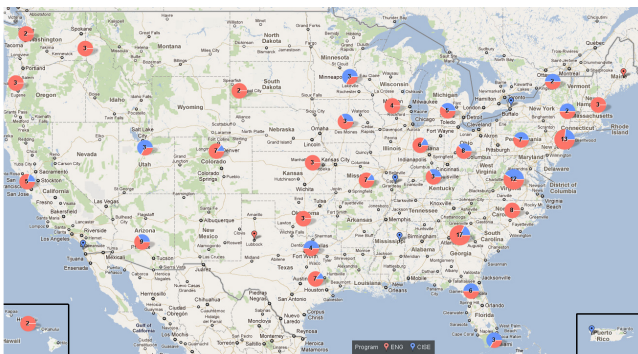




What is an Industry/University Cooperative Research Center (I/UCRC)?

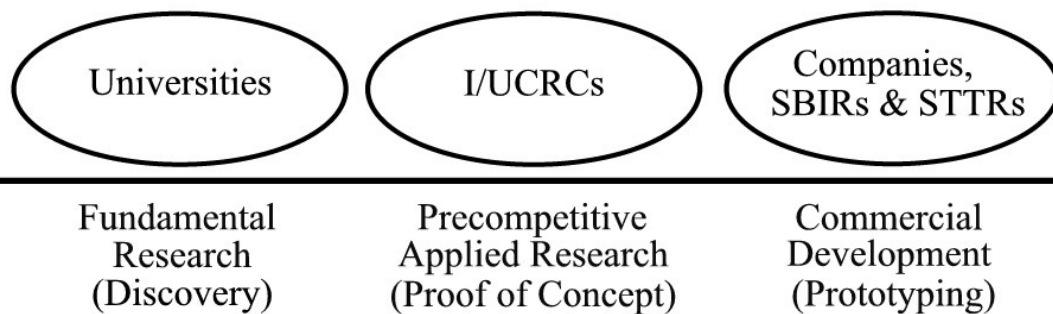
The National Science Foundation (NSF) Industry/University Cooperative Research Center (I/UCRC) program was initiated by Congress in 1973 to fund promising technologies created by university scientists and transfer them from their laboratories to companies and organizations where they can be applied to benefit society and enhance business.



63 I/UCRCs operate in the U.S. with no two centers focusing on exactly the same technology. Examples of technologies include:

- Actuators & Sensors
- Bio Energy
- Electric Vehicles
- Freeform Optics
- Fuel Cells
- Membranes
- Metamaterials
- Laser and Plasma
- Marine Fisheries
- Unmanned Aircraft

I/UCRCs focus on *applied precompetitive research*, which enables all companies, even competitors, to benefit from membership. I/UCRCs occupy a space on the continuum of innovation between basic scientific research and early stage commercialization characteristic of other federal funding mechanisms, such as Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs.



I/UCRC research centers are nonprofit organizations consisting of members from universities, industry, state and federal government agencies, and NGOs, all collaborating on precompetitive research. Every I/UCRC operates under the auspices, rules and standard operating procedures of the NSF I/UCRC program. I/UCRC operations are managed by member universities under the guidance of an Industry Advisory Board (IAB), which is comprised of a representative from each member organization and operates similar to a Board of Directors.

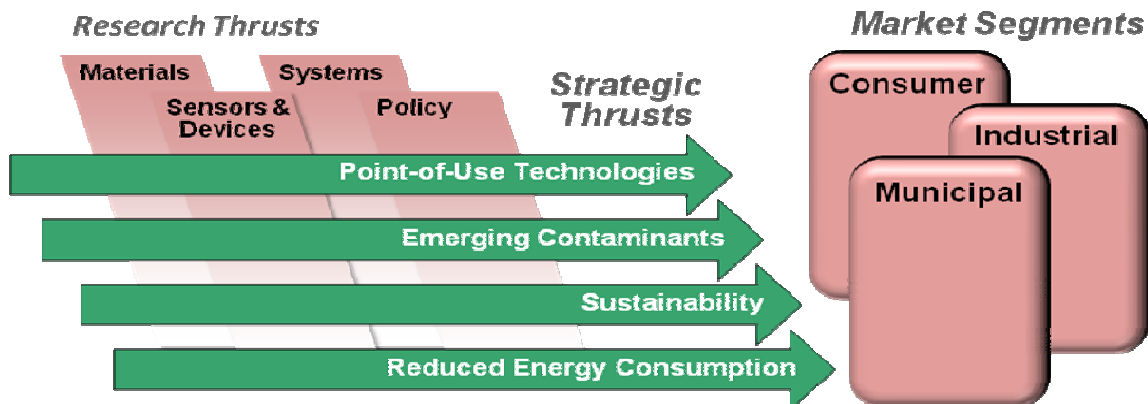
Each year research scientists propose projects to meet the needs outlined in the I/UCRC's Technology Roadmap. The IAB then votes on which projects to fund. The university scientists work closely with industrial scientists to ensure project deliverables and regularly report on their project progress to the IAB.

