

# ANNUAL REPORT 2023-2024





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### Dean's Message



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Dear members of the College of Science community,

As we conclude another eventful academic year, I am thrilled to share with you the remarkable successes and valuable lessons we have experienced together. Within this annual report, we take this opportunity to celebrate several significant milestones that have shaped the College of Science throughout the year.

The most remarkable achievement of the College of Science is its scientific research outcomes, where the college has topped in research productivity at the university level, namely, its faculty and students were able to publish in 2023

a total of 637 publications in Scopus journals, with an increase of more than 19% from 2022. Some papers were published in prestigious journals, with 11 papers in the top 1%, 210 papers in the top 10%, and 425 papers in the top 25% journals. COS Faculty members have recently been successful in receiving many internal and external research grants totaling AED 4,434,455.

In addition, we signed MOUs with the Technology Innovation Institute – Abu Dhabi, Akita University, Japan, Abu Dhabi Police Department, Dubai Police, The A.O. Kovalevsky Institute of Biology of the southern Seas of RAS – Russia, NetZero Technologies FZLLC – Abu Dhabi, New York University – Abu Dhabi and University of Ljubljana – Slovenia.

The College successfully expanded its relationship with the prestigious European Centre for Nuclear Research (CERN). One physics student took part in the CERN summer 2024 training program. Fifteen of our students participated in the Ministry of Education Student Exchange Program with the University of Wisconsin, Madison, USA. Our internship program continues to flourish, with 279 of our students gaining invaluable work experience across various institutions nationwide, thereby enhancing their preparedness for the competitive job market. Moreover, five of our best students spent a 3-week summer training at Oxford University.

Our commitment to attracting and nurturing talented students was a top priority throughout the year. Our student body now comprises of 1746 undergraduates, 139 Master and 82 PhD students. Moreover, we proudly graduated 285 undergraduate and 36 graduate students during this academic year.

Furthermore, I am delighted to share that two of our faculty members have been promoted to the rank of Full Professor, while two others have been promoted to the rank of Associate Professor.

As we bid farewell to this eventful academic year, I extend my heartfelt appreciations to each member of our College of Science community for their unwavering dedication, resilience, and commitment to excellence. Together, we have achieved remarkable milestones and took advantage of the opportunities presented by the challenges that crossed our way.

**Prof. Maamar Benkraouda**Dean, College of Science



## Vision & Mission

#### **Vision**

A beacon of scientific innovation, a host to a vibrant and creative scientific community, and a source of scientific solutions to the UAE and beyond.





#### **Mission**

The college aims at nurturing an innovative scientific environment that is inspiring to students, attractive to talented faculty, and conducive to strong partnership with the community and industry.

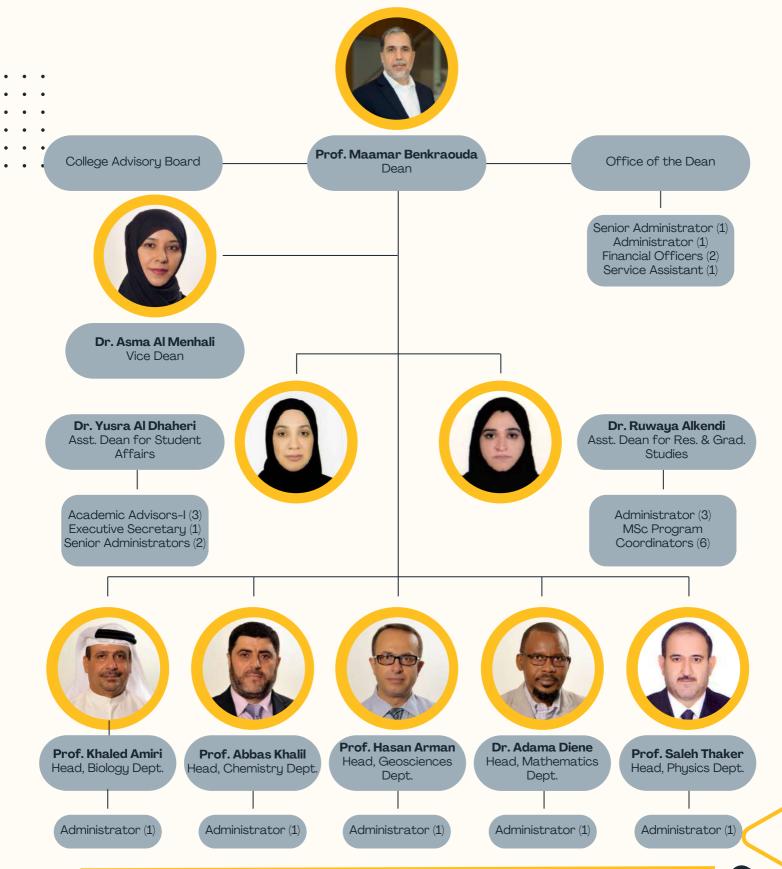


The College Advisory Board, composed of eminent individuals with governmental and non-governmental backgrounds, guides the College in attaining its mission and assists the College with its role in serving the nation. The Advisory Board met twice in 2023–2024, once in each semester, to review College plans and achievements. The College strategic plan was reviewed regularly in these meetings. The Advisory Board also assisted with the hiring of some of the College graduates and the establishment of a greenhouse.

Name	Affiliation
Mr. Sultan Al Hajji (Chairman)	Vice President for Public Affairs and Alumni Relations, Mohamed bin Zayed University of Artificial Intelligence.
Dr. Abdulla Ahmed Al Mandous	General Director, National Center of Meteorology
Mr. Saeed Mohammed Al Muhairi	Executive Director, Emirates Metrology Institute (EMI), Abu Dhabi Quality Conformity Council
Dr. Mohamed Murad Abdulla	Director, Decision Support Center, Dubai Police
Ms. Aayda Al Shehhi	Director, Radiation Safety, Federal Authority for Nuclear Regulation (FANR)
Eng. Suhail Thani Al Muhairi	Infrastructure & Services Coordination Division Manager, Municipalities and Transport Department - Al Ain City Municipality
Ms. Sheikha Al Maskari	Communications Advisor, Chief Innovation Officer & Founding member, UAE Space Agency
Mr. Salem Rashed Almatrooshi	Previously at ADNOC

#### THE COLLEGE ADMINISTRATION

**College of Science Organization Chart** 



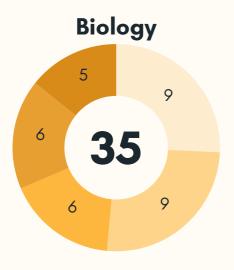
### College Council 2023-2024

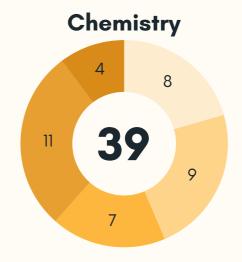
Prof. Maamar Benkraouda	Dean
Dr. Asma Al-Menhali	Vice Dean
Dr. Ruwaya Al-Kendi	Assistant Dean for Research & Graduate Studies
Dr. Yusra Al Dhahiri	Assistant Dean for Student Affairs
Prof. Khalid Amiri	Chair, Department of Biology
Prof. Abbas Khalil	Chair, Department of Chemistry
Prof. Hasan Arman	Chair, Department of Geosciences
Dr. Adama Diene	Chair, Department of Mathematical Sciences
Prof. Saleh Thaker	Chair, Department of Physics
Prof. Alaa Salem	Representative of Professors
Dr. Khalid Mohammad	Representative of Associate Professors

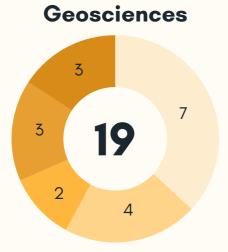
### **Program Coordinators 2023-2024**

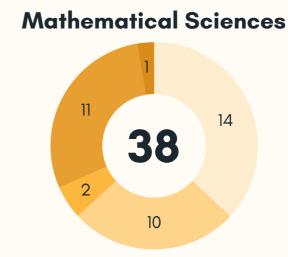
Prof Sabir Bin Muzaffar	Environmental Sciences and Sustainability Program
Prof. Rabah Iratni	Cellular & Molecular Biology Program
Prof. Yaser Greish	Chemistry Program
Prof. Salem Issa	Geosciences Program
Prof. Farrukh Mukhamedov	Mathematics Program
Prof. Noureddine Amrane	Physics Program
Dr. Rim Fares	Space Science Program

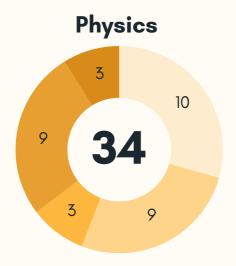
### **Faculty Members**













## New faculty Members join College of Science in Academic Year 2023-2024

The College of Science community welcomed 10 new faculty members to its community. Their expertise, enthusiasm, and dedication to academia will make a valuable addition to our faculty team. As they embark on their new journey with us, we express our confidence in the positive impact they will have on our students, your colleagues, and the broader academic community.



Houssam Abdul Rahman Assistant Professor Department of Mathematical Sciences (Joined in Fall 2023) PhD: University of Alabama at Birmingham, USA.



Ayham Zaitouny Assistant Professor Department of Mathematical Sciences (Joined in Fall 2023) PhD: The University of Western Australia.



Yasir Raouf
Assistant Professor
Department of Chemistry
(Joined in Fall 2023)
PhD: University of Toronto, Canada.



Mabrouk Hassan Assistant Professor Department of Geosciences (Joined in Fall 2023) PhD: University of Vienna, Austria.



Mohamed Belfkir
Assistant Professor
Department of Physics
(Joined in Fall 2023)
PhD: Savoie Mont Blanc University, France



Fatima Labeed
Associate Professor
Department of Biology
(Joined in Fall 2023)
PhD: University of Surrey, England.



Adnan Younis
Associate Professor
Department of Physics
(Joined in Spring 2024)
PhD: University of New South Wales, Australia.



Edvin Idrisov
Assistant Professor
Department of Physics
(Joined in Spring 2024)
PhD: University of Geneva, Switzerland.



**Basem Elsafty Assistant Professor**Department of Geosciences
(Joined in Spring 2024)
PhD: University of Munich, Germany.

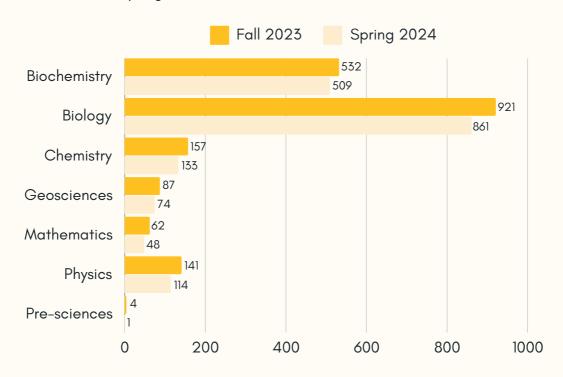


Visiting Faculty
Department of Biology
(Joined in Spring 2024)
PhD: University of Ulster, Northern Ireland, UK.



#### **ENROLMENT IN UNDERGRADUATE PROGRAMS**

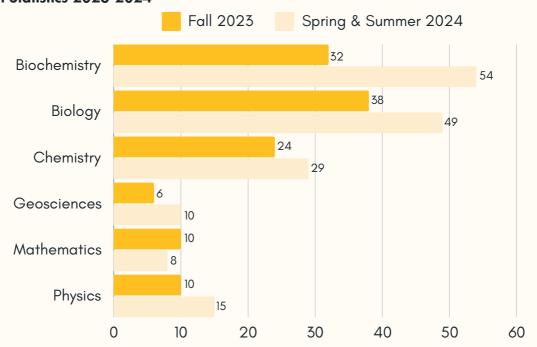
Over the academic year 2023/2024, there were a total of 1904 undergraduate students in Fall 2023 and 1740 in Spring 2024.



#### **GRADUATION STATISTICS**

COS proudly congratulates the 285 students who graduated with a BSc in AY 2023-2024 (120 students in Fall 2023 and 165 in Spring and Summer 2023).

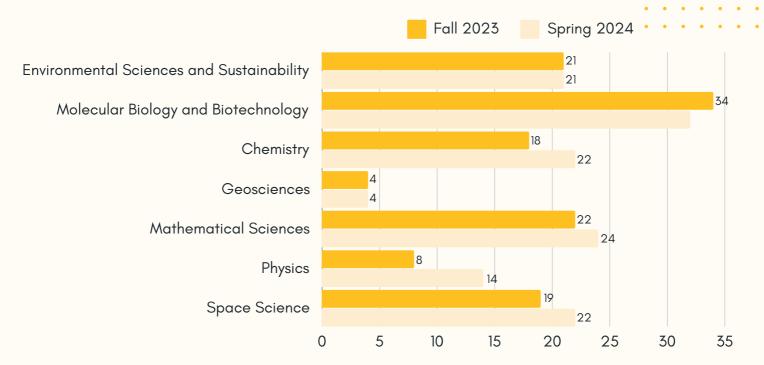
#### **Graduation Statistics 2023-2024**



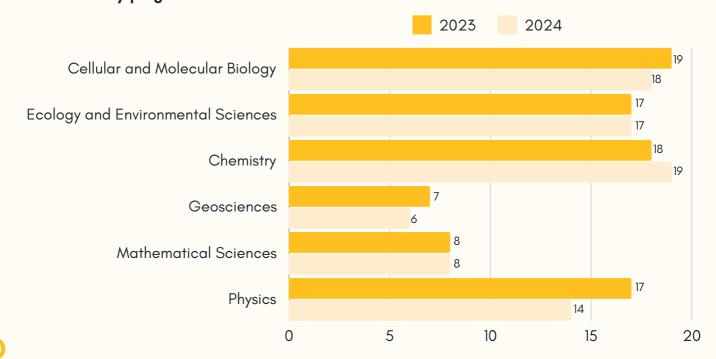
#### **ENROLMENT IN GRADUATE PROGRAMS**

COS also offers a wide range of graduate programs. The total number of students in the MSc programs was 126 in Fall 2023 and 139 in Spring 2024. In addition to the students in the MSc programs, there were 86 PhD students pursuing their PhD degrees in Fall 2023 and 82 in Spring 2024.

#### MSc enrolment by program in Fall 2023 and Spring 2024



#### PhD enrolment by program in 2023 and 2024



#### **Student Orientation**

The College is keen to prepare students to be distinguished in their field of specialization and to become productive leaders in society. Therefore, the College provides its students a diverse range of orientation programs.

During the first and second semesters of this academic year, the advising unit has performed several different programs that include multiple orientation sessions and workshops to cover:

- The University/College rules and policies related to class registration, attendance, academic warning ...etc.
- COS curricula and how to choose a major, concentration and minor.
- Ideal plan for the successful completion of the graduation requirements.

An online open discussion was organized for new students at the beginning of the year. Additionally, weak academic students or students who need assistance with specific subjects were directed to the help centers at the College level and University level.

### **Student Experience**

Life at the College of Science is not limited to classrooms and lectures. Rather, there are many opportunities to develop the student's scientific, social and personal skills. Students have the opportunity to participate in many beneficial programs such as:

- Outstanding students council
- Honor Students program
- Research projects/activities
- University career program
- Department clubs
- COS news team
- Local and international competitions
- Local and International conferences
- Volunteer work at university and college
- Workshops to develop students' skills



### Internship Program

The internship program is a mandatory requirement of all COS majors. It is an excellent opportunity for COS students to get involved in the labor market and acquire some experience from the real work environment. Students undergo hands-on training at a chosen governmental or private sector institution for a period of 8 weeks. Based on their major, students may opt to be placed at municipalities, forensic laboratories, hospitals, environmental agencies, oil companies, food control labs, banks, and research centers.

In AY 2023–24, 279 students successfully completed the internship program (138 students in Fall 2023 and 141 students in Spring 2024). The new programs, advising follow up, and internship flexible selections may play a role in the increase of the internship students.

The COS Internship Office, in coordination with the University Career Readiness Unit, organized a series of workshops under a program called "Jahez". This was delivered to the internship students before they started joining their workplaces. Jahez program aims to prepare students with the expectations of the work environment and career requirements. It is offered twice a year, with multiple 4-5 workshops each semester.

As the entire university activities have returned to normal after the COVID-19 pandemic, the internship program is now completely face-to-face. However, the workshops of Jahez readiness program were split between online and onsite attendance due to the timing conflict of some workshops with student's lab sessions.

Each semester the internship office organizes the Poster Presentation Day where all internship students present practices and skills they acquired and evaluate and discuss their internship experience with the dean, faculty members, and students. This event is back completely F2F after two and half years online.



### **International Internship Program**

### Oxford University Summer Program 2024

Following the success of the 2023 summer internship, five students from the College of Science at the United Arab Emirates University (UAEU) joined peers from the University of Southern California (USC) for a unique and enriching 3-week summer internship at the prestigious University of Oxford in the UK (Ranked #1 globally in 2024 by THE). Residing at the historic Somerville College, Oxford, they participated in an intensive curriculum focused on global health, tropical medicine, vaccinology, pharmacology, and health policy, all taught by Oxford's esteemed faculty.

The program also included guided tours of significant institutions such as the Francis Crick Institute, Wellcome Trust Collection, Science Museum, and Natural History Museum in London, as well as Dr Jenner Museum (pioneer of smallpox vaccination) in Gloucestershire. Additionally, students visited the laboratories of the Biochemistry and Pharmacology Departments at the University of Oxford and the labs of the Francis Crick Institute. They also undertook study tours to landmarks like Berkeley Castle, Blenheim Palace, Stonehenge, the City of Bath, and the City of London. A guided tour of the Oxford Centre for Islamic Studies was also included, where the mosque was built with contributions from the UAE.

