ANNUAL REPORT

2021 - 2022

UAEU كلية العلوم College of Science
جامعة الإمارات العربية المتحدة United Arab Emirates University

Produced by the Strategic Planning Committee (College of Science)
Dr. Asma Al-Menhali (Vice Dean, COS)
Dr. Ranjit Vijayan (Biology)
Dr. Soleiman Hisaindee (Chemistry)
Dr. Kamal Ali (Geosciences)
Prof. Mohamed Ibrahim Syam (Mathematical Sciences)
Prof. Mofreh Ramadan Zaghloul (Physics)

Data collection
Mr. Mohamed Shahid (Dean's Office)

Design
Dr. Ranjit Vijayan (Biology)

cos.office@uaeu.ac.ae | https://cos.uaeu.ac.ae

TABLE OF CONTENTS

"The important thing is not to stop questioning. Curiosity has its own reason for existing. One cannot help but be in awe when one contemplates the mysteries of eternity, of life, of the marvelous structure of reality. It is enough if one tries merely to comprehend a little of this mystery every day."

— Albert Einstein

DEAN'S MESSAGE

Another academic year full of opportunities and challenges has come to an end, where the College of Science has lived some remarkable success stories and learnt how to turn some challenges into opportunities. And although our academic life has become less restrictive under COVID-19 pandemic, our routine daily life is still impacted by the constant possibility of the rise of the virus that could significantly disrupt our academic life.

In this report, we would like to celebrate with you some of our important milestones that have been either initiated or achieved during this academic year.

Perhaps the most remarkable achievement of the College of Science is its scientific research outcomes. The College has topped all other colleges in terms of research productivity. In 2021, our faculty members and students were able to publish a total of 498 publications in Scopus-indexed journals, which is an increase of over 20% when compared to 2020. Furthermore, more than 55% of these publications are in Q1 journals. A number of papers were published in prestigious journals such as *Nature Microbiology*, *Science Advances*, *Journal of the American Chemical Society*, *Coordination Chemistry Reviews*, *Nature Communications*, *Astrophysical Journal Letters*, and *Scientific Reports*.

The College was also able to consolidate its collaboration with the European Center for Nuclear Research (CERN). A UAEU post-doctoral researcher was placed to work at ATLAS/CERN and a senior undergraduate student, competitively selected by CERN, was sponsored to participate in the summer training in Geneva, Switzerland. Few more graduate students will start their PhD at the Department of Physics, as part of this collaboration.

The College of Science worked hard to attract and retain both undergraduate and graduate students. The student strength now stands at 1610 undergraduate and 202 graduate students. The College also graduated 266 undergraduate and 40 graduate students this academic year.

Remarkably, five of our faculty were promoted to the rank of Full Professor while four were promoted to the rank of Associate Professor.

As for upgrading the College research infrastructure, we were able to set up our own greenhouse for the Department of Biology through a generous donation from the National Center of Meteorology. Our collaboration with the College of Medicine and Health Sciences on the mice-facility has led to the preparation and approval of the accreditation proposal of the facility by the American Association for Accreditation of Laboratory Animal Care (AAALAC).

The internship program saw 250 of our students working in different places around the country as part of their preparedness to the job market. Furthermore, as part of preparing our students with the needed skills for the job market, we collaborated with the Science and Innovation Park and the company Meta-Excellence. One hundred of our students were trained with the best skills and mindset for a very competitive job market.

Prof. Maamar Benkraouda
Dean, College of Science


MATH

THE COLLEGE

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.

COLLEGE ADVISORY BOARD

The College Advisory Board, composed of eminent individuals with governmental and non-governmental background, guides the College in attaining its mission and assists the College with its role in serving the nation. The Advisory Board met twice in 2021-2022, 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.

No	Name	Affiliation
1	Mr. Sultan Al Hajji	Vice President for Public Affairs and Alumni Relations, Mohamed bin Zayed University of Artificial Intelligence; Chairman, Advisory Board of COS
2	Eng. Suhail Thani Al Muhairi	Infrastructure & Services Coordination Division Manager, Al Ain Municipality
3	Dr. Mohamed Murad Abdulla	Director, Decision Support Center, Dubai Police
4	Mr. Saeed Mohammed Al Muhairi	Executive Director, Emirates Metrology Institute, Abu Dhabi Quality Conformity Council
5	Ms. Sheikha Al Maskari	Communications Advisor, Chief Innovation Officer & Founding member, UAE Space Agency
6	Mr. Salem Rashed Almatrooshi	Retired from ADNOC
7	Ms. Aayda Al Shehhi	Director, Radiation Safety, Federal Authority for Nuclear Regulation
8	Dr. Abdulla Ahmed Al Mandous	Executive Director, National Center of Meteorology

COLLEGE ADMINISTRATION

Prof. Maamar Benkraouda
Dean

College Advisory Board

Office of the Dean
Senior Administrator (1)
Administrator (1)
Service Assistant (1)

Dr. Asma Al Menhali
Vice Dean

Dr. Sulaiman Ali Alkaabi
Asst. Dean (Student Affairs)

Academic Advisor-I (1)
Academic Advisors (2)
Secretary (1)
Administrator (1)

Dr. Ruwaya Alkendi
Asst. Dean (Research & Graduate Studies)

Administrator (1)
MSc Coordinators (6)

Prof. Khaled Amiri
Head, Department of Biology

Administrator (1)

Prof. Abbas Khalil
Head, Department of Chemistry

Administrator (1)

Prof. Hasan Arman
Head, Department of Geology

Administrator (1)

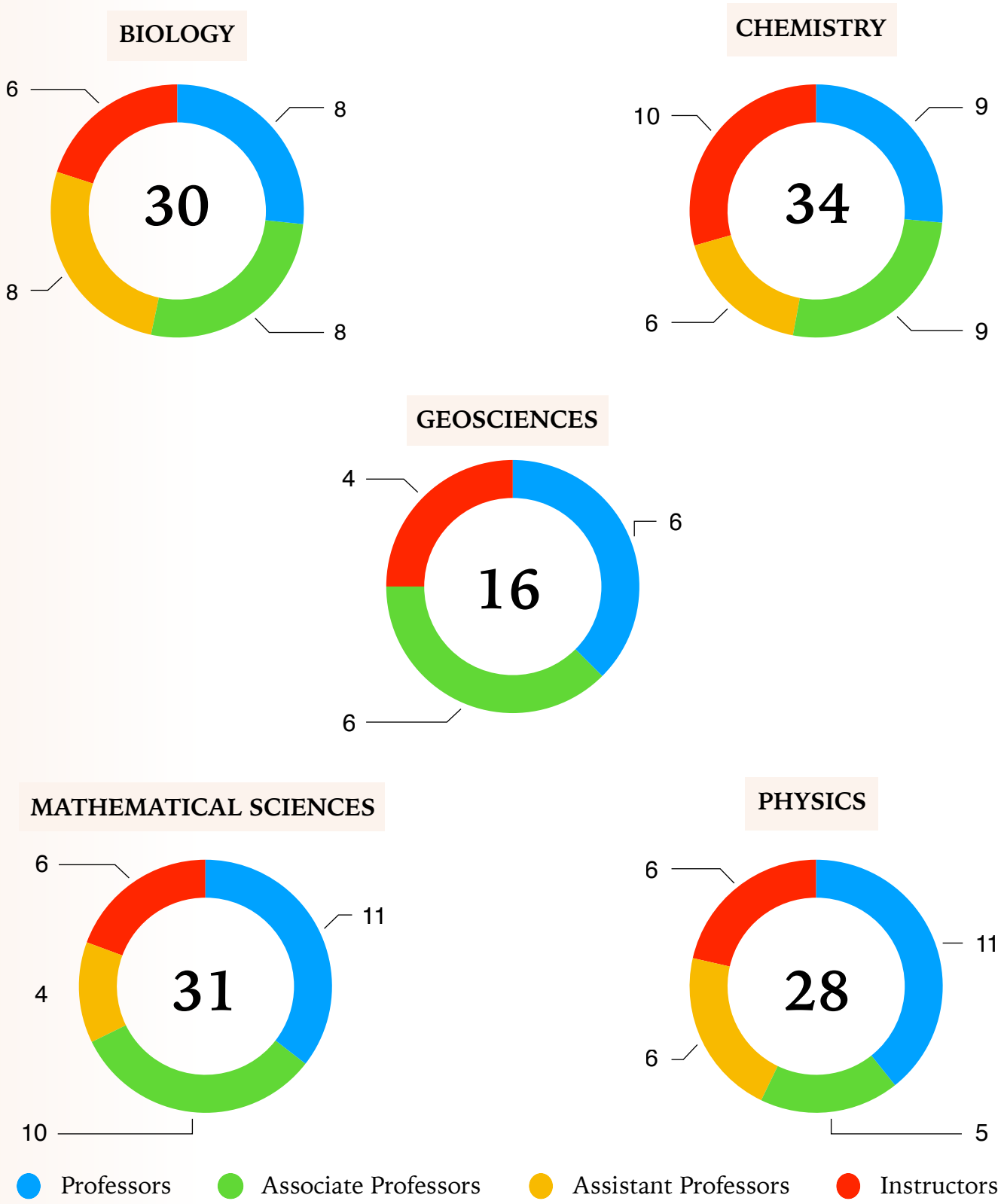
Dr. Adama Diene
Head, Department of Mathematical Sciences

Administrator (1)

Prof. Usama Al Khawaja
Head, Department of Physics

Administrator (1)

FACULTY MEMBERS



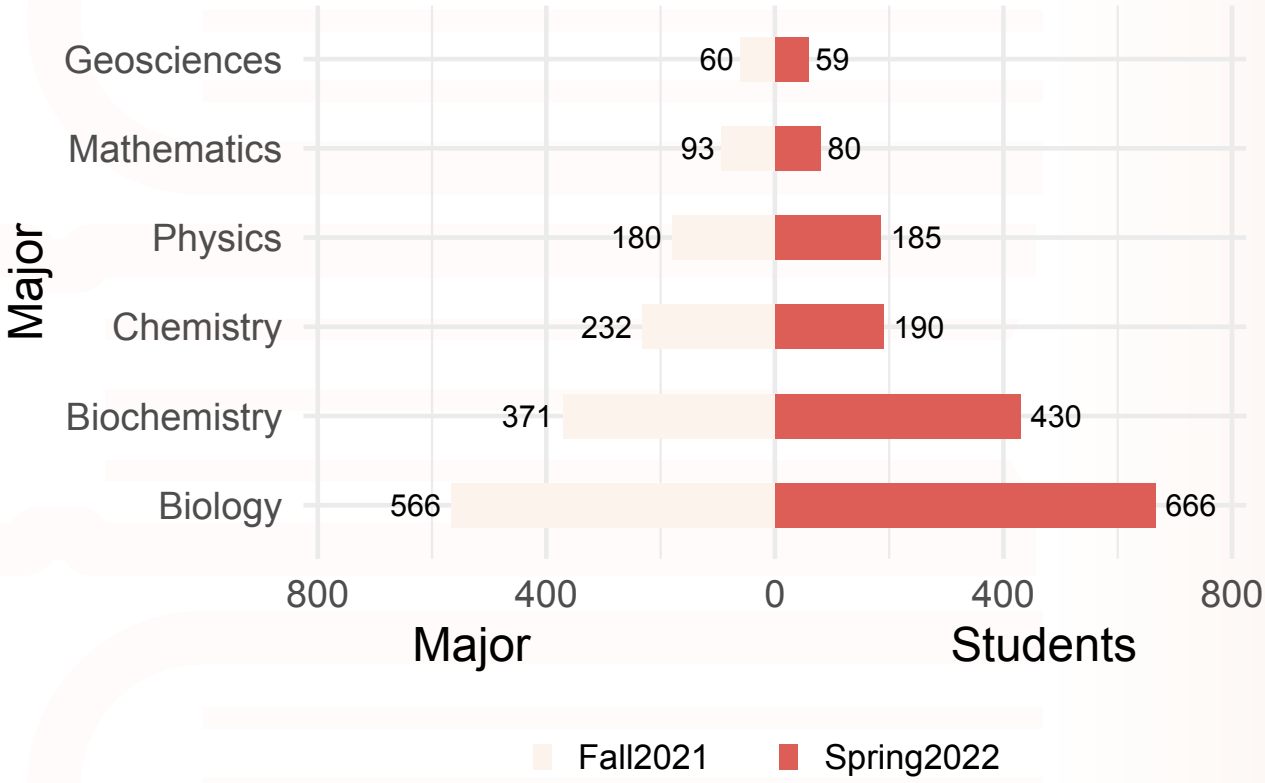
Number of faculty members in the COS Departments

The College has recruited a further 12 faculty members (Biology: 2; Chemistry: 4; Geosciences: 1; Mathematical Sciences: 3; Physics: 2) and 5 visiting faculty members (Biology: 2; Chemistry: 2; Mathematical Sciences: 1) who are expected to join in Fall 2022.

STUDENT READINESS JOURNEY

ENROLMENT IN UNDERGRADUATE PROGRAMS

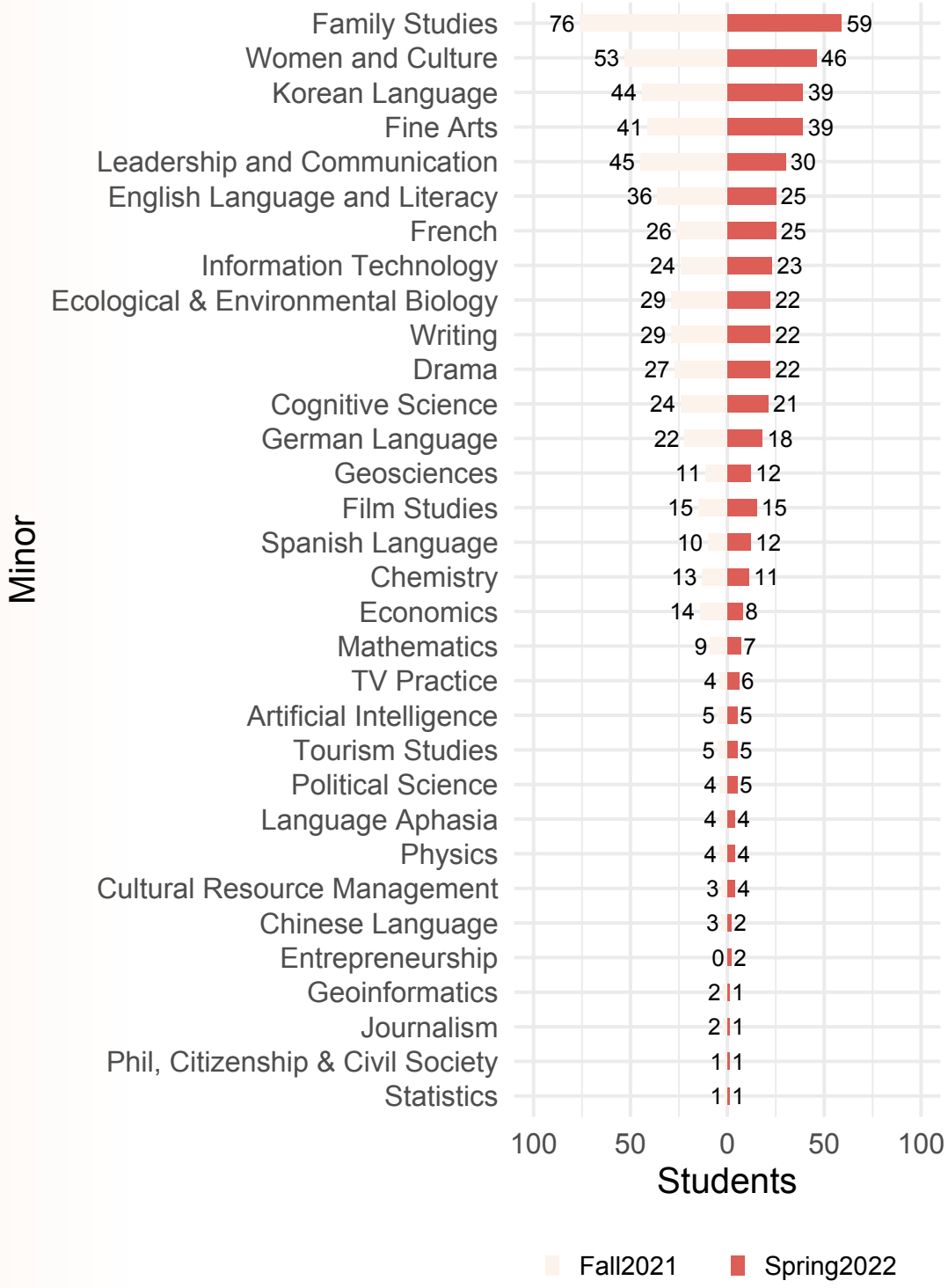
The undergraduate students have been steadily rising. There were a total of 1502 undergraduates in Fall 2021 and 1610 in Spring 2022.



