

Diving In

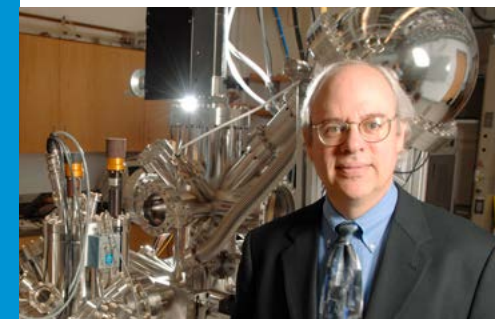
The Water Research Initiative establishes global partnership to advance solutions to water access, utility, quality, and preservation

“We feel it is critical to bring outstanding scientists together to address water-resource challenges that are being felt around the world, and will only become more acute over time.”

— UChicago President Robert J. Zimmer

While many may know that more than 783 million people do not have access to clean water, and almost 2.5 billion do not have access to adequate sanitation, the University of Chicago is doing something about it.

In a new partnership between the University’s Institute for Molecular Engineering and the departments of Chemistry, Ecology & Evolution, and Physics, as well as Israel’s Ben-Gurion University of the Negev, and Argonne National Laboratory, researchers are working to create new materials and processes for making clean, fresh drinking water more plentiful and less expensive by 2020. They also are developing technologies for using water more effectively in industry and agriculture.



Steven Sibener

“The expertise in basic science at the University of Chicago and Argonne National Laboratory combined with Ben-Gurion researchers’ decades of experience with applied science and desalination technology gives us a broad knowledge base to address one of the world’s most critical problems,” said Steven Sibener, Carl William Eisendrath Distinguished Service Professor in Chemistry and the Director of the Water Research Initiative.

“Our combined experience is a tremendous asset in turning early-stage science and technologies into innovative solutions that ultimately will have many applications.”

Working in multi-institutional collaborative teams, scientists are addressing an array of challenges in water management. One project involves multi-functional and anti-fouling membranes for water purification. Another focuses on ground water flow and replenishment in aquifers. This is particularly relevant to the joint US-Israel

LEFT: Water forms

Innovation

Diving In (continued)

research team studying two aquifer systems that are important sources of groundwater exploitation in Israel.

IME will bring tens of millions of dollars to the study of water and molecular engineering over the next decade through faculty hiring and research grants. Sibener also expects the Water Research Initiative to establish more industrial partnerships, which will lead to increase educational opportunities and technological advances.

“One of our goals is to develop scholars with a broad-based understanding of water utilization, science, and policy who will become leaders in the field,” said Sibener. “We expect that some of them will use their innovative ideas to develop viable new technologies that will ultimately lead to the creation of new companies to the benefit of us all.”

In addition to the commitment in water research at IME, UChicago also enjoys a campus-wide innovation network that includes researchers and scholars in a wide range of fields, including public policy at the Energy Policy Institute at Chicago (EPIC), microbiology researchers at the Marine Biology Laboratory, and University economists, social behavior scientists, and urban designers. This unique ecosystem enables the Water Research Initiative to tackle the water sustainability issues in a holistic approach that builds on itself.

The agreement between Ben-Gurion University and the University of Chicago was signed last June in Israel. (clockwise from bottom left) UChicago President Robert J. Zimmer, Chicago Mayor Rahm Emanuel, Israeli President Shimon Peres and Ben-Gurion President Rivka Carmi



Inaugural Water Research Grants Announced

Five seed grants have been awarded to researchers working in the Institute for Molecular Engineering's Water Research Initiative at the University of Chicago. Collaborative teams of scientists from UChicago's departments of Chemistry, Ecology & Evolution, IME and Physics, along with Ben-Gurion University of the Negev and Argonne National Laboratory have received funding to develop research projects with strong potential for providing technological solutions to the pressing challenges society is facing in water production, transportation and reuse.

“The five grants that were chosen were the lead programs, in part because they truly benefit from leveraging the strengths at the three institutions,” said Steven Sibener, Carl William Eisendrath Distinguished Service Professor in Chemistry and the James Franck Institute and Director of the Water Research Initiative. “They all require a true partnership in something that no one has done or could do alone.”

Sibener said another strength of the selected projects was their immediate relevance. “The winning proposals cover a range of topics that address critical issues concerning water resources,” he said. “They will use basic science, applied science, and engineering to take discoveries to a new level of innovation.”

Ben-Gurion, UChicago, and Argonne jointly committed more than \$1 million over the next two years to support the inaugural projects.

Water Research Initiative at home in the Chicago Innovation Exchange

While IME's science labs will be located on UChicago's main campus, the institute's “fab lab” will be housed in the University's new Chicago Innovation Exchange (CIE) on 53rd Street in Hyde Park. Located alongside new, permanent office spaces for the Water Research Initiative and Argonne National Laboratory in a building on the corner of Harper Avenue and 53rd Street, the “fabrication laboratory” will be a shared resource for researchers modeling new inventions both within IME and beyond.



Rendering of CIE interior space

It is one component of a 34,000-square-foot CIE campus set to open in the Autumn Quarter of 2014. Spread throughout three buildings on 53rd and Harper Avenue, CIE is dedicated to nurturing new businesses and product development, such as those coming out of the labs of IME and Argonne, the Chicago Booth School of Business, and the Polsky Center for Entrepreneurship, as well as through global partnerships. “There's a groundswell of desire from faculty and students around the University to invent and commercialize new technologies and products,” said John Flavin, Executive Director of the Chicago Innovation Exchange.

IME and Argonne will be the only permanent groups on the CIE campus, ensuring there will be space for teams from across campus working on various projects to come in and out. “The exchange is meant to be a co-working space for new ventures,” Flavin said, “a place where resources can be shared and used by entrepreneurs, where people can come to be near other people who can help them. Corporate partners love it because they can access innovation. Global partners love it because it broadens their reach.”

Flavin plans a robust schedule of speakers and opportunities for co-mingling of new ventures with the city of Chicago, corporate partners, venture capitalists, mentors, and service providers. “We're attracting incubating companies that are hard to get off the ground,” he said. “CIE is a gateway, a convening place for the beginning of technologies. It's the University-wide enabling of commercialization.”

But Flavin said CIE isn't just reserved for new products. “There's a sweet spot for ventures that address urban problems, like the Urban Education Initiative,” he said. “That's not necessarily tech, but it is innovation. We see a demand for strategic, global impact initiatives, such as the Water Research Initiative.”



John Flavin