The internship concluded with students presenting their end-of-term projects to their peers from UAEU, USC, and Oxford, followed by the awarding of certificates to acknowledge their hard work and achievements. The students were supervised by Dr. Iltaf Shah and Ms. Abla Alkaabi.





### **CERN Summer Internship Program 2024**



CERN, the European Center of Nuclear Research, has selected one student (Sanad Mubarak Binhalabi) from the Department of Physics for the summer internship 2024. Mr. Sanad completed the internship satisfactorily and delivered a presentation by the end of the program.



### **Honor Students Program**

During the 2023–2024 academic year, the COS Honor Students Committee organized a variety of events and activities for the benefit of honor students at the College of Science. These plenary meetings were held in the E1 Building Auditorium and were supported by the Dean of the College of Science, Professor Maamar Benkraouda, who provided ongoing support and encouragement.

On November 1, 2023, a ceremony was held to honor students who made the Dean's list for Spring 2023. The event, titled "Artificial Intelligence: The New Age of Technology", was held at the IT Auditorium on the female side. The purpose of the event was to explore the latest advancements in artificial intelligence (AI) and their implications across various sectors of science. The ceremony featured a distinguished lineup of speakers, including Dr. Martin Takáč from Mohamed bin Zayed University of Artificial Intelligence who provided a comprehensive overview of recent developments in AI research and their real-world applications. Dr. Adel Bolbol Fernandez from Esri Middle East & Africa discussed how AI is transforming geographic information systems and enhancing spatial data analysis. Dr. Fady Alnajjar from United Arab Emirates University addressed the ethical considerations and regulatory challenges associated with deploying AI technologies. Ms. Jingjing Huang, also from Mohamed bin Zayed University of Artificial Intelligence (MBZUAI), highlighted the opportunities for senior students who would like to pursue their graduate studies in artificial intelligence at MBZUAI, including various AI programs, scholarships, and facilities. The diverse expertise of the speakers facilitated a rich exchange of ideas and underscored the transformative potential of Al. Students left with a deeper understanding of Al's impact and the ongoing advancements shaping the future of technology. A highlight of the event was the Al competition, where several honor students showcased their innovative Al projects. Awards were presented to the top entries, celebrating their contributions to the field of Al. In the final part of the ceremony, Professor Maamar Benkraouda honored the students named to the Dean's List for Spring 2023. The students were invited to the stage to receive their certificates and trophies in recognition of their exceptional academic accomplishments.



On February 20, 2024, the COS Honor Students Committee held a distinguished Honoring Ceremony in the IT Auditorium, Female side. This event celebrated the students who made the Dean's List for Fall 2023, recognizing their academic excellence and dedication. The ceremony began with a warm welcome from Professor Maamar Benkraouda, the Dean of the College of Science. His address emphasized the significance of academic achievements and how such recognition can influence students' future endeavors. Following the welcoming segment, Dr. Raihan Taqui Syed from United Arab Emirates University delivered an engaging presentation lasting approximately 10–15 minutes. His talk, titled "Building Individual Capital Through an Entrepreneurial Mindset," offered valuable insights on how students can use an entrepreneurial approach to enhance their personal and professional growth. The ceremony concluded with an acknowledgment of students on the Dean's list for Fall 2023 by Dean Prof. Maamar Benkraouda, where students were called to the stage to receive certificates and trophies, celebrating their outstanding academic achievements. The ceremony was a meaningful occasion that acknowledged the students' hard work and provided inspiration and practical advice for their future paths.



On March 4, 2024, the COS Honor Students Committee hosted a workshop titled "How to Integrate AI into Education: Designing, Delivering, and Assessing Courses", presented by Dr. Ahmad Samer Wazan, Associate Professor at Zayed University. Dr. Wazan's presentation explored a pedagogical strategy that embraces ChatGPT as a pivotal component of the educational framework, rather than excluding it. He emphasized the value of harnessing both the advantages and limitations of AI in course design. Furthermore, Dr. Wazan presented data from eight authorized ChatGPT exams conducted in the UAE and France, revealing a minimal correlation between students' grades and their use of ChatGPT during these assessments.

### **Student Exchange Program**

The following students are participating in a Student Exchange Program with the University of Wisconsin–Madison, USA with funding from the Ministry of Education.

Semester	Name
Fall 2023	Fatima Juma Yousef Mubarak Aljneibi
	Hend Rasheed Ibrahim Ali
	Hajar Hamdan Yahmoor Mohammed Alhebsi
	Bian Nasser Mohammed Al Arashi
	Shamsa Eissa Husain Ahmed Alhammadi
Spring 2024	Saif Hamad Namshan Rashed Alkaabi
	Shaikha Hareb Saeed Hareb Alkaabi
	Meerah Mohamed Rashed Salem Alabdouli
	Anfal Khalfan Obaid Salem Alabdouli
	Shamsa Khalid Mohammed Hassan Almulla
	Abrar Ali Jumah Khamis Alshehhi
	Maryam Abdulla Ebrahim Ebrahimouh Alshehhi
	Fatima Juma Yousef Mubarak Aljneibi
	Hend Rasheed Ibrahim Ali
	Bian Nasser Mohammed Al Arashi

#### **Graduate Student Publications**

In 2023, our MSc students published 13 papers in international journals, while PhD students published 35 papers (For more information, see Appendix 1).

### **MSc and PhD Thesis Defenses**

For the year 2023–2024, 37 MSc theses and 13 PhD dissertation defenses were successfully completed. See Appendix 2 for detailed information.





### Sustainability Club

During the academic year 2023-2024, the Sustainability Club held a series of programs to raise awareness and inspire a sustainable future. Our primary goal is to engage students and encourage them to adopt sustainability as a lifestyle to ensure a healthy and resilient future. In addition, we encourage creativity and artistic expression by recycling and repurposing old or broken goods, illustrating how innovation and environmental responsibility go hand in hand.









Visited Al Narjes school to promote sustainability and creativity for schoolchildren.







The Sustainability Club worked with schools to increase plant awareness and promote sustainability.



### **College of Science Programs**

The various academic departments within the College of Science provide a range of programs at both undergraduate and graduate levels. Starting in Fall 2024, two newly approved programs will be launched. Additionally, a proposal for a new interdisciplinary graduate program is currently undergoing review.

Academic Department	Program
Biology	BSc (Cellular and Molecular Biology, Ecological and Environmental Biology) MSc (Cellular and Molecular Biology) MSc (Environmental Sciences & Sustainability) PhD (Cellular & Molecular Biology) PhD (Ecology and Environmental Sciences)
Chemistry	BSc (Chemistry) BSc (Biochemistry) MSc (Chemistry) PhD (Chemistry)
Geosciences	BSc (Geosciences) MSc (Geosciences) PhD (Geosciences)
Mathematical Sciences	BSc (Mathematics) BS-MS (Mathematics) MSc (Mathematics) PhD (Mathematics)
Physics	BSc (Physics, Track in Space Science) BS-MS (Physics) MSc (Physics) MSc (Space Science) PhD (Physics)

#### List of Minor Programs offered by the College of Science

- Minor in Chemistry
- Minor in Mathematics
- Minor in Physics
- Minor in Geosciences

#### **Dual Award PhD Programs**

Every PhD program at the College of Science is available in a Dual Award format in partnership with McGill University, Canada, and Katholieke Universiteit (KU) Leuven, Belgium.

#### **New Programs**

Mathematics of Data Science. A new Bachelor of Science program will be launched by the department of Mathematical Sciences starting from fall 2024. The Mathematics of Data Science program aims to bridge the talent gap in data science by training highly skilled data scientists who can thrive in a data-driven economy. Hosted by the Department of Mathematical Sciences, the program integrates computational and mathematical thinking into a transdisciplinary curriculum, supplemented by internships in data analytics. Students will learn to collect, process, and analyze data, uncovering patterns and gaining insights to solve real-world problems. Emphasizing problem-solving within specific domains, the program ensures students gain expertise in both data science and their chosen field. Graduates will be well-equipped to pursue diverse career opportunities across various sectors, not just in technology.

**BS-MS program in Chemistry.** Starting in Fall 2024, a new BS-MS program in Chemistry will be launched. This program offers a promising opportunity for Chemistry and Biochemistry students to advance in their careers by participating in graduate courses and conducting thesis research during their final year of undergraduate studies within the Department of Chemistry.

#### **Program Revision**

The Mathematics, Physics and Biology BSc programs have undergone revisions, strengthening their IT courses to equip students with essential programming tools required for the job market. These changes will be implemented starting from Fall 2024.

Course transformation into online delivery mode. Beginning in fall 2023, the Biology Department has transformed the general education course GESU121, "Sustainability," to an online delivery format. This shift aims to enrich student learning, particularly by offering greater flexibility, access to multimedia resources and tools, personalized learning opportunities, and chances for collaboration and networking. Proposals to convert additional courses within the College are currently underway.

#### **Under Review**

**MSc In Forensic Science.** The College has submitted a proposal for a new interdisciplinary graduate program "Master of Science in Forensic Science." This proposal is currently under review by the Academic Council.

**BS-MS** program in Environmental Sciences & Sustainability. A proposal for BS-MS in Environmental Sciences & Sustainability has been submitted by the Biology Department and is currently under review.

### **Program Accreditation Status**

The College of Science takes numerous steps to offer its students world-class programs. All current programs are either accredited locally or internationally. The table below provides a summary of the international accreditation status of science undergraduate programs.

Program	Accreditation Body	Duration	Renewal
BSc in Biology	Royal Society of Biology	2019-2024	2024
BSc in Chemistry	ROYAL SOCIETY OF CHEMISTRY	2022-2027	2025
DSC III CHEIIIISTIY	Canadian Society for Chemistry   For Our Future Societé canadienne de chimie   Pour notre avenir		2025
BSc in Biochemistry	Canadian Society for Chemistry   For Our Future Société canadienne de chimie   Pour notre avenir	2017-2022	2025
BSc in Geosciences	Applied and Natural Science Accreditation Commission	2022-2026	2025
BSc in Mathematics	Applied and Natural Science Accreditation Commission	2022-2026	2025
BSc in Physics	Applied and Natural Science Accreditation Commission	2020-2026	2025

### **Subject Rankings**

All science courses were ranked as follows according to the Times Higher Education (THE) and QS rating in 2024:

Subjects	THE	QS
Biological Sciences	301-400	351-400
Chemistry	301-400	451-500
Natural Sciences	301-400	401-450
Environmental Sciences	301-400	351-400
Mathematics	301-400	301-350
Physics	301-400	501-550

# RESEARCH PRODUCTIVITY AND PARTNERSHIPS

### Research Highlights

#### Hydrogen: A Renewable Energy Solution

Prof. Nacir Tit and Dr. Wadha Alfalasi from the Department of Physics, in collaboration with Prof. Yuan Ping Feng from the National University of Singapore, are spearheading hydrogen innovative research energy, a key player in the transition to renewable energy sources. Their work focuses on overcoming challenges in hydrogen storage, aiming to create sustainable and efficient solutions. By addressing global climate change and reducing greenshouse gas emissions, their research is crucail for advancing eco-friendly energy alternatives and ensuring a cleaner, greener future.



#### Patent of Catalyst for Natural Gas Reforming Technologies

This research is driven by the crucial role of natural gas in reducing the dependence on petroleum oil and its momentous value as a source of hydrogen fuel and a wide variety of other value-added chemicals. Therefore, better and more efficient utilization of natural gas as a source of clean energy and chemicals is one of the potential strategies to reduce dependence on petroleum oil facilitating the transition to a cleaner and more cost-efficient energy future.

However, its current conversion technology to hydrogen and other commodities is still a costly process due to different technical challenges. Therefore, different routes of CH4 (the major component of natural gas) reforming are being widely studied. All known potential reforming routes are based on catalytic reactions, where the performance depends mainly on different characteristics of the catalytical material. Catalysts that are known to exhibit high activity in all methane conversions are usually based on costly noble metals including Pt, Pd, Ru, and Rh. Fortunately, Nickel (Ni), which is significantly more cost-efficient, is an attractive potential alternative.

• • •

However, coke formation over Ni-based catalysts during the reforming reactions remains a major challenge as accumulating coke leads to catalysts' deactivation. In the present invention, a novel coking-resistant Ni-based catalyst was developed, holding great promise for developing robust commercially feasible catalytic materials for methane-reforming technologies. The invented material is composed of Ni nanoparticles supported on aluminium oxide modified with well-dispersed iron ions. The resulting low-cost composite has shown a long-life activity as a catalyst for partial oxidation of methane to synthesis gas, H2 and CO mixture, which is an intermediate for a wide variety of value-added products, in very high yields with significantly high coking resistance making it a promising catalytic material for natural gas reforming technologies.

Natural gas plays a pivotal role in the United Arab Emirates' economic development and in the world's energy supply. With about 200 trillion cubic feet, the UAE has the seventh largest gas reserves in the world. With these significant reserves in the UAE, the investment in better utilisation of natural gas becomes an essential area of research and instrumental to the economic development of the country. Besides its significant economic value, the invention deals with the production of cleaner alternative fuels and chemicals through more environmentally friendly processes. The invention holds great promise for a momentous impact on the UAE as well as the world's natural gas-based industry.

Future plans include collaboration with chemical and mechanical engineers to scale up the material production and testing towards designing commercially implementable processes. Further collaborations with companies in the UAE including ADNOC and ADGAS are planned towards commercialisation opportunities.

The patent is invented by **Professor Abbas Khaleel** and **Mr Abdul Rasheed Pillantakath** from the Department of Chemistry, College of Science at United Arab Emirates University.





### Impact of climate change on parasite infection of an important pollinator depends on host genotypes

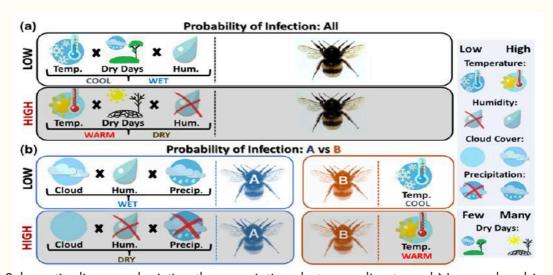
Dr. Oliver Manlik and Dr. Sunil Mundra (Biology Department) together with collaborators Prof. Paul Schmid-Hempel & Dr. Regula Schmid Hempel at ETH Zurich published an article in Global Change Biology. Their study investigated the genetic basis for bumblebees to resist parasite infection in a changing climate. Bumblebees are important pollinators of crops and other plants, but they have been declining worldwide, partly as the result of climate change and parasite infection. The researchers studied wild buff-tailed bumblebee (Bombus terrestris) in Switzerland for over one decade (from 2000 to 2010). They recorded which bumblebee queens were infected with a fungal parasite (Nosema bombi) during that time period and analyzed DNA sequences of infected and uninfected queens. When they compared parasite infection and climatic factors, such as temperature and rainfall, they noticed that with increasing temperature and drier conditions, more bumblebees were infected. Particularly notable was that bumblebees that had one type ('haplotype') of the gene were more resistant to parasite infection during hotter, wetter years. In contrast, bumblebees that had the other type, showed greater resistance to infection in cooler, drier years. The authors of the study concluded that having more than one version of the gene in the population increases the likelihood that some individuals have a better chance to evade parasite infection, depending on the climatic condition. Thus, these variable respiratory genes may aid bumblebees resisting parasite infection in a changing climate.



Dr. Oliver Manlik



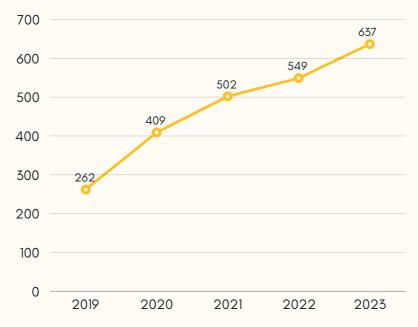
Dr. Sunil Mundra



Schematic diagram depicting the associations between climate and Nosema bombi infection of bumblebees with different mtDNA haplotypes (Figure: Manlik et al. 2023, Global Change Biology).

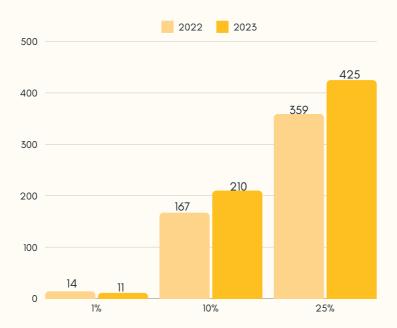
#### **Research Publications**

The College of Science leads all UAEU colleges in terms of overall number of publications in Scopus-indexed journals, with 549 in 2022 and 637 in 2023. The College is proud of its researchers' hard work and dedication to attaining such an exceptional achievement.



Total COS publications between 2019-2023.

COS remains first among UAEU colleges in terms of annual research funding for articles published in top journals (1%, 10%, and 25%) for both 2022 and 2023.



COS publications based on journal rankings in 2022-2023.

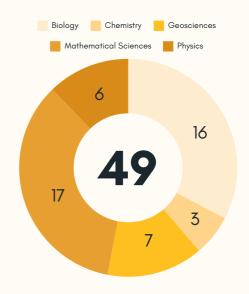
#### **New Research Grants**

COS Faculty members have been quite successful in being awarded several internal research grants. In terms of internal grants, this includes 11 UPAR, 4 Strategic Program, 4 AUA, one SDG, 9 start-ups, 3 District 4.0, one KU-UAEU and 34 SURE PLUS grants (see Appendix 3).