Undergraduate student enrolment by program

ENROLMENT IN MINORS

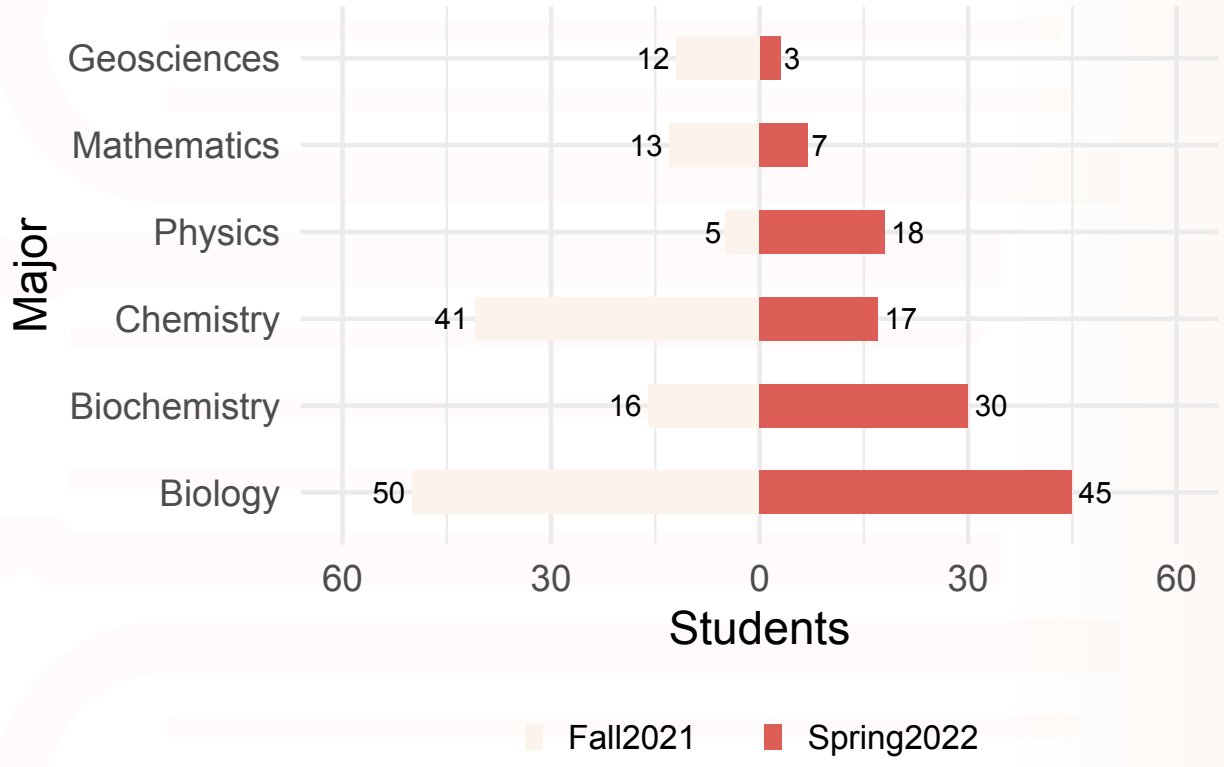
COS undergraduate students have enrolled in a wide selection of optional minors that add an extra dimension to their intellectual development.



Minor chosen by COS undergraduate students

GRADUATION STATISTICS

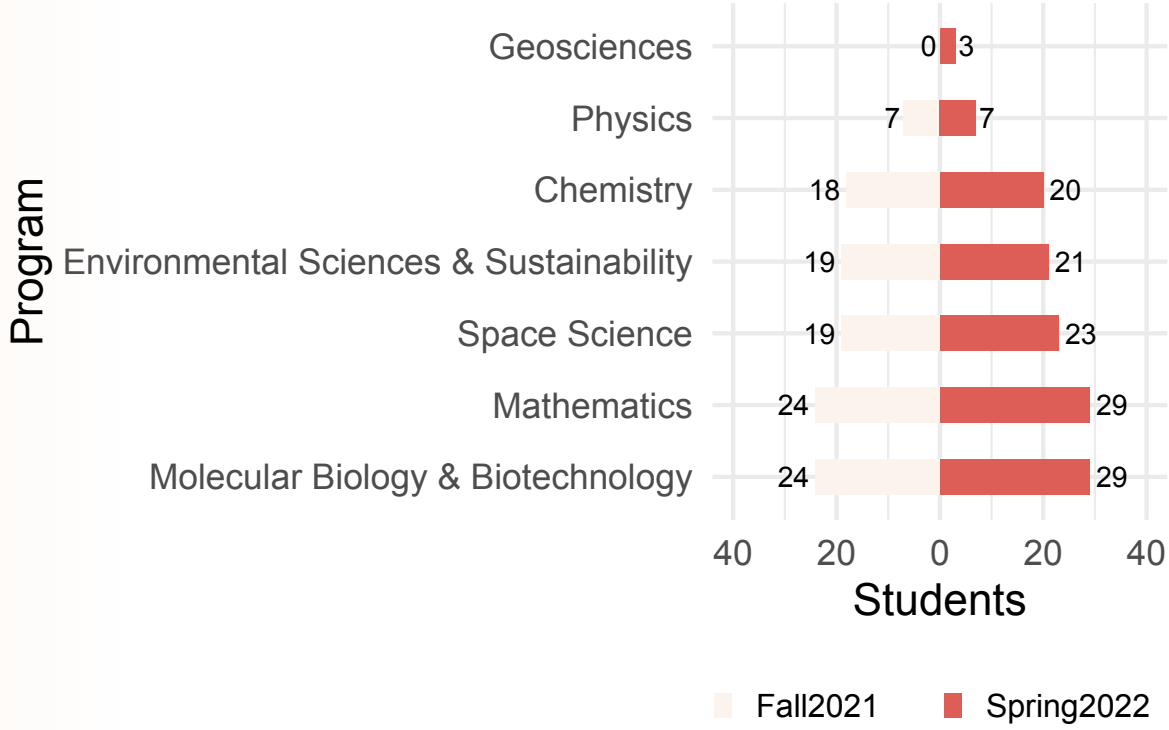
The College proudly congratulates the 257 (137 in Fall 2021 and 120 in Spring 2022) students who graduated with a BSc in this academic year.



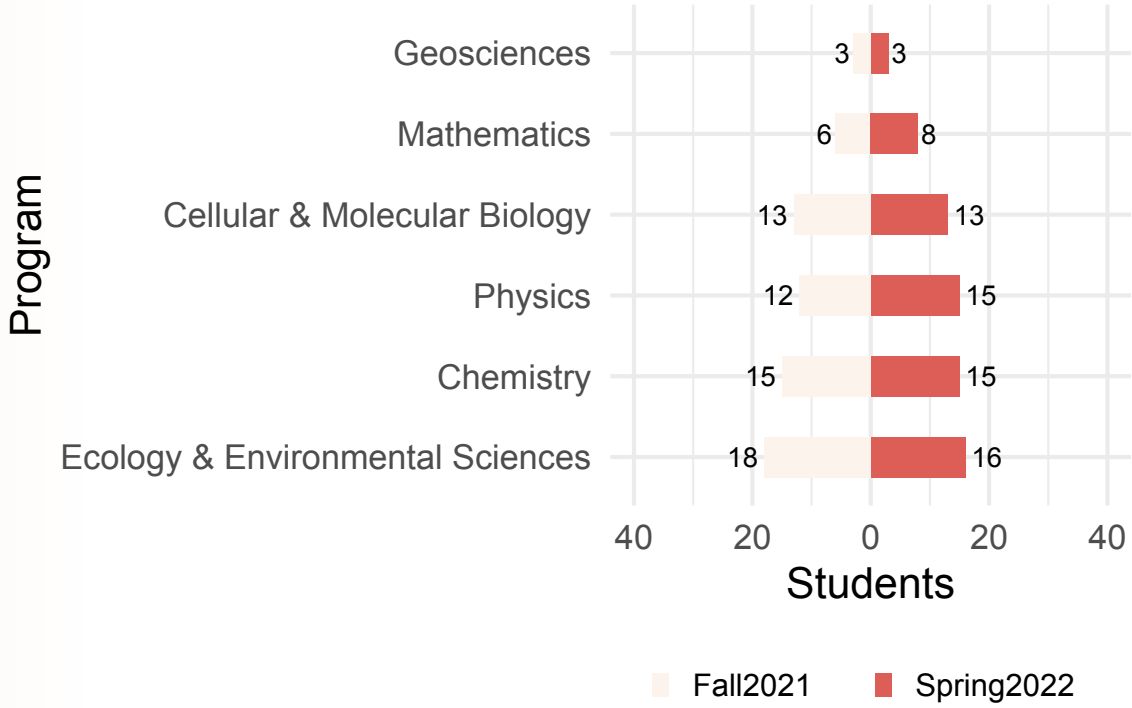
Students who graduated with a BSc this academic year

ENROLMENT IN GRADUATE PROGRAMS

The College also offers a wide-range of graduate programs. The total number of MSc students was 111 in Fall 2021 and 132 in Spring 2022. There were 67 PhD students in Fall 2021 and 70 in Spring 2022.



MSc enrolment by program in Fall 2021 and Spring 2022



PhD enrolment by program in Fall 2021 and Spring 2022

STUDENT ORIENTATION

The College is keen to prepare students to be distinguished in their field of specialisation and to become productive leaders in the 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 performed at least 10 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 requirements to graduate

An Open House was organised for new students was organised at the beginning of the year. Additionally, academically weak students or students who need assistance with specific subjects were directed to the help centers at the College level and University level.

FUTURE TEACHER PROGRAM

A group of students have been recruited to study at the COS through a special Ministry of Education initiative called the Future Teacher Program. It is targeted at distinguished students, with a high school score of 90% or above, and admitted after passing a selection interview. Although there are no new comers in this academic year, 40 female students and 5 males majoring in Chemistry, Physics and Mathematics have graduated from this program in this academic year, while there are currently 46 female students and 21 male students in the program.

Number of graduates of the Future Teacher Program in the academic year 2021-2022

Major	Fall 2021		Spring 2021		Total
	Male	Female	Male	Female	
Chemistry	17	2	4	1	**24**
Mathematics	9	0	3	1	**13**
Physics	1	0	6	1	**8**
Total	**27**	**2**	**13**	**3**	**45**

STUDENT EXPERIENCE

Life in the COS 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 involve in many beneficial programs such as:

- Outstanding students council
- Honor students program
- Dean's list
- Research projects/activities
- University career program
- Department club
- COS news team
- Local and international competitions
- Local and International conference

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 to get some experience from the real work environment. Students undergo hands-on training at a chosen governmental or private sector institutions 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 even research centers.

In the 2021-2022 academic year, 256 students successfully completed the internship program (137 students in the Fall semester and 119 students in Spring semester). This is slightly higher than the previous year with a total of 223 students (83 and 140 in Fall and Spring respectively). Higher numbers were observed in Biology and Chemistry. Furthermore, the number of Physics internship students increased significantly, relative to the previous year, reaching 17 in the Spring semester. This was due to the new batch of students from the Space Science track of Physics.

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 starting they joined their workplace, in order to prepare students with the expectations of the work environment and career requirements. It was offered twice this year, one in each semester.

At the beginning of the COVID-19 pandemic, the internship program was shifted to online training. This significantly reduced onsite training and gave less hands-on experience. However, since Fall semester of this year, some of the internship sites have started accepting onsite training. Since then, nearly all students have now been placed in face-to-face internship workplaces.

HONOR STUDENTS PROGRAM

Honors students of COS were given the opportunity to visit Expo2020 and attend events at the Switzerland and France pavilions. They were also invited to meet with the astronaut Charlie Duke, the 10th and youngest man to walk on the moon and the lunar module pilot of Apollo 16.

In collaboration with the Student Success Unit (SSU) Learning Centers at UAEU, the COS Honors Students Committee organized two programs targeting senior honor students (Pathway Program) and junior honor students (Skills for Success) in the academic year 2021-2022. The collaboration started in September 2021 and ended in March 2022 during which period 19 online workshops were organized. These events were delivered by the Writing, Speaking, Tutorial and Technology Centers.

In collaboration with the Emirates Center for Happiness Research, COS Honor Students Program organized a workshop titled "Positive Emotions and Character Strength". This workshop was delivered by Ms. Noof Al Junaibi, the Director of Emirates Center for Happiness Research.

DEAN'S LIST STUDENTS

The following students featured in the Dean's List of Fall 2021 and Spring 2022. The College would like to congratulate them for their academic achievement and encourages everyone to strive for excellent academic performance.

