

RE-INVENTING THE NATION'S URBAN WATER INFRASTRUCTURE
[ReNUWIt]
ERC Industrial Membership
PROGRAM DESCRIPTION AND OPERATION

BACKGROUND

The National Science Foundation ("NSF") has provided funding in support of education and research for Re-inventing the Nation's Urban Water Infrastructure [ReNUWIt Program] to Stanford University, the University of California-Berkeley, Colorado School of Mines, and New Mexico State University (hereinafter collectively with Stanford are called "ERC UNIVERSITIES"). In conjunction with the research activities under the ReNUWIt Program, Stanford has created this Industrial Membership Program to facilitate the implementation of the ReNUWIt Program.

The Engineering Research Center ("ERC") is a unique resource for its industrial members, providing a collaborative environment whereby the educational and research expertise of all industrial members can be leveraged to develop better understanding of urban water management to provide reliable and energy-efficient water supplies in ways that embrace the importance of engineered solutions tailored to local needs, the integration of natural systems into urban water infrastructure, and social and economic factors that stimulate industrial innovation.

The mission of the ERC Program is articulated in the ERC's strategic plans for research, university education, pre-college education, industrial collaboration and the innovation ecosystem, and infrastructure including diversity. NSF guidelines will apply to intellectual property conceived or developed in the performance of the NSF funded projects, and parties contributing to these projects will be offered first option of a non-exclusive, royalty bearing license, on terms to be determined, as explained in the ERC Intellectual Management Plan. After the option period has passed, the intellectual property may be offered to non-ERC collaborators.

To help accomplish the ReNUWIt Program's mission, this Industrial Membership Program has been established in order to create a culture of innovation and mechanisms for translating ideas from university research into professional practice. The members' guidance and active participation will help the ReNUWIt Program to realize its mission.

MEMBERSHIP ELIGIBILITY AND GOALS

The ERC for Re-inventing the Nation's Urban Water Infrastructure welcomes membership into the Program by any corporation, company, partnership, sole proprietorship, utility, non-profit organization or any other legally recognized business entity, or any agency of government, government office, or government organization duly authorized by the United States Government or government of any State or Nation that agrees to support the ERC mission and the goals of the ERC Industrial Membership Program and makes its annual membership contribution. The goals of the program include:

- Active participation in advancing the ERC research through an innovation ecosystem
- Providing guidance on strategic planning and research
- Serving on an industrial advisory board (IAB) that analyzes ERC activities
- Providing insight into real-world challenges associated with new technologies
- Contributing in-kind and cash resources to research

GENERAL PROVISIONS

MEMBERSHIP CONTRIBUTIONS

The ERC Industrial Membership Program offers a multi-level membership structure that is based upon the number of full time employees within the member's corporate entity:

<u>Membership Structure</u>	<u>Annual Contribution Amount</u>
Associate Member (less than 15 employees)	\$2,000
Member (between 16 and 49 employees)	Proportional from \$2,000 to \$10,000
Member (greater than 50 employees)	\$10,000
Principal Member	\$25,000
Student Fellowship Member	\$50,000
Non-profit Organization (IRS code 501(c)(3))	\$5,000

The Membership Structure shall not be changed except upon recommendation by the ERC Research and Industrial Liaison Officer (RILO) and approval of the ERC Executive Committee. Upon approval of the ERC Research and Industrial Liaison Officer, Principal Members may designate their annual contribution be directed towards an ERC research thrust or theme.

In addition to the Membership Structure above, Industrial Members who wish to support a particular research topic above the level of their annual contribution may do so by providing such funding support directly to the ERC UNIVERSITY under a separate agreement or arrangement, so long as the terms of such agreements or arrangements are consistent with, and do not conflict with, ERC research activities.

Payments shall be made annually, with pledges by November 1 and payments received by February 1, and are non-refundable. In order to facilitate planning and meaningful collaborations among members and ERC researchers, it is intended that members pledge a renewable two-year engagement.

In-kind contributions exceeding \$25,000 annually for direct support of on-going projects may substitute for the annual contribution. In-kind contributions may include the development of new test beds, operational support of existing test beds, analytical or computing support, real property, equipment, supplies, and the collection and processing of data for ERC research. In accord with NSF requirements, the basis for valuing the in-kind contribution must be documented annually. The ERC Research and Industrial Liaison Officer shall have the final decision whether to accept or deny any in-kind contribution, and its valuation, for ERC research.

An ERC UNIVERSITY may request that the ERC Research and Industrial Liaison Officer waive the membership fee for an organization that is not receiving funding from the ReNUWIt Program under one of the following conditions:

- a) The organization is directly contributing to the goals and objectives of the ReNUWIt Program at an ERC UNIVERSITY; or
- b) The organization is directly maintaining certain test beds (e.g., unique experimental facilities) that are being used by ERC researchers for ReNUWIt Program purposes.

The ERC Research and Industrial Liaison Officer, may at his/her sole discretion, agree to waive the membership fee for such organization for a specified period.

ERC Industrial Membership Program contributions will be used to off-set costs of program

management and ERC operations, including the costs of travel, workshops, and ERC administrative expenses in support of strategic planning, seed-funding of new or innovative activities, and sustaining collaborations among members and ERC researchers.