Research grants were awarded to COS faculty members this academic year.

Grant Type	Number	Amount
Start-up Grant	9	1,375,05
University Program for Advanced Research (UPAR)	11	1,421,400
Strategic Research Program	4	434,000
Asian Universities Alliance (AUA)	4	740,000
SDG (Sustainable Development Goals)	1	40,000
District 4.0	3	142,000
KU-UAEU	1	282,000
SURE PLUS 2024	34	
Total	67	4,434,455

Faculty members participated in International Conferences 2023/2024



#### **Patents Awarded**

Three US and three Japanese patents were granted to the College of Science faculty members in 2023–2024.

Title	Country	Inventor(s)
Method and system for gas identification by simultaneous permeation through parallel membranes	USA	Sayed Marzouk and Abdullah J. Abu Namous
Method of liver cancer treatment with safranal- based formulation	Japan	Amr Fawzy and Alaa Al Hrout
Combination therapy for cancer	Japan	Amr Amin
Safranal-Sorafenib combination therapy for liver cancer	Japan	Amr Amin and Ameera AlMansoori, Badriya Baig
Forming acousto-optic lenses using spherical acoustic waves in fluids	USA	Usama Al Khawaja and Laila Al Sakkaf
Novel coking resistant NiFeAl catalyst for partial oxidation of methane to synthesis gas	USA	Abbas Khaleel and Abdul Rasheed Pillantakath

### Signed MoUs

During the academic year 2023–2024, the College of Science was able to establish Memoranda of Understanding (MoUs) with the following institutions/agencies:

a, Slovenia

- Technology Innovation Institute, Abu Dhabi
- Akita University, Japan
- Abu Dhabi Police
- Dubai Police
- The A.O. Kovalevsky Institute of Biology of the southern Seas of RAS, Russia.
- NetZero Technologies FZLLC, Abu Dhabi, UAE.
- New York University, Abu Dhabi, UAE.
- University of Ljubljana, Slovenia



# International Research Collaborations

College of Science has been actively involved in creating and expanding various international relationships in 2023/2024. Several research initiatives and other activities are now underway as part of these collaborations with:

- UAEU-Chinese Academy of Science Collaborative Research Project
- UAEU-CERN
- UAEU-University of Belgrade

# Collaboration With Chinese Academy Of Sciences (CAS)

The collaboration project works are going well and here is the some of the updates:

Project: Detection and determination of carbamate pesticides and related metabolites in camel milk products of UAE (UAEU-Chinese Academy of Science Collaborative Research Project

A method was developed, validated and used to detect 11 carbamate pesticide residues in raw and pasteurized camel milk samples collected from the UAE using UHPLC-MSMS. An optimized liquid-liquid extraction was used to extract carbamate pesticides from the highly complex milk samples. The detection limit of all studied carbamates was down to 0.01  $\mu$ g kg-1. A total of 17 camel milk samples were studied, and no carbamate residues were found in one sample only. The remaining 16 samples contained at least one carbamate residue, but the detected concentration for all residues was below the Codexrecommended MRL ( $< 10 \mu g \text{ kg-1}$ ) except ethiofencarb residue in three samples was at the borderline. The health risk of carbofuran, carbaryl, and propoxur was assessed for camel milk consumers by calculating hazard index (HI) values in pasteurized and raw camel milk and found less than one, therefore camel milk consumers are not at risk. The UAEU-CAS partnership resulted in the publication of the following articles:



**Prof. Mohammed Almeetani**Department of Chemistry

- Morsi, R., Ghoudi, K. & Meetani, M.A. Determination and health risk assessment of carbamate pesticide residues in date palm fruits (Phoenix dactylifera) using QuEChERS method and UHPLC-MS/MS. Sci Rep 14, 13064 (2024). <a href="https://doi.org/10.1038/s41598-024-63704-6">https://doi.org/10.1038/s41598-024-63704-6</a>.
- Dina Ashraf, Rana Morsi, Rana Morsi, Muhammad Usman, Mohammed Meetani, "Recent Advances in Chromatographic Analysis of Emerging Pollutants in Dairy Milk: A Review (2018–2023)", Molecules 29(6), 2024,1296;https://doi.org/10.3390/molecules29061296.
- Rana Morsi, Kilani Ghoudi, Mutamed M. Ayyash, Xiue Jiang, and Mohammed A. Meetani, "Detection of 11 carbamate pesticide residues in raw and pasteurized camel milk samples using UHPLC-MS/MS: Method development, method validation, and health risk assessment". Journal of Diary Science, 2024, 107(4), 1916–1927. <a href="https://doi.org/10.3168/jds.2023-23512">https://doi.org/10.3168/jds.2023-23512</a>.
- Rana Morsi, Kilani Ghoudi, Basant Elabyad, Zaina Kadoura, Hind Zeidane, Bayan Al-Meetani, Mohammed A. Meetani, HPLC-MS/MS Monitoring and Health Risk Assessment of Carbosulfan and its Metabolites in Date Palm (Phoenix dactylifera) Fruit", Food Chemistry, Under review.

# Toward high efficiency and large-scale production of flexible perovskite solar cells

In the quest for efficient and sustainable energy sources, perovskite solar cells (PSCs) have emerged as a game-changing technology, revolutionizing the field of photovoltaics. However, the stability issue of PSCs restricts their further development for commercialization. We developed different strategies to keep moisture and oxygen out of the perovskite films and reduce defects by using surface and/or bulk passivation. Initially, we used Zn-porphyrin (Zn-PP) as a passivating agent during the growth of perovskite single crystal. And to passivate perovskite films. Furthermore, an effective chelation strategy was reported to suppress physical defects in Cu2ZnSn(S,Se)4 (CZTSSe) films such unterminated Cu, Zn, and Sn sites by modifying the surface of the film with sodium diethyldithiocarbamate (NaDDTC). Consequently, the solar cell efficiency of the NaDDTC-treated device is increased to as high as 13.77% under 100 mW cm-2 illumination,



**Dr. Adel Najar**Department of Physics

with significant improvement in fill factor and open-circuit voltage. Also, we verify in inorganic perovskite solar cells, that iodine interstitials (Ii) has a low formation energy similar to that of the iodine vacancy (VI) and is also readily formed on the surface of all-inorganic perovskite, and it is regarded to function as an electron trap. We screen a specific 2,6-diaminopyridine (2,6-DAPy) passivator, which, with the aid of the combined effects from halogen-Npyridine and coordination bonds, not only successfully eliminates the Ii and dissociative I2 but also passivates the abundant VI.

On the other hand, another aspect of this project focused on the application of perovskite materials, particularly their use in X-ray imaging. Metal halide perovskite single crystals (MHPSCs) are known for their facile fabrication into large sizes using inexpensive solution methods. Owing to their combination of large mobility-lifetime products and strong X-ray absorption, they are considered promising materials for efficient X-ray detection. However, they suffer from large dark currents and severe ion migration, which limit their sensitivity and stability in critical X-ray detection applications. Herein, a heterointerface design is proposed to reduce both the dark current and ion migration by forming a heterojunction. In addition, a new A-site cation of aminoguanidinium (AG) with all-NH2 terminals is designed to shorten the interlayer spacing by forming more and stronger N®H···I hydrogen bonds. The prepared large AG3Bi2I9 single crystals (SCs) render shorter interlamellar distance for a larger mobility-lifetime product of 7.94 × 10-3 cm2 V-1, which is three times higher than the value measured on the best MA3Bi2I9 SC (2.87 × 10-3 cm2 V-1). Therefore, the X-ray detectors fabricated on the AG3Bi2I9 SC exhibit high sensitivity of 5791 uC Gy-1 cm-2, a low detection limit of 2.6 nGy s-1, and a short response time of 690  $\mu$ s, all of which are far better than those of the state-of-the-art MA3Bi2I9 SC detectors.

- 1. Enhancement of Photodetector Characteristics by Zn-Porphyrin-Passivated MAPbBr3 Single Crystals, AKK Soopy, SF Liu, A Najar, Nanomaterials 14 (13), 1068, 2024
- 2. Modifying surface termination by bidentate chelating strategy enables 13.77% efficient kesterite solar cells, Lei Cao, Lijing Wang, Zhengji Zhou, Tianxiang Zhou, Rui Li, Hao Zhang, Zhiteng Wang, Sixin Wu, Adel Najar, Qingwen Tian, Shengzhong Liu, Advanced Materials 36 (16), 2311918, 2024
- 3. Zn-Porphyrin Antisolvent Engineering Enhanced Grain Boundary Passivation for High-Performance Perovskite Solar Cell, Abdul Kareem Kalathil Soopy, Bhaskar Parida, Assa S Aravindh, Hiba SahulHameed, Bhabani Sankar Swain, Na'il Saleh, Inas Magdy Abdelrahman Taha, Dalaver Hussain Anjum, Vivian Alberts, Shengzhong Liu, Adel Najar, Solar RRL, 8, 9, 2024
- 4. Heterointerface Design of Perovskite Single Crystals for High-Performance X-Ray Imaging, Xiaojie Zhang, Depeng Chu, Binxia Jia, Zeqin Zhao, Jiacheng Pi, Zhou Yang, Yaohui Li, Jinglu Hao, Ruixin Shi, Xiaofeng Dong, Yuqian Liang, Jiangshan Feng, Adel Najar, Yucheng Liu, Shengzhong Liu, Advanced Materials 36 (3), 2305513, 2024
- 5. Managing multiple halide-related defects for efficient and stable inorganic perovskite solar cells, Zhiteng Wang, Qingwen Tian, Hao Zhang, Huidong Xie, Yachao Du, Lei Liu, Xiaolong Feng, Adel Najar, Xiaodong Ren, Shengzhong Liu, Angewandte Chemie International Edition 62 (30), e202305815, 2023
- 6.Cs3Cu2I5 Nanocrystals with Near-Unity Photoluminescence Quantum Yield for Stable and High-Spatial-Resolution X-ray Imaging, Nan Li, Ziwei Xu, Peijun Wang, Fan Wu, Lihua Liu, Adel Najar, Yucheng Liu, Zhou Yang, Shengzhong Liu, ACS Applied Nano Materials 6 (13), 11472-11480, 2023
- 7. Interlayer-Spacing Engineering of Lead-Free Perovskite Single Crystal for High-Performance X-Ray Imaging, Ming Chen, Xiaofeng Dong, Depeng Chu, Binxia Jia, Xiaojie Zhang, Zeqin Zhao, Jinglu Hao, Yunxia Zhang, Jiangshan Feng, Xiaodong Ren, Yuqian Liang, Ruixin Shi, Adel Najar, Yucheng Liu, Shengzhong Liu, Advanced Materials 35 (18), 2211977, 2023
- 8. Tailored Cysteine-Derived Molecular Structures towards Efficient and Stable Inorganic Perovskite Solar Cells, Hao Zhang, Qingwen Tian, Wanchun Xiang, Yachao Du, Zhiteng Wang, Yali Liu, Lidan Liu, Tengteng Yang, Haifeng Wu, Ting Nie, Wenliang Huang, Adel Najar, Shengzhong Liu, Advanced Materials, 2301140, 2023.

### **UAEU-ATLAS/CERN Collaboration**

Since August 2021, the United Arab Emirates University (UAEU) has taken a significant stride towards advancing fundamental research through its collaboration with the European Organization for Nuclear and Particle Physics Research (CERN) in Geneva, Switzerland. The UAEU-ATLAS group, part of the ATLAS Collaboration at CERN, is led by Prof. Salah Nasri and comprises of Dr Mohamed Belfkir (Assistance Professor), Ammara Ahmad (PostDoc), Isaac Bamwidthi (PhD student), and Abdullah Mahboub (Master student). The primary research of the group includes Higgs Physics, Beyond Standard Model, and dark matter searches. The group is now



**Prof. Salah Nasri** Department of Physics

well recognition for its, the collaboration with a research team at Stanford University spearheading a pioneering search for double Higgs boson production in the boosted regime via the vector-boson-fusion (VBF) production mode. The results of this analysis were published at PRD (2023) and presented at the ICHEP conference 2023. The Performed analysis was mainly coordinated by UAEU team, which marked as a great achievement. Moreover, UAEU-ATLAS group is also collaborating with other research teams (New York Abu Dhabi University, Westmont University, Oregon University, INFN ..) on different searches focusing on new physics Beyond the Standard Model such as dark matter, heavy neutral leptons using the newly collected data in Run-3.

The year 2024 marked a momentous occasion with the appointment of Prof. Salah Nasri as the UAE ATLAS cluster leader and Dr. Mohamed Belfkir as a convener of the photon identification group. These two appointments make achievement of year of the UAEU-ATLAS group. During 2024, UAEU participated in the ATLAS egamma workshop organized in Valencia, Spain.



# **New Research Infrastructure**

#### Budget was granted to purchase the following equipment:

- Transmission Electron Microscopy (TEM)
- X-Ray Photoelectron Spectroscopy (XPS)
- International accreditation and upgrade of mice facility at College of Medicine and Health Sciences.







# **Faculty Achievements**

Excellence Award in Scholarship & Chancellor's Award for Institutional Excellence

**Prof. Khaled El-Tarabili** (Department of Biology) received the University Excellence Award in Scholarship for the 2023/2024 academic year, as well as the Chancellor's Award for Institutional Excellence as the best distinguished faculty member at UAE University in the field of specialized jobs for the academic year 2023.



# Chancellor's Innovation Award 9th Cycle (2023/2024)



Dr. Dalal Alshamsi, Director of the National Water and Energy Center, and her research team (Dr. Khalid ElHaj and Mr. Omer Elbashir) from the Department of Geosciences were recognized by the Chancellor of UAEU on May 20, 2024, for winning the Chancellor's Innovation Award (9th Cycle) in the faculty category of Water and Food Security. The winning project was titled "A Novel Approach of Ensemble Machine Learning Methods to Identify and Delineate Groundwater Aquifers".

# WINNERS OF COLLEGE EXCELLENCE AWARDS 2023-2024



Prof. Yaser Greish
Department of Chemistry
Excellence in Teaching



Prof. Muhammed Syam
Department of Mathematics
Excellence in Service



Prof. Nacir Tit
Department of Physics
Excellence in Scholarship - Theoretical Science



Prof. Synan AbuQamar
Department of Biology
Excellence in Scholarship - Experimental Science

# **FACULTY PROMOTIONS**

Dr. Iltaf Shah from the Department of Chemistry and Dr. Abdessamad Tridane from the Department of Mathematical Sciences have been promoted to Full Professor.



Dr. Iltaf Shah
Department of Chemistry



Dr. Abdessamad Tridane
Department of Mathematical Sciences

Dr. Sunil Mundra and Dr. Mohammad Tauqeer Aalam from the Biology Department have been promoted to Associate Professor.



Dr. Sunil Mundra
Department of Biology



Dr. Mohammad Tauqeer Aalam
Department of Biology

# **Future Leader Program**

Dr. Asma Al Menhali and Dr. Adama Diene, acting as representatives of the College of Science, were active participants in the "Future Leader Program." Their dedication and contributions were acknowledged during the program's closing event.





# ADMINISTRATIVE APPOINTMENTS 2023/2024



Prof. Sayed Marzouk
Department of Chemistry
Director of the Institutional Effectiveness Office at UAE University



Dr. Yusra Al Dhaheri
Department of Biology
Assistant Dean for Student Affairs



Prof. Saleh Thaker Mahmoud
Department of Physics
Chair of the Department of Physics



Dr. Khalid Muhammad
Department of Biology
Appointed to College Council as a representative of
Associate Professors

# **Students Achievements**

#### **Dean's List Honor Students**

By continuing to perform exceptionally well, 189 honor students in the fall of 2023 and 171 in the spring of 2024 were able to hold their positions on the Dean's List. The College wishes to congratulate them on their academic achievement and encourages everyone to strive for high academic performance.

