Research Overview at AAU (Science Disciplines)

Does Al Ain University have measures of interdisciplinary research success amongst science disciplines?

Al Ain University in the UAE is dedicated to fostering research excellence and innovation to address critical intellectual and social issues at the regional and global levels. To achieve this goal, the University prioritizes interdisciplinary research, particularly research that tackles complex challenges.

The University's research centers, programs, and institutes cover a wide range of topics, from medical research to social and political issues. As a result, the University is committed to making a positive impact on society and creating a better understanding of the world.

Al Ain University's research office oversees research projects, both internally and externally, and manages the logistical aspects of project funding and publication. Additionally, the University's technology transfer office encourages faculty and students to engage in entrepreneurship and commercialize their research outcomes.

Through these efforts, Al Ain University has earned a reputation as a leading institution in the UAE and the wider Middle East. Measures of interdisciplinary research success at Al Ain University include publishing research in top-tier international journals, securing funding from national and international agencies, producing research outcomes that have a significant social impact, engaging in research that extends beyond the classroom, and collaborating with researchers from different disciplines.

The Deanship of Scientific Research & Graduate Studies (DSRGS)

About the Deanship [1]
The Deanship of Scientific Research & Graduate Studies (DSRGS) is the organizational unit of the Al Ain University responsible for the planning, management, promotion and support of research activities that are carried out by the academic departments through internal and external funding. Also DSRGS is responsible for the administration of programs of instruction leading to graduate credit and graduate degrees. It utilizes the specialized faculty and physical facilities of the academic colleges.

The Deanship is managed by Dean of Scientific Research & Graduate Studies, and the Dean has primary responsibility for the academic direction and administration of the Deanship, and the functional responsibilities of scientific research include research activities such as funded research projects, professional conference attendance, sabbatical leaves, release time, research scholarship programs and research awards. In addition, the deanship manages a central workshop that serves research needs of the colleges. The Deanship plans and manages research and other scholarly activities through the scientific research Council or Committee.

Vision [2]
To establish conducive research environment and graduate programs that enable Al Ain University(AAU) to be one of the leading higher institutions in a national, regional as well as international levels in the research quality benefit and graduate programs, and relevance to the local society.

Mission

To provide a stimulating environment and continuous support that reinforce AAU faculty members to enhance its national, regional and international levels in quality research and graduate programs in different discipline of pharmacy, IT engineering, education, management and other related fields of significant importance to the UAE.

Values

- To engage in a continuous process of increasing the stock of useful knowledge.
- Teamwork and to collaborate in research with other institutions.
- To ensure high quality Education for Graduate students.
- To ensure Integrity and transparency of scientific research activities.
- To create new scientific instrumentation and methodologies.

Goals and Objectives [3]

The goals of the Deanship are as follows:

- To help produce research and generate innovative activities by encouraging Research proposals from faculty and staff.
- To engage and encourage research competitiveness by providing seed funding for early-stage research projects.
- To link research initiatives to the university mission.

Research and Scholarly Activity Outputs [4]

AAU believes that institutional reputation among research universities and research productivity are tied together. Research productivity is very crucial for the hiring and promotion of faculty members. To enhance research productivity, AAU regularly evaluates the output of its research and scholarly activities at the university level as well as the college level. Each college submits a summary report for all publications (research paper, books, conferences) conducted by faculty members at the end of each semester and at the end of the academic year to the university top management and the DSRGS. Moreover, each college submits an up-to-date list of publications in Scopus-Indexed journal at the beginning of each month of the academic year. Such evaluations should help the university management to take necessary actions to develop and enhance the quality of its research and scholarship. It is worth mentioning that the number of annual scientific journal papers published in journals indexed in Scopus has increased during the last three years. The overall increase in volume can be attributed to the incentives system for scientific publishing adopted by the university. The incentive system was revised to strengthen this leap towards achieving one of the strategic goals of the university to increase the percentage of faculty members who publish in high quality journals indexed in Scopus and other reputable journals.

