

KAUST Industrial Collaboration Program



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SECTION 1 – A Unique Two-Tier Approach to Industrial Collaboration

KAUST Industrial Collaboration Program (KICP) is designed and managed both centrally and at the level of each KAUST Research Center in order to maximize the chances of effective industrial collaboration with partners both within Kingdom and globally. Membership (annual fee base) of the umbrella KICP (tier one) provides the resource to ensure breadth of access to and awareness of all KAUST research, seminars, events, networking events, conferences information, etc., and co-funds with each participating Center Director the establishment of a Center Liaison Officer (CLO), under the Center Industrial Affiliates Program (tier two), whose task is to focus on and build the relationship between individual Centers and industry in a coordinated fashion with the broader needs and role of KAUST.

Companies, universities, and governments need to be innovative if they are to remain globally competitive. KAUST is acting as a significant investor building up infrastructure and providing substantial leverage potential to industry. Industrial members may become involved in educational activities, offer practical experience to KAUST faculty and students through the hosting of faculty sabbaticals, student internships, and on-site seminars. KICP members can also participate within the Centers in courses, seminars, and the co-advising of students. Members also have the opportunity to recruit the best students on graduation.

SECTION 2– KAUST Industrial Collaboration Program (KICP)

KICP has two mutually supportive functions. First, it provides opportunities for collaboration between the University and its associated academic partners with those in industry to further the economic development of the Kingdom and neighboring countries. Second, it provides a feedback loop to support and underpin the core academic mission of the University and to enrich the research experience of both faculty and students. In addition, membership provides our collaboration with recruiting and outreach support, offers both employment and funding prospects to students, and offers challenging and meaningful research collaborations for our faculty.

Membership of KICP may begin at any time during the calendar year, and the membership level is determined by a collaborator's total contribution to the University.

KICP seeks to engage key partners from industry, individuals, foundations, private associations, government departments, and organizations with a keen interest in the translation of knowledge into economic growth and job creation.

KICP office will be staffed by a manager and assistant appointed by director of Research Park and Industrial Collaboration. The CLO will both report to the Manager of KICP and each appointed Center Director. Following the deduction of overhead costs, the co-funding of the CLO, and the funding of strategic road-map studies, net proceeds from KICP will be used to further fund KAUST research and its distribution will be at the discretion of the provost.

KICP and each Center will derive advice, guidance, and support from an Industrial Advisory Board (IAB).

1. Governance

KICP will be governed by an IAB consisting of certain members of KAUST management and a single representative from each of the Founder members. The chairman of the IAB will be the senior vice president for Research and Economic Development.

Also represented on the IAB will be the vice president for Economic Development, vice president of Research, the provost, and the directors of the Research Park and Technology Transfer Office. Protocols and procedures for the IAB will be set out by KAUST management with input from the members of the IAB. Secretarial support for the IAB will be given by the office of the director of Research Park and Industrial Collaboration.

2. Resources

KICP funds are used to:

- finance KICP initiatives;
- provide support for educational outreach to the community within KAUST and the region, e.g., Enterprise Forum, national and local business plan competitions, training workshops for the broader community;
- support strategic studies, e.g., KAUST Foresight,¹ liaison with other academic resources within the Kingdom; and
- co-fund a CLO for each participating KAUST Research Center. The CLO will report to both the Center Director and Manager of KICP.

3. General Benefits of KICP

KICP members will benefit through:

- the harnessing of innovative thinking and research to create competitive and innovative products and services, access to new ideas, and know-how;
- the opportunity to learn about and possibly participate in the creation of spin-off companies;
- participation in professional networking and knowledge-building events in connection with the program's seminars, conferences, and workshops;
- access to the best students in their fields of research as a source of future executive and engineering talent (internships, etc.);
- access to KAUST core facilities and technical assistance;
- interaction with faculty members who are internationally recognized experts and who are involved in research that is at the forefront of exploring new solutions to tomorrow's engineering and business challenges; and
- access to leading university research programs at both KAUST and its associated universities in strategic topic areas of the current KAUST Global Research Partnerships (GRP) (Table 1), KAUST Thuwal Research Centers (Table 2), and KAUST Special Partnerships (Table 3).

¹ A process of road-mapping the key scientific, technological, and industrial milestones for a particular industry of interest with input from academia, industry, and government, including the alignment of policy and investment necessary.