#### Fall 2023

#### **TOP MALE STUDENTS**

- Hamad Khalifa Mukhtar Ahmed Alblooshi Chemistry
- Abdallah Humaid Mohammed Al Jabri Physics
- Muneb Redwan Mukhtar
  Chemistry
- Saeed Ahmed Salem Saif Alsaeedi Biology
- Omar Samir Al Awa
- Jassim Ibrahim Rashid Alqadeeb Alzaabi
  Physics
- Yousef Mohammad Yousef Salah
- Mohammed Abdulla Saeed Obaid Aldhaheri
- Sultan Khalfan Ali Khalifa Alqubaisi Biology
- Ahmed Yousef Qayed Mosaad Alharbi
- Abdallah Rashid Mohamed Masoud Alnaamani
- Abdulla Mohamed Hassan Albasri Almesmari
  Geosciences
- Mohammad Khalid Mohammad Abdulrahman Alqasemi Biology
- Mohamad Zaid Bin Mohd Tarid
  Geosciences

#### **TOP FEMALE STUDENTS**

- Haneen A. A Abufarajallah Biochemistry
- Ahlam Barhumi
  Biochemistry
- Alaa Mohamed Abdullah Elameen Biology
- Sahar Farid Allaban Biochemistry
- Maram Sami Suliman Elemam
  Biology
- Sana Abdallah Salim Chemistry
- Fatima El Yadali Biology
- Mariam Rami Nedal Hamdan
- Dara Mohammed Ashour Biochemistry
- Maitha Mohamed Mohsen Mesri Alhameli
  Biochemistry
- Leen El Srouji
  Chemistry
- Sara Yousef Hasan Ibrahim Alhammadi Biochemistry
- Shahad Khalifa Sultan Affaz Alkaabi Biochemistry
- Bayan Osama Hakim Biology
- Sara Esmaeel Ahmed Buqefel Alyassi Physics

## Spring 2024

#### **TOP MALE STUDENTS**

- Abdallah Humaid Mohammed Al Jabri Physics
- Adam Eqhbal Balideh
  Biology
- Mohammed Abdullah Saeed Obaid Aldhaheri
  Mathematics
- Haydar Moamar Abdulelah Abdulelah Biology
- Omar Samir Al Awa Biology
- Khaled Saif Sawayeh Matar Alkhyeli
  Physics
- Saeed Ahmed Salem Saif Alsaeedi Biology
- Osama Ahmad Al Mukbel
- Ahmed Yousef Qayed Mosaad Alharbi
- Eisa Mubarak Saqer Rashed Alkhyeli Biology

#### **TOP FEMALE STUDENTS**

- Meera Munjed Abedalqader Maraqa Biochemistry
- Bayan Osama Hakim
- Alaa Mohamed Abdullah Elameen
  Biology
- Mariam Salem Khalifa Mohamed Alderei Biochemistry
- Sahar Farid Allaban Biochemistry
- Latifa Saeed Jaber Mohammed Alkuwaiti
  Chemistry
- Fatima Hasan Ali Mohamed Almarzooqi Biology
- Rand Rebhi Khalaf Alomari
  Mathematics
- Fatima El Yadali Biology
- Rayaan Syed Safiuddin
  Geosciences
- Rawan Hashem Ali AlShateri
- Fatema Isa Hasan Isa Aljasim
  Geosciences
- Latifa Ghanem Matar Bin Halool Alkhateri Biology
- Fatema Abdulla Moosa Almurawwi Alblooshi Biology
- Maram Sami Suliman Elemam Biology

#### Chemathon 2023

The Chemistry Department of the Science College at UAE University proudly presented two teams at the 2nd CHEMATHON competition on October 5th, 2023, at King Fahd University of Petroleum and Minerals (KFUPM). The first team, which comprised Hamad Alblooshi and Muneb Mukhtar secured the first-place position, showcasing their remarkable skills and knowledge.

Moreover, UAEU proudly announces the remarkable achievement of second team, including Ali Saif Aleissaee, Mohammed Alhassani, Abdulrahman Al Teneiji, Abdullah Khalaf, and Sultan Jama, who were honored as the Best Poster Winners. Their exceptional creativity and unwavering dedication in advancing the field of chemistry were recognized, marking a testament to their excellence. This achievement highlights UAEU's commitment to nurturing talent and excellence in the realm of chemistry, cementing its position as a leader in the academic community



H.E. Zaki Anwar Nusseibeh, the Chancellor of the UAEU honors the College of Science students who won in the second edition of the 'Chemathon' competition, organized by King Fahd University of Petroleum and Minerals in the Kingdom of Saudi Arabia

# Winners of COP28 Competitions - Expo Live University Innovation Program

The College of Science extends its heartiest congratulations to the winning teams as well as appreciates the efforts put in by all the teams that participated. This indeed is a moment of pride for the College. The award is in the form of a competition between all universities in UAE. Almost 360 teams participated to develop an eye-catching idea that can make a difference to UAE economy and environment.

#### Team 1

The "Waste to Energy" team suggests transforming the waste from approximately 40 million palm trees across the UAE into activated carbon and carbon black. These materials can be utilized in various sectors such as battery manufacturing, wastewater treatment, the rubber industry, and even in constructing supercapacitors for high-power energy storage. This innovative approach is projected to generate annual revenues exceeding 1 billion USD for the UAE. The team is comprised of Dr. Fathy Hassan (supervisor) and the students from the Department of Chemistry, Maryam Abbas Ali Altahri, Amna Mohammed Rashed Alkaabi, and Mariam Alsaadi.



#### Team 2

The team presented in two separate rounds their project called "Windows into the Future" to utilize food waste from crustaceans for the manufacturing of dehumidifying gels that also act as support for hydroponics on windows of residential and commercial establishments. Team members: Dr. Abdulla Mahboob (supervisor), Aysha Al Balooshi (Space Science), Mansoor Al Nasi (Biology), Sara Al Muhairi (Physics).

# Innovation in Sustainability Awareness Campaign for Health, Safety, and Environment Week

Raghad Anas Al-Tahhan and Aya Azmi Abdullah from the Department of Chemistry won first place in the Abu Dhabi Ports' "Innovation in Sustainability" awareness campaign for Health, Safety, and Environment Week. The project title is "Al-guided development of a novel and genetically engineered strain of cyanobacteria to convert sour crude oil to high-value nanomaterials".



Raghad Anas Al-Tahhan Department of Chemistry



**Aya Azmi Abdullah** Department of Chemistry



# 15th International Conference on Innovations in Information Technology (IIT'23)

This conference focused on the latest advances in Information Technology related to Artificial Intelligence (AI) and took place at UAEU on November 14-15 of 2023. A team of 3 undergraduate students (Ms. Mouna Youssef, Shouq Aljaeedi and Aamna Alshehhi) from the UAEU Chemistry Department won the first place in the poster competition with the work "Protein Hm-FTF Computational Structure Prediction, Ligand Docking & Analysis using Albased systems" supervised by Drs. Nayla Munawar and Alejandro Perez Paz from the same Department.

## **Colleges Trophy Competitions 2024**

College of Science students had a great time competing in the College Trophy Competitions (February 2024) and won many prizes, as follows:

#### Female Students:

- First Place in Volleyball
- Third Place in CrossFit Competitions
- Third Place in Tabel Tennis
- Second Place in Basketball
- Second Place in Chess
- Third Place in Tennis

#### Male Students:

- First Place in Beach Volleyball
- Second Place in Volleyball
- Second Place in Badminton
- Fourth Place in Football



# 11th Undergraduate Research & Innovation Competition (URIC)

Under the supervision of Dr. Iltaf Shah, Gamilah Abdulgabar and Haneen Abufarajallah from the Department of Chemistry received third place in the 11th Undergraduate Research & Innovation Competition (URIC) that was conducted on May 23, 2024 at Abu Dhabi University.



**Gamilah Abdulgabar** Department of Chemistry



Haneen Abufarajallah Department of Chemistry

## Sustainability Innovation Challenge Competition

Under the supervision of Prof. Yaser Greish, his team of 4 Chemistry students (Mariem Sidi, Noor Albastaki, Mahra Alremeithi, Seba Albalki) were among the winners of the Sustainability Innovation Challenge Competition organized by the Ministry of Education and Altamimi & Company.



The award is for DPS4OiL as an innovative sustainable solution for oil spills, where a sponge made of recycled plastic and agricultural waste is used for the sorption and retrieval of oil spills. DPS4OiL provides a 4-in-1 solution to oil spills, plastic waste, agricultural waste and for the potential air pollution by the incineration of the manually collected oil spills. Moreover, DPS4OiL provides a method for retrieving the sorbed oil spills".

# Best Poster Presentation at the 2nd AAU Health and Biomedical Postgraduate Symposium

Congratulations to Dr. Shaikha Alneyadi and her chemistry students (Hamad Alblooshi, Muneb Mukhtar, and Sultan Jama) who secured second place at the 2AAU Health Biomedical Symposium held at Al Ain University.



Sultan Ali Jama



Hamad Khalifa Alblooshi



Muneb Redwan Mukhtar

Hamdan Bin Rashid Al Maktoum Award for Outstanding University

Student

The student Reem Quzli from the Mathematical Sciences Department won the Hamdan Bin Rashid Al Maktoum Award for Outstanding University Student in the academic field (Hamdan bin Rashid Al Maktoum Foundation for Medical and Educational Sciences – Session 26).

First Place in the Research Competition Organized by the Deanship of Student Affairs at Sultan Qaboos University

Under the guidance of Assistant Dean for Student Affairs Dr. Yusra Al Dhaheri, the student Aaesha Mohammad Rahma (Department of Biology) won First Place in the research competition in the field of medical research, held by Sultan Qaboos University Deanship of Student Affairs (January 7–9, 2024).

# Remarkable PhD Achievement in Biomedical Engineering - Ms. Leena Alkaabi

Congratulations to Ms. Leena Alkaabi, Laboratory Specialist in the Department of Chemistry, for completing her PhD in Biomedical Engineering at Khalifa University of Science and Technology, Abu Dhabi. This is an outstanding achievement that illustrates her dedication, tenacity, and academic excellence. The College of Science family wishes her continued success and fulfillment in her future endeavors.





# **Innovation Week (February 2024)**

The 5-day Innovation Week activities (5-9 February 2024) hosted by the College of Science and expertly coordinated by Dr. Sunil Mundra, Coordinator of the College Innovation Support Committee, along with his dedicated team of faculties, PhDs, and undergraduate students from various clubs. The Participants showed outstanding talent and creativity displayed by our undergraduate, graduate students and our esteemed faculty members.

The culmination of a week was celebrated with intellectual engagement and innovative spirit. Prof. Benkraouda welcomed all participants together with Dr. Asma Almenhali (Vice Dean, COS), and he distributed certificates and awards to the deserving winners across various categories, including the Geosciences/Biology intellectual game, Science and Art competitions, Undergraduate Student Innovation Competition (posters), Graduate Student Innovation Competition.

From groundbreaking research talks to captivating poster presentations and thought-provoking discussions, the innovation week served as a powerful testament to the transformative power of innovation and collaboration within our scientific community.



# Dean's List (Fall 2023) Honoring Ceremony

On February 20, 2024, the College of Science, in collaboration with the Honor Students Program Committee, held an Honors Ceremony to highlight the value of the honor program and recognize the outstanding honor students from Fall 2023. Prof. Maamar Benkraouda, COS Dean, delivered a welcoming message, which was followed by a presentation titled "Startup Spark: Igniting Entrepreneurial Passion" by Dr. Raihan Taqui Syed from the College of Business and Economics (UAEU).



# **End of the Year Gathering**

The College of Science hosted the end-of-year gathering for the academic year 2023-2024 on June 11, 2024, where faculty, staff, and students who have made outstanding contributions to their professional and educational sectors were recognized, and thanks was shown to faculty members who would be leaving the college this year.



# **College of Science Exhibition**



The College of Science, in cooperation with the Emirates Schools Establishment, organized the "Science Exhibition" from 21–22 May 2024, at Al Jahili School and Al Dhamaa School in Al Ain, with the aim of attracting school students to the specializations of the College of Science at the United Arab Emirates University. The college's participation included introductory presentations on the scientific disciplines and programs offered by the college, in addition to introducing students to the importance of science and its applications in practical life, by presenting some interesting scientific experiments.

# Social Breakfast

The College of Science hosted a social breakfast on Friday, February 16, 2024, in which more than 100 faculty and staff members of the College of Science gathered.



# **Masterminds**



"Masterminds" is an initiative by the Ministry of Education (MoE) that promotes the participation of UAE high school students in the International Science and Mathematics Olympiads. In the light of this initiative, the Physics department offered 2 days of experimental training sessions for the UAE National Team on Saturday-Sunday (June 22-23, 2024) to participate in the International Physics Olympiad 2024 to be held in Isfahan, Iran.

# International Junior Science Olympiad (2023)

Through "Masterminds," a Ministry of Education initiative promoting Olympiad participation, the Biology Department organized two training camps for the national team. In November 2023, Dr. Mayank Gururani and his team conducted training camps for the UAE national team and prepared them for the IJSO 2023 Biology experimental exams. Six bright young minds from various schools in the UAE were selected after rigorous national qualifying rounds to represent the UAE at IJSO 2023. This event was a great success for the students as they won two bronze medals for the nation.



# **Physics Day**



On Thursday, April 25, 2024, the Physics Department at UAEU hosted the Physics Day, which was aimed to attract students with a variety of interactive and educational activities focused on physics fundamentals. The day included a range of events, including interesting auditorium sessions with lectures, games, discussions, and more. Furthermore, the Physics students conducted interactive activities to provide students with diverse options such as astrophotography, poster sessions, virtual observatory experiences, and other fascinating activities. The Physics Day welcomed around 40 high school students from Al-Ain City. The students participated in this event with their posters and projects.

# **Conferences and Workshops**

# Seventh International Conference on Engineering Geophysics (ICEG 2023)

Under the patronage of His Highness Sheikh Tahnoun bin Mohammed Al Nahyan, the Ruler's Representative in Al Ain Region; the United Arab Emirates University (UAEU) and Al Ain City Municipality (AAM), in partnership with the Society of Exploration Geophysicists (SEG), organized the seventh edition of the International Conference on Engineering Geophysics (ICEG) during the period of October 16–19, 2023. The conference was opened by H.E. Zaki Anwar Nusseibeh, Cultural Advisor to the UAE President and Chancellor of the UAEU in the presence of dignitaries from the UAEU, Al-Ain City Municipality, ADNOC, SEG and other government agencies and industries. The ICEG 2023 was a success, with 113 abstracts, 62 invited speakers, 326 participants, 123 student participants, 75 different nations represented, and 25 industrial and educational exhibitors.



# International Conference on Microbiome: Human, Plant and Environmental Health - Application and Challenges

Conference The International "MICROBIOME: HUMAN, PLANT ENVIRONMENTAL HEALTH - applications and challenges", unfolded on November 21-22, 2023 at the Abu Dhabi National Exhibition Centre (ADNEC), attracted a diverse gathering of over 560 attendees, representing broad spectrum а interests and expertise. Notably, 74% of participants originated from the UAE, while the remaining 26% hailed from more than 28 other countries, including India, Oman, Saudi Arabia, Qatar, Pakistan,



Egypt, Italy, USA, Germany, UK, Lebanon, and beyond. This international participation underscored the paramount importance of microbiome science in planetary health, with a clear emphasis on its potential to address food security and contribute significantly to sustainability. Within the participant demographic, 30% were mainly Emirati undergraduate students, reflecting a keen interest in microbiome research among the younger generation. The remainder of the attendees comprised graduate students, researchers, scientists, healthcare professionals, environmentalists, policymakers, and industry leaders, all united in their curiosity about the recent advances in global microbiome research.

Jointly organized by the Khalifa Center for Genetic Engineering and Biotechnology (KGCEB), Abu Dhabi Agriculture and Food Safety Authority (ADAFSA), and the Department of Biology at the United Arab Emirates University, the conference served as a pivotal platform for exploring and discussing the intricacies of the microbiome within the framework of global one-health. This collaborative effort symbolized the convergence of minds from various sectors - scientists, healthcare professionals, policymakers, and industry leaders - all eager to delve into the most



recent and groundbreaking developments in microbiome research with a global and inclusive perspective. The event fostered interdisciplinary exchanges of ideas and insights, nurturing collaboration and raising awareness in the field.

# 2023 AUA Academic Workshop on "Delay Differential Equations and Applications to Immunology and Infectious Diseases (DDEs-AIIDs)"

November 23-24. 2023. the On Department of Mathematical Sciences hosted a two-day workshop on Delay Differential Equations Applications to Immunology and Infectious Diseases. This focused workshop brought together mathematicians and life science scholars from both inside and outside the Asian Universities Alliance (AUA) to meet, discuss, and exchange research mathematical modeling with delay differential equations and their application to infectious diseases. Multidisciplinary research on infectious diseases, chronic illnesses, and cancer were discussed in this session, along with possible directions for future investigation.



# Workshop on Stochastic & Machine Learning in Finance, Econometric Risk Modelling, and Other Sciences



The Department of Mathematical Sciences at the College of Science hosted a three-day workshop titled "Stochastic Machine Learning in Econometric Risk Modelling, and Other Sciences" (SMLF2024) on February 21-23, 2024. This workshop concentrated on mathematical problems linked to finance and economics, as well as practical applications in these fields. The goal was to bring together academics and industry professionals, as well as graduate students in mathematics, economics, and finance. Participants were able to present their research findings and discuss recent developments in a variety of topics, including stochastic processes, jump diffusions, stochastic volatility models, pricing and financial derivatives, price sensitivities computations, calibration, machine learning, risk, portfolio management, commodities, financial market integration, financial crisis, and contagion effects.

## Arab German Young Association (AGYA) Workshop



During the visit of the Arab-Germany Young Academy of Sciences and Humanities (AGYA) to the COS, UAEU, three back-to-back events were organized. On the first day 04/03/2024, there was a training session on Green Hydrogen production from different perspectives. Many of AGYA's members attended the training as well as some faculty members and graduate students from the Department of Chemistry. The next day (05/03/2024) began with a visit to the research labs in the Physics and Chemistry departments, followed by a panel discussion on Green Hydrogen production, with an expert panelists from Germany and the UAE. On 06/03/2024, an awareness day on medical waste treatment for sustainability was organized with more than six speakers from different universities in the UAE and Egypt.

# Al Workshop for Honor Students

On 4th March 2024, the COS Honor Students Committee presented a workshop on Artificial Intelligence entitled "How to integrate AI into Education: Designing, Delivering and Assessing Courses" by Dr. Ahmad Samer Wazan, Associate Professor at Zayed University, Abu Dhabi. The presentation explored a pedagogical approach that incorporates ChatGPT at the center of the education system rather than excluding it. In his talk, he showed the importance of leveraging both the limitations and strengths of AI in designing courses. Further, Dr. Wazan presented the results of data collected from eight authorized ChatGPT exams conducted in the UAE and France. The data demonstrates a weak correlation between student grades and their usage of ChatGPT during exams.



