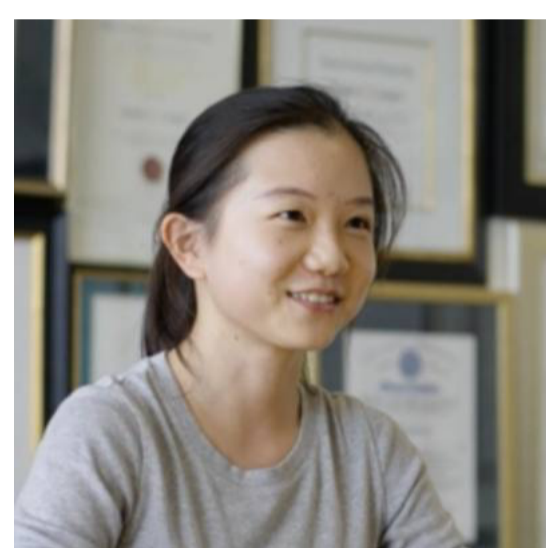
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IN-DEPTH LOOK

PAST J-WAFS FELLOW COMBATS NUTRIENT DEFICIENCIES

Rhoda Zhang authors a paper on a novel material to fortify foods

In 2022, MIT PhD student Linzixuan (Rhoda) Zhang was awarded a J-WAFS Fellowship for her micronutrient delivery platform. Now, Zhang is the lead author on a paper that explores this research further. Zhang is working with Ana Jaklenec, a principal investigator at MIT's Koch Institute for Integrative Cancer Research, and Professor Robert Langer, of the Departments of Chemical Engineering and Biological Engineering, as well as the Koch Institute.



To combat global micronutrient deficiency crises, Zhang and the team developed novel materials that protect fragile nutrients under harsh cooking and storage conditions. The microparticles are made of biodegradable polymers that dissolve in the stomach to release encapsulated vitamins and minerals. The particles can fortify foods by encapsulating nutrients, such as vitamin A, vitamin D, vitamin E, vitamin C, zinc, and iron. This work limits harmful microplastics while

bolstering food security.

Zhang has also invented nutritional metal-organic frameworks (NuMOFs) and created the world's first iron-fortified coffee called MOFe Coffee. She was recently awarded the [2024 Collegiate Inventors Prize](#) for her materials to stabilize nutrients in food with the goal of improving global health.

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AWARDS & RECOGNITIONS



J-WAFS Fellow featured in MSN article

Jonathan Bessette, a PhD student in mechanical engineering, is working with past J-WAFS PI Amos Winter on a solar-powered desalination system to provide drinking water for communities in need. The system doesn't require additional batteries to operate in cloudy or stormy weather. [MORE INFO](#)



MIT water spinout makes *Time's* Best Inventions of 2024

Gradiant, which was created to implement technology developed in the lab of J-WAFS director John Liendard, developed ForeverGone, an invention that sustainably eliminates harmful PFAS—known as “forever chemicals”—from contaminated water systems. [MORE INFO](#)



Past J-WAFS student selected for Early Career Research

Xiao Su PD '16, PhD '17, who worked with Professor T. Alan Hatton on a 2016 J-WAFS Solutions water treatment project, was selected by the U.S. Dept. of Energy for the 2024 Early Career Research Program. Su is now an assistant professor at the University of Illinois at Urbana-Champaign. [MORE INFO](#)



Community Jameel part of new collaboration to help farmers

A new partnership launched at the COP29 World Leaders Climate Action Summit brings together global partners, including Community Jameel, who will channel \$1B USD over three years to deliver high-quality weather forecasts to farmers for better climate adaptation and resilience. [MORE INFO](#)

FUNDING

AND OTHER OPPORTUNITIES

MIT Water, Food, and Agriculture Prize

Open to: University students

Deadline: December 15, 2024

This pitch competition, co-sponsored by J-WAFS, is for student-led startups in water, food, and/or agriculture. Compete for a pool of \$50K, mentorship from industry professionals, and networking with sustainability entrepreneurs.

[MORE INFO](#)

Society of Energy Fellows at MIT

Open to: MIT grad students/postdocs

Deadline: February 24, 2025

MIT faculty members: nominate a student who's dedicated to expediting a global transition to low-carbon energy solutions, including those related to water/food. Once nominated, applicants may complete the application.

[MORE INFO](#)

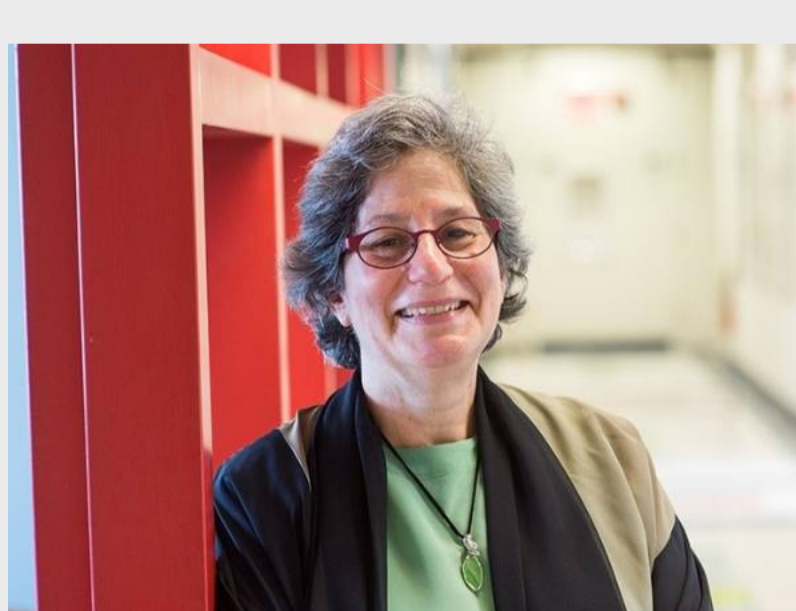


Learn about technology transfer

MIT researchers can join the Technology Licensing Office for talks from J-WAFS PIs Ariel Furst and T. Alan Hatton on moving lab discoveries to the market.

[LEARN MORE](#)

IN CASE YOU MISSED IT



Past J-WAFS PI featured on MITEI podcast

Susan Solomon spoke to the MIT Energy Initiative about solving the great challenge of global temperature rise.

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New video spotlights J-PAL's Air and Water Labs

J-PAL and Community Jameel are tackling pressing air and water challenges by incorporating evidence throughout the policymaking process.

[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.

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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.



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