Table 1. KAUST GRP Centers and Centers-in-Development

Academic Partner	Global Research Partnership Research Focus
Cornell University	KAUST-Cornell Center for Energy and Sustainability
King Fahd University of Petroleum and Minerals	Transformative Research in Petrochemicals and Polymers
University of Oxford	Oxford Centre for Collaborative Applied Mathematics (OCCAM)
Stanford University	The Center for Advanced Molecular Photovoltaics (CAMP)
National Taiwan University	Solar Energy Research Center (SERC)
Texas A&M University	Institute for Applied Mathematics and Computational Science (IAMCS)
Utrecht University	Center for Soil, Water, and Coastal Resources (SOWACOR)

Table 2. KAUST Thuwal Research Centers (September 2009)



Table 3. KAUST Special Partnerships

KAUST Research Global Centers	Partners	Project(s)
Marine and Ocean Research	WHOI	Coastal Hydrography and Circulation
		Corals and Reef Ecosystems
		Science and Economics for Fisheries and Aquaculture
Red Sea Science	AUC	An Environmental Approach for the Study of Marine Organisms in the Red Sea
	HKUST	Microbial Genomics and Bioactive Compounds of the Red Sea
Water Desalination	NUS	Solar-powered Adsorption Desalination
Membranes	NUS	Polymeric Membrane Materials for Desalination
Catalysis	NUS	Design of Functional Nanostructured Materials
	IFP	Computer-assisted Discovery and Elucidation of Catalysts for Economic Development of Saudi Arabia
	TUM	Catalysis, Carbon Dioxide Fixation, and Sequestration
Molecular Materials	HKUST	Micro-fluidics Laboratory
	AUC	Micro-electrochemical Systems: Devices and Sensors
Solar Energy	AUC	Integrated Desert Building Technologies
3-D Modeling and Visualization	UCSD	Visualization and Virtual Reality Center at KAUST

AUC	The American University in Cairo
HKUST	Hong Kong University of Science and Technology
NUS	National University of Singapore
IFP	Institut Français du Pétrolé
TUM	Technische Universität München
UCSD	University of California at San Diego
WHOI	Woods Hole Oceanographic Institute

SECTION 3 – Membership Levels

Within KICP, there are three categories of membership: (1) Founder, (2) Supporter, and (3) Small Business. Membership is a minimum three-year commitment.

1. Founder Member (Annual Contribution \$100,000)

There are several privileges to being a Founder member of KICP; they may include:

- representation in KICP IAB;
- playing a key role in defining and refining the role of KICP;
- the ability to inform and in turn help shape the future academic mission of KAUST;
- playing a major role in assisting KAUST and KICP in addressing its underlying economic mission of job creation;
- access to the full content of strategic studies, such as the KAUST Foresight Reports;
- privileged key-word access to the 'closed-garden' KAUST GRPs' international research network; and
- the use of KICP's logo on company presentation material.



In addition to these benefits, Founder members also can expect:

- access to and the potential to contribute to all KAUST symposia, in- and out-of-Kingdom;
- match-making efforts between Founder members and affiliates, research projects, faculty, and students;
- invitations to special events;
- specialized recruitment information; and
- availability of faculty, scheduling permitted, to give research talks.

2. Supporter (Annual Contribution \$50,000)

The privileges of being a Supporter member include:

- access to and the ability to contribute to all KAUST symposia in-Kingdom;
- in-Kingdom match-making between industrial collaborators, affiliates, research projects, faculty, and students;
- invitations to certain in-Kingdom special events; and
- employment and internship opportunities for talented and motivated students.

3. Small Business (Annual Contribution \$20,000)

Membership at the Small Business supporter's level is designed to help small companies and KAUST-driven start-ups develop their businesses through ties with the University and its extensive world-wide network of faculty and resources. Additional benefits include:

- access to advice and mentoring from the service team within the Center;
- access to faculty and students at KAUST, time and interest permitting;
- access to certain KAUST symposia and Center seminars; and
- the opportunity to employ students on summer internships and opportunities for collaboration on partners' research needs. Such interactions can take many forms – from on-site presentations to projects involving faculty, graduate, or undergraduate students.



SECTION 4 – Center Industrial Affiliates Program (CIAP): Tier Two

The Center Industrial Affiliates Program (CIAP) will have, for each participating KAUST Research Center, a CLO serving as a liaison between the Center, industrial partners, and KICP. This pivotal role will assist in the efficient coordination of the Center's research and facilitate the transfer of technology. Each Center Director will, in conjunction with the KICP office, agree on the specific role of the CLO in line with the specific needs of the Center. The CLO will have had extensive industrial experience and the maturity to interface between the relevant industries, students, faculty, and University administrators. The actual job description of each CLO will vary between Research Centers but may consist of some or all of the following, i.e., customer service; marketing; Center promotion; preparation of informational materials, annual reports, and data; liaison with Technology Transfer Office; intellectual property management; proposal writing; conference planning; student/industry relationships/interface; and the overall Center's representation to the broader community.