Fall 2021

Ms. Arwa Housam Ismail Mahmoud Shehada (Biology)
Ms. Asmaa Abdulwali Ali Abohatem (Mathematics)
Ms. Aya Fikri Mahmoud Abu-Zidan (Chemistry)
Ms. Ayah Hussein Atieh Al Hamaideh (Chemistry)
Ms. Dara Mohammed Ashour (Biochemistry)
Ms. Leen Arfan Alrawas (Physics)
Ms. Maryam K. Poolad (Biochemistry)
Ms. Maysam Abdulnaser Zain (Mathematics)
Ms. Mouna Yahia Youssef (Chemistry)
Ms. Nouf Ali Muftah Mohammed Alaryani (Biochemistry)
Ms. Sarah Hasan (Chemistry)
Ms. Shahed Mohammad Amjad Fayyad Hussein (Mathematics)
Ms. Shuhra Saleh Naser Binhaidra Altamimi (Biology)
Ms. Tamani Wafed Salem Ahmed Alharthi (Biochemistry)
Ms. Zaina Abaulla Hadi Saleh Al Ahbabi (Biology)

Mr. Ahmad Housain Al Hasbani (Biology)
Mr. Ali Hamdan Hamad Ali Alsheraifi (Mathematics)
Mr. Amar Yasser Aljumaa Aldakheel (Mathematics)
Mr. Esmael Hasan Mohamed Qasim Alhammadi (Biology)
Mr. Hamad Mohammad Ali Aldhafri Almheiri (Chemistry)
Mr. Jassim Ibrahim Rashid Alqadeeb Alzaabi (Physics)
Mr. Jean Damascene Tuyisabe (Biology)
Mr. Louis De Mont Fort Mugisha Ntwali (Biology)
Mr. Mohammed Abdulsamad K Al Minhali (Physics)
Mr. Mohammed Amr Mohammed Elsaid Hassan Shata (Biology)
Mr. Muneb Redwan Mukhtar (Chemistry)
Mr. Osama Nasser Abdellatif Ibrahim Gawish (Chemistry)
Mr. Shehab Adel Eldemerdash Mohamed (Chemistry)
Mr. Yahya Mohamed Yusuf (Mathematics)
Mr. Yaman Mothanna Sabsabi (Mathematics)

Spring 2022

Ms. Aaish Hamed Ali Mattar Al Jabri (Biology)
Ms. Aiswarya Sethu (Chemistry)
Ms. Aysha Emad Ibrahim Batainah (Mathematical Sciences)
Ms. Fatma Ibrahim Hassan Abdulrahim Almulla (Biology)
Ms. Fatmah Ali Abdulla Mohamed Alhindaassi (Biochemistry)
Ms. Leen Arfan Alrawas (Physics)
Ms. Maram Sami Suliman Elemam (Biology)
Ms. Mariam Rami Nedal Hamdan (Biochemistry)
Ms. Maryam Ahmed Salem Ahmed Almurshidi (Biology)
Ms. Mazna Rashid Ali Khalfan Alqaydi (Biology)
Ms. Meera Ahmed Salem Hmoud Alshamsi (Biochemistry)
Ms. Meera Munjed Maraqa (Biochemistry)
Ms. Mouna Yahia Youssef (Chemistry)
Ms. Rayaan Syed Safiuddin (Chemistry)
Ms. Zaina Abaulla Hadi Saleh Al Ahbabi (Biology)

Mr. Ali Hamdan Hamad Ali Alsheraifi (Mathematics)
Mr. Amar Yasser Aljumaa Aldakheel (Mathematics)
Mr. Esmael Hasan Mohamed Qasim Alhammadi (Biology)
Mr. Hamad Khalifa Mukhtar Ahmed Alblooshi (Chemistry)
Mr. Jean Damascene Tuyisabe (Biology)
Mr. Khalid Saud Abdullah Mohamed Alahmed (Biology)
Mr. Kinan Adnan Khudir (Biology)
Mr. Louis De Mont Fort Mugisha Ntwali (Biology)
Mr. Mohammed Abdulsamad K Alminhali (Physics)
Mr. Mohammed Amr Mohammed Elsaid Hassan Shata (Biology)
Mr. Muneb Redwan Mukhtar (Chemistry)
Mr. Saeed Ahmed Salem Saif Alsaeedi (Biology)
Mr. Sultan Ali Jama (Chemistry)
Mr. Yaman Mothanna Sabsabi (Mathematics)
Mr. Yousef Mohammad Yousef Salah (Mathematics)

META EXCELLENCE PROGRAM

The Meta Excellence Program has been offered since Fall 2020 by the COS and Arab Excellence, with the support of the JP Morgan, in partnership with the UAEU's Science & Innovation Park.

Through this program, the College aims to support 100 students to successfully integrate into the private sector, be it through employment, self-employment or SME creation.

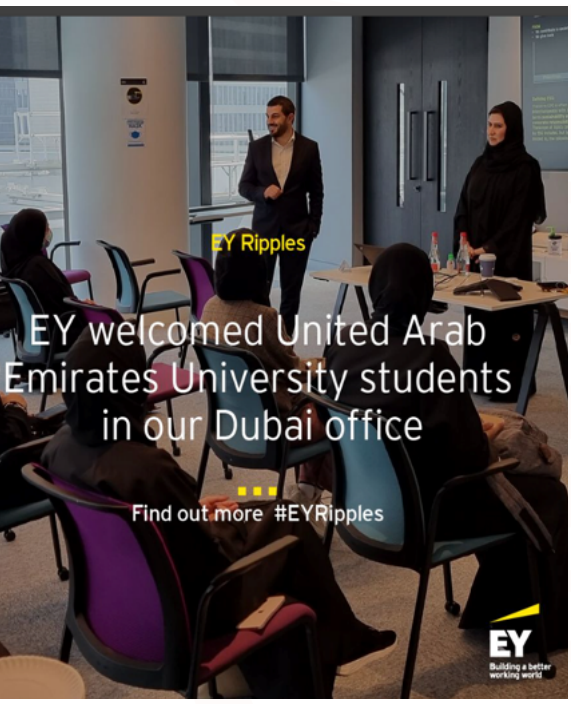
Within the program, a series of workshops and mentoring activities addressing employability, career guidance and soft skill development have been given. This is aimed at assisting students to architect and build their professional vision and career roadmap based on their field of studies, interests and ambitions as well as the priority sectors currently in the National Agenda of the UAE.

The program has reached phase 3. More than 400 students from the COS initially applied for the program.

This multiple phases of the program aims to empower the students by providing them with the coaching, mentorship, and networking opportunities needed to achieve their professional goals and aspirations and thereby successfully transition into the labor market.

Phase 1: Mindset shift

During this phase, students went through diagnostic workshops to self-reflect on their strengths, skills and career preferences. They developed a professional vision and roadmap for their future studies and career plans, worked with templates for next step planning, used strategies such as vision-mapping and goal setting, worked collaboratively to make presentations, and developed time-management, pitching, delivery skills as well as other key soft skills. In addition, throughout this phase, participants were introduced to, and engaged with, a number of Emirati role models as well as others from elsewhere in the Arab world, who have experienced adversity and prevailed. Learning about journeys of role models, be it through first-hand interactions or case studies, inspired participants and motivated them to action.



Phase 2: Mentorship with private sector

While Phase 1 was a personal and deep process to unveil the potential of the COS participants, Phase 2 was a pragmatic phase where mentors and mentees got to work together toward practical steps to reach career readiness and employability. This mentorship phase consisted of two different formats:

- Highly interactive training sessions delivered inside various private companies such as Ernst and Young in Dubai and Bank of America
- One-to-one mentorship with Ernst and Young professionals: more than 300 individual mentorship sessions were delivered from April to June 2022

Phase 3: Employability readiness

Phase 3 took place in parallel to phase 2 and consisted of interactive coaching and training sessions to prepare participants to be ready to apply and excel during job interviews. The sessions focused on:

- How to perform effective job and company research
- How to write the CV and cover letter in a professional way
- How to prepare and excel during job interviews
- Participants performed job interview simulations with the Arab Excellence coaching team

COS NEWS TEAM

The COS News Team consists of approximately 30 active members comprising of undergraduate students from all five departments with skills such as photography, editing, and presenting. The COS News Team aims to publish the latest college news and achievements in the best way along with projects, latest scientific publications, and awards received by members of the College. The Team also strives to educate people about the importance of science and its various future fields. The Team has several accounts on various social media platforms such as Instagram with 1,100+ followers, Telegram with 600+ followers, YouTube, and Tik Tok.


جامعة الإمارات العربية المتحدة
United Arab Emirates University
UAEU College of Science
Soliton-based all-optical data processing
PhD Dissertation Defense
Amaria Javed
(ID: 201790270)
Advisor: Prof. Usama Al Khawaja
Department of Physics, College of Science
United Arab Emirates University
20 October 2021

WORLD-CLASS PROGRAMS

COS PROGRAMS

The constituent departments of the COS offer a number of different programs both at the undergraduate and graduate levels. Several interdisciplinary programs are also currently being planned.

Department	Programs
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 (Geology/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)

Programs in progress
BSc in Data Science BSc Minor in Material Science MSc in Advanced Materials MSc Track in Quantum Computing MSc in Forensic Science MSc in Bioinformatics

PROGRAM REVIEW AND ACCREDITATION

PROGRAM ACCREDITATION STATUS

The COS takes many steps to provide its students with world-class programs. All of the current programs are either accredited (locally and/or internationally) or in the process of accreditation.

Program	Accreditation body	Duration	Application/renewal planned
BSc (Biology)	Royal Society of Biology	2019-2024	2024
BSc (Chemistry)	ROYAL SOCIETY OF CHEMISTRY	2022-2027	
	Canadian Society for Chemistry | *For Our Future* Société canadienne de chimie | *Pour notre avenir*	2017-2022	2023
BSc (Biochemistry)	Canadian Society for Chemistry | *For Our Future* Société canadienne de chimie | *Pour notre avenir*	2017-2022	2023
BSc (Geosciences)	ABET Applied and Natural Science Accreditation Commission		2022
BSc (Mathematics)	ABET Applied and Natural Science Accreditation Commission		2022
BSc (Physics)	ABET Applied and Natural Science Accreditation Commission	2020-2026	

ABET Accreditation for the BSc in Mathematics program

The Bachelor of Science in Mathematics program has received positive review with no comments or concerns from the Applied and Natural Science Accreditation Commission (ANSAC) of Accreditation Board for Engineering and Technology (ABET). The site visit was conducted online between November 7-9, 2021 for the accreditation cycle 2021-2022. The review process progressed smoothly and the Program Evaluator issued a positive draft statement of accreditation after the virtual visit. The statement for the Mathematics program includes the program strengths and only one minor concern on the "Institutional Support" Criterion. The department responded to this concern on 15 December 2021. Voting on the accreditation will be held in July 2022, with official confirmation of results in August. The accreditation period is expected to last for 6 years commencing 2 years prior to the site visit.

ABET Accreditation for the BSc in Geology program

The Geosciences Department applied to ANSAC of ABET for accreditation of the BSc in Geology, originally for the 2020-2021 review cycle. To this end the initial Readiness Review Report was submitted in September 2019, and evaluation was initiated in January 2020. However, the process was deferred due to the COVID-19 pandemic until the following 2021-2022 cycle. The Self-Study Report was therefore submitted in July 2021. The Program Evaluator met with the Geology accreditation team in September 2021 to prepare a schedule for the inspection visit, which was conducted online in November 2021. The Program Evaluator issued a positive draft statement of accreditation after the virtual visit, but included a recommendation to address minor concerns on some program specific criteria. These concerns were addressed within the specified period. ABET ABET voting on the accreditation will be held in July, 2022, with official confirmation of results in August. The accreditation period is expected to last for 6 years, though the PEV indicated that ABET may offer any number of years less than this if deemed appropriate.

Re-Accreditation of the BSc in Chemistry program

The undergraduate Chemistry Program received two prestigious international accreditations in 2017 from the Royal Society of Chemistry (RSC) and the Canadian Society of Chemistry (CSC). The Chemistry undergraduate program was re-accredited by RSC in 2022 until August 2027, while the CSC re-accreditation is due in the year 2023. The CSC also accredited the undergraduate Biochemistry program within the Department of Chemistry in 2017, and it is up for renewal next year in 2023.

Development of interdisciplinary future-oriented programs

New Multidisciplinary BSc Data Science Program
In collaboration with the College of Information Technology and the College of Business and Economics, the Department of Mathematical Sciences submitted a proposal for a new BSc program in Data Science. The proposed program is a significant addition to the UAEU's mission objective of "delivering undergraduate and graduate education that meets international standards, engaging effectively with the community and the world to foster knowledge creation and dissemination, and enhancing the research capacity of the country". The program is interdisciplinary and the forward-thinking curricular structure is directly aligned with UAEU's Strategic Plan.

The proposed BSc Data Science Program is jointly hosted by the Department of Mathematical Sciences of the College of Science, the College of Information Technology and the College of Business and Economics. This will be the first of its kind in the Middle Eastern region. Graduates of the program may pursue a number of careers including AI Engineer, Business Intelligence Developer, Machine Learning Engineer, AI and Big Data Analyst, AI and Data Architects, and Research Scientists. Graduates will also develop the necessary knowledge and skills to embark on postgraduate programs and advanced research degrees. The program offers a high degree of flexibility cutting across the mathematics and computing disciplinary boundaries and will also strengthen the position of the Department of Mathematical Sciences as a leading department in the UAE and in the region. The BSc Data Science program proposal has been already approved by the UPCC, the Academic Council and the University council.

Re-organizing the Master Program in Mathematics

The Department of Mathematical Sciences is in the process of introducing a new International Master of Science in Mathematics (IMM) in collaboration with Abdus Salam International Centre for Theoretical Physics and Applied Mathematics (ICTP) for a Joint Training & Research Program in Mathematics. ICTP is a very prestigious organization that attracts top scientists from around the world. It is a knowledge hub for physicists and mathematicians and nurtures international collaboration.

The core features of IMM are to create a program in Master of Mathematics, hosted by an existing higher education institution and taught by prestigious international faculty. It is designed to be an elite program for students who are highly motivated to develop a research-based academic career in mathematics and its applications. The collaboration is aimed to strengthen graduate programs and boost up the international research collaborations.

The IMM aims at attracting the very best local and international students and exposing them to the highest quality of teaching in preparation for entering competitive PhD programs. This program will create opportunity of induction of high-achiever international students from all Arab countries, Asia, Africa, and even Europe and will increase the standards and quality of education and research at the Department of Mathematical Sciences. Locally, it is anticipated that this IMM program will soon become one of the very best degree programs. The ambition of the program is to grow into a network of interconnected programs worldwide.

Commission of Academic Accreditation (CAA) Visit

CAA conducted a comprehensive review of college programs in March 2022. The ERT visited the college and went on a tour to visit research/teaching labs as well as to meet different COS members. It is important to mention that UAEU has achieved a High Confidence Classification in the Institutional Risk Evaluation that the Commission undertook as part of implementing the Standards for Institutional Licensure and Program Accreditation (2019). Therefore, clustering of the Renewal of Program Accreditation (RPA) of UAEU programs at the college level has been approved and will take place for COS in Fall 2025.

BLENDED TEACHING AND LEARNING

With the support of the CETL, the COS has embarked on an initiative to transform several courses into a blended format. The following courses have been transformed into a blended format in cycles 3 & 4 and are awaiting CETL approval.

- BIOC100 Basic Biology I
- CHEM111 General Chemistry I
- CHEM112 General Chemistry II
- CHEM181 Chemistry in the Modern World
- MATH115 Calculus for Business and Economics
- MATH305 Mathematics for Teachers 1
- RGIS604 Spatial analysis using GIS

The following courses are currently in the process of being transformed.

