

Annual Report 2020-2021 is online: annualreport.qatar.cmu.edu



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Annual Report 2020-21

ANNUAL REPORT 2020-2021

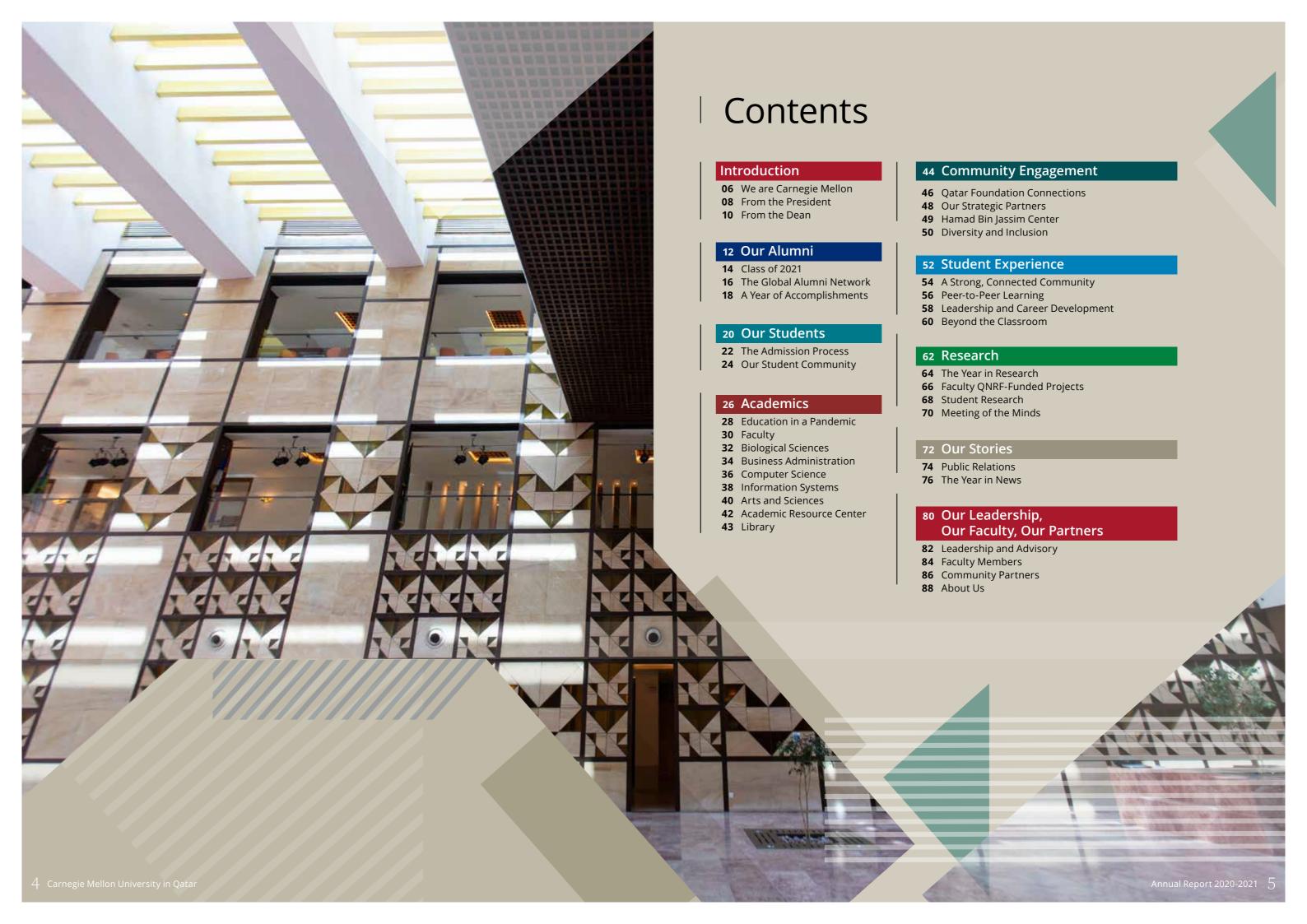




The mural "Between the Land and Sea" is on display in the CMU-Q building in Education City. The artwork was a collaborative project between **Douglas Cooper**, his family, the architects, the administration and the community.

Funding was made possible by trustee **Henry Posner Jr.** and his wife **Helen**. The piece was a gift presented to **Her Highness Sheikha Moza bint Nasser** by Carnegie Mellon University at the building opening event in 2009.





We are Carnegie Mellon

Vision

Carnegie Mellon University will have a transformative impact on society through continual innovation in education, research, creativity, and entrepreneurship.

Mission

To create a transformative educational experience for students focused on deep disciplinary knowledge; problem solving; leadership, communication, and interpersonal skills; and personal health and well-being.

To cultivate a transformative university community committed to

- a) attracting and retaining diverse, world-class talent;
- **b)** creating a collaborative environment open to the free exchange of ideas, where research, creativity, innovation, and entrepreneurship can flourish; and
- c) ensuring individuals can achieve their full potential.

To impact society in a transformative way—regionally, nationally, and globally—by engaging with partners outside the traditional borders of the university campus.





From the President

Since its inception in 2004, Carnegie Mellon University in Qatar has reflected this university's commitment to apply a globally inclusive mindset to our role as educators, knowledge creators and engines of economic impact. Today, CMU-Q is training even more of the world's most talented students, with our highest enrollment numbers ever: 442 students registered from 52 countries.

While the pandemic continues to reshape our world, I am proud of the way the CMU-Q community has united to overcome these challenges. Thanks to these collaborative efforts, 95 outstanding students graduated as part of the Class of 2021, bringing the total number of CMU-Q alumni to 1,030 Tartans. Even though CMU-Q alumni are still early in their careers, they are already contributing to the development of Qatar—and making an impact on our global society.

A focus on innovative learning and a transformative student experience continues to define CMU-Q. After the successful introduction of new micro courses, we have seen the popularity and impact of these opportunities continue to grow. These micro courses, taught remotely by professors from our Pittsburgh campus, allow CMU-Q students to engage in topics that typically lie outside CMU-Q offerings, including artificial intelligence and society, blockchain, and computational medicine. And as part of a university-wide commitment to diversity, inclusion and equity, Annette Vincent, associate dean for diversity and climate, recently created the new Office of Diversity and Climate to help ensure a supportive environment for all, not only at CMU-Q, but across Education City.

Our success to date would not be possible without the support of the Qatar Foundation, and the founding vision of His Highness the Father Amir Sheikh Hamad Bin Khalifa Al Thani, Her Highness Sheikha Moza bint Nasser, and Her Excellency Sheikha Hind Bint Hamad Al **Thani.** I continue to be deeply grateful for this dynamic partnership.

I invite you to explore the events and accomplishments from the past year that are outlined in this annual report, along with directions for the continued growth of CMU-Q. I congratulate you on what we have accomplished together, and I look forward to seeing what the coming years will bring.

Farnam Jahanian

President, Carnegie Mellon University

From the Dean

Welcome to the Carnegie Mellon University in Qatar Annual Report 2020-21.

Few events in history have had such a profound, rapid, and far-reaching impact as the COVID-19 pandemic. Like the rest of the world, our past year at CMU-Q has been tremendously different. Our building, typically a hub of activity during the academic year, was quiet as faculty, students, and staff mostly taught, learned, and worked remotely.

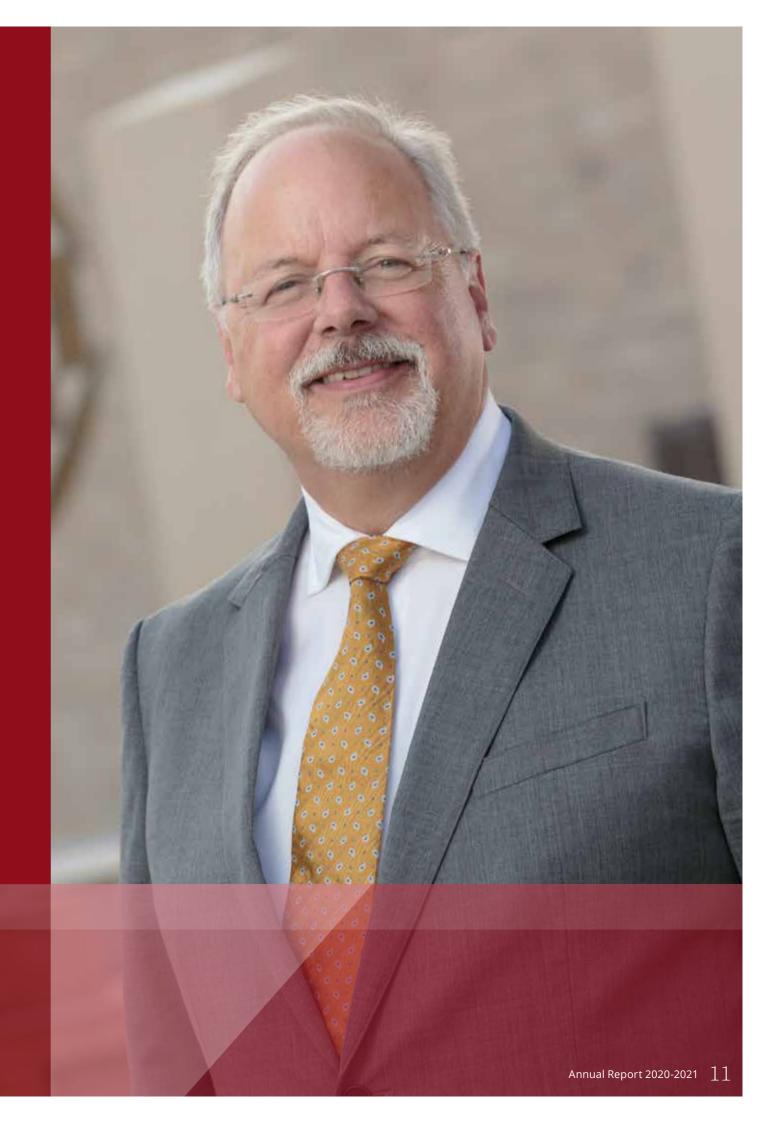
In this *Annual Report*, you will read about our journey through the last year. While 2020-21 was challenging, it also clarified who we are as a community. Our faculty, staff and students have worked in countless ways, big and small, to ensure that we tackled these monumental changes together.

We also strengthened our connections with Qatar Foundation and our Education City counterparts. This past year we have worked together like never before, collaborating to create a safe, supportive space for our students to learn.