### **Departmental Seminars**

The various COS departments organized several scientific seminars featuring both internal and external speakers from international institutions. The number of seminars organized are as follows: Department of Biology (9) seminars, Department of Chemistry (12), Department of Geosciences (2), Department of Mathematical Sciences (14) and the Department of Physics (11). For detailed information, see Appendix 4.

# Participation In Scientific and Educational Exhibitions/Conferences

#### **ADIPEC 2023**

Under the guidance of the Department of Geosciences, 15 female and 5 male students took part in ADIPEC 2023 activities in Abu Dhabi from October 2–5, 2023. The students gave one oral presentation, and Geoscience Club students displayed their rock and mineral collection at the Ministry of Energy and Infrastructure booth.



# Second Annual GCC Exhibition for Education and Training



During the 2nd Annual GCC Exhibition for Education and Training, which took place at the Earth Hotel in Abu Dhabi on October 24–25, 2023, the College of Science was recognized for its exceptional participation. Our work evidenced quality inventiveness and demonstrated our dedication to knowledge advancement.

### Najah Education and Training 2023

Najah Education and Training is a successful platform for higher education student recruiting in the UAE. The 17th edition of this event was held at the Abu Dhabi National Exhibition Centre (ADNEC) from October 29th to October 31st, 2023. Prof. Salem Ben Said and Mr. Osama Almukbel (student) represented the College of Science in Najah 2023.



## College of Science Participation in COP28

In line with the goals and objectives of COP28, the Expo City Dubai organized the "Expo Live - University Innovation Program (UIP)", which offered students of UAE-based Universities an opportunity to design and present creative projects aiming at developing solutions for problems related to Climate Change. Under the patronage of the Dean College of Science (COS), 22 student COS teams submitted their projects to participate in this initiative. Each team was supervised by a COS faculty member.

Competing with over 300 teams from across the UAE, 3 of the UAEU College of Science qualified for the semi-final round which involved presenting their ideas at the Expo City in front of experts. 2 out of 3 UAEU College of Science teams qualified for the final round and were invited to pitch their projects at the COP28 event.

The College of Science was very glad to announce that both finalist teams turned out to be winners at COP28 and were awarded a grant of AED 25,000 each to develop their projects. The UAEU COS activities related to the Expo UIP Initiative were coordinated by Dr. Aquib Moin and Dr. Abdelouahid Samadi.



# The American Chemical Society (ACS) Regional MEA Conference



The American Chemical Society (ACS) Regional MEA Conference in Abu Dhabi (2-7 February 2024) aimed to bring together for alobal scientists exchange and collaboration, with noteworthy attendees including Prof. Omar Yaghi from UC Berkeley, who gave a speech on Metal Organic Framework environmental applications. Prof. Na'il Saleh and the UAEU Student Chapter of ACS are thanked for their outstanding efforts in arranging this conference and the student symposium, as well as getting invitations special to the leadership summit.

## 12th World Environmental Education Congress (WeeC2024)



Dr. Iltaf Shah and his students from the Department of Chemistry presented their recent research to the international community during the 12th WEEC2024, which took place in Abu Dhabi, UAE, from January 8 to February 1, 2024. WEEC is an international conference on education for the environment and sustainable development. The congress provides an opportunity for learning more about environmental and sustainability education, interacting with people from all around the world, and contributing original research work.

## Asian Universities Alliance (AUA) Youth Forum 2024

Mr. Ali Saeed Saif Aleissaee and Mr. Hamad Mukhtar Ahmed Alblooshi, students in the Department of Chemistry, have been honored by the Dean of the College and Head of the Chemistry Department for their UAEU representation at the AUA Youth Forum 2024 - Building a Better Future: Inspiring Youth for Sustainable Habitat, which was convened at Hong Kong University of Science and Technology (HKUST) from January 6-12, 2024.



### **Demo Day - Expo City - University Innovation Program**



The College of Science hosted the Expo City - University Innovation Program Demo Day on Thursday, November 2nd, 2023, at the Expo Hub, Science & Innovation Park. This event coincided with the selection of three College of Science teams as semifinalists for the Expo City - University Innovation Program, which invited university students from across the UAE to submit innovative projects to solve climate change problems in conjunction with the UAE's hosting of the COP28 event. The selected College of Science teams presented their concepts on Demo Day in order to practice their pitches and get feedback from the audience.

# **Sports and Social Activities**

## **College of Science Sports Day**

On October 24-25, 2023, the College's Social Activities Committee hosted an open sports day for students, faculty, and staff.



# College of Science Culture and Entertainment Day



College of Science Culture and Entertainment Day (November 9th, 2023) was an unforgettable evening that included sporting events and cross-cultural interactions with the COS family. The event was led by Prof. Muhammad Syam, the coordinator of the social activities committee. A cultural dinner was organized in conjunction with the programs.

# Honoring University College Trophy Winners

On September 21st, 20023, the Dean's Office of the College of Science recognized the students and staff who won the College Trophy competitions in 2023. Our sports teams competed well in the College Trophy contests, winning various prizes in both male and female categories, particularly in Beach Volleyball, Chess, Table Tennis, and Volleyball. The honoring event was also attended by the Dean, Vice Dean, and members of the social activities committee.



### **Astronomy Night Observation**



On November 15th, 2023, the Department of Physics' Space Science Group hosted an unforgettable Astronomy Night Observation event at the UAE University Research Farm in Al-Foah. Aspiring astronomers were treated to a celestial spectacle as they peered through telescopes and cameras to observe the mesmerizing beauty of Saturn, Jupiter, and its moons. The Astronomy Night Observation event was a resounding success, igniting passion and curiosity for astronomy among the participating students.

# Sunspot Observation: A Captivating Astronomical Event at UAE University

Sunspots, like dark markings on the Sun's face, are caused by powerful magnetic fields. These temporary spots come and go, creating unique patterns on the Sun's surface. On November 21st, 2023, students at UAE University embarked on an exciting celestial adventure, observing sunspots through telescopes and cameras. Organized by the Department of Physics' Space Science Group, this event kindled a passion for astronomy among the students, fueling their curiosity about the cosmos and inspiring them to unravel the universe's mysteries. The sunspot photographs were captured by Dr. Sreejith Karthikeyan.



### **Internship Poster Exhibitions**



Poster exhibition days were held by the College of Science Internship Unit on December 5, 2023 (Fall 2023), and April 30, 2024 (Spring 2024). Students from every department presented and exchanged stories about their experiences participating in internship training programs different institutions.

# **Prominent Scientific Visits**

Visit of Professor Andrew Hursthouse from the Environmental Chemistry at

the University of West Scotland

On September 12, 2023, Professor Andrew Hursthouse makes a visit to Geosciences Department, Museum, and Labs. Prof. Andrew was invited to the Times Higher Education (THE) University Impact Forum on Accelerating Action on SDG 6 (Sustainable Development Goal), hosted by the UAE University. presented "Aiding and Addressing: How Can Universities Promote Best Practice for Clean Water and Sanitation?" Professor Andrew Hursthouse emphasized that should universities not only meaningful discussions and establish frameworks around the Sustainable Development Goals (SDGs), but also allocate resources to implement sustainability initiatives.



### Visit of Professor Zhang Chuanjie of Tsinghua Shenzhen University, General Secretary of the Asian Universities Alliance (AUA)



Professor Maamar Benkraouda, Dean of the College of Science and Dr. Adama Diene, Head of the Department of Mathematical Sciences, both offered an honor to Professor Zhang Chuanjie of Tsinghua Shenzhen University. Professor Zhang led a delegation, as the General Secretary of the Asian Universities Alliance (AUA), that visited the college during the week of October 23rd, 2023. The meeting agenda included various initiatives, involving faculty collaboration, student activities and mobility, research funding, and more. Notably, the college has already positively contributed to some of these initiatives.

## Delegation from King Saud University, KSA.



The visitors from King Saud University (KSU), Prof. Ali Aldalbahy, Dean of Student Affairs and Prof. Mohamed Elnewehy, Professor of Chemistry, were both honored by Dr. Asma Al Menhali, Vice Dean of the College of Science, and Prof. Yaser Greish, Department of Chemistry October 26th, 2023. This visit was result of the a research collaboration between UAEU and KSU funded by an AUA grant supervised by Prof. Yaser Greish from the Department of Chemistry.

### Visit of Mr. Alessandro Cremonesi, ST Microelectronics

Alessandro Mr. Cremonesi, Executive Vice President, Chief Innovation Officer, and General Manager of System Research and Applications, ST Microelectronics, visited UAEU as a keynote speaker at the 15th International Conference on Innovations in Information Technology (IIT'23) on November 13-15, 2023. He visited the College of Science (Physics and Chemistry Labs), as well as the Labs of the College of IT. He also discussed the details of a MoU between UAEU and ST Microelectronics.



# Visit of Prof. Olivier Sparagano, Dean of Royal Agriculture University, United Kingdom

Prof. Olivier Sparagano, Dean, Royal Agriculture University, United Kingdom, and Prof. Mohamed Médecine Gharbi. Ecole Nationale de Vétérinaire de Sidi Thabet, Tunisia, visited UAEU on December 5th, 2023 as keynote speakers at the symposium on "Climate Change, Ticks, and Tick-borne Diseases: A One Health Approach", jointly organized by the Department Veterinary Medicine (CAVM) and Department of Biology (COS). The delegations paid visits to the College of Science as well as the College of Agriculture and Veterinary Medicine. During their discussed future collaborations, fostering partnerships between different departments or institutions, potentially leading to joint research projects, shared resources, or knowledge exchange in the field of tick research and related areas.



# Delegation from the Hunan Province Key Laboratory of China



On December 6th, 2023, a delegation from the Hunan Province Key Laboratory of China, represented by directors of the 15 Institutions supporting the laboratory, paid a visit to the United Arab Emirates University Geosciences Department and College of Science to explore Geoscience collaboration in international geochemical research in the United Arab Emirates. Topics of research emphasized by the delegation were applied geochemical programs addressing mineral and groundwater resource modeling; energy and fuel exploration; and environmental and climate modeling. Attendees discussed possibilities for future cooperation in these areas of research. Following the meeting, the visiting delegates were invited to view the Geoscience Museum and Geoscience Laboratories.

# Visit of Professor Ling San, Deputy President and Provost, President's Chair in Mathematical Sciences at Nanyang Technological University, Singapore.



Professor Ling San, Deputy President and Provost, President's Chair in Mathematical Sciences at Nanyang Technological University, Singapore, visited Department of Mathematical Sciences at the College of Science from December 9th to 15th, 2023, for research collaboration with Professor Kanat Abdukhalikov. During his visit, he engaged with numerous colleagues from the department, met with the Dean of the College of Science, Professor Maamar Benkraouda, the Associate Provost for Research, Professor Ahmed Murad, and the Deputy Vice Chancellor for Academic Affairs & Provost, Professor Ghaleb Ali Alhadrami Albreiki. The United Arab Emirates University and Nanyang Technological University expressed their commitment to strengthening ties through student exchange, research collaboration, PhD co-supervision, and other initiatives discussed during his visit to UAEU.

# Visit of Professor Jose Luis Marco-Contelles from the Institute of General Organic Chemistry (IQOG, CSIC), Spain.

Prof. Maamar Benkaouda, Dean of the College of Science, and Dr. Abdelouahid Samadi, Department of Chemistry, honored Professor Jose Luis Marco-Contelles, Professor of Chemistry from the Institute of General Organic Chemistry (IQOG, CSIC), Spain. This visit was the outcome of a scientific cooperation between UAEU and the CSIC in Madrid, Spain, which was directed by Dr. Abdelouahid Samadi of the Department of Chemistry. College of Science (COS) invited Prof. José Luis Marco Contelles to be a Guest Speaker for the COS Colloquium Series in the Fall of 2023. The talk title was "Contilisant, a small molecule for Alzheimer's Disease Therapy".



## Visit of Ras Al Khaimah Gas Company

The Department of Geosciences at the College of Science welcomed four geologists (Giacomo Firpo, Paul Swire, Andrew John Amey, and Avni Ozan Balta) from the RAK GAS Company on January 24, 2024, as part of a research cooperation between the Geosciences Department and the RAK GAS company.



# Visit of Prof. Rozalina Zakaria from the University of Malaya, Malaysia



Professor Rozalina Zakaria from the University of Malaya in Malaysia visited the Department of Physics from January 17 to January 31, 2024, to collaborate on research with Dr. Adel Najar. During her visit, Prof. Zakaria focused on developing perovskite thin films incorporating 2D materials for potential use in perovskite solar cells. Furthermore, she delivered a seminar at the Physics Department and participated in scientific discussions with faculty members to explore opportunities research collaborations future between our universities.

# Visit of Prof. Istvan Bagamery, the founder of the company Mediso (Hungary)

Prof. Istvan Bagamery, the founder of the company Mediso (Hungary), visited the College of Science to strengthen the research cooperation between the UAEU and Mediso. The company would like to see qualified students in its Medical Image Processing Team, particularly PhD students with expertise in Mathematics and deep learning.



# Collaboration Visit of Prof. Stefan Wuttke (Ikerbasque Research Professor, BC Materials, Spain) at the College of Science



Prof. Stefan Wuttke is a renowned young scientist working in the field of Materials Chemistry at the Basque Center for Materials, Applications & Nanostructures- Spain with hindex 56 and 10,641 citations. He visited the College of Science during Feb 25-29, 2024, as part of his collaboration with Prof. Saleh Thaker (Department of Physics) and Prof. Yaser Greish (Department of Chemistry) in a Strategic Research grant entitled "Design of Smart Gas Sensors for Human Breath Analysis Using 2D MXene-based Hybrid Nanomaterials". The visit was very successful, as the research team held a few meetings discussing the progress of the research work and future plans. Moreover, Prof. Stefan delivered an interesting seminar "MOF applications: what is the problem?" for faculty, students and staff of the college on Wednesday Feb 28, 2024 at 12:30 pm.

# Delegation from the Ministry of Defense, UAE

A delegation from the Ministry of Defense visited the College of Science Labs on 22nd March 2024. Prof. Ahmed Ali Murad, Associate Provost for Research introduced the delegation and explained purpose of the visit. The gathering was presided over by the Dean of the College, who welcomed the group and Dr. Asma Al Menhali, the of the Vice Dean College, presented an overview of the College with updates. The Assistant Dean for Research and Graduate Studies, the Assistant Dean for Student Affairs, and the Chairs of Geosciences, Chemistry, Mathematical Sciences, and Physics were all in attendance.



# **Educational & Scientific Meetings**

## **Meetings with New Faculty Members**

The new faculty members who joined the College of Science family in the Fall of 2023 were welcomed on September 8th, 2023, by the Dean's office of the College of Science. The meeting was presided over by the Dean of the College, who provided an overview of the College to the newcomers. The presence of the Vice Dean, the Assistant Dean for Research and Graduate Studies, the Assistant Dean for Students Affairs, and the Department Chairs enriched the discussion on the orientation of the new faculty. We extend our best wishes for a smooth transition to UAEU and wish them all the success in their career. New faculty members include Dr. Houssam Rahman and Dr. Ayham Zaitouny (Department of Mathematical Sciences), Dr. Mohamed Belfkir (Department of Physics), Dr. Fatima Labeed (Department of Biology), Dr. Yasir Raouf (Department of Chemistry), and Dr. Mabrouk Hassan (Department of Geosciences).





On February 16, 2024, from 9:00 am to 9:30 am., the College of Science Dean's office hosted a welcome meeting for new faculty members who joined the COS family in Spring 2024. The meeting was presided over by the Dean of the College, who provided newcomers with an overview of the institution. The Vice Dean, the Assistant Dean for Research and Graduate Studies, the Assistant Dean for Student Affairs, and the Department Chairs of Physics and Geosciences were also present, contributing to the discussion on incoming faculty orientation. We wish them a smooth transfer to UAEU and continued success in their careers. New faculty members include Adnan Younis and Dr. Edvin Idrisov (Department of Physics), Dr. Basem Elsafty (Department of Geosciences), and a visiting faculty from the Department of Biology, Dr. Janine Tan.

## **College Advisory Board Meetings**



First Advisory Board meeting for 2023–2024 was held by the College of Science on November 16th, 2023, at Mohammed bin Zayed University for Artificial Intelligence, Masdar City, Abu Dhabi. The Advisory Board Chair, Mr. Sultan Hajji, presided over the meeting, which covered a range of subjects pertaining to the College's strategy and collaborations with other organizations. On Thursday, April 18, 2024, the College of Science's second Advisory Board meeting (AY 2023–2024) took place at the National Meteorological Center headquarters, Abu Dhabi. Dr. Abdullah Al Mandoos, Director General of the National Center of Meteorology, invited all to an introductory tour of the center. Mr. Sultan Hajji, Advisory Board Chair, presided over the meeting, which covered a wide range of topics related to the College strategy and relationships with other organizations.

# Collaboration Meeting with ADNOC Higher Management

On Tuesday, October 31st, 2023, a collaboration meeting between ADNOC and the Department of Geosciences at UAEU was convened in ADNOC to discuss the cooperation agreement between ADNOC and the UAE University in the field of mineral exploration and mining.



## Collaboration Meeting with Abu Dhabi Judicial Department



The College of Science met with a delegation from the Abu Dhabi Judicial Department on November 15th, 2023, to discuss future research partnership. Both sides decided to sign an MOU as a steppingstone to initiate this collaboration.