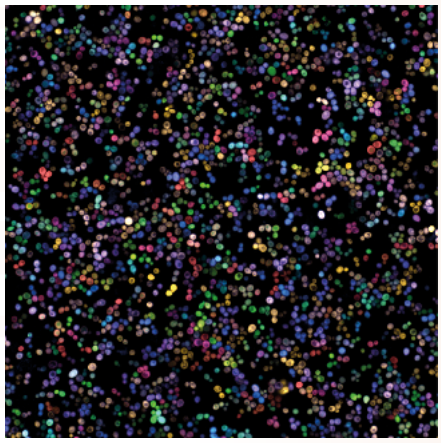
- BIOC250 Basic Ecology
- BIOC290 Cellular & Molecular Biology

RESEARCH PRODUCTIVITY & PARTNERSHIPS

RESEARCH HIGHLIGHTS

Dr. Mohammad Tauqeer Alam (Biology)

Dr. Mohammad Tauqeer Alam and colleagues recently published an article in *Nature Microbiology* where they studied >12,000 natural microbial communities and found a high frequency of species that have lost essential metabolic pathways (called auxotrophs) in host-associated communities. To survive, these auxotrophic species require essential metabolites from the environment or another microorganism (prototrophs). Using mathematical models, proteomics and metabolomics experiments, they studied metabolic exchange between auxotrophic and prototrophic species and show that a large number of metabolites are exchanged between these organisms. In addition, these organisms also release various antimicrobial substances. Hence, they concluded that metabolic cooperation between species not only promote cell growth but it also helps these species to become tolerant to various antimicrobial drugs. The original research article can be found at https://doi.org/10.1038/s41564-022-01072-5

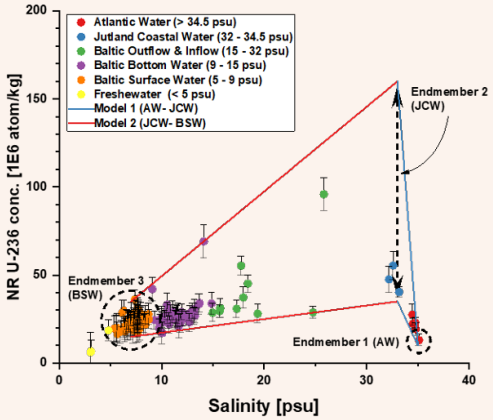


Dr. Ahmed Alzamly (Chemistry)

Dr Ahmed Alzamy and colleagues published a comprehensive review in *Coordination Chemistry Reviews* of using designed metal-organic frameworks (MOFs), MOFs with postsynthetic modification through linker metalation and mixed-metal clusters for selective oligomerization of α-olefins. In the petrochemicals industry, oligomerization of α-olefins, mainly ethylene and propylene, is an important process that produces linear α-olefins (LAOs). Industrial processes for selective LAOs rely on various homogenous. Recently, heterogeneous catalysts have largely been applied for α-olefin oligomerization and polymerization due to their high selectivity, stability, and reusability. In this context, MOFs have emerged as promising catalytic systems for this purpose. Finally, the authors highlight the use of MOFs as non-selective catalysts for α-olefin oligomerization. The review can be found at https://doi.org/10.1016/j.ccr.2022.214522

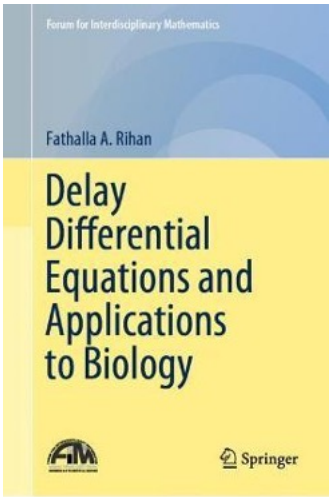
Prof. Ala Aldahan (Geosciences)

Prof. Ala recently co-authored a pioneering study in *Nature Communications* that presents the application of multi-isotopic methods (i.e., U-236/U-238, U-233/U-236, U-236/I-129 and I-129/I-127) for the discovery of sources of anthropogenic radioactivity. The results of the first case study from the Baltic Sea indicates sources of reactor U-236 in addition to the discharges from the two European nuclear reprocessing facilities and global radioactive fallout. The reactor U-236 likely relates to discharges from Swedish nuclear research facilities. These results highlight the usefulness of the U-233/U-236 system for nuclear fingerprinting safeguards, emergency preparedness and environmental tracer studies. The original research article can be found at https://doi.org/10.1038/s41467-021-21059-w



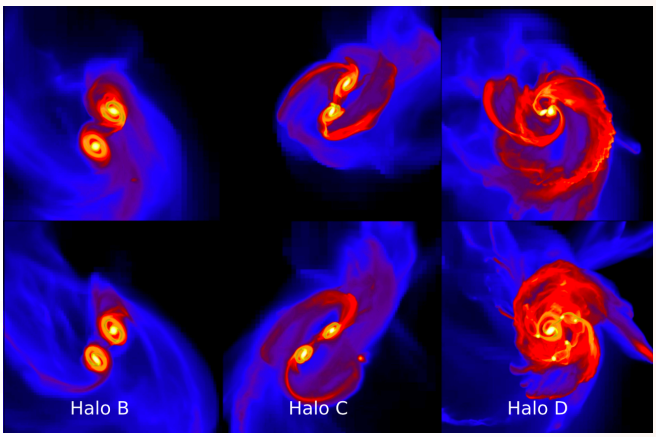
Prof. Fathalla Ali Rihan (Mathematical Sciences)

Prof. Fathalla Ali Rihan published a book titled *Delay Differential Equations with Applications to Biology*. The book contains 14 chapters discussing delay differential equations and their applications in biosciences. The book presents a wide class of delay differential equations with integer and fractional-order derivatives for the analysis of dynamical and biological systems, which provide a richer mathematical framework than differential equations without memory. There are also interesting applications of delay differential equations to immunology and infectious diseases, including COVID-19 and tumor-immune interactions. The book is valuable to graduate and undergraduate mathematicians, and specialists in the fields of mathematical biology, mathematical modeling, life sciences, optimal control, immunology, and infectious diseases. It also provides a bridge between the mathematical and biological communities. More details about the Springer-published book can be found at https://doi.org/10.1007/978-981-16-0626-7



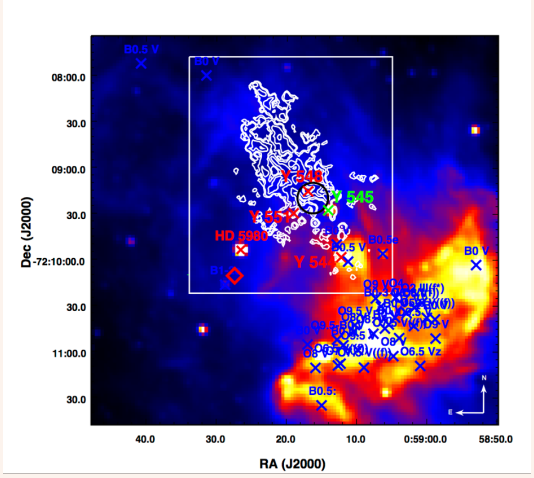
Dr. Muhammad Abdul Latif (Physics)

Dr. Muhammad Abdul Latif and colleagues published an article in *The Astrophysical Journal Letters*, about simulations of supermassive stars. Supermassive stars formed from catastrophic baryonic collapse are the leading contenders for the origin of the first quasars in the universe. They presented new cosmological simulations which are evolved for times that are long enough for stars to collapse into direct-collapse black holes (DCBHs). They found that the high infall rates required to build up such stars persist until the end of their lives and could fuel BHs rapid growth thereafter. The simulations demonstrated the formation of binary and even small multiples of DCBHs. This discovery raises the exciting possibility of their detection with future ground and space-based telescopes. The original research article can be found at https://doi.org/10.3847/2041-8213/ab7c61



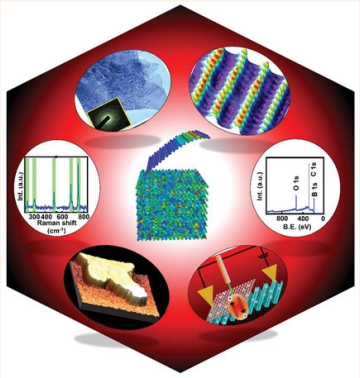
Dr. Naslim Neelamkodan (Physics)

Dr. Naslim Neelamkodan and colleagues published an article in *The Astrophysical Journal Letters* about the process through which high-mass starts form. This is one of the most contentious issues in astronomy. They discovered the formation of massive stars by the cloud collision in the Small Magellanic Cloud galaxy using high-resolution observations of molecular gas in sub-millimeter wavelengths. The observations were obtained with the Atacama Large Millimeter/submillimeter Array in Chile. This is the first observation of a cloud-cloud collision results in star formation in an environment with a metallicity of $0.2Z_{\odot}$. Their research showed physically associated filamentary clouds, and the velocity components that were blue-shifted and red-shifted when they collided 0.2 million years ago. The full article can be found at https://doi.org/10.3847/2041-8213/abdebb



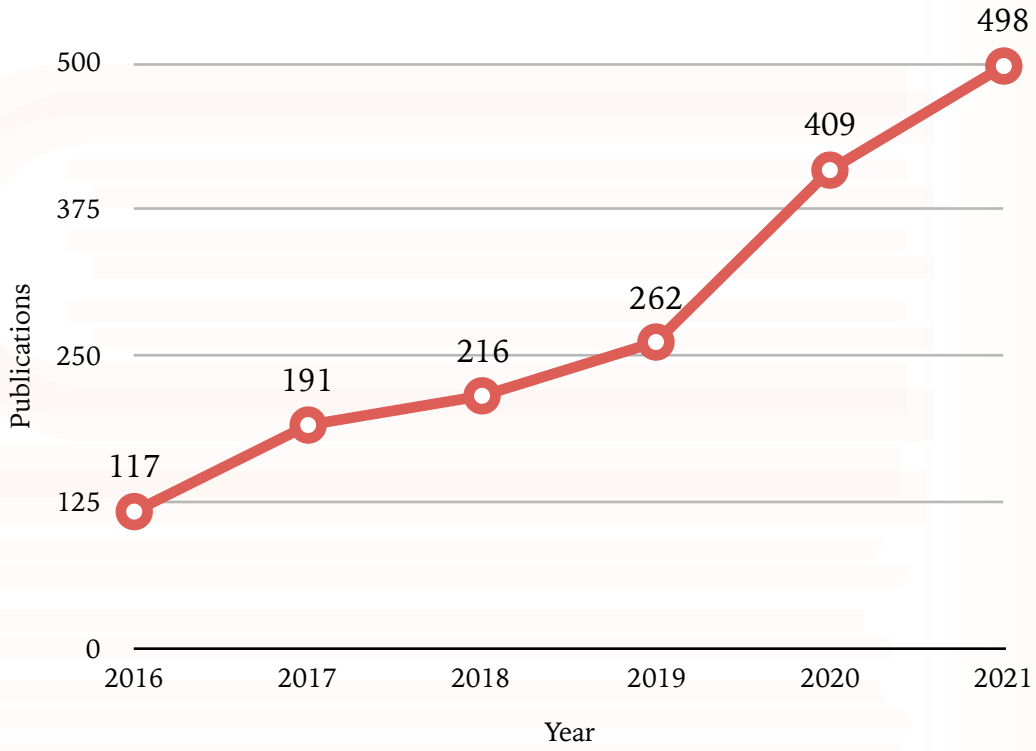
Dr. El Hadi Sadki (Physics)

Dr. El Hadi Sadki and colleagues published an article in the journal *Advanced Materials* about borophene. Borophene, a 2D atomic sheet of boron, possesses extreme electronic mobility and ultra-high mechanical strength. Currently, it is either synthesized by vapor deposition techniques or liquid phase exfoliation. However, these methods are costly or yield defected samples. Dr Sadki and colleagues presented a novel synthesis method of borophene based on a simple micromechanical exfoliation or also commonly known as scotch-tape method. This discovery will offer easy access to high quality borophene samples for fundamental science characterization, as well as for promising applications such as gas sensing, batteries, and supercapacitors. More details about this work can be found at https://doi.org/10.1002/adma.202102039

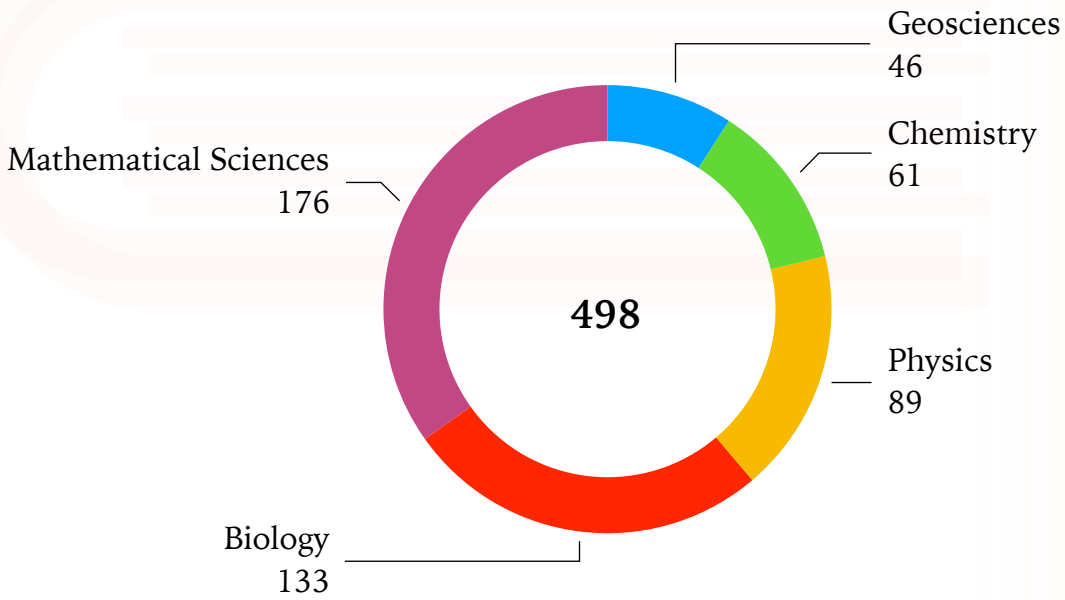


RESEARCH PUBLICATIONS

The COS leads among the colleges of UAEU in terms of total number of publications in Scopus-indexed journals for 2020 and 2021 with 409 publications in 2020 and 498 publications in 2021. The College is proud of the hard-work and dedication of its researchers for achieving this.