One of the bright spots last year was the level of engagement between CMU-Q and the Carnegie Mellon main campus, particularly through crosscampus course enrollment. Early in the pandemic, CMU introduced the Tartans Together campaign to inspire CMU worldwide to stay connected, and our community thoroughly embraced this message.

This Annual Report is a window into a year like no other. I am exceptionally proud of the many individual achievements and milestones in this report. I would also like to acknowledge that this year especially, behind every success was our community. Through it all, we supported one another and tapped into new reserves of creativity, cooperation and empathy.

Michael Trick





When the Class of 2021 graduated in May, our alumni network grew to more than 1000 men and women.
Beginning with our first class in 2008, our graduates have followed their interests, forged their own paths, and contributed to building a better world.



Class of 2021

CMU-Q celebrated the 95 graduates from the Class of 2021 at a virtual event that drew more than 450 unique views from around the world.



Class of 2021

95 graduates

dual degree

4 programs

23 nationalities

49% Qatari citizens





Your senior year has been challenging, but you have adapted, prioritized learning, and found ways to collaborate, create, and celebrate together. Our community is stronger because of your Tartan spirit.

Michael Trick
Dean





Even though COVID did have an influence in our journey, always remember that it did not define it.
All of our accomplishments started with the decision to try.

Dina Abdelazeem

Dina Abdelazeem Student speaker

Class of 2021

Graduates by program



15 Biological Sciences



11 Computer Science



26 Information Systems Business Administration



Outstanding Academic Achievement Awards

Biological Sciences

Noora Al-Mohannadi

Business Administration

- Omar Naim
- Muhammad Syed

Computer Science

Laila Ossama El-Beheiry

Information Systems

- Mohammad Shahmeer Ahmad
- Shouq Al-Khuzaei

Andrew Carnegie Society Scholars

- Mohammad Shahmeer Ahmad
- Muhammad Ahmad Khan

Qatar Campus Scholars

- Mohammad Shahmeer Ahmad
- Muhammad Ahmad Khan
- Weilin Li
- Muhammad Ahmed Zahid

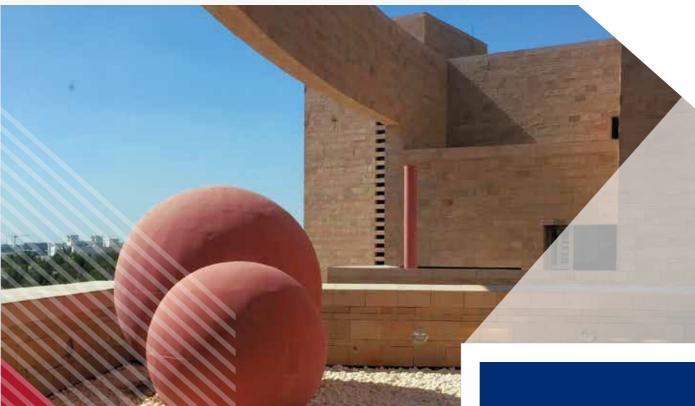
Fifth Year Scholars

- Mohammad Shahmeer Ahmad
- Mariyam Amir

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The Global Alumni Network

The CMU-Q alumni network extends throughout Qatar and beyond. Our alumni work at top organizations and creative new startups. They are influencing government policy, analyzing big data, spearheading creative projects, educating people, researching new ideas and working to improve the lives of others.





14
graduating classes

1,030
total alumni

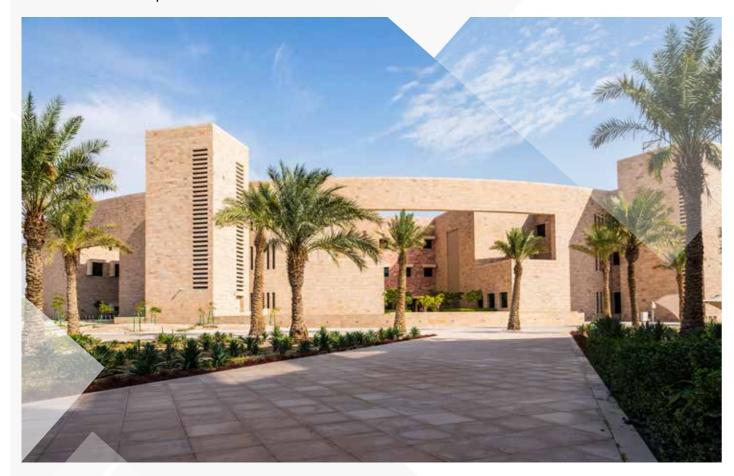
57
nationalities

Alumni live on
5
continents



A Year of Accomplishments

The first graduating class at CMU-Q was in 2008, and each year our alumni network grows in both numbers and achievements. In the last year, here are just a few of our alumni accomplishments.





Mentorship

Graduation is just the beginning of a new relationship with CMU-Q. Our alumni remain closely connected, keeping us up-to-date with their personal milestones and career successes. Throughout the year, they come back to the university to share their experiences and advice with a new generation of students.

- Fatima Amir (BS 2016), Rayan Hashim (BS 2016), Nourhan El-Khatib (BS 2018), Sondoss Hassan (BS 2020), guest speakers for the biological sciences course EUREKA
- Mohammed Al-Hor (BA 2017), Ibrahim Hassan (BA 2008), Dema Abou Samhadaneh (BA 2018), guest speakers for the Carnegie Mellon Finance Association
- Fahim Dalvi (CS 2014), Priyanka Dodia (CS 2016), Keghani Kouzoujian (CS 2010), Julian Sam (CS 2019), speakers for the Computing Club
- Min Kyung Kang (BS 2017), guest lecturer, entrepreneurship course
- Hasan Naveed (IS 2019), speaker, Carnegie Mellon Business Association





Education Excellence Day Awards

Six graduates from the Class of 2020 received awards from His Highness Sheikh Tamim Bin Hamad Al Thani, the Amir of Qatar. Haya Al-Kaabi (BS 2020) received a platinum award. Gold awards went to Sara Al-Darwish (BS 2020), Albandari Al-Mana (BA 2020), Taimaa Al-Mohanadi (BA 2020), Maha Al-Tamimi (BS 2020), and Fatima Mustafawi (IS 2020).



Government of Ireland Scholarship

Farjana Salahuddin (IS 2017) was awarded the Government of Ireland Scholarship to further her studies at Trinity College Dublin. Salahuddin was one of only 60 recipients worldwide.

CEO of Silatech

Hassan Al-Mulla (BA 2012) was named the CEO of Silatech, a Qatar-based nonprofit organization that promotes large-scale job creation for youth around the world.



IEEE/ACM Symposium on Edge Computing

Aliaa Essameldin (CS 2017) and Mohammed Nurul Hoque (CS 2020) published their work in the 2020 IEEE/ACM Symposium on Edge Computing. The paper, which is called, "More than the sum of its things: Resource sharing across iots at the edge," is co-authored by Khaled Harras.



Our student community is at the heart of all we do at Carnegie Mellon University in Qatar. During the admission cycle each year, we seek out applicants who are motivated and eager to learn. Together, our enrolled students form a global-minded community that is enthusiastic, encouraging and supportive.

The Admission Process

We consider each applicant to CMU-Q holistically: we look at grades and academic excellence, and also special interests, leadership qualities, enthusiasm and the motivation to learn. Through this careful process, we select a diverse, talented class who will support and challenge one another.





Class of 2024

124 first-year students

45 Qatari students

34 international students

The incoming class

CMU-Q welcomed our largest class of incoming students in August 2020, including the first students from Côte d'Ivoire, Myanmar, the Netherlands and Vietnam.

Class of 2024, I predict that the challenges of the pandemic will shape you, bring out the best in you, and make you more empathetic and thoughtful young professionals.

Michael Trick

Virtual First-Year Orientation, Class of 2024



Recruitment for the Class of 2025

The admission process for the Class of 2025 was exceptionally selective, with a record number of applicants.

Pandemic restrictions precluded in-person visits, interviews and events with prospective students. Instead, CMU-Q reached out to prospective students digitally, including the first virtual Admission Viewbook in English and Arabic.

Pre-college programs

Nearly 200 high school students from 25 countries tuned in to Experience CMU-Q, a virtual workshop for exploring study and career options in science, technology and business. CMU-Q held 20 virtual workshops during the academic year for pre-college students.

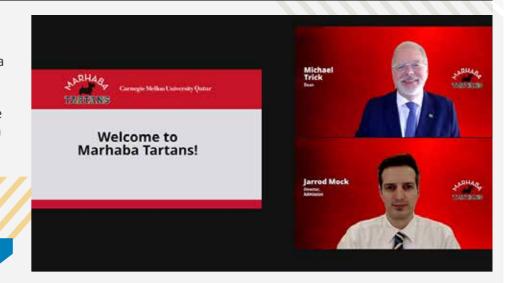


Early Decision, Class of 2025

CMU-Q welcomed the students admitted through Early Decision at an in-person ceremony.
There are 30 students admitted to the Class of 2025 through Early Decision, including 12 Qatari students.

Marhaba Tartans

To welcome the newly admitted students, CMU-Q hosted Marhaba Tartans, a day of online sessions to introduce the Class of 2025 to the university. The students in the admitted class come from 90 high schools in 43 countries.



Our Student Community

CMU-Q students come from diverse backgrounds, with a wide spectrum of interests and aspirations. Together, they form a community of enthusiastic learners.



Countries represented



ALBANIA
ALGERIA
AUSTRALIA
BAHRAIN
BANGLADESH
CANADA
CHINA
COTE D'IVOIRE
EGYPT
ETHIOPIA
ESWATINI

FRANCE GEORGIA INDIA INDONESIA IRAN IRAQ JAPAN JORDAN KAZAKHSTAN KENYA KOREA KUWAIT LEBANON LESOTHO MALAYSIA MOLDOVA MONGOLIA MOROCCO MYANMAR NEPAL NETHERLANDS OMAN PAKISTAN
PALESTINE
PHILIPPINES
QATAR
ROMANIA
RUSSIA
RWANDA
SAINT KITTS AND NEVIS
SAUDI ARABIA
SERBIA
SOMALIA

SUDAN SYRIA TANZANIA TUNISIA UNITED KINGDOM USA UZBEKISTAN VIETNAM

Students enrolled, by program

Source: Carnegie Mellon University in Qatar registrar





- Biological Sciences
- Business Administration
- Computational Biology
- Computer Science
- ♦ Information Systems



Our student body

442 students enrolled

124 first-year students

52 nations represented

40% Qatari citizens

59% female

Financial aid

Financial aid options are a vital component of a diverse, competitive and strong CMU-Q student community. In 2020-21, there were several types of financial support available for our students:

- Amiri scholarship, Ministry of Education and Higher Education
- Sponsorship from a national organization
- Qatar Foundation need-based grant
- Qatar Foundation financial aid
- Qatar Foundation scholarship
- Carnegie Mellon University in Qatar scholarship
- FAFSA loans for U.S. citizens

Organizations that sponsored CMU-Q students

- Amiri Diwan
- Aspire Zone Foundation
- Qatar Airways
- Embassy of the State of Kuwait Qatar National Bank
- Qatar Armed ForcesQatar National Bank
- Ministry of Education and Higher Education
- Qatar Petroleum
- Ministry of Interior
- Sidra Medicine

Academics For decades, Carnegie Mello

For decades, Carnegie Mellon has been at the forefront of educational science, and this history was crucial when the challenges of the pandemic arose. A strong collaboration of CMU-Q experts in technology, education and subject areas ensured that students continued to learn and grow, even in exceptional circumstances.