## Collaboration Meeting with Saif Bin Zayed Academy

A meeting was held on September 20th, 2023 between College of Science and Shaikh Saif Bin Zayed (SBZ) Academy with the purpose of exploring support and collaboration in several key areas, including training, internships, research, facility access, curriculum feedback, financial assistance, and community engagement. This collaborative effort sought to enhance the overall quality, practical exposure, and research capabilities by capitalizing the expertise and resources of the Abu Dhabi Police and SBZ Academy, ultimately contributing to the advancement of forensic science and security in the UAE.



# Collaboration Meeting with Net Zero Technologies



Prof. Maamar Benkraouda (Dean of the College of Science) and Dr. Ruwaya Alkendi (Assistant Dean for Research and Graduate Studies) met with Sheikh Dr. Muhammad bin Muslim Al Ameri (Chairman of Net Zero Technologies) and his team on November 1st, 2023, to discuss ways of collaboration between the two parties.

## **General Meeting with Students**

The College of Science held a General Meeting with Students on Feb. 7, 2024, attended by the Dean, Assistant Dean for Student Affairs, Department Chairs and Assistant Dean for Research and Graduate Studies. The meeting aims to promote communication, ideas exchange, and to build a sense of community inside our campus. We are connecting the dots of progress and development via focused discussions and shared vision.



# **Coming Events**

# 01

# Workshops on "Knots and Spatial graphs 2024"

### November 05-07, 2024

The workshop primarily addresses fundamental questions in knot theory and low dimensional topology in general. It will bring together a wide range of leading experts in the field to discuss the state of the art in current research, both in terms of core fundamental problems and crossover to other areas and explore exciting new directions. Research topics to be discussed at the workshop include combinatorial knot theory, link homologies, topological invariants of links and spatial graphs, in addition to applications of knots and spatial graphs in other fields of science and mathematics.

# Workshops on "New Trends in Algebra and Its Applications"

### November 06-08, 2024

The Department of Mathematical Sciences of UAE University organizes a Workshop on New Trends in Algebra and Applications. The workshop addresses fundamental questions in algebra and discrete mathematics. The purpose of the workshop is to enhance collaboration among scholars from different countries including graduate students. This research event will include 1-hour talks contributed by the invited keynote speakers as well as short communications sessions with 15-min talks of other participants.

# 03 International Conference GULF4

### November 26-28, 2024

Under the patronage of the Chancellor of United Arab Emirates University, the Biology Department, and the College of Science, UAE University in collaboration with the Canadian Society of Aquatic Ecosystem Health and Management (AEHMS-Canada), are organizing the 4th International conference on "Sustainable management of the Arabian Gulf ecosystem health under climate change: Regional experiences and global practices" during the period 26–28 November 2024 (UAEU, Al Ain). The conference will be attended by scientists from 15 countries with a total of more than 65 presentations and posters.

The conference aims to discuss issues in the Impact of anthropogenic stressors e.g. oil, petroleum and power on Water quality, Climate change and more related topic and their effects on the Gulf Ecosystem. In addition to the international water quality agreements, Sustainability in emerging coastline practices, A.I. and Robotics contribution to ecosystem health.

# UAE-Italy Bilateral Conference-2024: Advanced Materials for the 21st Century

### February 3-4, 2025

This bilateral conference, organized by UAEU with Italian universities, focuses on recent applications of advanced materials. The 2-day, invitation-only event will feature prominent scientists from the UAE, Italy, and Europe across six themed sessions and two poster sessions for UAEU graduate students.

The conference aims to foster collaboration and potential joint grants among scientists. Themes include:

- Advanced Materials for Energy Applications
- Advanced Materials for Environmental Applications
- Advanced Materials for Biomedical Applications
- Advanced Materials in Magnetic Applications
- Advanced Materials for Optical Applications

# APPENDICES

# APPENDIX 1 GRADUATE STUDENTS' PUBLICATIONS

#	Student Name	Program	Title of the Research paper	Authors	Name of Journal
1	Wadha Khalifa Salem Rashed Alfalasi	PhD - Physics	First-principles study of H2 adsorption mechanism on defective MoSe2/graphene heterostructures	Wadha Alfalasi and Nacir Tit	MRS Advances
2	Wadha Khalifa Salem Rashed Alfalasi	PhD - Physics	Ferromagnetism in Defected TMD (MoX2, X = S, Se) Monolayer and Its Sustainability under O2, O3, and H2O Gas Exposure: DFT Study Open Access	Anjna Devi, Neha Dhiman, Narender Kumar, Wadha Alfalasi, Arun Kumar, P.K. Ahluwalia, Amarjeet Singh, Nacir Tit	Nanomaterials
3	Wadha Khalifa Salem Rashed Alfalasi	PhD - Physics	Designing a functionalized 2D- TMD (MoX2, X = S, Se) hosting half-metallicity for selective gas-sensing applications: Atomic-scale study Open Access	Wadha Alfalasi, Yuan Ping Feng, Nacir Tit	Acta Materialia
4	Wadha Khalifa Salem Rashed Alfalasi	PhD - Physics	Enzyme stabilization and thermotolerance function of the intrinsically disordered LEA2 proteins from date palm	Aziz, Mughair Abdul, Sabeem, Miloofer Kutty, M. Sangeeta; Rahman, Shafeeq; Alneyadi, Maitha Khalfan; Alkaabi, Alia Binghushoom; Almeqbali, Eiman Saeed; Brini, Faical; Vijayan, Ranjit; Masmoudi, Khaled	Scientific Reports
5	Amie Jobe	PhD - Cellular & Molecular Biology	Enzyme stabilization and thermotolerance function of the intrinsically disordered LEA2 proteins from date palm	Amie Jobe, Priya Antony, Suhib Altabbal, Yusra Al Dhaheri & Ranjit Vijayan	Scientific Reports
6	Amie Jobe	PhD - Cellular & Molecular Biology	Novel Plant-Protein (Quinoa) Derived Bioactive Peptides with Potential Anti- Hypercholesterolemic Activities: Identification, Characterization and Molecular Docking of Bioactive Peptides	Ajayi, F.F., Mudgil, P., Jobe, A., (), Gan, C Y., Maqsood, S.	Foods

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7	Tunde Joseph Osunmusanmi	PhD - Physics	Energy spectrum design and potential function engineering	AD Alhaidari, TJ Taiwo	Scientific Reports
8	Tunde Joseph Osunmusanmi	PhD - Physics	Nonlinear extension of the J- matrix method of scattering: A toy model	A.D. Alhaidari and T.J. Taiwo	Mathematical Physics
9	Mehreen Javed	PhD - Physics	Strained induced metallic to semiconductor transitions in 2D Ruddlesden Popper perovskites: A GGA + SOC approach	Javed, M., Sattar, M.A., Benkraouda, M., Amrane, N., Najar, A.	Applied Surface Science
10	Mehreen Javed	PhD - Physics	Band gap tailoring with octahedral distortion and bader charge analysis for 2D-Ruddlesden–Popper monolayer tin halide perovskites	Javed, M., Noureddine, A., Benkraouda, M.	Materials Science in Semiconductor Processing
11	Mehreen Javed	PhD - Physics	First-principles investigation on the novel half-Heusler VXTe (X=Cr, Mn, Fe, and Co) alloys for spintronic and thermoelectric applications	Sattar, M.A., Javed, M., Al Bouzieh, N., Benkraouda, M., Amrane, N.	Materials Science in Semiconductor Processing
12	Biruk Abera Cherkose	PhD - Geosciences	Audio-Magnetotelluric Survey for Groundwater Investigation in the Al-Jaww Plain in Eastern Abu Dhabi, Al-Ain, United Arab Emirates	Saibi H.; Ali M.Y.; Cherkose B.A.; Alaran A.; Ullah S.; Tsuji T.	Earth and Space Science
13	Biruk Abera Cherkose	PhD - Geosciences	Building a geospatial model to identify potential geothermal sites in Ayrobera: Afar depression, NE Ethiopia	Cherkose, B.A., Issa, S., Saibi, H., ElHaj, K.	Geothermics
14	Fouzia Shaheen	PhD - Mathematics	C*-algebra-valued measure of non-compactness with applications	Shaheen, F., Mehmood, N., Rawashdeh, A.A.	Results in Nonlinear Analysis
15	May Reda Mohamed Ahmed Ibrahim	PhD – Chemistry	MOF-Based Biosensors for the Detection of Carcinoembryonic Antigen: A Concise Review	Ibrahim, May R.; Greish, Yaser E	Molecules
16	Stephan Bruns	PhD - Ecology & Environmental Sc.	Occurrence of the endangered white spotted eagle ray Aetobatus narinari around the Lesser Antilles island of Saint Kitts: a photo-identification study	Conan, Anne; Dennis, Michelle M.; Gilbert, Kathleen; Lenain, Eva; Bruns, Stephan; Henderson, Aaron C.	Environmental Biology of Fishes

17	Stephan Bruns	PhD - Ecology & Environmental Sc.	Smooth muscle "microsphincters" in the gastric mucosa of stingrays (Elasmobranchii, Dasyatidae)	Conan, Anne; Dennis, Michelle M.; Gilbert, Kathleen; Lenain, Eva; Bruns, Stephan; Henderson, Aaron C	Journal of Fish Biology
18	Stephan Bruns	PhD - Ecology & Environmental Sc.	A wandering wedgefish illustrates the need for cooperative elasmobranch conservation in the Arabian Gulf	Vyshak Sureshkumar; Khalifa Hamad Harib; Adewale Oriyomi Oseni	Environmental Biology of Fishes
19	Rener Sahot De Jesus	PhD - Cellular & Molecular Biology	Detection, Identification, and Inactivation of Histamine- forming Bacteria in Seafood: A Mini-review Open Access	Daniel Lance Nevado, Sophia Delos Santos, Gelian Bastian, Jimson Deyta, El-jay Managuelod, Jamil Allen Fortaleza, Rener De Jesus	Journal of Food Protection
20	Taimun Qaisar	PhD - Mathematics	Genetic Algebras Associated with ξ(a)-Quadratic Stochastic Operators	Mukhamedov, Farrukh; Qaralleh, Izzat; Qaralleh I.; Qaisar, Taimun; Hasan, Mahmoud Alhaj	Entropy
21	Najwa Qasem Hussein Al Bouzieh	PhD - Physics	Ultrahigh power factor of Bi/Zn co-doped SnSe: Mechanical and thermoelectric properties on DFT level	Najwa Al Bouzieh, Maamar Benkraouda, Noureddine Amrane	Materials Chemistry and Physics
22	Najwa Qasem Hussein Al Bouzieh	PhD - Physics	A Comparative Study of Electronic, Optical, and Thermoelectric Properties of Zn-Doped Bulk and Monolayer SnSe Using Ab Initio Calculations	Najwa Al Bouzieh, Muhammad Atif Sattar, Maamar Benkraouda and Noureddine Amrane	Nanomaterials
23	Najwa Qasem Hussein Al Bouzieh	PhD - Physics	Optoelectronic, mechanical, and thermoelectric properties of Na/I co-doped SnSe via ab initio calculations	Al Bouzieh, N., Sattar, M.A., Benkraouda, M., Amrane, N.	Journal of Solid-State Chemistry
24	Najwa Qasem Hussein Al Bouzieh	PhD - Physics	First-principles investigation on the novel half-Heusler VXTe (X=Cr, Mn, Fe, and Co) alloys for spintronic and thermoelectric applications	Sattar, M.A., Javed, M., Al Bouzieh, N., Benkraouda, M., Amrane, N.	Materials Science in Semiconductor Processing
25	Najwa Qasem Hussein Al Bouzieh	PhD - Physics	Ab initio investigation of the structural, optoelectronic, mechanical, vibrational, and thermoelectric properties of the SixSn1–xSe alloys	Muhammad Atif Sattar, Najwa Al Bouzieh, Fayyaz Hussain, Maamar Benkraouda, Nacir Tit & Noureddine Amrane	Journal of Materials Science

26	Irfa Anwar	PhD - Cellular & Molecular Biology	Microbes Bioconversion of Agri-Waste for Soil Health and Crop Productivity	Mathew, G.M., Anwar, I., Binod, P., Pandey, A., Sindhu, R.	Microbial Bioprocessing of Agri- Food Wastes: Industrial Applications
27	James Kegere	PhD - Chemistry	Immobilized Bacterial Cells on Electrospun Nanofibers for Crude Oil Spills Treatment and Bioremediation	Kegere, J., Alblooshi, A., Nguyen, H.L., Alnaqbi, M.A.	Chem Nano Mat
28	James Kegere	PhD - Chemistry	Metal-organic frameworks for CO2 capture and conversion (Book Chapter)	Kegere, J., Nguyen, H.L.	Reticular Chemistry and Applications: Metal-Organic Frameworks
29	Shahana Seher Malik	PhD - Cellular & Molecular Biology	Increasing Consumption of Antibiotics during the COVID- 19 Pandemic: Implications for Patient Health and Emerging Anti-Microbial Resistance	Malik, S.S., Mundra, S.	Antibiotics
30	Fareeha Jamal	PhD – Mathematics	On inverse sum indeg energy of graphs	Jamal, F., Imran, M., Rather, B.A.	Special Matrices
31	Abdulmuizz Adamson	PhD – Chemistry	Significant role of well- dispersed Fe2+ ions in the support of Ni catalysts in enhancing coking resistance during partial oxidation of methane	Khaleel, Abbas; Pillantakath, Abdul Rasheed;Adamson, Abdulmuizz	International Journal of Hydrogen Energy
32	Gouthaman Puthan Purayil	PhD - Cellular & Molecular Biology	Fully resolved assembly of Fusarium proliferatum DSM106835 genome	Purayil, G.P., Almarzooqi, A.Y., El- Tarabily, K.A., You, F.M., AbuQamar, S.F.	Scientific Data
33	Sameera Karumannil	PhD - Cellular & Molecular Biology	Impact of Exogenous Melatonin Application on Photosynthetic Machinery under Abiotic Stress Conditions	Karumannil, Sameera; Khan, Tanveer Alam; Kappachery, Sajeesh	Plants
34	Narender Kumar	PhD - Physics	Functionalized Hf3C2 and Zr3C2 MXenes for suppression of shuttle effect to enhance the performance of sodium—sulfur batteries Open Access	Khan, S., Kumar, N., Hussain, T., Tit, N.	Journal of Power Sources
35	Narender Kumar	PhD - Physics	Ferromagnetism in Defected TMD (MoX2, X = S, Se) Monolayer and Its Sustainability under O2, O3, and H2O Gas Exposure: DFT Study Open Access	Anjna Devi, Neha Dhiman, Narender Kumar, Wadha Alfalasi, Arun Kumar, P.K. Ahluwalia, Amarjeet Singh and Nacir Tit	Nanomaterials

36	Yaman Mothanna Sabsabi	Mathematics	Influence of PST and PHF heating conditions on the swirl flow of Al+Mg+TiO2 ternary hybrid water-ethylene glycol based nanofluid with a rotating cone	Salah, Yousef; Mukbel, Osama Al; Sabsabi, Yaman; Saranya S.; Al- Mdallal, Qasem M.; Mukhamedova, Farzona George, Suja;	International Journal of Thermofluids
37	Mohamed Omer Elbashir Elsiddig	Molecular Biol & Biotechnology	Ticarcillin degradation product thiophene acetic acid is a novel auxin analog that promotes organogenesis in tomato	Rafi, Mohammed; Aldarmaki, Maitha; ElSiddig, Mohamed; Nuaimi, Mariam Al; Sudalaimuthuasari, Naganeeswaran; Nath, Vishnu Sukumari; Mishra, Ajay Kumar; Hazzouri, Khaled Michel; Shah, Iltaf; Amiri, Khaled M. A.	Frontiers in Plant Science
38	Sara Helmy Ramadan Abdalla Saada	Chemistry	Iodine-DMSO Mediated Conversion of N- Arylcyanothioformamides To N-Arylcyanoformamides and The Unexpected Formation of 2- Cyanobenzothiazoles	Ziad Moussa, Zaher M. A. Judeh, Ahmed Alzamly, Saleh A. Ahmed, Harbi Tomah Al-Masri, Bassam Al- Hindawi, Faisal Rasoola and Sara Saadaa	RSC Advances
39	Maitha Salem Mohammed Abdulla Aldarmaki		DNA-free high-quality RNA extraction from 39 difficult-to- extract plant species (representing seasonal tissues and tissue types) of 32 families, and its validation for downstream molecular applications	Sasi, Shina; Krishnan, Saranya; Kodackattumannil, Preshobha; Shamisi, Aysha Al; Aldarmaki, Maitha; Lekshmi, Geetha; Kottackal, Martin; Amiri, Khaled M. A	Plant Methods
40	Mazoun Talal Abdul Rahman AL Azzani	Molecular Biol & Biotechnology	Synthesis of New Chromene Derivatives Targeting Triple- Negative Breast Cancer Cells	Alneyadi, Aysha; Nizami, Zohra Nausheen; Aburawi, Hanan E.; Hisaindee, Soleiman; Nawaz, Muhammad; Attoub, Samir; Ramadan, Gaber; Benhalilou, Nehla; Al Azzani, Mazoun; Elmahi, Yassine; Almeqbali, Aysha; Muhammad, Khalid	Cancers