AAU recognizes the role of students' research in promoting the research ambitions of the university and the importance of integrating students more effectively into the research culture of the institution. AAU encourages students to be involved in research that has an impact on the social development of the community, supports the national goals and contribute to the development and revision of curricula. Student research activity should be under the supervision of a faculty member in AAU to ensure the quality of the submitted work (See Students Involvement in Research Policy).

AAU believes that the demand for increased research productivity is attended by the challenge of effectively measuring its scholarly output. To do this, AAU considers a variety of factors in several different ways since measurements of progress and success must change as institutions develop. AAU considers many factors to measure its research productivity such as:

Number of externally funded research projects.

- Number of publications in reputable journals.
- Number of publications in Scopus-Indexed journals.
- Number of presentations in high reputable conferences and forums.
- The average number of refereed published research per each faculty member per year.
- The value of the grant and regularity of being "PI" on a research grant.

In measuring publications, various metrics are being used to assess the quality as well as the quantity of a researcher's output. Such measures include the quality of the journal and the number of citations (The number of times other researchers cite a publication).

In addition, Al Ain University has its Journal of Business and Law. [5]

AAU Journal of Business and Law is an International Scientific Peer reviewed Open access journal. It is published by Al Ain University in the United Arab Emirates with no publication cost. The journal applies strict and accurate requirements for both reviewing and publication. The general scope of the journal lies in legal, business and economic research and closely related disciplines. The journal accepts for publication both Arabic and English articles on local, regional and international levels. It also publishes comments on judicial rulings and principles. The journal has a varied range of research topics which includes (but not limited to) the following list:

- Business & Management
- Accounting
- Finance
- Banking
- Marketing
- MIS, HRM
- Economics
- Data Mining
- Business Analytics
- Economics Education
- Business Intelligence
- Business Law, Trade Law
- Intellectual Property
- Consumer Protection
- Corporate Governance
- Contract Law
- E- Commerce
- Litigation Procedures and Execution
- Arbitration and Alternative Dispute Resolutions

- Maritime Law
- Civil Law, Labour Law
- Private International Law
- Criminal Law, Criminal International Law
- Public International Law
- International Humanitarian Law
- Human Rights
- Constitutional Law, Administrative Law Environmental Law

Scientific Research Support Fund (SRSF) [6]

AAU has adopted the "Scientific Research Support Fund (SRSF)" as one of its key principle strategies to contribute to a productive society through the enhancement of Research and Development (R&D). The SRSF main goal is to fund scientific R&D projects of excellence -within and across all disciplines that, will build capacity, expertise and develop collaborative relationships for AAU researchers. This will definitely invest in the development of a highly skilled, highly productive, and competitive research community and enable AAU researchers to compete nationally and internationally for other competitive research funding.

The Deanship of Scientific Research & Graduate Studies with the Administration of the university are dedicated to supporting researchers and students in their research activities. AAU has budgeted a 5% of the total operational expenditure to support faculty research, innovation, creative, and scholarly activities annually in order to maintain and boost the growth of its ongoing research capacity. This in turn, shall maximize the impact of research through the dissemination of knowledge and related activities.

The university continues to enhance its educational research infrastructure by increasing efforts to pursue new external funding opportunities for faculty research. AAU strives to create a supportive environment to provide guidance and support to faculty members to help them attain excellence in research and creative accomplishments. To achieve such a goal, AAU encourages faculty members to collaborate with members of other colleges to create a strategy to support the research and scholarly activities.

The major aim of the university research strategy is to provide all means of support for faculty members of all colleges to produce high quality research that leads to a continuous change towards a better society and improvement of human lives. Such support can be manifested in providing financial research funding and securing the required time for faculty members, supporting scientific publications, supporting participation and presentation in conferences and seminars, establishing databases of research productivity, rewarding research productivity, and providing research resources.