Education in a Pandemic

During the summer of 2020, CMU-Q leadership prepared for an academic year like no other. With classes taught primarily in remote mode, the university prioritized the student learning experience, including the new cohort of first-years.

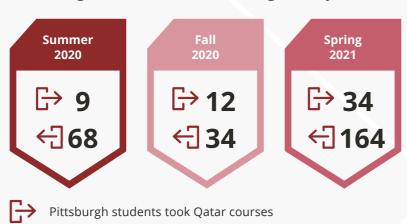


Courses offered 43 **Biological Sciences** courses offered over 3 semesters 82 **Business Administration** 65 103 first-years completed Computer Science **Edge Summer Program 2020** 100+ Information Systems 31 students took micro courses Arts and Sciences 30 each semester

Zoom fatigue is real, but CMU-Q has done a great job in delivering a seamless transition to remote learning. Having the option for asynchronous and synchronous classes has been really valuable.

Fatima El-Sallabi
Business Administration, Class of 2022

Cross-registration with Pittsburgh campus



Qatar students took Pittsburgh courses

New project-based studies

CMU-Q created four new courses for the summer 2020 semester that each took a unique look at questions raised during the pandemic. The project-based courses provided students the opportunity to tackle relevant, real-world questions in an interdisciplinary context.

- History of epidemics, pandemics, and infectious disease
- Data analysis for social commerce platforms in the Gulf during COVID-19
- Creating a digital exhibit of the COVID-19 pandemic in Qatar
- Islamic finance on the blockchain—Using smart contracts for sukuk transactions



Project-based courses challenge you and pull you out of your comfort zone. You are pushed to learn new things on your own, even more than what is usually expected.

Andrew Edward Information Systems, Class of 2021

Micro courses

The Qatar campus offered an extensive slate of remote micro courses throughout the academic year. Taught by professors from the Pittsburgh campus, micro courses offer CMU-Q students a sampling of the myriad areas of study at CMU. Three micro courses are equivalent to one semester course.



Micro courses for 2020-21

- Geopolitical challenges of a changing Middle East: Politics, security and law, Ignacio Arana
- Pricing strategy, **Peter Boatwright**
- Understanding stress and mood, **DJ Brasier**
- Design that lasts, **Jonathan Chapman**
- Design thinking, **Jonathan Chapman**
- Applied design methods for collaborative innovation, Wayne Chung
- Geopolitical challenges of a changing Middle East: Politics, security and law, Colin Clarke
- Machine learning and sensing, Mayank Goel
- Understanding the demented and delusional brain, Ken Hovis
- Learning to design effective health communications and services, Kristin Hughes

- Shaping form, Ramesh Krishnamurti
- Stars, kites and darts: A primer on Islamic geometric designs, **Ramesh Krishnamurti**
- Blockchain technologies, Michael McCarthy
- Geopolitical challenges of a changing Middle East: Politics, security and law, Geoffrey McGovern
- Napkin sketching: Aiding understanding and communication, Stacie Rohrbach
- Introduction to design for climate change,
 Peter Scupelli
- Introduction to design futures, Peter Scupelli
- Photography and the implied narrative,
 Dylan Vitone

Faculty

CMU-Q faculty members are experts in their fields and dedicated to undergraduate education. Faculty members provide individualized attention and focused instruction so that all students can reach their potential.



Promotions



Jennifer Bruder, associate teaching professor, psychology

New faculty members

Iman Adeinat, visiting assistant professor of operations management Samaneh Hamidi, visiting assistant professor of mathematical sciences Sameer Mathur, visiting associate professor of marketing and business technologies



Hasan Demirkoparan, teaching professor, mathematics



Silvia Pessoa, teaching professor, English



Mohammad Hammoud, associate teaching professor, computer science



Zelealem Yilma, associate teaching professor, mathematics



Meritorious Teaching Award 2021

Cecile Le Roux, received the Meritorious Teaching Award at the Class of 2021 virtual graduation celebration.

I want the students to feel like they can approach me. If they make a mistake, I don't just say it's wrong, I encourage them to look at the question differently, to find a way to contextualize it so they can change their approach.

Cecile Le Roux

Assistant Teaching Professor, Organization and Behavior

Teaching With Intention

Along with support from CMU's Eberly Center, **Kira Dreher** and **Cecile Le Roux** led the Teaching With Intention workshop series for faculty members at CMU-Q. An initiative of the Committee for Diversity and Inclusion, the series teaches and promotes strategies to center diversity, equity and inclusion in course design and delivery.



We have received an unbelievable level of support, including CMU's outstanding teaching and educational resources. The switch to online learning was unavoidable, yet I believe it will result in improvements for the long-term.

Serkan AkgüçAssistant Teaching Professor,
Finance

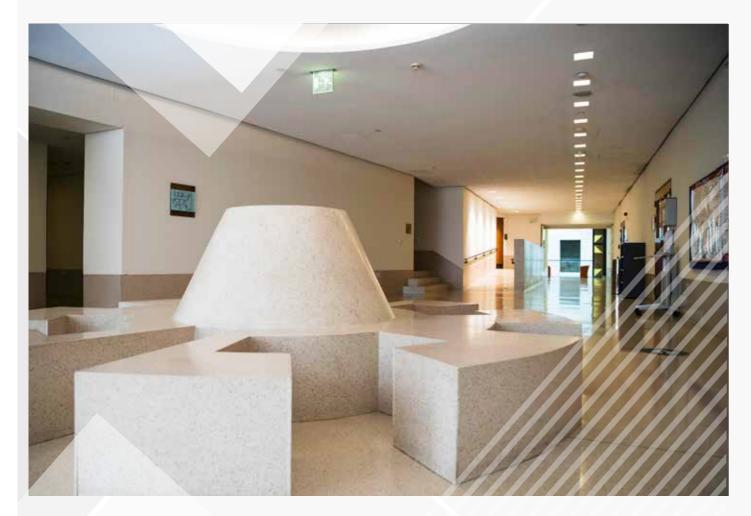
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Faculty Majlis

Lauren Burakowski, Fuad
Farooqi, and Selma Limam
Mansar created the Faculty
Majlis, a forum for faculty
members to learn from one
another about models of
delivery, new technologies, and
different modes of instruction.
The Faculty Majlis held ten
sessions for CMU-Q faculty
throughout the year.

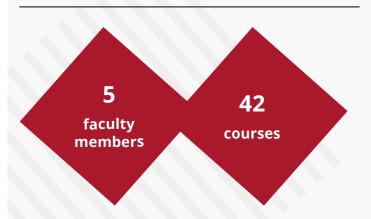
Biological Sciences

Biological sciences students are trained to be scholars deeply knowledgeable in their discipline, professionals who work in diverse teams, and active, engaged global citizens.



Minor intron splicing

Ettaib El Marabti (BS 2017), **Ihab Younis** and **Joel Malek** from Weill Cornell Medicine—Qatar wrote the first comprehensive review of minor intron splicing for the *International Journal of Molecular Sciences*. El Marabti is now a student at WCM-Q.



74 92 students alumni

Elizabeth W. Jones Award

Mariam El-Esnawy received the Elizabeth W. Jones Award for Excellence in Undergraduate Research. The award is given annually by CMU to recognize a biological sciences senior for exceptional commitment to research. This is the second year in a row that a CMU-Q student has won the award.



Provost's Inclusive Teaching Fellowship

Ihab Younis was awarded a CMU Provost's Inclusive Teaching Fellowship for the 2021-2022 academic year. Younis will redesign elements of the advanced elective, Molecular Biology, to address issues of gender bias and gender barriers in the scientific community.

World Water Day

For World Water Day, seniors **Sara Fakhroo** and **Shahad Younis** shared their experience doing research in the area of water quality. They are working on a collaborative project with Qatar Environment and Energy Research Institute (QEERI) to reduce wide and indiscriminate use of biocides to prevent corrosion in offshore drilling water pipes.



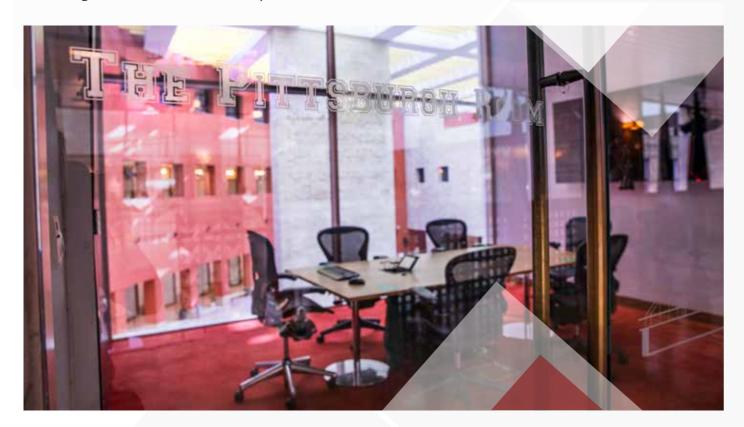


Wimmer Faculty Fellowship outcome

Nesrine Affara completed her Wimmer Faculty Fellowship, redesigning the spring 2021 course, Human Health and Disease, to link course material to tangible examples. During the course, Affara found that the new methodology triggered analytical thinking and expanded student understanding beyond the scope of the course material. The fellowship outcome has led her to incorporate clinical scenarios in other course materials.

Business Administration

Business administration students learn quantitative decision-making, CMU's pioneering approach to undergraduate business education. With an emphasis on analytics and leadership development, graduates are prepared for the challenges of the global business landscape.