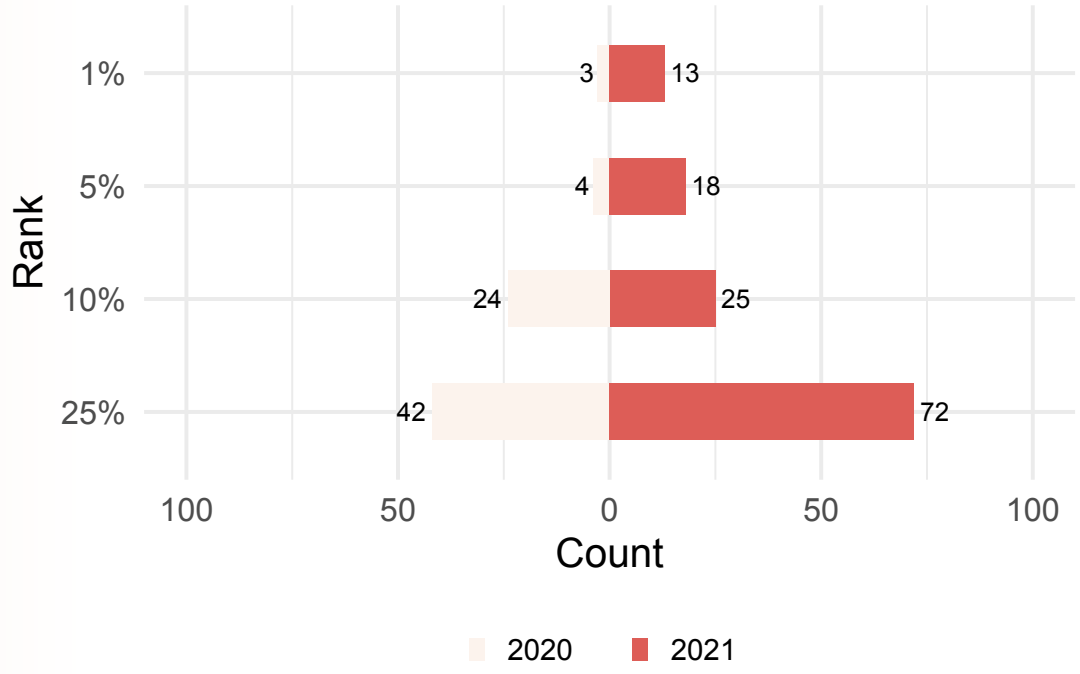


Total COS publications between 2016-2021

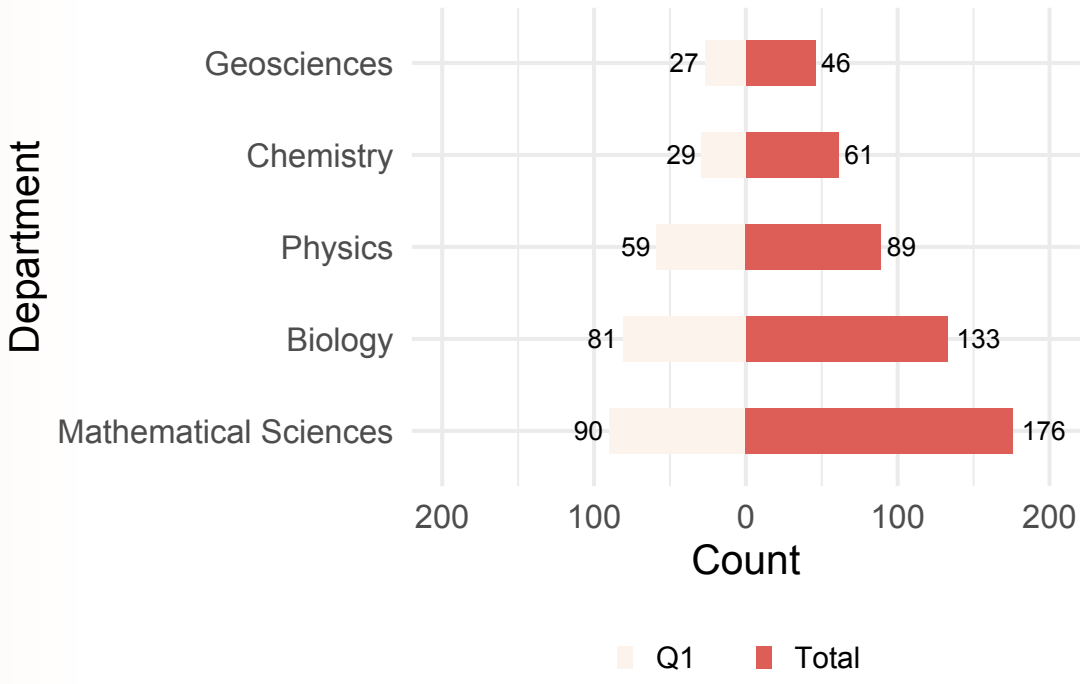


2021 publications by department

Once again, COS remains on top of the list of UAEU colleges in terms of annual research awards for papers published in the top journals (1%, 5%, 10%, and 25%) for both 2020 (73 papers) and 2021 (128 papers). For full details, see Appendix 1.



COS publications based on journal rankings in 2020 and 2021



COS publications in 2021 by department

NEW RESEARCH GRANTS

Faculty members of the COS have been quite successful in being awarded a number of internal research grants. In terms of internal grants, this includes 12 UPAR, 4 Strategic Program, 4 AUA and 5 start-up grants. Two external ADEK (ASPIRE) grants have also been secured by COS faculty members. See Appendix 2 for the full list of projects and amount awarded.

Research grants awarded to COS faculty members in this academic year

Grant Type	Number	Amount (AED)
Start-up Grant	5	1,780,000
University Program for Advanced Research (UPAR)	12	6,278,060
Strategic Research Program	4	1,400,000
Asian Universities Alliance	4	1,960,000
SURE PLUS	53	2,325,405
Collaborative Research (UAEU-Zayed University)	3	1,050,000
External Grants (ADEK)	2	1,200,000
Total	**83**	**15,993,465**

PATENTS

In 2021, 8 US patents were awarded to 7 members of the COS community.

Patents awarded in 2021

#	Title	Application No.	Country	Inventor(s)
1	Quantum Dot Sensitized Solar Cell and Method of Making Same	16/939,010	US	Ihab M. Obaidat Sambasivam Sangaraju
2	Cadmium Sulfide Quantum Dot Sensitized Solar Cell Device with Nanograss-Like Tin Oxide Interlayer	16/847,446	US	
3	High-Rate Hybrid Supercapacitor	17/021,247	US	
4	Prevention of Liver Cancer with Safranal-Based Formulations	16/288,930	US	Amr Amin
5	Crocin- Sorafenib Combination Therapy for Liver Cancer	16/513,026	US	
6	Pyridine Compound, Making, and Use Thereof	16/067,709	US	Yaser E. Greish Sherif M. Karam
7	Optical Analyte Detector	17/096,747	US	Adel Najar
8	Cycloheptylamine Derivatives as Anti-Diabetic Agents	16/866,856	US	Shaikha Al Neyadi Alaa A. Salem

INTERNATIONAL RESEARCH COLLABORATIONS

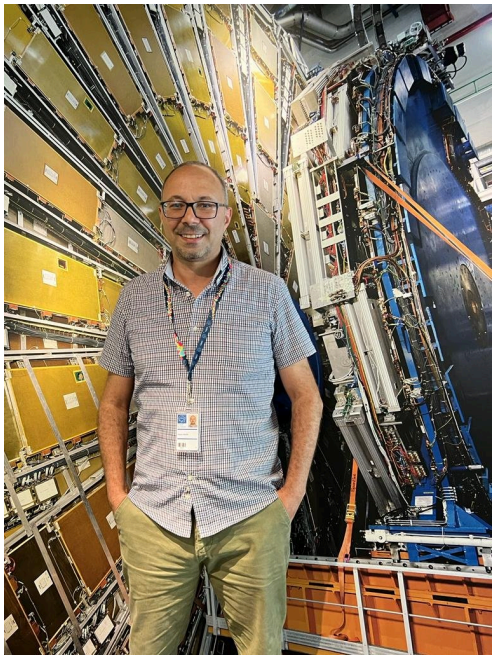
The COS has been actively involved in establishing and building on several international collaborations during this. Multiple research projects and other activities are currently ongoing as part of these collaborations with

- University of California Berkeley
- Chinese Academy of Science Collaborative Research Project
- CERN
- Murchison Widefield Array, Curtin University, Australia
- University of Texas, Austin, USA

UAEU GROUND-BASED RADIO ARRAY FACILITY

To boost and facilitate high-impact world-class space science research at the UAEU, Dr. Aquib Moin (Physics) launched the "UAEU Radio Astronomy Pathway Project". Within the framework of this project, a first-of-a-kind array-type radio and space science observation infrastructure called the "UAEU Ground-based Radio Array Facility (GRAF)" was deployed at UAEU. The facility is in the last stages of commissioning and testing, in preparation to launch science operations. This project is jointly supported by the COS and National Space Science and Technology Center and it was awarded one of the largest R&D grants at the UAEU. The primary objective of GRAF, a large-scale, UAE-based flagship radio and space science observatory, is to enable and sustain high-impact multidisciplinary space science research and development primarily in the areas of: 1) Radio Astronomy & Astrophysics, which involves radio observational studies of celestial objects in an attempt to develop better understanding of the astrophysical processes and events in the universe; and 2) Astrodynamics, which involves tracking and monitoring Resident Space Objects (RSOs) in near-Earth space to study and predict their orbital trajectories, analyze their dynamics, and effect of environment in order to carry out effective conjunction assessment and collision avoidance space object cataloguing. In addition, the facility would also be capable of augmenting research in solar & heliospheric physics, planetary science and atmospheric science with radio data. This project is being carried forward in collaboration, and with active support of, Curtin Institute of Radio Astronomy, Curtin University, Australia and Computational Astronautics Group at University of Texas, Austin, USA. A salient feature of this project was that it was assembled and deployed in totality by a team of UAEU students serving as a platform for capacity building, skill development and practical knowledge gaining through hands-on experience. The project is aimed to produce scientific research and support technological development in alignment with the strategic objectives of the space sector in the UAE. In collaboration with the Australian government, the project was showcased at the Australian pavilion at Expo2020 in Dubai, as a high-profile Space R&D initiative.

COLLABORATION WITH CERN



UAEU took a major step toward an outstanding investment in fundamental research with the establishment of a collaboration with the world's largest physics research centre, the European Organization for Nuclear and Particle Physics Research (CERN) in Geneva, Switzerland. CERN, European Center for Nuclear Research, is the largest particle physics laboratory in the world. More than 10,000 scientists from over all the world work to understand the nature of our universe. To facilitate this, CERN holds the Large Hadron Collider (LHC), which is a circular collider with a circumference of 27 kms. LHC accelerates protons (atom nuclei) to 99.9999999% the speed of light which are collided every 25 ns in the heart of four large particle physics detectors. ATLAS is one of the major detectors. A collaboration of more than 3,000 scientists work to record, process and analyse more than 60 million megabytes per second.

UAEU recently joined the ATLAS Collaboration at CERN through a high-energy group of the COS founded and led by Prof. Salah Nasri (Physics), who is primarily interested in the Higgs and dark matter physics at the high energy collider. In addition to Prof. Salah Nasri, the group also includes:

- Dr. Mohamed Belfkir, who focuses on Higgs and double-Higgs physics, ATLAS trigger system and the application of Artificial Intelligent (AI) in particle physics.
- Dr. Hemza Azri, who is mainly interested in the interplay between particle physics and cosmology.
- Mr. Isaac Bamwhadi, a PhD student who recently joined the group, who will work on the production of double Higgs.
- Mr. Mohammad Al Minhali, an undergraduate physics student who joined the CERN summer student program this year, is working on the tracking system.

Currently, the group is working on the development of new ATLAS High-Level Trigger (HLT) algorithms for the next LHC run and the performance of existing algorithms. In addition, the UAEU-ATLAS group is also engaged in the search for the dark matter photon candidate in the Higgs boson decay using data collected by the ATLAS detector. It is expected that the results will be published in top journals and presented at the Higgs Hunting conference in September 2022.

OTHER COLLABORATIONS

TECHNOLOGY AND INNOVATION INSTITUTE (TII)

The College has established contact with TII (This institute is part of the Advanced Technology Research Council in Abu Dhabi, [ATRC]) to collaborate on research, co-advise PhD students to be sponsored by TII and to initiate a graduate track in quantum computing, as they do have 5 research centers, among them are the Materials Science Research Center and the Quantum Computing Research Center.

FEDERAL AUTHORITY FOR NUCLEAR REGULATION (FANR)

The college has become part of an international research proposal by the International Atomic Energy Agency (IAEA) on Transfer of Radionuclides in Arid and Semi-Arid Environments for Radiological Environmental Impact Assessment. Furthermore, FANR will train and hire a number of students.

RESEARCH CENTERS IN THE UNIVERSITY

The COS has joint appointments with the National Space Science and Technology Center and the Khalifa Center for Genetic Engineering and Biotechnology. Several research projects with significant funding running in the millions of dirhams are currently underway.

MEMORANDUM OF UNDERSTANDING (MOU)

To foster closer cooperation and exchange of ideas, projects and resources, in the last 2 years, the COS has signed or is in the process of establishing MOUs with the following entities:

- Graduate School of Engineering Kyoto University, Japan
- A.N. Severtsov Institute of Ecology and Evolution of Russian Academy of Sciences (Moscow, Russia).
- Dubai Desert Conservation Reserve
- Project Management Institute partnership agreement
- University of Sharjah & New York University, Abu Dhabi
- Dalian Institute of Chemical Physics, Chinese Academy of Sciences
- Shaanxi Normal University, China
- European Center for Nuclear Physics (CERN, Geneva, Switzerland)
- Univ. of Sassari, Italy
- Faculty of Technology and Metallurgy, Univ. of Belgrade, Serbia (This was led by the VC and a representative from the government of Abu Dhabi)
- Dubai Police, Dubai (agreement for the MSc in Forensic Science) – in progress
- Abu Dhabi Police, Abu Dhabi (agreement for the MSc in Forensic Science) – in progress
- Murchison Wide-field Array (MWA) consortium – in progress
- Joint Lab with the Chinese Academy of Science – in progress

NEW FACILITIES

GREENHOUSE

In collaboration with National Center of Meteorology, UAEU established a new greenhouse for the Department of Biology. The greenhouse, with a total area of 240 m^2, was designed according to international standards with control system for adjusting conditions necessary for plant growth.

The collaboration will study the effect of environmental factors on native plants of the UAE and crops as well as factors that affect their growth and production to support sustainable food security.

COS GRADUATE STUDENT COMPUTING LAB

The COS Graduate Students Computing Lab (GSCL) was inaugurated on 4 October 2021 in presence of the Dean, Prof. Maamar Benkraouda, Assistant Dean for Research, Dr. Ruwaya Alkendi, faculty members and graduate students from the different departments of the college. The GSCL, located in E5-1018, 1024, and 1025, offers postdocs, research assistants, graduate students and their supervisors, space to meet and discuss issues related to their research topics. It provides them a quiet space where they can concentrate on their write-up of papers and theses, meetings, and graduate seminars.

The GSCL is equipped with powerful computers and special discipline-specific software such as CrystalMaker, Quantum Computing software, etc. Graduate students' supervisors can also connect remotely from their offices to these computers to use the software. There are machines with Windows and Linux operating systems. Besides the workstations, the GSCL is equipped with 30 new Windows desktops, 10 Mac desktops, 3 printers, and a copier machine.

The GSCL is open 24 hours every day. Since its opening last October, many graduate students, postdocs, and research assistants have used it regularly. Recently, some faculty members have also used it to conduct undergraduate research.

MERIT & AWARDS

FACULTY AWARDS

PRIME MINISTER'S MEDAL

Prof. Khaled Amiri (Biology) received the Prime Minister's Medal (Mohammed Bin Rashed Government Excellence Award) in the Future Career Category.

KHALIFA AWARD FOR EDUCATION

Prof. Khaled El-Tarabily (Biology) won the Khalifa Award for Education in the field of Higher Education (Distinguished University Professor category).

UAE INNOVATION AWARD

Dr. Abdessamad Tridane (Mathematical Sciences) was awarded the UAE Innovation Award in August 2021.

FELLOWSHIP OF THE HIGHER EDUCATION ACADEMY OF THE UK

Dr. Ranjit Vijayan (Biology) was awarded a Fellowship of the Higher Education Academy of the UK in recognition of teaching and learning support in higher education.

UNIVERSITY EXCELLENCE AWARD

Prof. Synan AbuQamar (Biology) was awarded the University Excellence Award for Excellence in Scholarship

MERIT ALLOWANCE

The following faculty members were granted the University Merit Allowance for the academic year 2021-2022.

Prof. Amr Amin
Biology

Prof. Farrukh Mukhamedov
Mathematical Sciences

COLLEGE EXCELLENCE AWARDS

The College is proud to recognize the following faculty members for their contributions to the institution.

TEACHING
Prof. Ahmad Al Rawashdeh
Mathematical Sciences

SCHOLARSHIP (Theoretical Science)
Prof. Salah Nasri
Physics

SCHOLARSHIP (Experimental Science)
Prof. Hakim Saibi
Geosciences

SERVICE
Prof. Saleh Thaker
Physics

CHANCELLOR'S INNOVATION AWARD (7TH CYCLE)

Faculty members from the COS were awarded Chancellor's Innovation Awards for their innovative ideas in the field of water, health and technology.