What is the Water Equipment and Policy I/UCRC?

In 2010 UW-Milwaukee, Marquette University and six companies formed the Water Equipment and Policy (WEP) I/UCRC. UWM serves as the lead university.

National Science Foundation	Current University Members	Current Industry Members
	 	<ul style="list-style-type: none"> • AO Smith • Badger Meter • Donohue & Associates • Marmon Water • Milwaukee Sewerage District • Pentair • Wisconsin Department of Natural Resources

WEP is the nation's only I/UCRC focused solely on advancing technology *and* policy in water-related industries. WEP research projects are designed to meet members' strategic water and wastewater needs in line with the Technology Roadmap created by the IAB and member universities.



WEP has developed core strengths (7 invention disclosures and two patent applications) important to its members including:

- Real-time sensors that detect contaminants in water and wastewater systems, and remote locations
- Nutrient removal, advanced wastewater treatment, anaerobic digestion and bioenergy generation
- Innovative materials that resist corrosion, reduce friction and save energy in water treatment and distribution systems, and self-healing materials that automatically repair cracks that develop

Nearly 30 research projects have been funded since WEP was founded. Current projects and lead university researchers include the following:

- *Biochar Product and Processing of Wastewater Biosolids* – Dr. Patrick McNamara and Dr. Dan Zitomer, Marquette
- *Evaluation of electrocoagulation-microfiltration for removal of trace heavy metals, hardness, and viruses* – Dr. Brooke Mayer, Marquette
- *Low-Cost Paper-Fluidic Device for the Detection of Extremely Low Concentration of Heavy Metals* – Dr. Woo Jin Chang, UWM
- *Miniature High Efficiency Transducers for Use in Ultrasonic Flow Meters* – Dr. Shri Joshi, Marquette
- *Novel Hybrid Nanofiber Membranes for Removal of Multi-Pollutants from Water* – Dr. Ying Li, UWM
- *Self-Cleaning Materials for Water Industry* – Dr. Pradeep Rohatgi and Dr. Michael Nosonovsky, UWM
- *A Disposable Paper-based Calorimetric Microfluidics Platform for Real-time Lead Ions and Bio-chemical Sensing in Water* – Dr. Chung Hoon Lee, Marquette