12
faculty members

65
courses

157
students

516
alumni



Al Fikra National Business Competition

Ali Al-Maadid won in the Mashrouie Category at the 2020 Al Fikra competition for his concept of a metal recycling plant.



Innovation Scholar Yusufbek Nasriddinov was one of 13 Carnegie Mellon students accepted into the selective Innovation Scholar program at the main campus' Swartz Center for Entrepreneurship. He is the first Innovation Scholar to be selected from the Qatar campus.











Qatar Stock Exchange Financial Education Competition

A team of students took the top spot at the second QSE Financial Education Competition. **Haidar Al-Haidar, Joud Ghalayini, Faiha Sahirah** and **Mariam Syed** edged out teams from Qatar University and Hamad Bin Khalifa University. **Abraham Farooqui** (BA 2020) was also on the original team.

Thought leadership

Islamic finance

In an exclusive interview with the *Gulf Times*, **John O'Brien** and **Fuad Farooqi** shared their perspective on Qatar's role in the growth of Islamic finance.

Qatari Quality Mark

Agustín Indaco shared his views on how the Qatari Quality Mark will encourage innovation and creativity among Education City students.

Economic impact of COVID-19

Veli Safak and students Mariam Ahmed, Daisy Ru and Ihsane Sadiki researched the impact COVID-19 has had on working mothers, and how this could affect the local labor market. They shared their insights with *The Peninsula*.



Computer Science

Computer science students learn the theoretical foundations and the practical skills of computing, so they can explore, design and create the technologies that are transforming modern life.



9 faculty members

31 courses

88 students 170

First undergraduate program ranking

Carnegie Mellon University was ranked second for U.S. undergraduate computer science programs by U.S. News & World Report, a leader in educational analysis. CMU-Q has taught the computer science program since 2004. This is the first time that U.S. News & World Report has ranked undergraduate computer science programs.



Graph Challenge Innovation Award

Faculty member **Mohammad Hammoud** was part of a team that was awarded the 2020
Graph Challenge Innovation
Award. The Graph Challenge is part of the annual IEEE High Performance and Embedded Computing conference.

International Collegiate Programming Competition

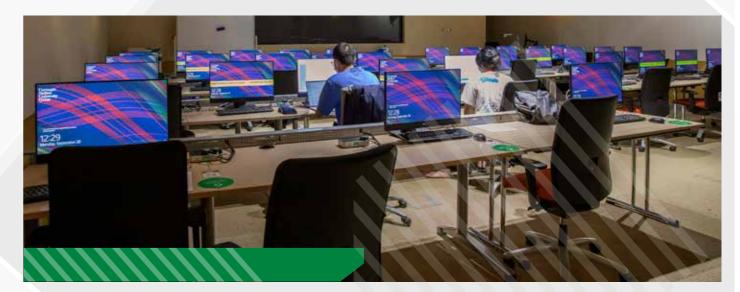
CMU-Q hosted Qatar's first ICPC event, which included students from CMU-Q, College of the North Atlantic-Qatar and Qatar University. **Giselle Reis** and **Eduardo Feo Flushing** organized the competition, which qualifies Qatar-based students to progress to the regional level.

Mohammed Al-Jawaheri, Igli Mlloja, and Abubakr Mohamed won the competition, and Stefan Baumann, Eui Suh (John) Jeong and Radu Revutchi placed second.



CyberStars Qatar computer security competition

Faculty member **Ryan Riley** won first place at a competition that challenged participants to solve a complicated set of cybersecurity problems. The contest was hosted by the Ministry of Transport and Communications and Q-CERT.



Information Systems

Information systems students build a solid foundation in computing, communications, and software development, as well as humanities and social sciences. Graduates are uniquely positioned for careers in a digitized and connected world, with strong technical and analytical skills and a deep understanding of the human impacts of technology.



8
faculty
members

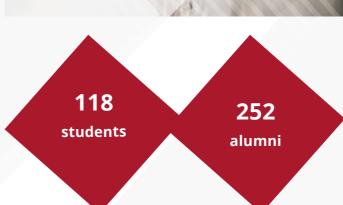
30 courses

Dean's Innovation Scholar

Susan Hagan was the 2021 recipient of the CMU Dean's Innovation Scholar award. Hagan was honored for her teaching approach, which brings together design, rhetoric and technology.









Al Fikra National Business Competition

Student **Mohammed Al-Qassabi** won in the Startup Category at the 2020 Al Fikra competition for an invention to automatically detect when football players are offside.

Qatar Sustainability Week webinar

Chadi Aoun was featured in a panel discussion titled, "Maintaining sustainability: Building capacity and breaking barriers," hosted by the U.S. Embassy Qatar during Qatar Sustainability Week.

Ooredoo 5G Hackathon

Anis Charfi was a co-organizer for the Ooredoo 5G Hackathon, the first event of its kind in Qatar. Fellow faculty members **Houda Bouamor** and **Nui Vatanasakdakul** served as coaches.

IEEE Global Conference on Artificial Intelligence and Internet of Things

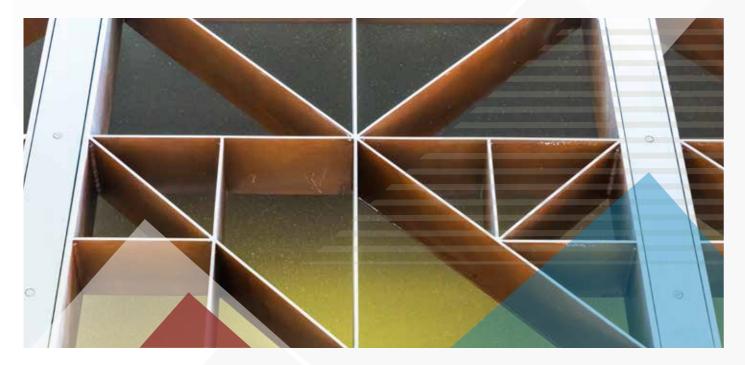
Houda Bouamor joined panelists from the MENA region to discuss the challenges of gender diversity in the field of artificial intelligence.





Arts and Sciences

Students in every program learn to draw connections and work effectively outside their majors through study in the arts and sciences, including required courses such as chemistry, English, math and physics, and electives in a wide vareity of disciplines.



Provost's Inclusive Teaching Fellowships

Deepa Nair and **Patrick Walsh** were awarded Provost's Inclusive Teaching Fellowships for the 2021-2022 academic year. Nair will redesign the course Gender in South Asia, while Walsh will focus on the course AI, Society, and Humanity.





26 faculty members

103 courses offered in 12 disciplines



Ability Friendly Program

Jennifer Bruder and students in the Autism course took part in Qatar Foundation's Ability Friendly Program. The program is designed to build empathy for people with autism and other disabilities by simulating their experiences in a physical education setting.



Great Chemistry Quiz

Students from more than 20 high schools participated in CMU-Q's first Great Chemistry Quiz, an online competition created and hosted by **Ravichandra Bachu** and **Simon Faulkner.**





Global Learning Festival 2020

Dudley Reynolds was a speaker for the World Innovation Summit for Education (WISE) panel on language policy at the Global Learning Festival 2020, which was hosted by UNESCO Learning Cities Wyndham and Melton, Australia. Reynolds spoke about rethinking the role of the classroom as a space for peer learning, and capitalizing on students' diverse linguistic backgrounds.

Thought leadership

Arabic language learning

Zeinab Ibrahim spoke with *Qatar Tribune* about how social media use has contributed to a gap in language learning for Arabic speaking children. She believes there is an urgent need to update the methodology of Arabic teaching to native speakers.

Language education

Dudley Reynolds shared with *Gulf Times* his perspective on how education policy should promote languages and multilingualism as vehicles for collaboration and community building.



Academic Resource Center

The Academic Resource Center (ARC) provides students with the support, resources and opportunities to improve learning and succeed academically.



Consultations with students

The ARC provides individual and group consultations for students who have questions about their course material. In the fall semester, there were 2439 consultation visits; in the spring semester, there were 2044 consultation visits.

Edge Summer Program

The Edge Summer Program began in 2016 as an in-person course for new students to prepare for their first semester. In 2020, the program moved to online mode, so students could participate, regardless of their location. Attendance quadrupled for the summer 2020 session, with more than 80 students participating.

Workshops

- Starting the semester strong
- Time management
- Effective note-taking
- Learning strategies for science courses
- How to read a math textbook
- The smart way to read
- Test prep and learning strategies
- QPA forecaster workshop
- Mid-semester slump and recovery
- Brain rules: Upgrade your memory
- How to become indistractable
- Prepping effectively for finals
- Getting past procrastination
- Academic Kaizen
- Write your way out of writer's block
- Effective study sessions
- The art of revising academic writing
- Power of deep focus
- Relieving math test anxiety

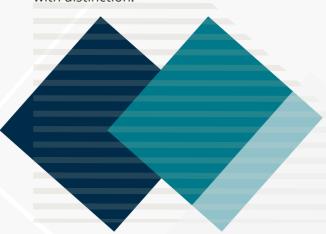
Library

The CMU-Q library played a vital role during the pandemic, securing the digital and print resources for students to continue their studies remotely.



Refinitiv Eikon certification

Four students earned certification for the Refinitiv Eikon data dashboard, a professional-level global stock trading and financial analysis tool. Jasmine (Siyuan) Guo, Yusufbek Nasriddinov, Ihsane Sadiki and Ravshanbek Salimov received the certification, with Guo and Salimov passing with distinction.



