RESEARCH TRENDS IN THE UAEU
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United Arab Emirates

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United Arab Emirates University

ESTABLISHED IN 1976, AROUND 13,000 STUDENTS
UNITED ARAB EMIRATES UNIVERSITY IS ACCREDITED BY THE WASC SENIOR COLLEGE AND
UNIVERSITY COMMISSION (WSCUC),
QS RANKING 385 (2014)

Colleges in the UAEU
- College of Business & Economics
- College of Education
- College of Engineering
- College of Food & Agriculture
- College of Humanities & Social Sciences
- College of Information Technology
- College of Law
- College of Medicine & Health Sciences
- College of Science

Research Centers in the UAEU
- Zayed Bin Sultan Al Nahyan Center for Health Sciences
- Khalifa Center for Genomics Engineering and Bioinformatics
- Roadway Transportation & Traffic Safety Research Center
- UAEU Center for Public Policy and Leadership
- Emirates Center for Energy and Environment Research
- National Water Center
- Date Palm Development Research Unit Department

Research Focus areas
- Health,
- Education,
- Energy,
- Water,
- Space,
- Transportation,
- Technology
Funding Opportunities

- UAEU Center-based Research (UCBR) Grant
- UAEU Program for Advanced Research (UPAR) Grant
- UAEU Startup Grant
- UAEU Joint Collaborative Projects with Other Institutions
- Consultations

UAE Spending on Scientific Research

- In 2011, UAE spent 0.49% of its GDP (2.5 $bn) on research and development (Canada spent 1.6% (25.7 $bn)
- In UAE, 0.03% of its GDP on scientific research, which is significantly below the 0.2% average that Arab countries spend on scientific research.
- In Canada, Science and technology spending by federal departments and agencies reached its highest level in 2010/2011 at $12.0 billion (0.66% of GDP).
CFA (College of Food and Agriculture)
- The only college in this field in the country
- Three programs are accredited by AIC (Agricultural Institute of Canada)
- Five Departments
- Three Experimental Sites:
  - Halophytes research farm
  - Aquaponics unit
  - Experimental farm

Graduate Programs
- Agribusiness and Consumer Science
  - Master of Agribusiness Management
- AridLand Agriculture
  - Master of Science in Horticulture
    - Doctor of Philosophy (PhD) Concentration: Horticultural Science
  - Food Science
    - Master of Science in Food Science
    - Doctor of Philosophy (PhD) Concentration: Food Science
- Nutrition And Health
  - Master of Science in Horticulture
  - Doctor of Philosophy (PhD) Concentration: Nutritional Sciences
- Veterinary Medicine
  - Doctor of Philosophy (PhD) Concentration: Animal Science

Department of Aridland Agriculture
- Offers two programs
  - BSc., Horticulture and Animal Sciences and Marine Fisheries
  - Accredited by AIC (Agriculture Institute of Canada)
- 12 Faculty members
- Number of annual graduates is about 20

Faculty Members Research Interests

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Research Interest</th>
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<tbody>
<tr>
<td>Dr. Firas Abu Elsamen</td>
<td>Assistant Professor and Chair</td>
<td>Plant Pathology</td>
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<tr>
<td>Elke Neumann</td>
<td>Assistant Professor</td>
<td>Plant Nutrition</td>
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<tr>
<td>Prof. Ahmed Hussain</td>
<td>Professor</td>
<td>Poultry Sciences</td>
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<tr>
<td>Dr. Ibrahim Belal</td>
<td>Associate Professor</td>
<td>Fish Nutrition</td>
</tr>
<tr>
<td>Dr. Shyam S. Kurup</td>
<td>Associate Professor</td>
<td>Landscape Management</td>
</tr>
<tr>
<td>Dr. Moustafa A. Fadel</td>
<td>Associate Professor</td>
<td>Protected Agriculture/ Hydroponics</td>
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<tr>
<td>Dr. Franz Helmut Lennart</td>
<td>Associate Professor</td>
<td>Irrigation</td>
</tr>
<tr>
<td>Dr. Mohamed Salem</td>
<td>Associate Professor</td>
<td>Climate change Biology</td>
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<tr>
<td>Dr. Jaber Aldahmani</td>
<td>Assistant Professor</td>
<td>Plant Disease &amp; Prevention</td>
</tr>
<tr>
<td>Dr. Abdul Jaleel Cheruth</td>
<td>Assistant Professor</td>
<td>Medicinal Plants</td>
</tr>
<tr>
<td>Dr. Dawood Al Ajmi</td>
<td>Assistant Professor</td>
<td>Desert Ecosystems</td>
</tr>
<tr>
<td>Dr. Mohamed AL Yahya'i</td>
<td>Assistant Professor</td>
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<tr>
<td>Dr. Dawood Al Ajmi</td>
<td>Assistant Professor</td>
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VRT Application of Phosphate Utilizing DGPS and RTK

Team: Moustafa Fadel and Ahmed AlMowafy

Evaluation of greenhouse microclimate performance under arid conditions utilizing wireless sensor networks

- Team:
  - Moustafa Fadel
  - Farag Sallabi
  - Arshad AlDaly

24 units of Libelium Waspmote® Gases board 2.0 were used to host four sensors to measure Co2, temperature, humidity and Ammonia and communicate with the gateway utilizing ZigBee-Pro protocol.

E- Surveillance of Commercial Poultry Farms

Team:
- Moustafa Fadel
- Prof. A. Hussein, Poultry sciences
- Prof. Farag Sallabi, IT and telecommunications

System Structure

Web-based Application

http://farmbiosecurity.uaeu.ac.ae/
Connecting Database to GIS map

- ArcGIS 10.1 does not allow to read MySQL
- Additional interface of Microsoft Access

Development of Hydroponic Garden Modules

- Team:
  - Moustafa Fadel
  - Dr. Shyam Kurup
  - Dr. Elke Neumann
  - Mr. Raed (MSc Student)
  - Mr. M. AlAbdoly
  - Mr. Ismail (graduated)

Production of Turf grass Sods in Hydroponics in different growth media

- Bermuda grass and Desitices
Final goal is to have an outdoor hydroponic landscape (Golf course, playground, etc.) and outdoor ornamental modules.

Development of a Novel Vegetable Farming Chamber Utilizing Zero-Water Cooling and Natural Lighting

“Towards a Green Organic Farming”

- Sultan Qaboos University, Sultanate of Oman
- Team:
  - M. AlIsmaily
  - Hemanatha Jayasuriya
  - Adel Al-Mahthour

- UAE University, UAE
- Team:
  - Moustafa Fadel, CFA
  - M. Farag, COE
  - M. Hamdan, COE
  - S. Kurup, CFA
Proposed System

Salicornia production in marshlands for biofuel

- Team:
  - Moustafa Fadel
  - Arnold
- Halophyte hydroponics
- Energy budget of Salicornia

Lighting System

Geo-spatial Analysis of Red Tide in the Arabian Gulf

- Team:
  - Dr. Eihab Fadhlurahman
  - Moustafa Fadel

Other research activities at UAEU


Acknowledgment
Thank You for Listening