Category: TECHNOLOGY
Prof. Amr Amin
Biology

Category: WATER
Prof. Hakim Saibi
Geosciences

Category: HEALTH
Dr. Abdullah Mahboob
Chemistry

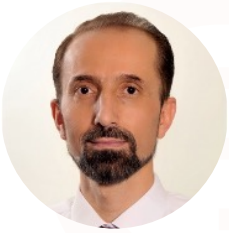
CERTIFIED CAA REVIEWERS

Prof. Sayed Marzouk (Chemistry) and Dr. Asma Al Menhali (Biology) have successfully qualified as CAA certified reviewers.

FACULTY PROMOTIONS

FULL PROFESSORS

The following five faculty members were promoted to the rank of Full Professor.



Dr. Mohamed Al Deeb
Biology

Dr. Ranjit Vijayan
Biology

Dr. Thomas James Fowler
Geosciences

Dr. Nafaa Chbili
Mathematical Sciences

Dr. Youssef El-Khatib
Mathematical Sciences

ASSOCIATE PROFESSORS

The following four faculty members were promoted to the rank of Associate Professor.

Dr. Yusra Al-Dhaheri
Biology

Dr. Ho Hon Leung
Mathematical Sciences

Dr. Mustapha Aouchiche
Mathematical Sciences

Dr. Zsolt Adam Balogh
Mathematical Sciences

STUDENT AWARDS


PLANET X YOUTH AEROSPACE AWARD

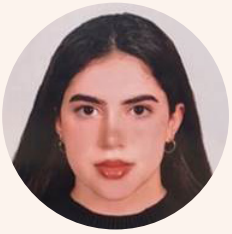
Ms. Rayah Ali Abualsboua Alkhateri (Department of Biology) and Ms. Jawaher Ali Almoutar Alnuaimi (Department of Physics) won the 3rd place in the Planet X Youth Aerospace Challenge organized by the Emirates Planet Discovery Project in partnership with the Dubai Airshow (2021).

SUSTAINABLE DEVELOPMENT GOALS DEBATE

A group of Chemistry students - Aya Azmi Abdallah Alhamshari, Omnia Yahya Hassan Elsheikh and Basant Sayed Ali Sayed Elabyad - received the Second Place at the Sustainable Development Goals Debate organized as part of EXPO 2020.

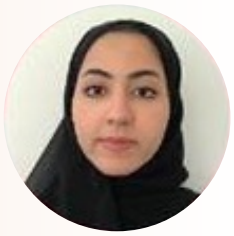
WRITING COMPETITION, UAEU PAVILION, EXPO2020

Ms. Maryam Naveed from the Department of Biology won the second place for the best article written about the UAEU pavilion.



SHARJAH CULTURE & ARTS COMPETITION

Ms. Fatema Iss Aljasim from the Department of Geosciences won the third place in the University of Sharjah Culture and Arts Competition.




READING MONTH COMPETITIONS

Ms. Maryam Poolad and Mr. Hamad Alblooshi from the Department of Chemistry won a short story writing competition organized by the College of Humanities and Social Sciences as part of the Reading Month 2022 competitions.

GRADUATE STUDENT RESEARCH & INNOVATION COMPETITIONS

The following winners of the Graduate Students Research & Innovation Competitions were honored by the College

Cellular & Molecular Biology: Ms. Shahana Seher Malik
Ecology & Environmental Sciences: Mr. Stephan Bruns
Chemistry: Ms. Lamia Siddiq & Ms. Sandy Almehrath
Geosciences: Mr. Khalid Galal Eldin Khair
Mathematical Sciences: Ms. Fouzia Shaheen
Physics: Ms. Mehreen Javed & Ms. Sabah Khan

STAFF RECOGNITIONS

PHD IN ECOPHYSIOLOGY

Mrs. Naeema Alshamsi (Lab Specialist, Biology) received her PhD in Ecophysiology from the University of Malaga, Spain.

INTERNATIONAL HAPPINESS DAY

On the occasion of the International Day of Happiness, Ms. Halima Almeqbali (Lab Specialist, Biology Department) received an award from the 'The Emirates Center for Happiness Research' for volunteer work at Expo2020.

STAFF ACHIEVEMENT AWARD

Ms. Abla Alkaabi, Senior Financial Officer received an achievement award from the Provost for her efforts as a senior financial officer.


MATH

COLLEGE EVENTS

18TH INTERNATIONAL JUNIOR SCIENCE OLYMPIAD 2021

The International Junior Science Olympiad (IJSO) is an international event that involved more than 60 countries. The UAE hosted this international event for the first time. The Ministry of Education, UAE was the lead organization for the event and the UAEU was in charge of leading the scientific committee. The UAEU was represented by Dr. Ehab Malkawi, Dr. Mayank Gururani, Dr. Sabir Bin Muzaffar and Dr. Fathy Hassan from the COS. Since late August 2021, the team from UAEU worked closely with the MOE and IJSO's international advisory board meeting weekly virtually to prepare for the event. A camp held in COS Labs in September 2021 hosted students and the international committee. A second camp was organized by COS to train our graduate students who acted as moderators and graders.

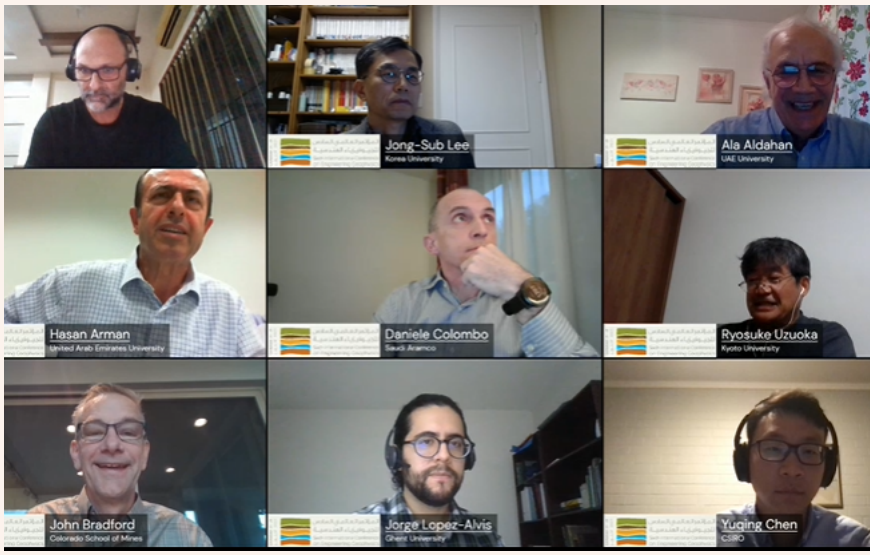
BREAST CANCER AWARENESS MONTH

25 and 26 October 2021

As part of the Breast Cancer Awareness Month, in October, the Biology Club organized several events and activities over a 2-day period. All members of the UAEU community were invited to these activities. This included an open discussion about breast cancer hosted by Dr Shamsa Alawar (Department of Obstetrics and Gynecology, CMHS, UAEU), a talk on immunotherapy for breast cancer by Dr Khalid Muhammad (Biology, UAEU) and an exhibition in the corridor of E1 building. Information brochures and badges were distributed to spread awareness about breast cancer and to emphasize the importance of self-examination. This event received a lot of positive feedback and successfully achieved the main goal of spreading awareness.

INTERNATIONAL CONFERENCE ON ENGINEERING GEOPHYSICS

25–28 October 2021

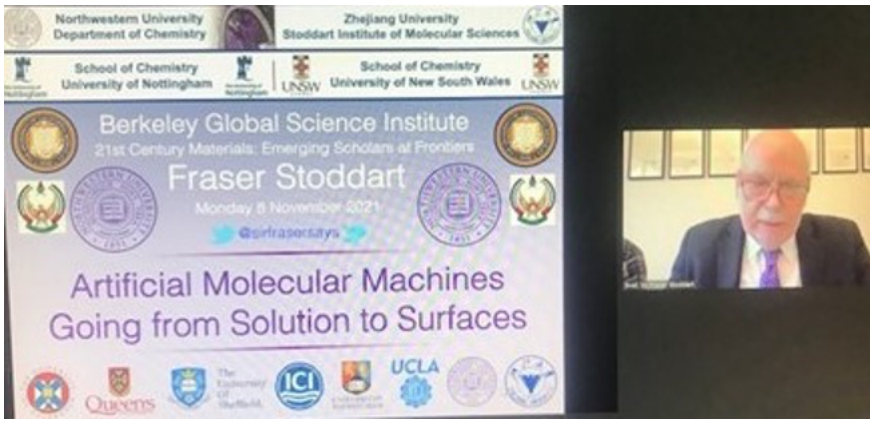


Under the patronage of H.H. Sheikh Tahnoun bin Mohammed Al Nahyan, the Ruler's Representative in Al Ain region, the United Arab Emirates University (UAEU) and Al Ain City Municipality (AAM), in partnership with the Society of Exploration Geophysicists (SEG), organized the sixth edition of the International Conference on Engineering Geophysics (ICEG) between 25-28 October 2021. The conference was organized virtually for the first time since its launch in 2011. The conference was opened by H.E. Zaki Anwar Nusseibeh, Cultural Advisor to the President of the UAEU and Chancellor of the UAEU.

ICEG2021 received a total number of 111 paper submissions. The Technical Committee accepted 91 submissions - 71 as oral presentations and 20 as posters. There were 209 participants from 29 countries representing 38 universities and 68 international companies.

21ST CENTURY MATERIALS: EMERGING SCHOLARS AT THE FRONTIERS SYMPOSIUM

8-10 November 2021



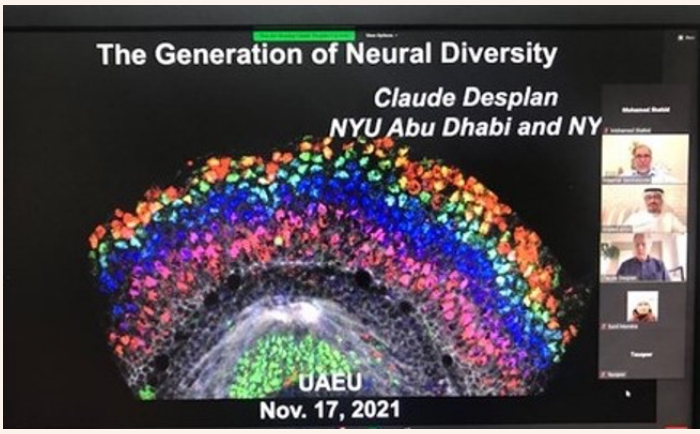
This symposium was held virtually between 8-10 November 2021 with the aim of discussing the most recent advances in materials science in the 21st century. It was delivered by 22 distinguished scholars at the frontier of materials science from 15 countries including the UAE. The event also included a keynote speech by the Noble laureate Sir Fraser Stoddart from Northwestern University, USA. The symposium will be moderated by five prominent Material Scientists.

The symposium was jointly organized by the Berkeley Global Science Institute (Prof. Omar Yaghi, USA), BC Materials (Prof. Stefan Wuttke, Spain), and United Arab Emirates University (Prof. Maamar Benkraouda, UAE).

SCIENCE COLLOQUIUM

17 November 2021

In Fall 2021, the College initiated the Science Colloquium – a series of talks from distinguished researchers from across the globe. The first colloquium was delivered by Prof Claude Desplan from the Center for Developmental Genetics, New York University, USA. He delivered a talk on "The Generation of Neuronal Diversity" that illustrated how complex neuronal organization can be implemented by simple rules using a fruit fly (Drosophila) model.



FIRST UAEU NONLINEAR PHYSICS SYMPOSIUM 2022

20 April 2022

The Nonlinear Physics Group of the Department of Physics (leader: Prof. Usama Al Khawaja) organized the First UAEU Nonlinear Physics Symposium on 20 April 2022. The symposium was conducted fully online (due to Covid-19) with the participation of local and international experts in the field.

FACTORS IN INNOVATIVE RESEARCH

21 April 2022

An online discussion was organized by the COS and the Berkeley Global Science Institute where several renowned scholars from around the world talked about factors affecting creative research.

Prof. Omar M. Yaghi
University of California
Berkeley, US

Dr. Evelyn Ploetz
University of Munich
Germany

Prof. Stefan Wuttke
BCMaterials
Germany

Dr. Stefano Canossa
Max Planck Institute
Stuttgart, Germany

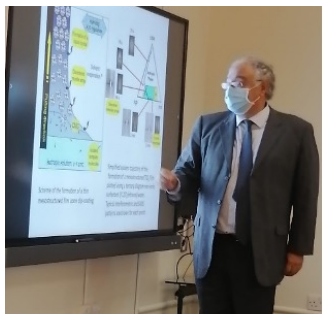
DEPARTMENTAL SEMINARS 2021-2022

The constituent departments of COS organized a number of scientific seminars featuring both internal as well as external speakers from international institutions. Biology: 8 seminars; Chemistry: 4 seminars, Geosciences: 4 seminars; Mathematical Sciences:12 seminars and Physics: 8 seminars. The details of all departmental seminars can be found in Appendix 3.

VISITORS

VISIT OF PROF. PLINIO INNOCENZI, UNIVERSITY OF SASSARI, ITALY

10-12 October 2021



Prof. Plinio Innocenzi, from the Laboratory of Materials Science and Nanotechnology, University of Sassari, Italy, visited the College between 10-12 October 2021. He is also an Associate Researcher at the National Instituto of Nuclear Physics (INFN) and the Director of the Laboratory of Materials Science and Nanotechnology. During his visit, Prof. Innocenzi met with Prof. Ahmed Murad, Associate Provost for Research, Prof. Maamar Benkraouda, Dean of COS, and the Chairs of Chemistry and Physics Departments. He delivered a lecture titled "From 0D Nanostructures to Complex Materials" and discussed his research and possible collaborations. Prof. Innocenzi will be a Visiting Faculty in the Department of Chemistry for the Academic Year of 2022-2023.

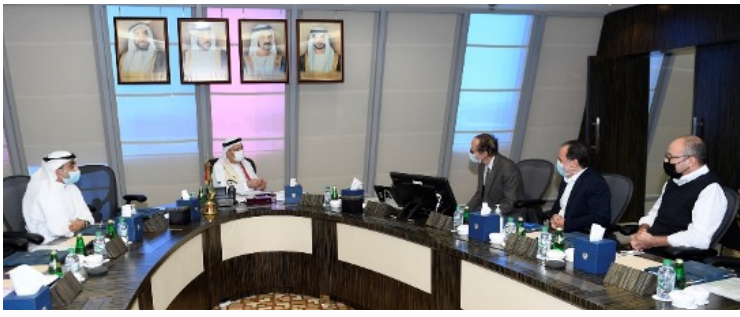
VISIT OF SERBIAN DELEGATION

9-11 November 2021

Prof. Petar Uskokovic, Dean, and Prof. Dorde Janackovic from the Faculty of Technology and Metallurgy, University of Belgrade visited UAEU between 9-11 November 2021. This visit aimed at initiating academic and research collaboration between University of Belgrade and UAEU, especially in the area of Materials Science. The delegates presented their research interests and capabilities, met with faculty members from the College of Science (Chemistry and Physics) and Engineering (Chemical and Mechanical) who are undertaking research in this area and visited research laboratories in buildings E3, E4, E6 and F2.

VISIT OF PROFESSOR ANDREAS HOECKER, SPOKESPERSON OF ATLAS COLLABORATION AT CERN

22 November 2021



The UAEU recently joined the ATLAS Collaboration [CERN-Large Hadron Collider (LHC)], as part of a cluster of three UAE Universities: United Arab Emirates University (UAEU), University of Sharjah (UoS), and New York University Abu Dhabi (NYUAD). A delegation from ATLAS collaboration at CERN led by Professor Andreas Hoecker visited UAEU on 22 November 2021 and held discussions with H.E the Chancellor of UAEU, Dr. Zaki Nusseibeh, Prof. Ahmed Murad, Associate Provost for Research, and Prof. Maamar Benkraouda, Dean of COS. He also discussed research opportunities with faculty members and students of the Department of Physics.