Community Engagement [7]

As part of its philosophy, Al Ain University has asserted that it is "a symbol of the society's renaissance and a significant pivot around which cultural life revolves on the intellectual, scientific, academic, and technological levels." The University has worked to accomplish these principles as part of its commitment to catering for the UAE's need for highly qualified leaders who possess a profound and comprehensive understanding of the requirements and challenges of the twenty-first century in all fields and in all walks of life.

In order to verify its course and to assess the needs of the community at large, the University has engaged in a range of services, studies, and activities so as to communicate with the stakeholders to help serve the educational process and the local community as well as the Arab society. This is congruent with the University's vision to maintain contact with alumni and stakeholders through actively taking part in efforts

directed towards achieving compatibility between the learning outcomes of higher education and the needs of the job market.

Consequently, through community service, the University aims at:

- Following up alumni and evaluating their level of knowledge in the job market;
- Building a database related to the alumni and the needs of the job market;
- Building bridges of cooperation with different stakeholders in the local community;
- Identifying the needs of the local community as well as the challenges facing it especially in relation to 'globalization'; and
- Establishing joint accords with various organizations to look into the problems facing the local community and finding effective remedies.

It is worth noting, that the Deanship of Scientific Research and Graduate studies emphasizes the impact of community engagement activities on three components:

- Impact on faculty members in terms of their shifting paradigm from teaching to learning. Most courses involve study cases relevant to particular community engagement activities.
- Impact on students in terms of raising their awareness about real life problems' solving, practices and how to apply theoretical concepts to real situation cases.
- Impact of community engagement in terms of advancing suggestions and recommendations to enrich program learning outcomes or/and offering courses to fit specific job market qualifications.

Collaborative Research and Scholarly Activity [8]

According to the AAU research instructions and guidelines, the cooperative arrangement in scientific research entails the development of cooperation with three bodies, including cooperation with other national, regional and international universities; industry; public, and private sectors. This cooperative arrangement statement is based on the university principles of openness and free dissemination of research ideas. It also ensures that profit-oriented companies should use university's research ideas on professional and ethical basis. AAU encourages conducting research with individuals from other institutions and international organizations. As evidence of that, several faculty members have published joint research papers with researchers from other universities. Several faculty members have collaborative work with local and international universities. AAU is aware of the role of research cooperation as an important form of engagement that the university can offer to communities. This engagement will also help AAU to utilize research resources effectively, especially that some resources have often not been used in university partnerships. The research strengths can be integrated more fully into partnerships with communities in the following forms:

1. Cooperation with Universities

AAU encourages field-specific collaboration with national and international universities and research institutions to develop extended partnership and enhance research quality on mutual benefit basis.

2. Cooperation between University and Industry

Research and development cooperation between universities and industry is quite hard because it involves uncertainty, high information use on asymmetries between partners, and high spillovers. Despite these difficulties, AAU is willing to play an important role in the academic fields and research central to arts and humanities, businesses, natural sciences, social sciences, technology and economics.

3. Cooperation with Public and Private Sectors

AAU encourages research cooperation with the public and private sectors that includes collaboration through joint research projects, sponsored research, consultation and expert assistance. Other important forms of cooperation include University researchers' participation in conferences and workshops arranged by government and non-governmental organizations as well. Graduate students are also encouraged to conduct research related to public interest.

Research centers

Artificial Intelligence Research Center [9]

Overview

The AI-RC provides support to the faculties' members and staff to respond effectively and efficiently to the new technological and research advances in the field of AI. The Center is dedicated for conducting AI-based research and consultations; and among its major objectives is to publish scientific journal papers, strengthen university's international collaboration, and organize conferences, seminars, scientific meetings related to the AI services, solutions and applications. The Center aims to provide AI-oriented research that can provide the best services and solutions to UAE community and governmental sectors. This can be achieved through the full utilization of all capabilities and capacities, and the optimal use of the University's financial, faculty, equipment's and human resources.

Vision

To be a distinguished research center at the national and International levels that seeks to realize creativity and excellence, and contributes to the AI research community according to the international research standards.