The CLO is primarily responsible for managing the community of industrial partners and collaborators assisted by the Center Director, staff, faculty, and students. The CLO will ensure effective communication through the creation and dissemination of literature, newsletters, annual reports, articles, brochures, etc., and the organizing of conferences, technical meetings, and workshops. Other mechanisms used to broaden interaction will include: student internships and mentoring, faculty sabbaticals, researcher exchange Center/collaborator, IABs, review meetings, collaborative research projects, specific-sponsored research agreements (SRA), intellectual property licensing, short courses, and tours.

1. CIAP Membership Categories

The following CIAP membership categories and key benefits are proposed:

- a. Principal Members** – have opportunities to learn about the Center's early-stage intellectual property, subject to confidentiality restrictions, and work closely with the Center to help guide its research direction.
- b. Associate Members** – participate in annual seminars, short courses, and publications and have privileged access to the Center's faculty, students, facilities, and outreach programs.
- c. Affiliate Members** – receive in-kind contributions – product evaluations for donor companies.

The levels of financial contribution for each category will be defined by the Center Director and the CLO and will take into account the nature of the collaborative project. To maximize the chances of effective industrial collaboration, a Center Director and team will establish the vision and strategic plan for industrial interaction during the initial stages of the Center's development.

2. Collaborative Research Contract Mechanisms

The CLO, working closely with the Center Director, will seek to establish the most appropriate contractual mechanism to facilitate industrial collaboration. It is envisioned that the contractual relationship between the industrial partner/collaborator will be through one of two key mechanisms:

- a. Pre-competitive research group-sponsored (PCRG) research (more than one commercial entity sponsoring the research and in research endeavors which are less closely defined). For such an arrangement, the standard agreement will be based on KAUST owning all the intellectual property in all the results of the group-sponsored research (excluding any background intellectual property introduced by any other party) and on all other parties enjoying a non-exclusive, perpetual, royalty-free, worldwide, sub-licensable (but non-transferable) license to said intellectual property. In essence, PCRG provides a route for pre-competitive research (funded by capped cost-share percentages) and the use of non-dilutive capital (i.e., primarily KAUST funding to the benefit of the project sponsors).
- b. Specific-sponsored research agreements (SRA) with individual Centers and faculty with more focused goals and research objectives. Terms of the SRA to be negotiated with the Office of Research Services and the Office of Technology Transfer and to include specific intellectual property terms of ownership.

Each Center should collaborate with industry from the early stages of its vision creation and strategic planning. Collaboration extends to technology development and application.

3. CIAP IABs

Each CIAP will have an IAB. The IAB will be advisory in nature and final decisions must be made by the Center Management. It is envisioned that a Center IAB will carry out all or some of the following activities:

- perform annual strengths, weaknesses, opportunities, and threats (SWOT) on the Center and critique the progress and direction of each research project;
- help define the strategic plan – define the road map – for the Center and recommend changes including the need for additional resources;
- identify additional areas for cooperation with industry and/or other institutions;
- review overall progress against strategic goals;
- supply and appoint industry speakers for workshops and seminars; and
- review filed invention disclosures and discuss potential improved patent action with the KAUST Technology Transfer Office.

It is proposed that each IAB consists of all Principal Members and elected Associate Members. The following is a useful guideline for maximizing the benefit of having an IAB to the research efforts of the Center:

- weekly meetings - IAB Chair, co-Chair, Secretary, CLO, and Center Director;
- monthly teleconference meetings – small IAB Executive Committee;
- quarterly teleconference meetings – full IAB; and
- face-to-face full IAB meetings held every six months in conjunction with site visit and annual seminar and review.

SECTION 5 – Conflict of Interest and Intellectual Property

Research involving industry can potentially create a number of conflicts of interest that have to be managed by the CLO through the KAUST Conflict of Interest Committee. Similarly, all matters relating to intellectual property must be managed by the CLO in intimate conjunction with the Technology Transfer Office, in accordance with KAUST policies and procedures.

Confidentiality restrictions will play a critical role in KAUST's research collaborations. CIAP and KICP members shall adhere to KAUST's confidentiality policies and may, in certain instances, be required to sign confidentiality agreements.