41	Haneen Edhar Y Abouhaligah		Modelling and Visualizing Urban Growth Trajectory in Abu Dhabi using Time Series Satellite Imagery	Issa S.; Al Ameeri M.; Abouhaligah H.; Alkaabi N. ; Sultan M.; Dahy B.	International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences - ISPRS Archives
42	Yaman Mothanna Sabsabi	Mathematics	Influence of PST and PHF heating conditions on the swirl flow of Al+Mg+TiO2 ternary hybrid water-ethylene glycol based nanofluid with a rotating cone	Salah, Yousef; Mukbel, Osama Al; Sabsabi, Yaman; Saranya S.; Al- Mdallal, Qasem M.; Mukhamedova, Farzona	International Journal of Thermofluids
43	Zohra Nausheen Nizami		Synthesis of New Chromene Derivatives Targeting Triple- Negative Breast Cancer Cells	Alneyadi, A., Nizami, Z.N., Aburawi, H.E., Vijayan, R., Iratni, R.	Cancers
44	Zohra Nausheen Nizami		Oxidative Stress Inducers in Cancer Therapy: Preclinical and Clinical Evidence	Nizami, Z.N., Aburawi, H.E., Semlali, A., Muhammad, K., Iratni, R.	Antioxidants
45	Mohamed Ali Khalaf Abdelrahman Mahmoud	Chemistry	First Exclusive Stereo- and Regioselective Preparation of 5-Arylimino-1,3,4- Selenadiazole Derivatives: Synthesis	Ziad Moussa, Alejandro Perez Paz, Mohamed A. Khalaf, Zaher M. A. Judeh, Ahmed Alzamly, Abdelouahid Samadi, Jabir H. Al- Fahemi, Madhu Babu Tatina, Harbi Tomah Al-Masri, Rabab S. Jassas, Saleh A. Ahmed	Chemistry an Asian Journal
46	Mohamed Ali Khalaf Abdelrahman Mahmoud	Chemistry	Spectroscopic, anti-bacterial, anti-cancer and molecular docking of Pd(II) and Pt(II) complexes with (E)-4- ((dimethyl amin o)methy I) -2 - ((4,5-dimethylthiazol-2-yl)diazenyl)phenol ligand	Ahmed S.M. Al Janabi, KhulooH. Oudah, SamarA. Aldossari, MohameA. Khalaf Abdulrahman M. Saleh, Mohammad R. Hatshan, Nourah B. Altheeb, Syed Faroq Adil	Journal of Saudi Chemical Society

47	Mohamed Ali	Chemistry	The Essential Oil of	Oscar Herrera-	Plants
"′	Khalaf	Chemistry	Petroselinum crispum (Mill)	Calderon,	i idiics
	Abdelrahman		Fuss Seeds from Peru:	Abdulrahman M	
	Mahmoud		Phytotoxic Activity and In	Saleh, Ammar A	
			Silico Evaluation on the Target	Razzak Mahmood,	
			Enzyme of the Glyphosate	Mohamed A Khalaf,	
			Herbicide	James Calva, Eddie	
				Loyola-Gonzales,	
				Freddy Emilio Tataje-	
				Napuri, Haydee	
				Chávez, José Santiago	
				Almeida- Galindo,	
				Javier Hernán Chavez-	
				Espinoza, Josefa	
				Bertha Pari-Olarte	
48	Mohamed	Space Science	Custom GNSS Signal Simulator	Mohamed Abduljawad,	NAVIGATION, Journal
	Mohamed Yaser		for LEO GNSS Augmentation	Alina M. Hasbi, Jean-luc	of the Institute of
	Abduljawad		System	Issler	Navigation

## **APPENDIX 2**

# **MASTER AND PhD THESIS DEFENSES (AY: 2023-2024)**

No	Student Name	ID	Program	Thesis Title	Supervisor
1	Aisha Ali Khalfan Sulaiman AlNaqbi	202070566	Space Science	COMMISSIONING OF THE UAEU RADIO ARRAY AND PILOT LOW- FREQUENCY RADIO ASTRONOMY STUDIES	Dr. Aquib Moin
2	Haneen Y Abouhaligah	201630074	Space Science	ESTIMATING MARS SURFACE WIND STRESS AND DUST LIFTING USING REANALYSES BASED ON EMM AND OTHER SPACECRAFT OBSERVATIONS	Dr. Roland Young
3	Ammara Aftab	700036114	Space Science	RADIO EMISSION FROM LOW MASS ACTIVE GALACTIC NUCLEI	Dr. M. Abdul Latif
4	Naser Salem Mohamed Aldahmani	202170104	Space Science	COASTAL BATHYMETRY OF UAE USING SATELLITE-BASED REMOTE SENSING DATA	Dr. Mritunjay Singh
5	Malak Ali Hamed	201970122	Physics	MEASURING JUPITER'S WIND FROM CASSINI SPACECRAFT OBSERVATIONS	Dr. Roland Young
6	Zohra Nizami	202170108	Molecular Biology & Biotechnology	ANTI-CANCER ACTIVITY OF RHUS CORIARIA (SUMAC) AGAINST 5-FLUOROURACIL- RESISTANT COLORECTAL CANCER CELLS	Prof. Rabah Iratni
7	Sara Dewaib Rahmah Alhmoudi	201606655	Molecular Biology & Biotechnology	MODULATION OF CHRONIC ALLERGIC CONTACT DERMATITIS THROUGH B CELLS REPROGRAMMING	Dr. Khalid Mohammad
8	Suhib Ziad Mohammad Abu Jwayed	201970176	Molecular Biology & Biotechnology	ASSOCIATION OF HUMAN LEUKOCYTE ANTIGEN (HLA) ALLELES WITH ATOPIC DERMATITIS IN THE UAE POPULATION	Dr. Khalid Mohammad
9	Maya Iyad Berakdar	201350506	Chemistry	ANALYSIS OF PHARMACEUTICAL RESIDUES IN WASTEWATER FROM A AIN, UNITED ARAB EMIRATES USING LIQUID CHROMATOGRAPHY- TANDEM MASS SPECTROMETRY AND CIRCULAR DICHROISM:POTENTIAL HAZARDOUS EMERGENT CONTAMINANTS	Prof. Alaa Salem

10	Fatima Saif Ali AlHumaidi	201506535	Chemistry	MODIFICATION OF CELLULOSE	Dr. Soleiman
			,	FIBERS BY ACYL GRAFTING FOR	Hisaindee
				OIL SPILL REMEDIATION	
11	Mohamed Mahmoud	202170149	Chemistry	EXCLUSIVE REGIOSELECTIVE	Dr. Ziad Moussa
				SYNTHESIS OF POTENTIALLY	
				BIOACTIVE 1,3,4-	
				SELENADIAZOLE	
12				POPULATION STRUCTURE AND	
	Noura Khamis Khursan		Environmental	GENETIC DIVERSITY OF THE	
	Almansoori	201309042	Science &	SOCOTRA CORMORANT	Dr. Oliver Manlik
	Aimansoon		Sustainability	(PHALACROCORAX	
		,	2	NIGROGULARIS)	
13				BIOCHEMICAL	
				CHARACTERIZATION OF A	
			Environmental	FRUCTOSYLTRANSFERASE	
	Ahlam Mohammed Sultan	201105512	Environmental Science &	ENZYME FROM A HALOPHILIC	Dr. Navia Munauca
	Alameri	201105512	Sustainability	ARCHAEON, HALOARCULA	Dr. Nayla Munawar
			Sustainability	MARISMOTUI, FOR	
				BIOTECHNOLOGICAL	
				APPLICATIONS The use of	
14	Bader Mazin	200337460		ACTINOBACTERIA- PRODUCING	Prof. Khaled
				1 AMINOCYCLOPROPANE-1-	ElTarabily
				CARBOXYLIC ACID DEAMINASE	
			Environmental	AS A BIOCONTROLAGENT	
			Science &	AGAINST NEOSCYTALIDIUM	
			Sustainability	DIMIDIATUM THE CASUAL	
				AGENT OF STEM CANKER OF	
				POINCIANA TREES	
15	Hamad AhmedAlMansoori	200981354	Environmental	INVESTIGATING THE MASS	Prof. Waleed Hamza
			Science &	MORTALITY INDUCED FACTORS	
			Sustainability	OF PEARL OYSTER (PINCTADA	
			,	RADIATA) AT ABU DHABI	
				PEARLS FARM, UAE	
16	Ahmed Elsir	201250391	Chemistry	ADVANCED NANOSTRUCTURED	Dr. Fathy Hassan
			,	MATERIALS FOR WATER	,
				HARVESTING AND ENERGY	
				STORAGE	
17	Yassin Ibrahim Ahmed	201350231	Environmental	Satellite-Based Spatial and	Dr. Mohamed
			Science &	Temporal Characterization of	Hamouda
			Sustainability	Rainfall Over the UAE	
18	Mohamed Omer ElBashir	201350162	Molecular	OPTIMIZATION OF IN-VITRO	Prof. Khaled Amiri
			Biology &	REGENERATION AND	
			Biotechnology	AGROBACTERIUM-MEDIATED	
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				TRANSFORMATION OF (LACTUCA SATIVA) FOR ENHANCED SALT AND DROUGHT TOLERANCE	
19	Moath Ali	201735244	Mathematics	PRICING ASIAN OPTIONS DURING CRISES WITH THE IMPACT OF EXOGENOUS EVENTS	Prof. Youssef El- Khatib
20	Ahmad Saeed Ghanem	202070023	Chemistry	THEORETICAL AND COMPUTATIONAL ASTROCHEMISTRY: A VARIATIONAL QUANTUM MONTE CARLO (VQMC) STUDY OF THE TRIHYDROGEN MOLECULE CATION (H3 + )	Dr. Alejandro Perez Paz
21	Abdulla saad Elshaal	202170179	Space Science	ANALYSIS, DESIGN AND VALIDATION OF THE STRUCTURAL SYSTEM OF ALAINSAT-1 CUBESAT	Dr. Mohammed Okasha
22	Asma Ali	202070551	Space Science	DETERMINATION OF VARIAITONS IN THE ORBITAL PARAMETERS OF A SAMPLE OF SATELLITES THROUGH SPACECRAFT TRACKING	Dr. Aquin Moin
23	Maitha Salem Aldermaki	201407195	Molecular Biology & Biotechnology	EXPRESSION OF HUMAN ARGININE VASOPRESSIN IN ARABIDOPSIS AND ASSESSMENT OF ABIOTIC STRESS TOLERANCE	Prof. Khaled Amiri
24	Archana Mathai	202070675	Molecular Biology & Biotechnology	INCREASING THE PHYTOREMEDIATION EFFICIENCY OF HEAVY METAL- CONTAMINATED SOILS IN THE UAE USING ENDOPHYTIC ACTINOBACTERIA FOR SUSTAINABLE AGRICULTURE	Prof. Synan AbuQamar
25	Alia Musabbeh Khamis	201602264	Molecular Biology & Biotechnology	SYNTHESIS, CHARACTERIZATION AND BIOLOGCAL EVALUATION OF SAFRANAL-LOADED METALORGANIC FRAMEWORK NANOSTRUCTURES	Prof. Yaser Greish
26	Mohammad Samih	700036453	Physics	INVESTIGATING THE MAGNETIC CYCLE OF THE PLANET-HOSTING STAR HD189733	Dr. Rim Fares

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27	Maryam Yahya Al Sakkaf	200631676	Chemistry	MOLECULAR GEOMETRY CHANGES IN SOME CARBONYLS AND AROMATIC RINGS UPON ELECTRONIC EXCITATION: HERZBERG-TELLER VIBRONIC COUPLING AND UNITARY DUSCHINSKY ROTATION	Prof. Mohammed Toutounji
28	Julius Kurian	700039915	Mathematical Sciences	FAITHFUL REPRESENTATION OF FREE GROUPS AND CONGRUENT SUBGROUPS OF <i>SL</i> 3 ( <i>Z</i> )	Prof. Alexandr Zubkov
29	Aaesha Mohammed	202170123	Molecular Biology & Biotechnology	PHYTOCHEMICAL ANALYSIS, ANTIOXIDANT, AND ANTI- BREAST CANCER EVALUATION OF H. TUBERCULATUM, A MEDICINAL PLANT NATIVE TO THE EMIRATE OF RAS AL- KHAIMAH, UAE	Dr. Yusra AlDhaheri
30	Ruba Z. Hameed	700038096	Mathematical Sciences	CELLULAR AUTOMATA MODELING APPROACH OF ADDICTION	Dr. Abdessamad Tridane
31	Heba Hameed	201350513	Mathematical Sciences	MATHEMATICAL MODELING OF AN EPIDEMIC IN SCALE-FREE NETWORK WITH IMPERFECT VACCINATION	Dr. Abdessamad Tridane
32	Mazoun Talal Al Azzani	201540113	Molecular Biology & Biotechnology	THE ANTICANCER ACTIVITY OF NOVEL 8-HYDROXYQUINOLINE DERIVATIVES AGAINST 5- FLUOROURACIL RESISTANT COLORECTAL CANCER CELLS	Prof. Rabah Iratni
33	Fedaa Ismail AbuNawa	700039658	Mathematical Sciences	TOPOLOGICAL INDICES AND THEIR APPLICATIONS IN DESIGNING DRUGS	Dr. Muhammad Imran
34	Sara Ali Abdulla Maleeh Alneyadi	201700676	Molecular Biology & Biotechnology	FUNCTIONAL CHARACTERIZATION OF POTATO ARP1 GENE ENCODING AUXIN- REPRESSED PROTEIN IN ARABIDOPSIS THALIANA UNDER SALINITY STRESS CONDITIONS	Dr. Mayank Gururani

### **PhD Dissertations**

No	Student Name	ID	Program	Thesis Title	Supervisor
1	Biruk Abera Cherkose	201990083	Geosciences	LATE CRETACEOUS OPHIOLITE	Prof. Hakim Saiibi
				EMPLACEMENT AND CENOZOIC	
				COLLISIONAL TECTONICS IN THE	

				NORTHERN UAE: INSIGHTS FROM BROADBAND MAGNETOTELLURIC DATA	
2	Najwa Hussein Al Bouzieh	202090127	Physics	ELECTRICAL, OPTICAL, AND THERMAL PROPERTIES OF SnSe- BASED MATERIALS WITH HIGH THERMOELECTRIC PERFORMANCES	Prof. Noureddine Amrane
3	Wadha Al Falasi	201001502	Physics	AB-INITIO INVESTIGATION OF TRANSITION METAL DICHALCOGENIDE MONOLAYER FOR OPTOELECTRONIC, GAS- SENSING, INFORMATION- AND ENERGY-STORAGE APPLICATIONS	Prof. Nacir Tit
4	Mehreen Javed	201890081	Physics	FIRST PRINCIPLES INVESTIGATION OF ENERGY HARVESTING MATERIALS FOR GREEN ENVIRONMENT	Prof. Maamar Benkraouda
5	Fouzia Shaheen	201990173	Mathematics	ON THE PROJECTIONS AND UNITARY GROUPS OF UNITAL C*-ALGEBRAS	Prof. Ahmed AlRawashdeh
6	Amrutha Aravind	201990184	Ecology & Environmental Science	REPRODUCTIVE BIOLOGY OF THE JELLYFISH OUTBREAK ALONG THE UAE COASTAL WATERS	Prof. Waleed Hamza
7	Khalid Galal ElDin	200734761	Geosciences	MAPPING THE INVISIBLE: MACHINE LEARNING AND GEOVISUALIZATION METHODS FOR GROUNDWATER MANAGEMENT	Dr. Dalal Alshamsi
8	Ahmed Abuibaid	201150365	Chemistry	DEVELOPMENT OF HIGHLY EFFICIENT HYBRID- FUNCTIONALIZED MEMBRANES FOR SUSTAINABLE WATER HARVESTING	Dr. Yaser Greish
9	May Reda Mohamed	202090115	Chemistry	DESIGN, SYNTHESIS AND CHARACTERIZATION OF ZINC AND GOLD-BASED METAL- ORGANIC FRAMEWORKS AND COMPLEXES FOR THE DETECTION AND TREATMENT OF CANCER	Dr. Yaser Greish

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10	Nour ElHouda Debouza	201670061	Ecology & Environmental Science	GERMINATION AND SEEDLING GROWTH OF NATIVE UAE PLANT SPECIES: THE COMBINED EFFECTS OF ELEVATED CO2 AND TEMPERATURE	Prof. Taoufik Ksiksi
11	Feras Adel Mohammad Alsalem	201690415	Ecology & Environmental Science	PRODUCED WATER MANAGEMENT FROM PRODUCTION SITES IN THE STATE OF KUWAIT	Prof. Thies Thiemann
12	Abdul Kareem Kalathil Soopy	201990031	Physics	PEROVSKITE MATERIALS FOR OPTOELECTRONICS APPLICATION: SOLAR CELLS AND PHOTODETECTORS	Dr. Adel Najar

# APPENDIX 3 RESEARCH GRANTS AWARDED IN 2023

### **Strategic Research**

No.	Name	Department	Title
1	Mohammad Alam	Biology	Understanding metabolic re-organization in Date palm due to biotic and abiotic stresses, using systems biology approaches
2	Adel Najar	Physics	Surface/bulk perovskite passivation strategy toward efficient and stable perovskite solar cells
3	Sunil Mundra	Biology	AridBacDVM: Assessing the impact of extreme aridity on soil bacterial diversity, vulnerability, and multifunctionality in the desert ecosystem
4	Fathy Hassan	Chemistry	Design and Development of MXenes/Zinc Chalcogenide based Heterostructures for Efficient Photocatalytic Green H2 Evolution