H.E. DR. ZAKI NUSSEIBEH, UAEU CHANCELLOR'S VISIT TO BIOLOGY LABS

28 November 2021

H.E. the Chancellor of UAEU, Dr. Zaki Nusseibeh visited Biology Labs in F1 and E3 buildings on 28 November 2021. He was accompanied by Prof. Ghaleb Alhadrami, the Acting VC, Prof. Mohamed Hasan, the Acting Provost, Prof. Ahmed Murad, Associate Provost for Research, Prof. Maamar Benkraouda, Dean of COS, and Prof. Khaled Amiri, the Chair of the Department of Biology. Members of the Department, including faculty, staff and students, gave the guests a tour of key research facilities and important projects that the Department has undertaken.

VISIT OF A DELEGATION FROM THE SERBIAN MATHEMATICAL INSTITUTE

16 December 2021

A delegation from the Mathematical Institute, Serbian Academy of Sciences and Arts visited the Department of Mathematical Sciences on December 16th 2021. A meeting was held between the delegation, the COS dean, the Department Chair and other faculty members to discuss different opportunities of collaboration between the two sides. The delegation was composed of Prof. Miodrag Mihaljevic Deputy Director of the Mathematical Institute, Prof. Silvia Ghilezan, Vice President of Scientific Council and the Chef of the Mathematics Group at the Faculty of Electrotechnics of the University of Novi Sad and Dr. Djorđe Baralić, Vice Director of the Mathematical institute.

VISIT OF MALAYSIAN DELEGATION

19 May 2022

A delegation from the University Teknology MARA Malaysia (UiTM), composed by Prof. Haryani, Dean of Faculty of Computer and Mathematical Sciences, Dr. Amirul Afif Muhamt, and Dr. Hayati Abdul Rahman visited the Department of Mathematical Sciences of the College of Science on 19 May 2022. They met with the Dean, Prof. Maamar Benkraouda, the Chair of the Department of Mathematical Sciences, Dr. Adama Diene, and a few other faculty members from the College. The two delegations discussed the possibility of collaboration between UAEU and UiTM. They agreed to sign an MoU between the two universities, including the establishment of joint collaborations on research, supervision of graduate students, organization of staff mobility, and exchange of external examiners.

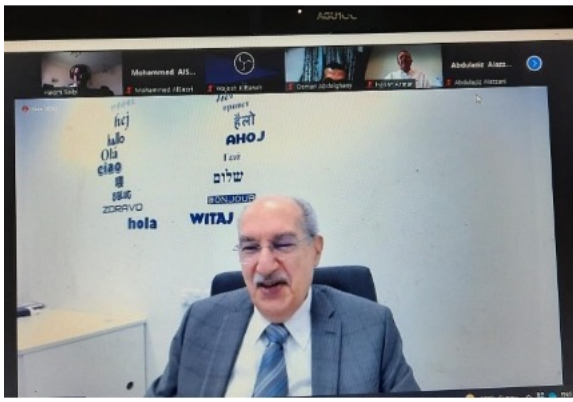
INNOVATION WEEK ACTIVITIES

INNOVATION WEEK ACTIVITIES

31 January – 4 February 2022

As part of the Innovation week the COS and its constituent departments organized several activities and events to engage the members of the UAEU. This included the Innovation 101 which was a series interviews of senior members of the College regarding their innovations, talks about recent innovations and graduate research competitions.

Activities conducted:

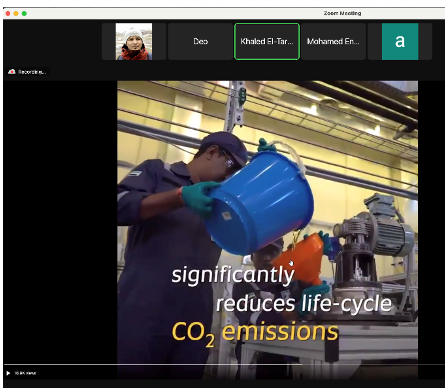


Innovation 101 interviews with

- Prof. Haydar Baker (Geosciences)
- Prof. Amr Amin (Biology)
- Prof. Abbas Khaleel (Chemistry)
- Prof. Fathalla Ali Rihan (Mathematical Sciences)
- Prof. Farrukh Mukhamedov (Mathematical Sciences)
- Prof. Adel Najar (Physics)

Talks

- "Vehicles detection based on their seismic surface waves using artificial intelligence" by Prof. Hakim Saibi (Geosciences)
- "Innovative technology for reconstruction of past climatic events" by Prof. Ala Aldahan (Geosciences)
- "Camel Milk and Diabetes - Recent Advances", by Dr. Mohammad Ayoub (Biology)
- "Use of microorganisms to promote salicornium growth for biofuel production", by Prof. Khaled Al-Tarabily (Biology)
- “SAMSE, a new conservation tool to determine sustainable limits to human-caused mortality of wildlife in a stochastic world” by Dr. Oliver Mallik (Biology)
- “Frontiers in Photochemistry” by Dr. Ahmed Alzamly (Chemistry)
- “Innovative approaches in Mathematical Modelling” - Series of student presentation in different mathematical subjects



Competitions

- Earth Science Innovation Competition for Graduate Students
- Biology Innovation Competition for Graduate Students
- Chemistry Innovation Competition for Graduate Students
- Mathematics Innovation Competition for Graduate Students
- Physics Innovation Competition for Graduate Students

Workshops

- Workshop tutorial on ChemDraw Software
- A workshop about innovation in Physics -1
- "Biofuel production" – A laboratory demonstration by Prof. Khalid El-Tarabily (Biology).

OTHER ACTIVITIES AND EVENTS

BIOLOGY GRADUATE RESEARCH DAY

25 November 2021

The Department of Biology organized a Biology Graduate Research Day where students from the two PhD programs based in the department presented their research work virtually. Ms Subha Chandran and Ms Shaima Raji from the Cellular and Molecular Biology program and Ms Nour El Houda Debouza from the Ecology and Environmental Science program were adjudged as the best presenters.

COS AT EXPO 2020

19-23 December 2021

The College of Science was represented at the UAEU pavilion at Expo 2020 between 19-23 December 2021. The College exhibition showcased several distinguished achievements related to research, inventions and intellectual property held by members of the College in various fields. This is expected to create awareness and demand among investors and students wishing to join the college programs. It is also likely to increase opportunities for research cooperation between COS and other entities. Over 14 professors and 17 graduate students represented the COS in the exhibition.

SCIENCE EXHIBITION CONDUCTED BY THE COS NEWS TEAM

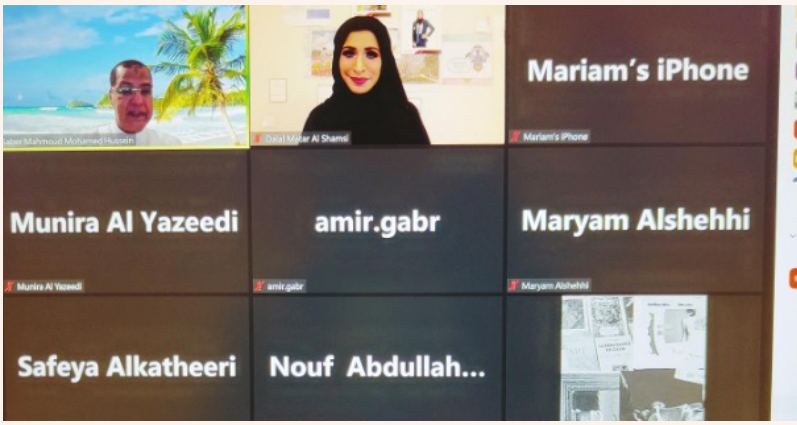
18 March 2022

On the occasion of International Science Week, the COS News Team organized the "COS Exhibition". Each booth represented a different department of the college. Students were exposed to scientific experiments and live applications in a socially stimulating and enjoyable setting, increasing their curiosity about various fields of Science.

MONTH OF READING ACTIVITIES

March 2022

In line with the national celebrations, March was marked with reading activities, including reading from an Arabic book and poetry reading, to celebrate the month of reading.



POSTER PRESENTATION DAY OF INTERNSHIP STUDENTS

11 May 2022

In Spring semester of this year, on 11 May 11 2022, the College organised an on-campus face-to-face poster presentation event, where more than 100 students presented their internship experience in a poster presentation. It was the first face-to-face gathering done after 2.5 years of lockdown due to the COVID-19 restrictions. The Dean, members of the College council and faculty members moved through all poster listening to students who were excited and enthusiastic to discuss their internship experience at the work site.

COS PARTICIPATION IN GULF NEWS EDUFAIR 2022

7-29 May 2022

The Gulf News EduFair is the one-stop shop for everything a student needs to know about going to university in the UAE and abroad. This three-day education fair offers a unique platform where prospective students and their families can interact with admissions officers and faculties; compare and contrast degrees, scholarship and admissions options; take part in workshops and seminars that track emerging higher-education trends; and chat with career counsellors. Members of the College participated in the event to represent the UAEU and COS in particular.

END OF YEAR GATHERING

23 June 2022

The College organised an end of year gathering that brought together a large number of the members of the College at a face-to-face event. It was held on Thursday, 23 June 2022. The goal was to highlight the College achievements in this academic year. Distinguished students, faculty, and admin staff and their accomplishments in academic, service, or research activities were showcased.

APPENDICES

APPENDIX 1: PUBLICATIONS IN TOP JOURNALS IN 2020

No	Faculty /Student	Department	Rank of journal
1	Muhammad Abdul Latif	Physics	1% (2 papers)
2	Khaled El Tarabily	Biology	1%
3	Synan Abu-Qamar	Biology	1%
4	Ahmed Alzamly	Chemistry	1%
5	Khaled El Tarabily	Biology	1% - Coauthor
6	Sunil Mundra	Biology	1% - Coauthor
7	Aaron Henderson	Biology	1% - Coauthor
8	Synan Abu-Qamar	Biology	1% - Coauthor
9	Youngwook Kim	Biology	1% - Coauthor
10	Alejandro Perez	Chemistry	1% - Coauthor
11	Lac Ha Nguyen	Chemistry	1% - Coauthor
12	Ala Aldahan	Geosciences	1% - Coauthor
13	Muhammad Abdul Latif	Physics	1% - Coauthor
14	Khaled Amiri	Biology	5% (2 papers)
15	Sabir Bin Muzaffar	Biology	5% (2 papers)
16	Khalid Muhammad	Biology	5%
17	Ruwaya Alkendi	Biology	5%
18	Ahmed Alzamly	Chemistry	5%
19	Mohammad Toutounji	Chemistry	5%
20	Yaser Greish	Chemistry	5%
21	Salem Ben Said	Mathematical Sciences	5% (2 papers)
22	Abdessamad Tridane	Mathematical Sciences	5%
23	Nacir Tit	Physics	5% (3 papers)
24	Naslim Neelamkodan	Physics	5% (2 papers)
25	Ihab Obaidat	Physics	5%
26	Muhammad Abdul Latif	Physics	5%
27	Shaima Malik	PhD student	5% (2 papers)

28	Khaled El Tarabily	Biology	10% (4 papers)
29	Synan Abu-Qamar	Biology	10% (2 papers)
30	Ranjit Vijayan	Biology	10% (2 papers)
31	Asma Al Menhali	Biology	10%
32	Mohammad Al Deeb	Biology	10%
33	Yusra Al Dhaheri	Biology	10%
34	Abbas Khalil	Chemistry	10%
35	Iltaf Shah	Chemistry	10%
36	Alejandro Perez	Chemistry	10%
37	Ala Aldahan	Geosciences	10%
38	Salem Issa	Geosciences	10%
39	Salem Ben Said	Mathematical Sciences	10%
40	Farrukh Mukhamedov	Mathematical Sciences	10%
41	Salah Nasri	Physics	10% (5 papers)
42	Nacir Tit	Physics	10%
43	Ihab Obaidat	Physics	10%
44	Saleh Thaker	Physics	10%
45	Bashar Al Zohily	PhD Student	10%
46	Seham Al Raish	PhD Student	10%
47	Nighat Perveen	PhD Student	10%
48	Amanat Ali	PhD Student	10% (2 papers)
49	Betty Mathew	PhD Student	10%
50	Khalid Muhammad	Biology	25% (3 papers)
51	Mohammad Al Deeb	Biology	25% (2 papers)
52	Mayank Gururani	Biology	25%
53	Khaled El Tarabily	Biology	25%
54	Mohammed Akli Ayoub	Biology	25%
55	Sabir Bin Muzaffar	Biology	25%
56	Ahmed Alzamly	Chemistry	25% (2 papers)
57	Na'il Ibrahim	Chemistry	25% (2 papers)
58	Iltaf Shah	Chemistry	25%
59	Shaikha Saif Al Neyadi	Chemistry	25%

60	Ziad Ali Moussa	Chemistry	25%
61	Hakim Saibi	Geosciences	25%
62	Qasem Al-Mdallal	Mathematical Sciences	25% (18 papers)
63	Muhammad Imran	Mathematical Sciences	25% (6 papers)
64	Farrukh Mukhamedov	Mathematical Sciences	25% (4 papers)
65	Humberto Rafeiro	Mathematical Sciences	25% (4 papers)
66	Fathalla Rihan	Mathematical Sciences	25% (2 papers)
67	Muhammed Syam	Mathematical Sciences	25%
68	Alexandr Zubkov	Mathematical Sciences	25%
69	Mohamed El Bachraoui	Mathematical Sciences	25%
70	Youssef El-Khatib	Mathematical Sciences	25%
71	Ihab Obaidat	Physics	25% (9 papers)
72	Saleh Thaker	Physics	25% (2 papers)
73	Usama Al Khawaja	Physics	25% (2 papers)
74	Adel Najar	Physics	25%
75	Fathalla Hamed	Physics	25%
76	Hebatallha AlSakaji	PhD student	25%
77	Laila Sakkaf	PhD student	25%
78	Salwa Hussein Ahmed	PhD student	25%
79	Onoud Alyammahi	PhD student	25%
80	Nighat Perveen	PhD student	25%
81	Isra Al Zamel	PhD student	25%
82	Amaria Javed	PhD student	25%
83	Reem H. Alzard	PhD student	25%

APPENDIX 2: NEW RESEARCH GRANTS AWARDED IN 2021

START-UP

No	Name	Department	Title
1	Ushangi Goginava	Mathematical Sciences	Fourier Series with respect to locally constant orthonormal system
2	Mohammad Alam	Biology	Understanding how metabolic regulations constrain metabolism.
3	Lac Ha Nguyen	Chemistry	Mixed-metal-based MOFs for photocatalytic overall water splitting
4	Kamal Ali	Geosciences	Economic and scientific significance of chromitite deposits and associated rocks of the ophiolite section in the UAE: platinum-group elements, geochemistry and geochronological per-
5	Abdulla Mahboob	Chemistry	Multitarget approach to treatment of COVID-19 relying on protein therapeutics produced in transgenic tobacco chloroplasts