The Connection virtual conference

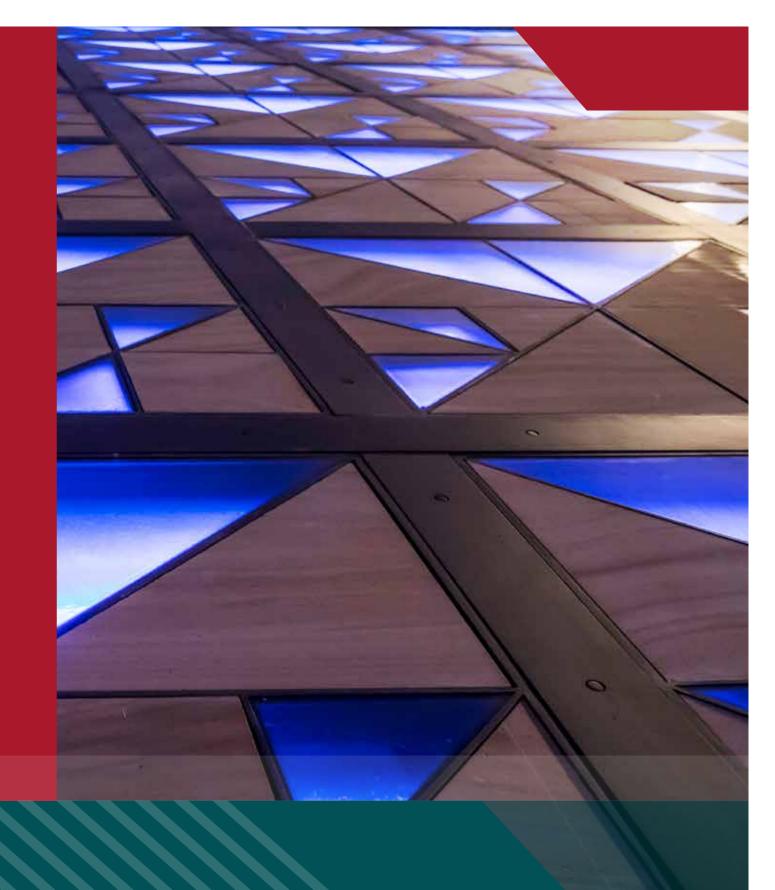
Teresa MacGregor and **Jasmine Kirby**, along with **Jill Chisnell** and **Rikk Mulligan** from the Pittsburgh campus, created and published a crowd-sourced digital exhibit as part of The Connection virtual conference.

Education City Virtual Human Library®

Jasmine Kirby was a co-organizer of the Education City Virtual Human Library®, along with Texas A&M University at Qatar. Members of the community served as "books," volunteering to share their experiences and stories in a virtual space. The Human Library® is a global initiative that challenges prejudice through respectful conversation.

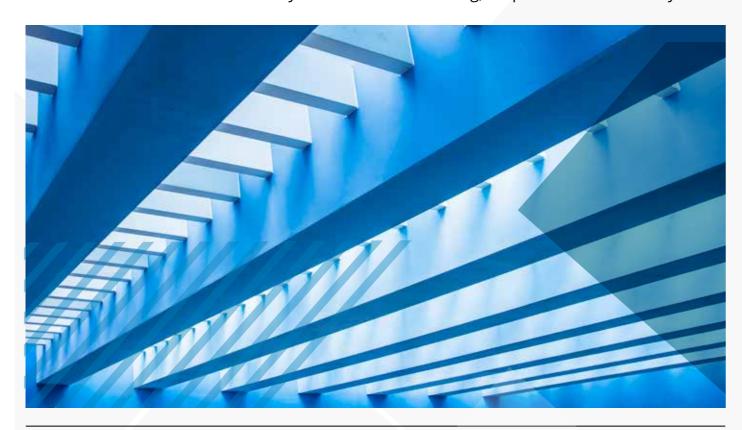
Community Engagement

We have strong, living connections to the global Carnegie Mellon community, Qatar Foundation, and our strategic partners in government and industry. These collaborations offer rich learning opportunities for our students as we help build Qatar's knowledge economy.



Qatar Foundation Connections

We are an integral part of Qatar Foundation, and our students, faculty, alumni and staff work with entities across Education City to build a hub of learning, cooperation and discovery.





Conrad Challenge

STEM experts from partner universities CMU-Q and Texas A&M University at Qatar coached high school teams for the international Conrad Challenge 2020/2021. Participants selected a local or global issue and worked to design an original invention to address the challenge.

Read to Lead Program

Jennifer Bruder co-hosted a session for Qatar Foundation's Read to Lead Program, along with Qatar University's Yusri Marzouki. The session included a discussion on Dan Ariely's book, Predictably irrational: The hidden forces that shape our decisions.

Intercultural Communication and Collaboration Forum

Cecile Le Roux spoke to the Qatar Foundation community about leadership during complex times.



VEX Robotics

CMU-Q and partner university
Texas A&M University at Qatar led
an advanced robotics course for
high school students in the Qatar
Science and Technology Secondary
School under the supervision of
the Ministry of Education and
Higher Education. The course
wrapped up with the Qatar 2021
VEX Robotics Competition.

Qatar Faculty Forum Nesrine Affara delivered a lecture on student visibility to the Education City faculty community.



CMU-Q alumni and QF

Abdulaziz Al-Homaid (CS 2014), software engineer at HBKU'S Qatar Computing Research Institute, shared with *Silicon Republic* how he is using Al to discover population-specific risk factors for diseases,

Asma Al-Kuwari (BA 2011) hosted a live session for QF Alumni Instagram on the challenges and triumphs of life coaching.

Nada Al-Mahmeed (BA 2011), director of HBKU's TII's Translation and Training Center, reflected on the impact of their language courses and translation and interpreting services.

Reem Al-Muftah (BA 2009) and **Nada Arakji** (BA 2016) spoke as part of an all-Qatari female Education City panel on ways of staying active while working or studying from home.

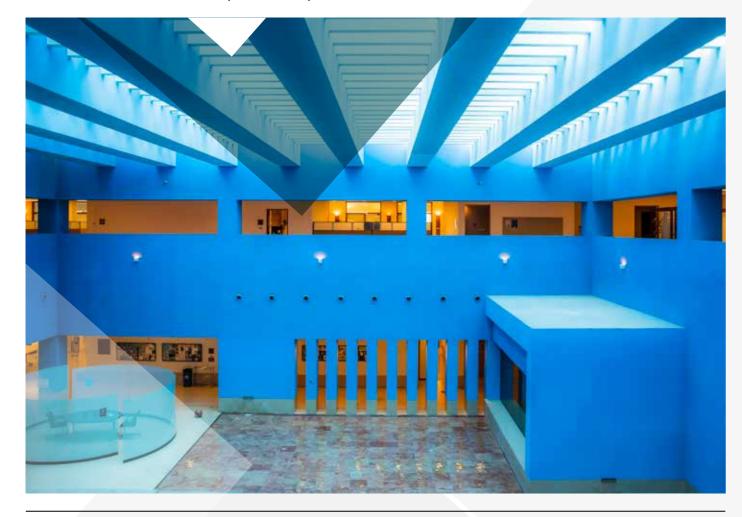
Zaid Haque (IS 2012) and **Rishav Bhowick** (CS 2010) hosted a live session discussing the future of human-Al interactions on QF Alumni Instagram.

Omar Shaath (IS 2011) hosted a live session for QF Alumni Instagram on finding balance with a healthy lifestyle.



Our Strategic Partners

We are proud to have strong, collaborative relationships within the Qatar community. Each year, we strive to strengthen the connections with our strategic partners, and reach out to form new partnerships.



Equine Veterinary Medical Center

CMU-Q and the Equine Veterinary Medical Center signed a Memorandum of Understanding to cooperate in the areas of research, education, and the career development of Carnegie Mellon students.

Mada – Assistive Technology Center Qatar

CMU-Q and Mada – Assistive Technology Center Qatar created a course for students called "A Web for Everyone," to provide a deeper understanding of the concepts and standards of digital inclusion. CMU-Q and Mada joined in a formal partnership in 2019.



Community Partner Lecture series

CMU-Q launched Community Partner Lectures, a virtual series featuring CMU-Q's faculty experts in the areas of business, science and technology. The first lecture was titled "The new normal: Managing online teams," and was delivered by **Cecile Le Roux**.

Hamad Bin Jassim Center

In 2017, CMU-Q and Jassim and Hamad Bin Jassim Charitable Foundation joined forces to create the Hamad Bin Jassim Center for K-12 Computer Science Education. The center's goal is to introduce school-aged children in Qatar to concepts and career paths in computer science.

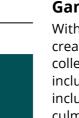


Alice Programming Competition

The sixth annual Alice Middle East Programming Competition took place virtually. Teams from Al Khor International School came in first and third place, while the second and fourth place teams were from Al Arqam Academy. A Doha College team rounded out the top five. There were 35 teams of middle and high school students who entered the contest, with 13 teams advancing to the final round.

Mindcraft

Mindcraft is a workshop program that introduces high school students to the many facets of computer science. Each workshop includes a conceptual activity that challenges students to think computationally, as well as an artificial intelligence component where students learn to program a robot. In the past academic year, 518 students participated in 11 Mindcraft Virtual events.



Game Qode

With the cooperation of GameDev Qatar, CMU-Q created a series of workshops to introduce precollege students to the basics of game development, including coding and design. The workshops included developers and other professionals, and culminated in Qatar's first virtual game development competition, Game Qode.

Diversity and Inclusion

At Carnegie Mellon University, the principles of diversity, equity and inclusion guide our values and serve as our foundation. The Qatar campus is committed to building a campus community that embodies these principles.



Associate dean, diversity and climate Annette Vincent was

appointed CMU-Q's first associate dean of diversity and climate. **Michael Trick** created the new leadership role to oversee and guide campus efforts to become a more diverse, inclusive and equitable learning and working community.



"

We aspire to create a supportive climate at CMU-Q, and across Education City, by promoting the values of mutual respect and equal treatment.

Annette Vincent
Associate Dean,
Diversity and Climate



International Day for Women and Girls in Science

CMU-Q hosted a panel of experts to share their career journeys with students, faculty and staff from across Education City. The panel included women in science from CMU-Q, Hamad Bin Khalifa University's College of Health and Life Sciences, Qatar Biomedical Research Institute and Texas A&M University at Qatar.

Multilingualism in the classroom

Dudley Reynolds penned an op-ed on how multilingualism enriches the classroom, and how schools can make the communities they serve smarter, fairer, and more welcoming places.

Events, workshops and initiatives

- Orientation workshop: Respect in the CMUnity
- Biasbusters
- Teaching With Intention
- Anti-discrimination course planning
- World Tolerance Day
- Women and Girls in Science Day
- Martin Luther King Jr. Day
- Tartans Stand Together commitment
- Community Cooking
- Community Conversations
- Karak Konnections
- Social Injustice StuCo
- Spring book club: Blindspot: hidden biases of good people
- Imposter Syndrome webinar, in collaboration with MENA Women in Law, Qatar Financial Center, the Human Project
- Asian women's perspective in the Middle East panel, in collaboration with VCUarts Qatar and Texas A&M Qatar

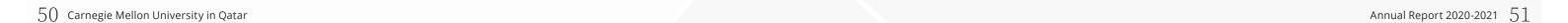


Respect for All campaign

CMU-Q celebrated Martin Luther King Jr. Day with the launch of the 'Respect for All' campaign, which included in-person and virtual activities that promote respect, civil society, and thoughtful, empathetic discussion.