### Asian Universities Alliance (AUA)

No.	Name	Department	Title
1	Fathalla Rihan	Mathematical	Continuous Runge-Kutta Methods for Pantograph Delay
		Sciences	Differential Equations
2	Kanat	Mathematical	Codes associated with arcs and caps, and MDS codes
	Abdukhalikov	Sciences	
3	Muhammad Imran	Mathematical	Spectral study of generalized adjacency matrices of graphs
		Sciences	and its applications
4	El Hadi Sadki	Physics	Two Dimensional Materials from Non-layered Non-Van-
			der-Waals Crystals: Synthesis and Characterization

### **UPAR**

No.	Name	Department	Title
1	Salah Nasri	Physics	Confronting the non-SUSY SO(10) GUT with updated
			Proton Decay, Neutrino and Cosmological data
2	Osman Abdelghany	Geosciences	Middle to Late Eocene paleo-environment and fossil
			assemblages of the Dammam Formation, Abu Dhabi and
			Sharjah Emirates, UAE
3	Ziad Moussa	Chemistry	Sustainable Synthesis and Evaluation of Cetilistat and
			Related Derivatives as Potential Anti-Obesity Drugs
4	Saleh Mahmood	Physics	Development of the Aptamer-based Upconversion
			Fluorescent Sensor for the Detection of infectious
			Pathogens for Food Safety



5	Humberto Gil Silva	Mathematical	Frontiers of Non-Standard Function Spaces Theory
	Rafeiro	Sciences	
6	Sameer Mirza	Chemistry	Overcoming endocrine resistance by targeting
			Pontin/Reptin proteins
7	Naslim	Physics	A study of Massive star feedback and high-mass star
	Neelamkodan		formation in the Magellanic clouds.
8	Zsolt Balogh	Mathematical	Algebra and deep learning in image processing
		Sciences	
9	Dalal Saif Sulaiman	Geosciences	Environmental settings in a changing climate: land-sea
	Alshamsi		interactions along the Gulf of Oman
10	Mohammed Kalim	Chemistry	Engineering the production of prodigiosin using a marine
	Akhtar		bacterium
11	Khaled El Tarabily	Biology	Enhancing Drought Tolerance in Plants by Endophytic
			Actinobacteria in the United Arab Emirates

### Start-up

No.	Name	Department	Title
1	Amit Kumar	Biology	Searching the past to secure the future: Identifying efficient root and rhizoSphere traits for Sustainable crop production (OASIS)
2	Mohamed Qenawy	Chemistry	Covalent Organic Frameworks for Photocatalysis Applications: Robust Scaffold, High Photostability, and Efficient System
3	Mabrouk Hassan	Geosciences	Evaluating the mafic-ultramafic rocks and their associated platinum group elements mineralization in the UAE as strategic economic metals using mineralogical, geochemical, and isotopic techniques
4	Yasir Raouf	Chemistry	Structural Optimization of a first-in-class Covalent HDAC Inhibitor towards Improved In Vivo Pharmacokinetics
5	Mohamed Belfkir	Physics	Search for the double Higgs boson production using ATLAS detector at the LHC with Run-2 + Run-3 data
6	Alaa Ahmed	Geosciences	Isotope Fingerprinting of Emirates Waters "IFEW"
7	Ayham Zaitouny	Mathematical Sciences	Advanced Time Series Analysis Based on Phase Space Reconstruction and Dynamical Systems Approaches. Applications in Engineering, Geology and Health Sectors
8	Fatima Labeed	Biology	The role of the circadian rhythms in platelet behaviour in health and disease
9	Houssam Abdul Rahman	Mathematical Sciences	Localization and localization-like phenomena in quantum (many-body) systems

### District 4.0

No.	Name	Department	Title
1	Ayham Zaitouny	Mathematical	IoT-based Fault Detection System for Smart Predictive
		Sciences	Maintenance: Application to rotary motors
2	Haila Aldosari	Physics	Exploring Doped-Ga2O3-Based Memristors for
			Neuromorphic Computing Solution
3	Fathy Hassan	Chemistry	Cobalt Layered Double Hydroxide (Co-LDH) for High-
	,	,	Performance Zinc Air Batteries

### SDG

No.	Name	Department	Title
1	Shaikha Alneyadi	Chemistry	Combatting M. cartusiana: Designing Effective
			Molluscicides with Novel trifluoromethylpyrazolones
			derivatives

### **KU-UAEU**

No.	Name	Department	Title
1	Adel Najar	Physics	Defects Passivation Strategies toward Higher Efficiency
			Perovskite Solar Cell Devices

### **SURE PLUS 2023**

No.	Name	Department	Title
1	Synan AbuQamar	Biology	Studying the Effect of the Plant-growth Promoting
			Rhizobacteria on Mango Diseases in the United Arab
			Emirates
2	Amit Kumar	Biology	Impacts of micropLastic on Organic carbon dynamics in
			mAngrove seDiments (LOAD)
3	Mayank Gururani	Biology	Elucidating the regulatory relationship of chloroplast
			biogenesis and photosystem II repair genes through
			transcriptome analysis of Arabidopsis mutants lacking
			Deg7 protease.
4	Rabah Iratni	Biology	Anti-pancreatic activity of new synthetic chromene
			compounds
5	Mohammad Fazale	Biology	Unraveling the interplay between hydrogen sulfide and
	Haque		selenium in the drought-stress response of tomato plants
6	Youngwook Kim	Biology	The effects of extreme weather events on vegetation
			productivity in Al Ain UAE using multi-source satellite
e.			remote sensing
7	Ranjit Vijayan	Biology	In silico exploration of the binding of antibacterial
			peptides and their targets
8	Khaled El Tarabily	Biology	Marine Actinobacteria for Sustainable Development Goal
			(SDG13: climate action) in the UAE

9	Asma AlMenhali	Biology	The Impact of Sunlight Therapy on Serum Vitamin D Levels and the Immune and Mental Health
10	Ruwaya Al Kendi	Biology	Developing Synergistic Microbial Consortia for Enhanced Plastic Degradation Efficiency
11	Shaikha Alneyadi	Chemistry	Hydrophilic Magnetic COFs: The Answer to Neonicotinoid Insecticide Removal
12	Ziad Moussa	Chemistry	Title of the Research Project: Improved Route to Prepare N- arylcyanothioformamides for Ultimate Use in the Controlled Regioselective Synthesis of Potentially Bioactive 5-Imino-2- selenoxoimidazolidine-4-thiones
13	Iltaf Shah	Chemistry	Exploring Antioxidant Profiles of Dry Fruits for Health Promotion
14	Abbas Khaleel	Chemistry	In-situ spectroscopic investigation of activation of CO2, CO, and CH4 over metal catalysts supported on multi-metal perovskites as catalysts for CO2 reduction
15	Nail Ibrahim	Chemistry	Supramolecular Hydrogels for Enhancing Immunomodulatory Properties of Curcumin
16	Yaser Greish	Chemistry	Characterization and evaluation of a MOF-polymer nanocomposite membrane for gas-sensing applications
17	Mohammed Almeetani	Chemistry	Detection and Determination of Triazole Pesticide Residues in Camel Milk Products of UAE
18	Mohamed Qenawy	Chemistry	Light active Quantum Dots-Based System for Anticancer and Antimicrobial Applications
19	Sameer Mirza	Chemistry	Elucidate how E6 highjack Pontin/Reptin in Human Papilloma Virus (HPV) mediated cancer.
20	Yasir Raouf	Chemistry	Design and Synthesis of Novel Piperazine Carboxamide Inhibitors of Casein Kinases as an Emerging Therapeutic Strategy against Human Breast Cancers
21	Hasan Arman	Geosciences	Investigation Optimum Cycling Period of Slake Durability Index Test on Carbonate Rocks
22	Alaa Ahmed	Geosciences	Hydro-Geophysical Assessment of Wadi Hadhf area and Investigation of the Dam efficiency, nearby Hatta City - United Arab Emirates
23	Mabrouk Hassan	Geosciences	Unraveling the genesis and economic significance of celestite (SrSO4) deposits of Mount Hafit, UAE, using mineralogical, geochemical and isotopic data.
24	Muhammed Syam	Mathematical Sciences	Numerical method for solving fractional integro-differential equations with some applications.
25	Qasem Al Mdallal	Mathematical Sciences	Fractional Derivative Approach to Buongiorno's Model for Fluid Flow over Contracting Permeable Cylinders
26	Farrukh Mukhamedov	Mathematical Sciences	Stability of Lotka-Volterra model with perturbations
27	Ushangi Goginava	Mathematical Sciences	Two-sided estimates of Lebesgue constants associated with linear transformations
28	Nafaa Chbili	Mathematical Sciences	Graph Polynomials and Applications to Symmetry



29	Ayham Zaitouny	Mathematical	Leveraging Deep Learning and Dynamical Characteristics
		Sciences	for Real-Time Traffic Incident Detection
30	Houssam Abdul	Mathematical	Entanglement of the energy eigenstates of harmonic
	Rahman	Sciences	oscillator systems
31	Nacir Tit	Physics	Suitable Materials for Hydrogen Storage and Sensing
			Applications
32	Hakim Saibi	Geosciences	Geological Structures of the Arabian Peninsula: Insights
			from Gravity Data Analysis.
33	El Hadi Sadki	Physics	Synthesis and Characterization of Two-dimensional Boron
			Nanosheets
34	Muhammad Abdul	Physics	Radio emission from an active galactic nucleus at z ~ 10
	Latif		

# APPENDIX 4 **DEPARTMENTAL SEMINARS**

### Department of Biology

#	Title	Name of the	Affiliation	Date
		Speaker		
1	Discovery of Diverse Chimeric Peptides	Dr. Igor	Department of Biology,	07/09/2023
	in a eukaryotic proteome sets the stage for the experimental proof of the mosaic	Kryvoruchko	UAEU	
	translation hypothesis			
2	Restoration and management of	Dr. Sanjay Swarup	Department of	12/09/2023
	dwindling natural resources using an		Biological Sciences,	
	integrtive ecosystem approach: Lessons		National University of	
	from Southeast Asia		Singapore, Singapore	
3	The hairy story of the type-IV glandular	Dr. Vagner	West Virginia	26/10/2023
	trichome development in the Solanaceae	Benedito	University, WV, USA	
4	Peripheral vascular strand development	Dr. Senjuti	National Institute of	16/11/2023
	in nodules is controlled by a bHLH/HLH	Sinharoy	Plant Genome Research,	
	heterodimer		New Delhi, India	
5	Medicinal plants in UAE and their uses	Dr. Seham M. Al	Department of Biology,	08/02/2024
		Raish	UAEU	
6	Trends in tick research in the United	Dr. Nighat	Department of Biology,	29/02/2024
	Arab Emirates	Perveen	UAEU	
7	Circardian rythms in human blood	Dr. Fatima Labeed	Department of Biology,	07/03/2024
	electrophysiology		UAEU	
8	Sustainable development goals:	Dr. Shaijal Babu	Department of Biology,	04/04/2024
	concepts, challenges, and progress	Thru Ppoyil	UAEU	
9	Role of NFAT-signaling network in	Dr. Khalid	Department of Biology,	18/04/2024
	controlling allergic contact dermatitis	Muhammad	UAEU	

### **Department of Chemistry**

#	Title	Name of the Speaker	Affiliation	Date
1	Light Harvesting in Organic Solar Cells	Tariq Sajjad	South Bank University, UK	14/09/2023
2	Solar Energy Conversion Systems: Time – resolved Spectroscopy	Mohamed Qenawy	Department of Chemistry, UAEU	09/10/2023
3	Electro-spun Nanofibers as Drug Delivery System: Methods and Applications	Mohamed El- Newehy	King Saud University, Saudi Arabia	26/10/2023
4	Contilisant, A Small Molecule for Alzheimer's Disease Therapy	Jose Contelles	SEPCO, Institute of General Organic	07/11/2023

			Chemistry, CSIC, Madrid - Spain	
5	Focus On Energy and Environmental Applications: Can Framework Materials Listen to Your Tunes	Dinesh Shetty	Department of Chemistry, Khalifa University	09/11/2023
6	Exploring Uncharted Realms with FIB- SEM & TEM Workflow Solutions from Thermo fisher Materials & Structural Division	Daniel phifer	Thermo Fisher Scientific Materials & Structural Analysis Division	14/11/2023
7		Reza Zamani	Product Specialist, EMEA, Transition Electron Microscope (TEM)	14/11/2023
8	Rational Design of Material for Energy Applications	Farshid Ramezanipour	University of Louisville, USA	12/02/2024
9	Cutting – Edge Innovations in Wastewater Treatment and Water Reuse	Dhara Raval	Department of Metallurgical Engineering and Material Science, IIT Bombay	22/02/2024
10	Promoting Sensing of Volatile Organic Compounds (VOCs) on The JANUS PDSTE Monolayer for The Bio-Medical Engineering Application	Lokesh Sahu	University of Louisville, USA	22/02/2024
11	MOF Applications: What is The Problem?	Stefan Wuttke	Basque Centre for Materials, Applications and Nanostructures, UPV/EHU Science Park,48940 Leioa, Spain	28/02/2024
12	Gold Nanoclusters – Based Luminescent Sensors for Clinical Applications	Mohamed AbuHalawa	Chemistry Department, College of Science, UAEU	25/04/2024

### **Department of Geosciences**

#	Title	Name of the Speaker	Affiliation	Date
1	Quantification and prediction of carbonate diagenesis from well logs using artificial neural network: An innovative technique to understand complex carbonate systems	Prof. Abdulaziz Ismael		11/10/2023
2	Analysis of building failure associated with water seepage into Gypsiferous soils (Case of Ouled Djellal town, Algeria).	Mr. Farouk Rebiai		17/01/2024



### **Department of Mathematical Sciences**

#	Title	Name of the Speaker	Affiliation	Date
1	Distinct eigenvalues of Quotient matrix	Bilal Ahmad Rather	UAEU	9/22/2023
2	Automorphism group functors of algebraic superschemes	Alexandr Zubkov	UAEU	10/6/2023
3	Separating invariants of octonions	Artem Lopatin	University of Campinas, Brasil	10/13/2023
4	Exponentially decaying velocity bounds of quantum walks in periodic (electric) fields	Houssam Abdul- Rahman	UAEU	11/3/2023
5	Introduction to Knot Theory and Braid Theory	Valerii Bardakov	Sobolev Institute of Mathematics, Russia	11/10/2023
6	The associative spectrum of a binary operation	Erkko Tapio Lehtonen	Khalifa University of Science and Technology, UAE	11/17/2023
7	Manis valuations on Superrings	Joel Torres Del Valle	Universidad De Antioquia, Colombia	11/23/2023
8	Graphs, growth and geometry	Abhijit Champanerkar	The City University of New York, USA	1/12/2024
9	Well-posedness and stability results for thermoelastic Bresse and Timoshenko type systems with Gurtin-Pipkin's law through the vertical displacements	Aissa Guesmia	Elie Cartan Institute of Lorraine University of Larraine, France	2/8/2024
10	Reconstruction and Noise Reduction in Comuted Tomography	Zsolt Balogh	UAEU	2/15/2024
11	Unitary units of modular group algebras	Victor Bovdi	UAEU	3/1/2024
12	Conformal algebras and their relations	Pavel Kolesnikov	Sobolev Institute of Mathematics, Russia	3/15/2024
13	Conformal differential envelopes of Novikov-Poisson algebras	Pavel Kolesnikov	Sobolev Institute of Mathematics, Russia	3/22/2024
14	Securing Next Generation Wireless Networks: Advancements in Research and Education on Cybersecurity	Yi Qian	University of Nebraska- Lincoln, USA	4/22/2024

### **Department of Physics**

#	Title	Name of the	Affiliation	Date
		Speaker		
1	Explore the Mysteries of the Unknown	Dr. Aquib Moin	Physics, UAEU	22/9/2023
	in the Universe			
2	The Super-CDMS SNOLAB Experiment,	Dr. Muad Ghaith	Zayed University, Dubai	27/10/2023
	Status, and Updates			

3	Suitable 2D Materials for Hydrogen- Storage Applications	Dr. Tanveer Hussain	New England University, Armidale (Australia)	14/11/2023
4	2D Materials for Thermoelectric  Applications: A Theoretical Perspectives	Dr. Nirpendra Singh	Khalifa University, Abu- Dhabi	17/11/2023
5	2D Matetials as Efficient Electrodes for Rechargeable Metal-Ion Batteries	Dr. Tanveer Hussain	New England University, Armidale (Australia)	23/11/2023
6	Plasmon-enhanced Gold Hetero- structures of Tungsten Disulphide Nanoflakes (Au/WS2 NFS) for Nonlinear and Photodetector Applications	Prof. Rozalina Zakaria	Malaya University, Huala Lumpur (Malaysia)	24/1/2024
7	Quantum Materials under Extreme Conditions	Dr. Mahmoud Abdel-Hafez	University of Sharjah	2/2/2024
8	Solar Energy Conversion Systems: Time- resolved Spectroscopy	Dr. Mohamed Qenawy	Chemistry, UAEU	16/2/2024
9	Introduction to CERN and MENA Collaborations	Mr. Martin Gastal	CMS Lab, CERN (Switzerland)	26/4/2024
10	Solution-processed Nanostructures for Next Generation Nonvolatile Memories	Dr. Adnan Younis	Physics, UAEU	17/5/2024
11	Non-equilibrium Bosonization Approach and Its Applications in Mesoscopic Physics	Dr. Edvin Idrisov	Physics, UAEU	31/5/2024