All educational, research and other programs and administrative activity of the ERC Industrial Membership Program will be conducted with pooled resources with contributions from ERC Industrial Members, and other sources, including NSF, as long as expenditures from these pools are deemed appropriate for the establishment and operation of the ERC.

BENEFITS OF ERC Industrial MEMBERSHIP

Industrial Members are entitled to the following ERC Industrial Membership benefits:

- Early access to ReNUWIt Program research products such as reports, papers and other publications originated by faculty and researchers of the ERC Universities prior to dissemination to the general public. Early access may include papers in publication, annual reports, poster research briefs, and discussions with faculty and students.
- Data and information resulting from the ReNUWIt Program research will be shared with Industrial Members and ERC Universities, and such Industrial Members and ERC UNIVERSITIES may utilize and disclose such data and information within the conduct of their normal business. The ERC Universities retain the first right to publish the results of the ReNUWIt Program research.
- Industrial Members will have access to facilities and instrumentation utilized in the ReNUWIt Program research, but such access is subject to any requirements or limitations of the organization whose facilities and instrumentation are being accessed. These arrangements would be decided on a case-by-case basis to advance ReNUWIt Program research and accelerate innovation.
- Industrial Members may request on-location short courses to be provided by ERC UNIVERSITIES at fees to be negotiated between ERC UNIVERSITIES and Industrial Members to cover costs.
- Industrial Members will have access to the ERC Web Site, which comprises an electronic information network maintained by the Center for timely exchange of information, e.g., accepted or submitted papers or working drafts as appropriate, annual progress reports, and created knowledge base of research advances.
- Industrial Members who wish to support a particular ReNUWIt Program research thrust or topic above the level of their Annual Fee may do so by providing such funding support directly to the ERC UNIVERSITY under a separate agreement or arrangement.

INDUSTRIAL MEMBERSHIP PROGRAM MANAGEMENT AND OPERATION

The ERC Industrial Membership Program is led by an ERC Research and Industrial Liaison Officer, who works with an Industrial Membership Program Executive Officer, who is a Stanford faculty member, for management of the ERC Industrial Membership account. The ERC's Executive Committee supports the ERC Research and Industrial Liaison Officer by recommending collaborative interactions, strategic planning and research topics to the ERC Research and Industrial Liaison Officer, as well as provide advice to guide the overall ERC research and educational programs.

The ERC Industrial Membership Program is created to foster collaborative relationships with companies or other entities to promote the ERC Industrial Membership Program's mission through membership on the ERC's Industrial Advisory Board (IAB). The IAB is expected to play an important role in advancing the goals of the ERC, including creation and demonstration of the scientific, technological, economic and institutional feasibility of innovative methodologies and systems governing urban water infrastructure, assisting in the transfer of research discoveries and observations for the public benefit, and developing an interdisciplinary education program. The IAB is administered by Stanford through a Research and Industrial Liaison Officer (RILO).

The IAB will consist of representatives from each Industrial Member's organization. The IAB shall nominate from its membership IAB representatives to serve on an Industrial Advisory Board Executive Committee (IAB-EC). For the first year during startup, the IAB-EC Chair and co-Chair shall be appointed by the ERC Industrial Membership Program Executive Officer. The number of IAB-EC members and appointments shall be approved by the ERC Research and Industrial Liaison Officer. The IAB-EC will be managed by the RILO, including supportive administrative tasks. The IAB-EC will be constituted, to the extent reasonably possible, so as to represent the broad spectrum of the IAB membership and will ensure the overall synergy of the research carried out in various thrust areas, and make recommendations to the Executive Committee.

The IAB will assist with identifying and recommending priorities of ERC educational and research programs to the ERC Research and Industrial Liaison Officer and Executive Committee and participate in the evaluation of progress towards the ERC's goals and objectives. The IAB members will conduct an annual SWOT analysis of the ERC research thrusts and provide the analysis to the IAB-EC Chair, the ERC Research and Industrial Liaison Officer and the IAB Executive Committee.

The rights and obligations of ERC Industrial members shall extend only to ERC Industrial members in good standing and their affiliates or subsidiaries that routinely share in a free flow of technical information or participate in related research or educational activities in support of the ERC.

The IAB Executive Committee shall recommend new members for approval by the ERC Industrial Membership Program Executive Officer. The RILO will review members annually and make a recommendation to the ERC Industrial Membership Program Executive Officer for continuing beneficial relationships or terminating relationships that are not benefitting the ERC.

The requirements for ERC Industrial members participating in the ERC are defined below. The IAB duties include:

- a) Meet as a group of IAB participants twice a year with ERC researchers during semi-annual reviews
- b) Provide advice and recommendations on developing the strategic plan
- c) Review overall progress against strategic goals
- d) Critique the progress and direction of research thrusts including an annual SWOT analysis
- e) Discuss the strategic plan and suggest potential modifications based on research results
- f) Review and suggest potential changes to the education efforts
- g) Engage in joint research and experimental test beds to validate ERC research results in practical applications
- h) Assist in translating ERC research results through commercial implementation
- i) Recommend industry speakers for workshops and seminars to promote the mission of the ERC