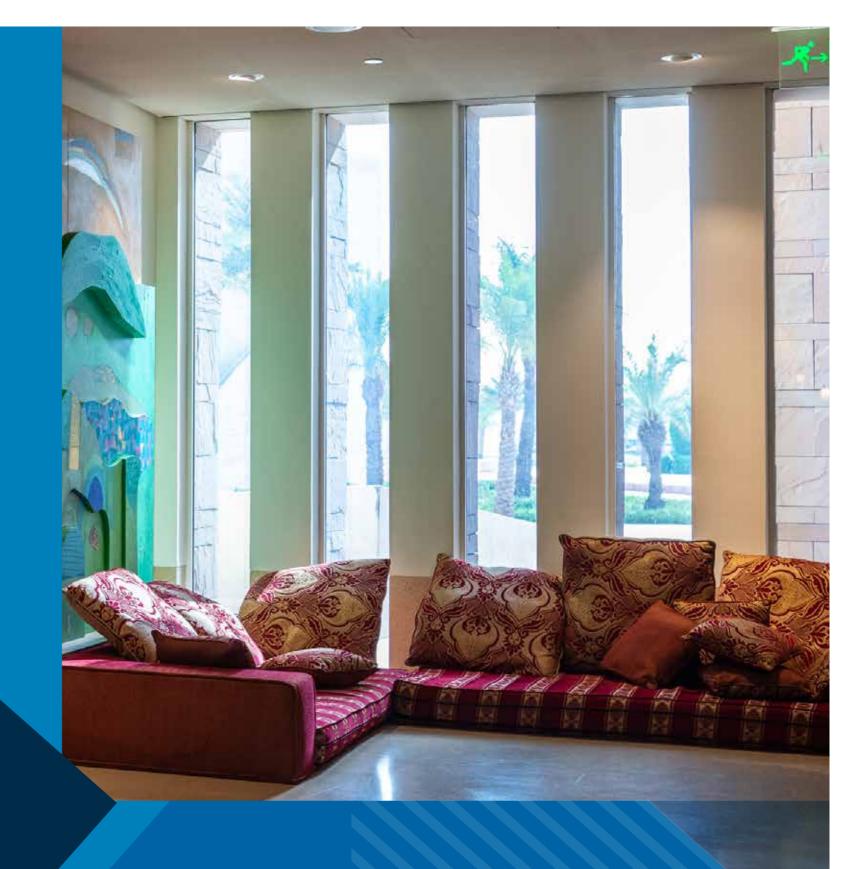
Women in Leadership Education City Forum

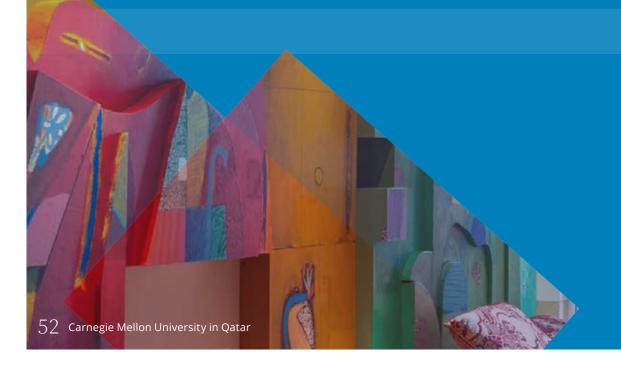
Selma Limam Mansar and **Annette Vincent** were featured as part of a Texas A&M University at Qatar panel discussion on the challenges that face women who pursue careers in science.



Student Experience

Throughout their undergraduate education, we encourage our students to come together, explore their interests, and develop the skills of leadership and teamwork. The pandemic restrictions inspired students to find creative ways to connect and grow.





A Strong, Connected Community

With much of the academic year in remote or hybrid mode, students found new ways to connect with the community.



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This Qatar National Day will feel a little strange, since we can't celebrate in person. But at CMU-Q, we can show our love for our country through photos, and through a virtual gathering and shared celebration of Qatar.

Mohammed Al-Qassabi

President, Qatari Student Association Information Systems, Class of 2022

Qatar National Day

Students capped off an extraordinary fall semester of challenges, achievement, growth and innovation with a virtual Qatar National Day celebration. The CMU-Q Qatari Student Association held a photo competition and online event for students to connect and learn more about the rich Qatari culture.



Karak Konnections

CMU-Q began a new initiative to strengthen one-on-one connections within the community. Each week, students, faculty and staff members signed up and were matched for a friendly cup of karak. Each semester, about 150 community members participated.

Winter Week of Welcome

To help students re-engage after the winter break, CMU-Q held a series of in-person and online events. These included a welcome back, a Martin Luther King Jr. Day gathering and activities, a reflections and intentions session and a "Last First Day of School" event for seniors.

Tartan Community Day

The CMU-Q community spent a day having fun, exploring interests and connecting with one another. The inaugural Tartan Community Day included safe in-person activities like a beach clean-up and rescue dog walking. Online activities were led by community members, including classes in yoga, mindfulness, Zumba, cooking and Qatari culture.



Student connections

With limited occasions for students to gather, CMU-Q created opportunities for students to connect over common interests.

- International student gathering
- First-year welcome
- IS Café
- Creativity and Connection
- Karak Konnections
- U.S. election results discussion
- Painting Together
- Tartan Community Day
- Bio Sci Social
- VOICES Survey Talk Show
- Stress Recess
- Relaxed and Ready: Getting Prepared for Finals
- Spring Semester Welcome
- Thursday Majlis
- Vision Boards
- Heart Health: Am I at Risk?
- Info session for new arrivals
- Sophomore Karaoke Night
- TEDxCMUQatar
- IS Spirit Day
- Finals week events



A Tartan's Responsibility art showcase

On the anniversary of the start of the COVID-19 pandemic in Qatar, students created works of art to promote the safety guidelines. Reem Al-Haddad, Sara Al-Sabbagh, Fatima El-Sallabi, Weilin Li and Gulnaz Serikbay contributed multi-media pieces to the project.



Peer-to-Peer Learning

Discovery and exploration are at the heart of the CMU-Q experience, and students have many opportunities to share their knowledge and talent with their peers.



StuCo program

The Student Courses (StuCo) program offers students the opportunity to design and deliver a unique course at CMU-Q. Students who are selected receive training and resources, including guidance on course design, syllabus writing, and teaching.

- The Birth and Evolution of Hip-Hop
- Creative Mobile Video Editing
- Cults and Persuasion
- How to Fake Being Tech Savvy
- Join the Conversation: Tackling Social Injustices
- PPAP: Paradoxical Perception Amongst People
- Understanding the Rubik's Cube

Undergraduate course assistants

Course assistants are an essential part of the learning team at CMU-Q. Undergraduates who have excelled in specific courses can become a course assistant in later years, working with faculty and the Academic Resource Center to support student learning. There were 96 course assistants during the fall and spring academic sessions.

Outstanding Course Assistant award

Each year, the Outstanding Course Assistant award recognizes a student who has made an exceptional contribution to student learning. This year, 16 students were nominated for the Outstanding Course Assistant Award. Huda Salik, a business administration senior, received the award.

Virtual orientation

First-year orientation for the Class of 2024 took place as a series of virtual workshops, panels and social events over two weeks. CMU-Q recruited more than 70 current students to organize and run the welcome event that introduced the new students to CMU-Q.



Tartan Bridge Buddies

Tartan Bridge Buddies was created to match incoming first-year students with their upperclass peers. In fall 2020, 63 upperclass students and 120 first-year students participated in the program.



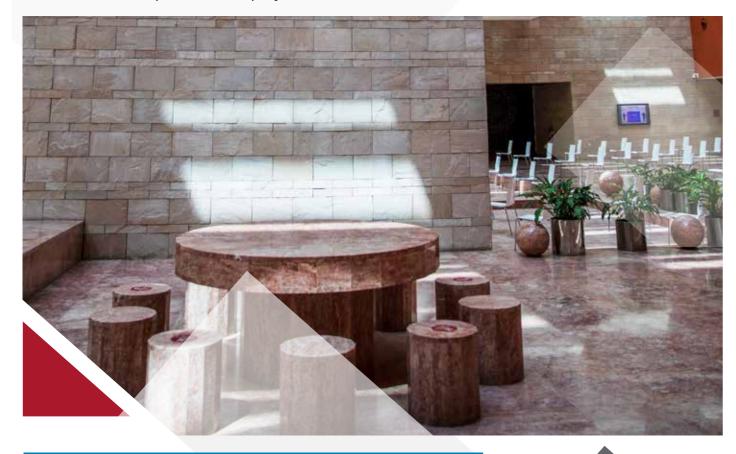


Breast cancer awareness

The Big Movement Club collaborated with CMU-Q Health and Wellness, faculty members in the biological sciences program, and experts at the Aster Medical Center to offer an information session during Breast Cancer Awareness Month.

Leadership and Career Development

As students follow their interests and passions outside of the classroom, they develop critical skills and experience for their future careers. Students learn how to work in teams, organize and lead groups, present their work in a professional setting, and network with potential employers.



Student Majlis

The Student Majlis is the official student committee at CMU-Q, representing the student body in academic matters, overseeing clubs and activities, and ensuring the community is cohesive and engaged.

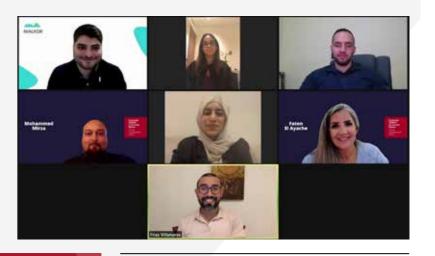
- Mubarak Al-Sulaiti, President
- Yara Al-Shakhs, Vice President
- Syed Mohammad Shah, Head of Academics
- Andria Atalla, Head of Finance
- Omar Beshara, Head of Clubs and Organizations
- Martin Sikhondze, Head of Communications

24 online career events

485
individual
career
consultations

Career networking

Employers, students and alumni embraced virtual opportunities to connect and share information. CMU-Q held 24 online career events over the academic year, including five virtual fairs: Careers Platform, Technology Edition; Professional Services Career Day; Bio Sci Career Day; Grad School Info Night; and Careers Platform, Spring Edition.



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This shift to a remote setting has actually pushed me to become more resourceful. I believe that this ability to work independently and efficiently will undoubtedly benefit my work and early career.