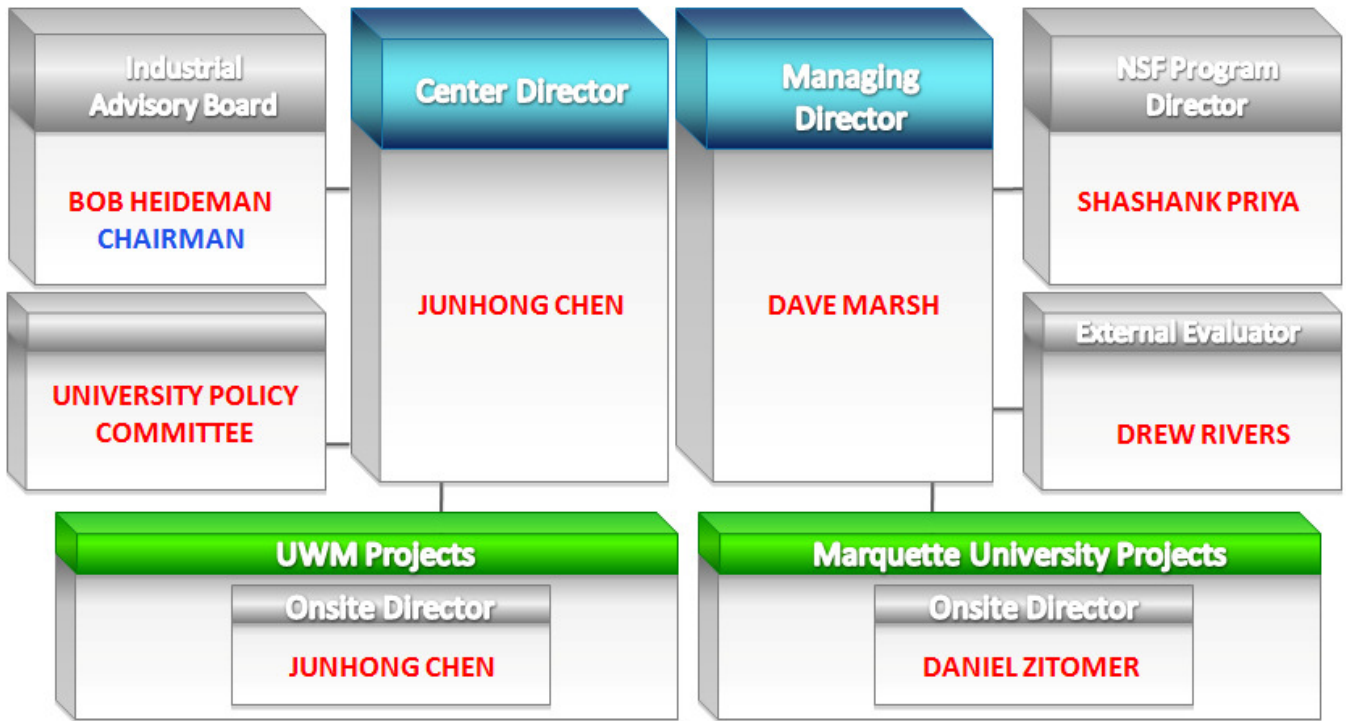
How you would benefit as a Member of WEP I/UCRC.

The Water Equipment and Policy I/UCRC provides low cost, low risk precompetitive research for its members from industry, government agencies, and NGOs that validate early stage innovations in water technologies and policy by collaborating with university faculty, post-doctoral scholars and students.

As a member of the WEP Industry Advisory Board, you will provide direction to WEP's research projects that directly reflect your needs, and your organization will benefit from important water and wastewater innovations. You will also have access to the interdisciplinary knowledge base of academic researchers and engage with other industry advisory board members to explore mutually beneficial opportunities. These are some of the benefits WEP members have said are important to them:

- ***LEVERAGED RESEARCH INVESTMENTS*** - 100% of your funds support the research. NSF and member universities fund center administration, and NSF limits overhead charges for university research to 10% compared to the overhead rates of about 50% universities normally charge for research conducted outside of an I/UCRC. Your funds will be significantly leveraged by pooling them with funds from other members. Current research dollars are leveraged by a factor of 6 to 1, and this will increase with addition of each new member.
- ***ROYALTY-FREE INTELLECTUAL PROPERTY*** – You'll benefit from royalty-free access to intellectual property created within the center.
- ***WORLD-CLASS RESEARCH*** – You'll enjoy one-stop access to interdisciplinary university professors, post-doctoral researchers, and graduate students working in state-of-the-art laboratories on research that would likely be too expensive for your internal staff to investigate.
- ***PROFESSIONAL PROJECT MANAGEMENT*** – You'll participate in formal periodic project reviews along with continuous informal interaction with researchers and timely access to reports, papers and intellectual property generated by WEP, which significantly reduces your risk to validate your innovative ideas.
- ***RECRUIT TOP ENGINEERING TALENT*** – Leverage recruitment opportunities to attract outstanding graduate students by engaging and collaborating with them over time on projects important to your company.
- ***Network With Industry Peers*** – You'll network with other Industry Advisory Board members and collaborate on mutually beneficial pre-competitive research.

WEP Organization



		
Center Director Dr. Junhong Chen jhchen@uwm.edu 414-229-2615	Marquette Site Director Dr. Dan Zitomer daniel.zitomer@marquette.edu 414-288-5733	Managing Director Dave Marsh marshd@uwm.edu 262-227-2277

Companies and organizations in the U.S and overseas interested in collaborating on creating the next generation of water technology and products are encouraged to learn more about WEP by contacting Dave Marsh, Junhong Chen or Dan Zitomer.