UPAR

No	Name	Department	Title
1	Aaron Henderson	Biology	Biological and ecological characteristics of two critically-endangered elasmobranch species: the Pakistan whipray *Maculabatis arabica* and the halavi guitarfish *Glaucostegus halavi*
2	Mustapha Aouchiche	Mathematical Sciences	Distance Laplacian matrices of graphs and applications
3	Mohammed Almeetani	Chemistry	Detection and determination of Endocrine disruptors, Mycotoxins and related metabolites in camel milk products of UAE
4	Iltaf Shah	Chemistry	Hair analysis for drugs of abuse in health/disease in UAE population
5	Thomas Fowler	Geosciences	Palaeo-environmental geochemical investigation of the Bani Hamid metasediment protoliths: new criteria for constraining models of Semail obduction at the northern end of the Oman Mountains

6	Salah Nasri	Physics	Understanding the Origin of the Leptonic Flavor Structure
7	Nayla Munawar	Chemistry	Rewiring Gut-Induced Immunity Through Enzymatic Production of Novel Prebiotics
8	Viktor Bodi	Mathematical Sciences	Filtered multiplicative bases in associative and non-associative algebras
9	Noureddine Amrane	Physics	Molecular design and fabrication of antimonene-based materials with high optoelectronic performance.
10	Sofyan Alyan	Biology	Landscapes, Nocturnal Flight, and the Navigational Mechanisms of Homing Pigeons: Behavioral, Sensory and Neural Control
11	Muhammad Imran	Mathematical Sciences	Properties and applications of graphs in chemical and spectral graph theory
12	Mohammad Al Deeb	Biology	Camel ticks in Abu Dhabi, Dubai, and Sharjah: 16S rRNA gene-based screening of microbial communities and molecular investigation of Q fever, Rickettsia aeschlimannii, and

STRATEGIC RESEARCH PROGRAM

No	Name	Department	Title	Type
1	Ranjit Vijayan	Biology	Elucidation of the binding mechanism of antidiabetic peptides	ZCHS
2	Nacir Tit	Physics	Metal Atom Catalyst Embedded in C2N for Gas-sensing and Energy-storage Applications: DFT Study	NWEC
3	Na'il Ibrahim	Chemistry	Chemically modified liquorice extracts for the protection from sea-	ZCHS
4	Abdelouahid Samadi	Chemistry	Design, Synthesis and Biological Evaluation New Conciliant for the Treatment of the Alzheimer's Dis-	ZCHS

ASIAN UNIVERSITIES ALLIANCE

No	Name	Department	Title
1	Yaser Mohamed Greish	Chemistry	Novel Designing and Fabrication of Self-Cleaning Medical Clothes with Multi- Protective Layers for Prevention of Covid-19 Transmission
2	Amr Fawzy	Biology	Targeting ACE2 in hepatocellular carcinoma by carbon nanodots conjugated with saffron-derived crocin
3	Ihab Obaidat	Physics	Investigating new spin correlated-plasmon in novel Mott-like insulating highly oriented single-crystalline gold quantum dots
4	Sunil Mundra	Biology	Unveiling hidden potential of hypersaline soil (sabkha): halophilic microbiome, their functionality and extremozyme potential (SalMicro)

UAEU-ZAYED UNIVERSITY COLLABORATION RE-

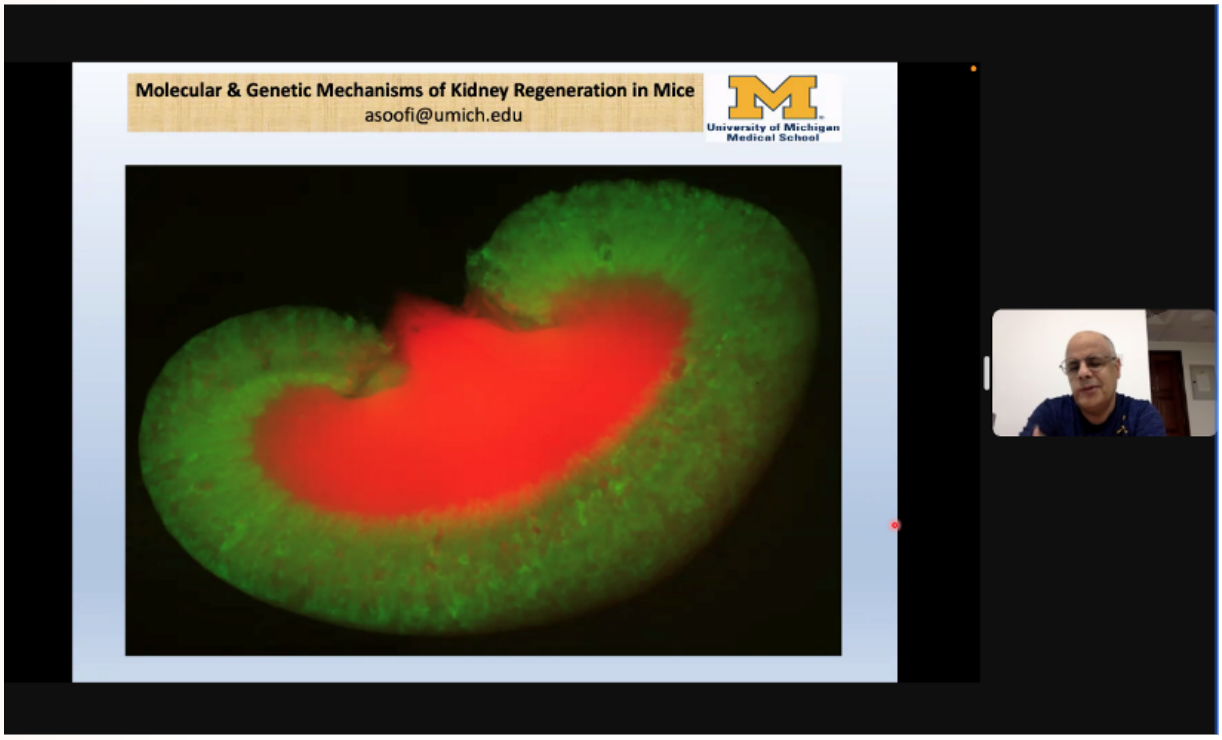
No	Name	Department	Title
1	Sunil Mundra	Biology	The impact of newly planted mangrove forest on the ecosystem carbon balance and microbial communities
2	Na'il Saleh	Chemistry	Detection of COVID-19 Saliva Components by Cucurbit[8]uril-based Reduced Graphene Oxide Amine Functionalized Electrodes
3	Fathalla Rihan	Mathematical Sciences	Impact of Stochastic Noise on COVID-19 Dynamics in the UAE: Analysis, control, and treatment

ADEK

No	Name	Department	Title
1	Youngwook Kim	Biology	Monitoring vegetation phenology and biogeochemical responses to UAE hydroclimate changes with satellite, drone and *in–situ* observations
2	Sunil Mundra	Biology	Sewage resistome: Deciphering antimicrobial resistance (AMR) genes dynamics in wastewater from Abu Dhabi (sewageAMR)

APPENDIX 3: DEPARTMENTAL SEMINARS

DEPARTMENT OF BIOLOGY



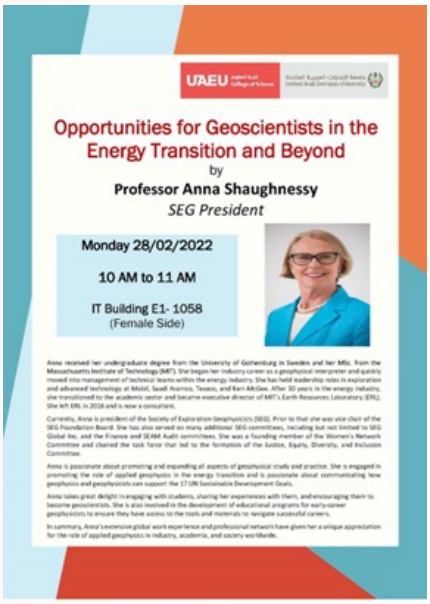
No	Name	Affiliation	Title	Date
1	Dr. Munawaar Khan	College of Natural and Health Sciences, Zayed university	Effect of Biochar on arid soil microbial community structure and physicochemical properties	23 Sep 2021
2	Dr. Mohd Imtaiyaz Hassan	Centre for Interdisciplinary Research in Basic Sciences. Jamia Millia Islamia, New Delhi, India	Structure based drug design and discovery: from theory to therapy	14 Oct 2021
3	Dr.M.Muthusamy	Department of Agricultural Biotechnology, National Academy of Agricultural Sciences, Rural Development and Administration, Jeonju, South Korea.	Engineering thermotolerance in Brassica rapa (Chinese cabbage)	28 Oct 2021
4	Prof. Claude Desplan	Dept. Biology, New York University. Affiliate Member, Center for Neural Science, NYU.	The generation of neuronal diversity	17 Nov 2021

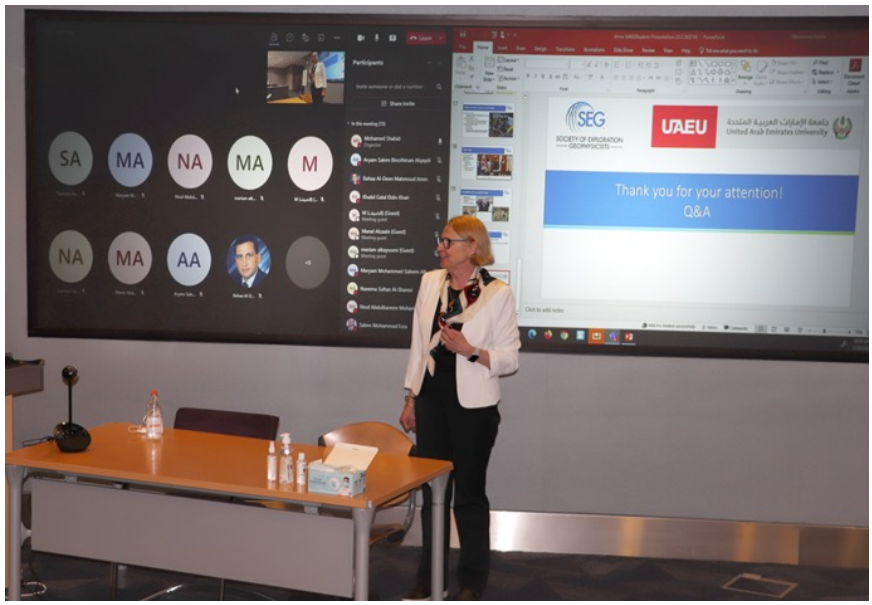
5	Prof. Morsy Mustafa	Department of Biology, University of West Alabama, Chair, American Society of Plant Biologists –Southern Section	Integration of fungal endophytes into crop plants to improve productivity: application and molecular mechanisms	17 Mar 2022
6	Dr. Igor Kryvoruchko	Department of Biology, UAEU	Functional Characterization of Root Nodule Transporters Involved in Symbiotic Nitrogen Fixation	08 Apr 2022
7	Dr. Khaled Mohammad	Department of Biology, UAEU	Role of the Ca^{++}/Calcineurin/NFAT-Signaling Network in controlling allergic skin responses	22 Apr 2022
8	Dr. Abdulsalam Soofi	Department of Pathology, School of Medicine, University of Michigan, Ann Arbor MI, USA	The use of animal models to understand human diseases (AKI)	28 Apr 2022

DEPARTMENT OF CHEMISTRY

No	Name	Affiliation	Title	Date
1	Dr. Rana A. Bilbeisi	American University of Beirut, Lebanon	Design and preparation of zeolitic imidazolate framework derivatives for environmental applications	18 Feb 2022
2	Dr. Harekrushna Sahoo	National Institute of Technology, India	Ionic liquid: Impact on protein conformation and dynamics	04 Mar 2022
3	Dr. Mahmoud Abdel-Latif	UAEU, UAE	Nanomaterials drug delivery, reaction pathway investigation, energy transfer control, polymer water treatment and corrosion inhibition, quantum chemistry insights	08 Mar 2022
4	Dr. Jibran Iqbal	Zayed University, Abu Dhabi	Application of two-dimensional MXene for sustainable water trearment	15 Apr 2022

DEPARTMENT OF GEOSCIENCES





No	Speaker	Affiliation	Title	Date
1	Khaled Galal	PhD Student, UAEU	Artificial Intelligence and its applications in Geo-sciences	02 Feb 2022
2	Prof. Hesham El-Kaliouby	The National Research Center, Dokki, Giza, Egypt	Ground Penetrating Radar (GPR): Principles, Applications & New Trends	02 Mar 2022
3	Prof. Michael Becken	Munster University, Germany	Semi-airborne electromagnetics for deep exploration	23 Mar 2022
4	Prof. Anna Shaughnessy	SEG President	Opportunities for Geoscientists in the Energy Transition and Beyond	28 Feb 2022

DEPARTMENT OF MATHEMATICAL SCIENCES

No	Speaker	Affiliation	Title	Date
1	Mykola Khrypchenko	Universidade Federal de Santa Catarina	Crossed modules over inverse semigroups and the third inverse semigroup cohomology group	26 Aug 2021
2	Salvatore Siciliano	Università Del Salento	Lie identities of group algebras, enveloping algebras and related structures	30 Sep 2021
3	Bilal A. Rather	UAEU	On the Gersgorin discs of distance matrices of graphs	07 Sep 2021
4	Antal Nagy	University of Szeged	Segmenting Head & Neck MR images	14 Sep 2021
5	Istvan Mezo	Nanjing University of Information Science and Technology	The Lambert W function and its applications and generalizations	28 Oct 2021
6	Meena Sahai	Lucknow University	Unit Groups of Group Algebras	11 Nov 2021
7	Krassimira Vlachkova	Sofia University “St. Kliment Ohridski”	Scattered Data Interpolation in using Minimum Norm Curve Networks	18 Nov 2021
8	Fereshteh Bahadorykhalily	Institute of Advanced Studies in Basic Science	On the generalization of Grassmannians in super geometry	20 Jan 2022
9	László Varga	University of Szeged	Data Assessment and Augmentation in Tomography	27 Jan 2022
10	Vipin Kumar	Max-Planck-Institut für Dynamik komplexer technischer Systeme	Controllability Results for Fractional Differential System with Non-instantaneous Impulses	03 Feb 2022
11	Abdul Q. M. Khaliq	Middle Tennessee State University, USA	Deep-Data-Driven Neural Networks for Mathematical Models- A COVID-19 case study	03 Mar 2022
12	Firuz Kamalov		A presentation on Deep Learning for a general audience	04 Jun 2022

DEPARTMENT OF PHYSICS

No	Speaker	Affiliation	Title	Date
1	Dr. Mohamed Belfkir	UAEU	Experimental Physics within ATLAS Collaboration at CERN	07 Oct 2021
2	Dr. Rachik Soualah		Search for New Physics with ATLAS at the LHC (CERN)	04 Nov 2021
3	Dr. Asma Wasfi		Design of Graphene-based Sensors for DNA Detection and Analysis	25 Nov 2021
4	Dr. Sangaraju Sambasivam	UAEU	Nanostructured Materials for Energy Conversion and Storage Applications	09 Dec 2021
5	Dr. Walid Malaeb		High-Tc Superconductivity: Uncovering the Underlying Physics using Photoemission Spectroscopy	11 Feb 2022
6	Dr. Roland Young	UAEU	First Results from the Emirates Mars Mission	04 Mar 2022
7	Dr. Bijay Kumar Guha	Dr. Bijay Kumar Guha	Understanding Martian Atmospheric Characteristics Associated with Dust, Storms and Clouds through Observations and Modelling	18 Mar 2022
8	Prof. Ahmad Ayesh	Prof. Ahmad Ayesh	Recent Findings on Gas Sensors based on Metal-Oxide Nanoparticles	25 Mar 2022

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