Đorđe Popović Computer Science, Class of 2022

Internship Showcase

Internship Showcase 2020 was a virtual opportunity for students to share their internship experiences, as well as network with employers. Presenters included **Muhammad Syed** who interned with Aljazeera, **Laila Assami** who worked at Equine Veterinary Center, **Zaryab Shahzaib** who worked at Snoonu, and **Andrew Edward** who interned at Monkibox.

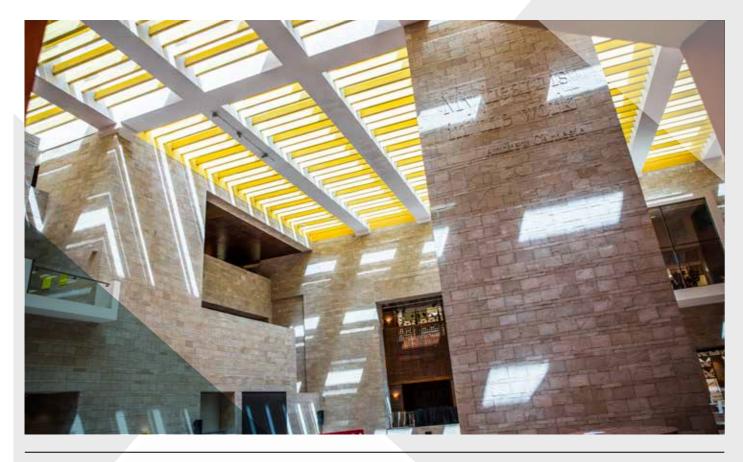


Student Leadership Awards

- Dina Abdelazeem
- Mohammad Shahmeer Ahmad
- Aisha Al-Darwish
- Alanoud Al-Ghamdi
- Reem Al-Haddad, with distinction
- Shouq Al-Khuzaei
- Andrew Edward, with distinction
- Joud Ghalayini, with distinction
- Muhammad Ahmad Khan, with distinction
- Weilin Li
- Zenab Siddig
- Muhammad Syed
- Muhammad Ahmed Zahid

Beyond the Classroom

CMU-Q students are curious, motivated, and eager to learn about the world. By participating in student clubs or delving into the many opportunities that Qatar provides, CMU-Q students are making their mark in unexpected places.



TFD_X

A group of students held an official TEDx event at CMU-Q, creating detailed plans to ensure the attendees maintained a safe social distance. The event was a success, with five speakers sharing their insights. The talks of Tamara Albaja, Faten El Ayache, Joud Ghalayini, Gordon Rule, and Muhammad Hamza Sohail have also been posted on the TEDx YouTube channel.



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In our building, we study four different fields. Among the students, there is a lot of interest in learning about new concepts, and we wanted to create a platform for discussion.

Jawaria Abbas

President, TEDxCMUQatar Business Administration, Class of 2022

Student clubs and organizations

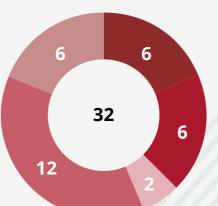
Academic

Cultural

Service

Special interest

Sports



Ajyal Film Festival Exhibit

Reem Al-Haddad's photo essay was selected for a photography exhibit at Doha Film Institute's Ajyal Film Festival. The project began as part of a CMU digital photography course.



University debate

the top ten list of speakers.

A student team took the national championship title at the 2021 Arabic university debate tournament.

Rahaf Abutarbush, Ammar Karkour and Abdullah Shaar swept the first three rounds of the tournament to earn a place in the grand finale against a team from Doha Institute. CMU-Q won the final round in a debate on the topic of social media and free speech. All three team members placed in

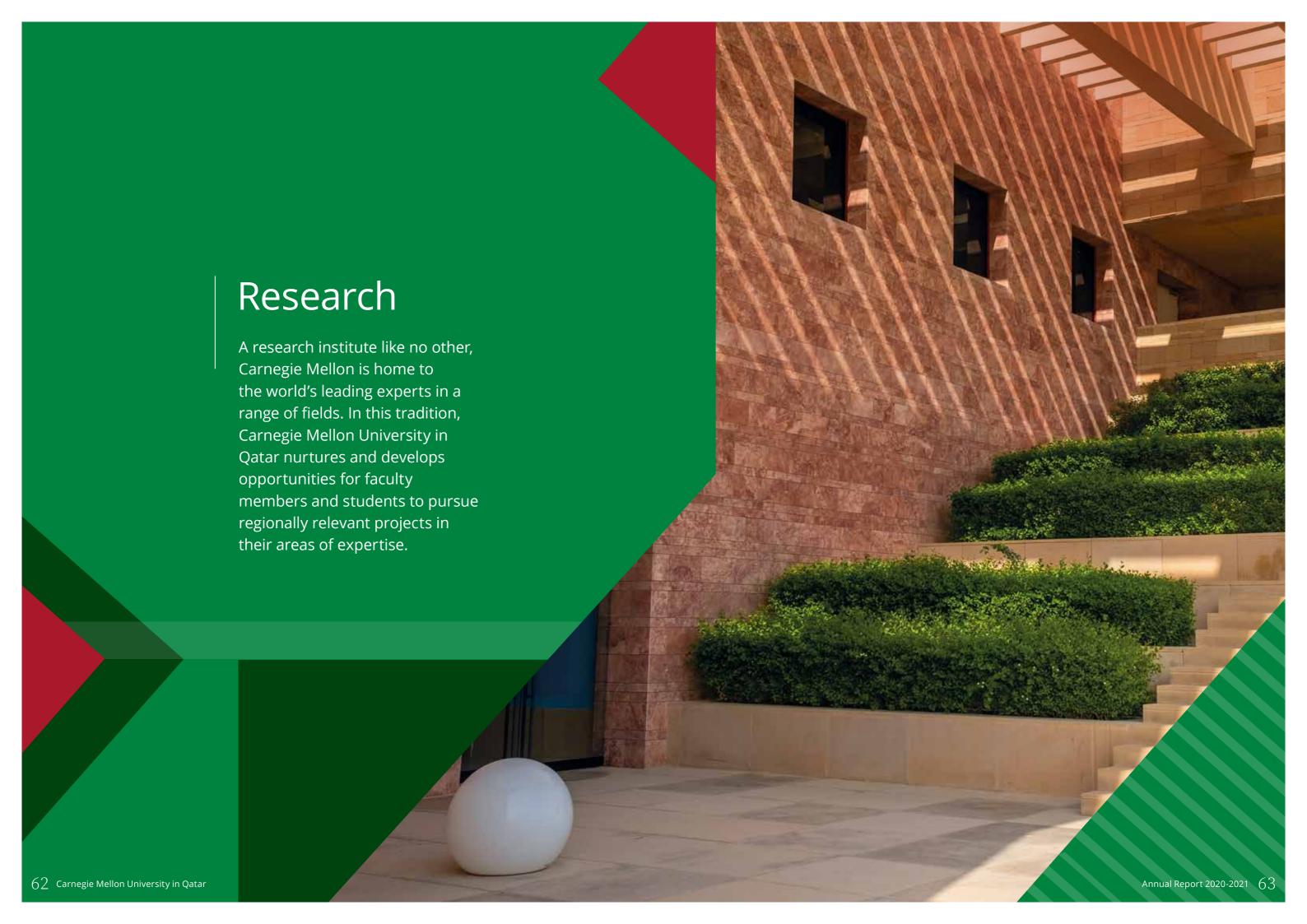
JEDARIART, Qatar Museums

Alanoud Al-Ghamdi was selected to create a mural for the Qatar National Library metro station. The artwork is part of the JEDARIART initiative through Qatar Museums to bring art to public spaces around Doha.

Qatar Sports Tech Virtual Hackathon

Student teams placed first and second in the Qatar Sports Tech Virtual Hackathon 2020. The winning team of Reem Al-Dahneem, Alanoud Al-Ghamdi, Reem Al-Haddad, Aisha Al-Jabir and Shouq Al-Khuzaei created an augmented reality game to explore fanzone spaces. The second-place team included Sara Al-Hemaidi, Amal Al-Korbi, Rawan Alkuwari and Almayasa Al-Naimi.





The Year in Research

CMU-Q researchers are actively engaged with the international research community, leading or collaborating on a myriad of projects. Faculty members also contribute to the engines that drive international research, include publications, professional organizations and academic conferences.



QNRF Post-Doctoral Research Award

Hend Gedawy (CS 2009) received CMU-Q's first Post Doctoral Research Award (PDRA) from Qatar National Research Fund. Khaled Harras will serve as mentor. The project, which will harness edge resources for deep learning, could have prof ound implications in the area of mobile health applications and data privacy. Gedawy is an alumna of CMU-Q, as well as Carnegie Mellon's School of Computer Science and Hamad Bin Khalifa University.



Faculty research

59 published articles

5 book chapters

34 conference presentations and talks



QNRF Research Outcome Seminar Series

Gianni Di Caro presented his project TARMEM (Teams of Aquatic/Aerial Robots for Marine Environment Monitoring) at the QNRF's research outcome seminar on Al. His work was also featured in the QNRF newsletter for November 2020.

Nature journal article on quantum materials

Mohamed Zayed and an international team of researchers have shed new light on the thermodynamics of quantum materials.

Their findings were published in the journal *Nature*.

New seed research grant

Ryan Riley received a new seed research grant for an Internet of Things penetration testing lab.



New international research community collaborations

Chadi Aoun served as a track co-chair for Green IS and Sustainability at the Americas Conference on Information Systems.

Houda Bouamor was a co-organizer of the third Financial Narrative Processing Workshop, the fifth and sixth Arabic Natural Language Processing Workshops, the first Joint Workshop on Financial Narrative Processing and MultiLing Financial Summarisation, and the first Nuanced Arabic Dialect Identification Shared Task.

Gianni Di Caro was the guest co-editor of the *OR Spectrum Journal's* "Special Issue on Machine Learning and Combinatorial Optimization."

Susan Hagan joined the editorial board for *Future* of *Design Education, Essay Series*, developed by the DesignLab at the University of California and IBM.

Jasmine Kirby joined the SAGE Research Methods Doing Research Online Editorial Advisory Board.

Teresa MacGregor served as vice chair of the Education City Library Directors Council.

Kemal Oflazer served as senior area chair for Phonology, Morphology and Word Segmentation, at the 58th Annual Meeting of the Association for Computational Linguistics.

Silvia Pessoa serves on the editorial board for *English for Specific Purposes*, and as associate editor for *Linguistics and Education*.