Mission

- To be committed in providing excellent research outcomes by performing high-quality research and publishing in high reputation journals,
- To acquire funding for conducting AI-based research projects
- To enhance the institutional capacities of governmental and private organizations in UAE in the field of AI-solutions through providing outstanding consultations and technical research/studies by utilizing the University's stock of expertise.
- To explore the issues of the UAE society in a spirit of responsibility and to actively contribute in providing the most creative AI-based solutions that help achieving the goals of comprehensive smart and automated development.

Goals and Objectives

The goals and objectives of the center are:

- Publish high quality research papers in reputational international journals and conferences.
- Increase the visibility of the University's research structures;
- Introduce new international cooperation in the field of AI;
- Utilize the University's capacities and financial/human resources to serve the AI-based development in UAE.
- Design customized AI solutions fitting the needs of UAE, in a professional, creative and institutional spirit.

- Provide technical consultations and AI solutions, responding to societal needs and contribute to the UAE provision of supporting AI deployment.
- Organize and manage training programs, seminars and conferences related to the nature of the Center's research.
- Encourage the university community, to respond to AI research calls, initiatives and programs;
- Prepare AI-related proposals and projects;

Health and Biomedical Research Center [10]

Overview

AAU Health and Biomedical Research Center aims to become a world-class center in innovative research, allowing faculty members from different disciplines to carry out research. It acts as the confocal point that coordinate and promote interdisciplinary research activity in the area of health and biomedical sciences. This research center provides direction for the growth and development in the scholarly activity, aligned with the strategic plans and objective of the university. AAU health and biomedical research center aims to:

- Contribute to the strategic educational and research missions of the university, the emirate of Abu Dhabi, and the UAE;
- Enhance the reputation of the university nationally and internationally and thus helps in improving University ranking and student's admission.
- Increase and effectively manage the resources and research support for its members and the wider university community;
- Provide education and training in research and related skills (internal programs: e.g., masters; external services and collaborations);
- Promote and facilitate collaborative research and enhancement of research networking capacity and infrastructure;

College of Engineering [11]

One of the most important commitments of AAU College of engineering is to perform high quality researches to be reflected in the national rankings of the AAU and in the Research Excellence Framework, and to publish in leading venues and attract high levels of citations. Therefore, the need is always there to increase the number of citations in our research, as papers with international partners and collaboration with leading institutions at the national, regional and international levels tend to be highly cited. Raising motivation in conducting research at both individual and group levels among the faculty members in the college is part of the research strategy. The college is committed to build its research capacity that is centered on improving the offered academic programs and innovating new undergraduate and graduate programs. Attraction and retention of research productive faculty, networking with partners in the public and private sectors, and organizing research venues (conferences, workshops, etc.) are the main elements of the college research strategy.

AAU College of engineering has identified areas of emerging research excellence in the field of Engineering. Conducting research in such areas of research excellence is essential part of the college's strategic research plan.

The main objectives of AAU College of engineering Research Strategy are to:

- Ensuring high quality scientific research.
- Promoting research that has high societal impact – regionally and globally.
- Ensuring competitiveness in research funding.

College of Engineering Research Groups:

- Software Engineering Research Group [12]
- Antennas and Propagation Research Group [13]

College of Pharmacy
College of Pharmacy Research Groups:

- Clinical Pharmacy and Pharmacy Practice Research Group [14]
- Drug Formulations, Analysis and Characterization Group [15]
- Drug Design and Action Group [16]
- Drug Delivery and Pharmaceutical Technology Group [17]

College of Law
College of Law Research Groups:

- Intellectual Property Rights Research Group [18]
- Commercial Law Research Group [19]
- International Law research group [20]

College of Business Research Groups: [21]
- Strategic Management and Organizational Excellence Research Group
- Entrepreneurship, SME's and family Business Research Group
- Applied Business and Social Economics Research Group
- Emerging Market Internationalization Research Group

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