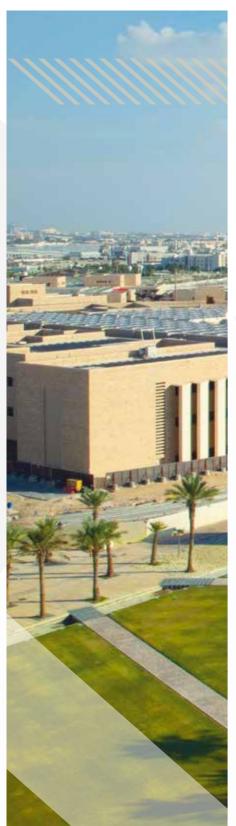
Giselle Reis served as co chair for the International Workshop on Logical and Semantic Frameworks, with Applications (LSFA).

Dudley Reynolds is serving as a trustee for the American Association for Applied Linguistics' Fund for the Future of Applied Linguistics. He is also serving on the nominating committee for TESOL International.

Nui Vatanasakdakul served as local conference chair for the International Conference of Information Systems (ICIS), Thailand, and research track chair for the Americas Conference on Information Systems - Green IS and Sustainability.

Faculty QNRF-Funded Projects

For more than a decade, Carnegie Mellon University in Qatar has been proud to contribute to the Qatar National Vision 2030 through Qatar National Research Fund's many programs.





New projects

Sub-project 6: Assessing baseline sustainability literacy and awareness of SDGs and develop and test interventions. Part of SDG education and global citizenship in Qatar: Enhancing Qatar's nested power in the global arena Sub-project Lead PI: Jennifer Bruder Subaward partner: NPRP-Cluster Project Director: Evren Tok, Hamad Bin Khalifa University

Resources and applications for detecting and classifying polarized and hate speech in Arabic social media. PI: Anis Charfi

Subaward partners:

Lead PI: Wajdi Zaghouani, Hamad Bin Khalifa University PI: George Mikros, Hamad Bin Khalifa University

PI: Marc Jones, Hamad Bin Khalifa University

PI: Georgios Dimitropoulos, Hamad Bin Khalifa University PI: Fadi Makki, Supreme Committee for Delivery and

PI: Paolo Rosso, Universitat Politecnica de Valencia

PI: Joe Cannataci, University of Groningen

PI: Aitana Radu, University of Mala

FemtoQlouds: Leveraging edge resources to enable personalized and federated deep learning for mHealth applications.

Postdoctoral researcher: Hend Gedawy Faculty mentor: Khaled Harras



Anis Charfi

Sustainable bioplastics production from industrial wastewaters using photosynthetic microbial production of polyhydroxyalkanoates (PHAs)

PI: Annette Vincent Subaward partner:

Lead PI: Hamish Robert Mackey, Hamad Bin Khalifa

PI: Albert Liberski, Hamad Bin Khalifa University

Pl: Adriaan Luyt, Qatar University

PI: Mabrouk Querderni, Qatar Petrochemical Company



Annette Vincent

Biological conversion of fuel synthesis process water to single cell protein for aquaculture feed using purple phototrophic bacteria PI: Annette Vincent

Subaward partners:

Lead PI: Hamish Robert Mackey, Hamad Bin Khalifa University PI: Prasanna Kolkatar, Qatar Biomedical Research

Institution, HBKU PI: Udeogu Onsuwogh, Qatar Shell Research

and Technology Centre

PI: Xue Zhang, Institute of Hydrobiology, Chinese Academy of Sciences

PI: Haokun Liu, Institute of Hydrobiology,

Chinese Academy of Sciences



Ongoing projects

Teams of aquatic/aerial robots for marine environmental monitoring (TAREM) Lead PI: **Gianni Di Caro**

Subaward partners:

PI: Enrico Simetti, University of Genova

PI: Filippo Arrichiello, University of Cassino and Southern Lazio

Qatari Linguistic Map

Lead PI: Zeinab Ibrahim

PI: Houda Bouamor

Subaward partners:

PI: Mohamed Mahgoub, Doha International

PI: Aisha Sultan, Doha International Family Institute

PI: Hany Abdelrhem, Georgetown University in Qatar

Bringing computer science to secondary schools -Curriculum design and implementation

Lead PI: Saquib Razak

The garbled computer: Towards computing without seeing

PI: Ryan Riley

Subaward partner:

Lead PI: Qutaibah Malluhi, Qatar University

Using bacteriophages as biomonitoring tools for water quality measurements

Lead PI: Annette Vincent

PI: Valentin Ilyin

Subaward partner:

PI: Basem Shomar, Qatar Environment and Energy Research Institute (QEERI), HBKU

Molecular profiling of breast cancer transcriptome and splicing aberrations

Lead PI: Ihab Younis



Student Research

Through research projects, students develop the skills of intellectual rigor and creative problem solving that are integral to their careers and future studies.



IEEE Symposium on SSRR

Students Ishaq Ansari and Abubakr Mohamed's research into coordinating and planning in heterogeneous multi-robot systems was published in the 2020 IEEE International Symposium on Safety, Security, and Rescue Robotics. Eduardo Feo Flushing and Saquib Razak were advisors and co-authors.

Summer Undergraduate Research Apprenticeship showcase

SURA was created in the summer of 2020 for first-year and sophomore students to participate in faculty-led research. Fourteen students participated in SURA projects.

Qatar Student-Initiated Undergraduate Research Program

QSIURP offers support for students pursuing a research, scholarly or artistic project over the summer. In 2020, 12 students were selected for QSIURP awards.

New QNRF-funded student projects

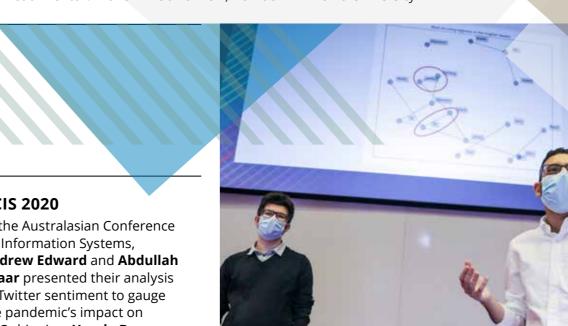
 Communications award distributed deep reinforcement learning in multi-robot teams for underwater inspection task Student researchers: Ishaq Ansari, Yaqoob Ansari Lead mentor: Gianni Di Caro Mentor: Eduardo Feo Flushing

 Exploring neuronal and non-neuronal defects associated with neurodevelopmental disorders

Student researchers: Frewoyni Birhane, Thamanna Hashir

Mentor: Annette Vincent

Lead mentor: Mohammad Farhan, Hamad Bin Khalifa University



ACIS 2020

At the Australasian Conference on Information Systems, Andrew Edward and Abdullah **Shaar** presented their analysis of Twitter sentiment to gauge the pandemic's impact on GCC shipping. Houda Bouamor and **Nui Vatanasakdakul** were advisors and co-authors.



College Honors is a formidable task for any graduating student, and these 15 students tackled the challenge during a pandemic. We are very proud of their dedication, focus and tenacity.

Michael Trick

College Honors presentations, Class of 2021

Senior Honors theses

Sixteen graduating students in all five academic programs completed a senior honors thesis as part of their College Honors requirements. The students presented their research at a virtual event for students, faculty, families and the wider community.

Samir Abdaljalil Yara Al-Abdulghani **Reem Al-Sayed Alanoud Al-Ghamdi** Aisha Al-Jabir Shoug Al-Khuzaei Ali Al-Maadid Fajer Al-Marzooqi

Imane Bendou Laila El-Beheiry **Mariam El-Esnawy** Joud Ghalayini Joana Khatib Weilin Li **Auguste Piromalli**

Meeting of the Minds

Since 2007, Meeting of the Minds has provided an opportunity each year for students to present their research work to the community. With pandemic restrictions preventing an in-person event, CMU-Q created a digital version to share this work.



RESEARCH PROJECTS, BY FACULTY ADVISOR

Nesrine Affara

- Characterization of the transformation/transition of naive fibroblast to cancer associated fibroblasts using 3D co-cultures, Fajer Al-Marzoogi
- The analysis of colorectal cancer tumor-stroma interaction and the optimization of a testing model, Joana Khatib

Chadi Aour

 The present and future of data security, Huda Baig, Mashael Al-Emadi, Fatima Al-Safar

Houda Bouamor

- Narrative summarization in the domain of finance, Samir Abdaljalil
- Automatic Arabic translation of English educational content online using neural machine translation: The case of Khan Academy, Imane Bendou

Mohamed Bouaouina

 Characterization of PDLIM7 expression and localization in cancer cells, Weilin Li

Iennifer Bruder, Lauren Burakowski

- We protect what we like: Further evidence from a large multinational Qatar sample on attitudes towards Qatar's threatened animal species,
 Reem Al-Haddad, Amal Al-Korbi, Sara Al-Hemaidi,
 Almayasa Al-Naimi
- We like what we know: Evidence from a large multinational Qatar sample on attitudes towards Qatar's threatened animal species, Sara Al-Hemaidi, Almayasa Al-Naimi, Reem Al-Haddad, Amal Al-Korbi

Fuad Faroogi

 Comparative study on the cost of engineering financial instruments between Islamic and conventional banks, Mariam Syed, Noora Al-Shurafa

Eduardo Feo-Flushing

 Cooperative and load-balancing auctions for heterogeneous multi-robot teams dealing with spatial and non-atomic tasks, Abubakr Mohamed, Ishaq Ansari

Susan Hagan

 Design for a change: Examining the effect of microinteractions to keep students engaged in reading, Shoug Al-Khuzaei

Khaled Harras, Giselle Reis

 FemtoCOF: An offloading framework tailored for FemtoClouds, Laila El-Beheiry

Valentin Ilyin

 Genome sequencing of bacteriophage, Ahmed Warraich

Agustín Indaco

 What's in a song? Natural Language Processing (NLP) analysis of Billboard Top 100 songs,
 Nour Mohamed

Agustín Indaco, Fuad Farooq

 Natural resource dependance and income inequality in the Gulf, Joud Ghalayini

Cecile Le Roux

 Instructional scaffolding impacts student performance on exit tickets, Huda Abdul Salik

Taeyong Park

 Locked down and locked in: the impact of COVID-19 on mental health, Alanood Al-Thani, Aisha Al-Remaihi

Saguib Razak, Eduardo Feo-Flushing

 Deep learning of indoor radio link quality in wireless networks using floor plans, Yaqoob Ansari, Nouha Tiyal

Giselle Reis

 SMLtoCoq: Automated generation of Coq Specifications from SML programs, Laila El-Beheiry, Ammar Karkour

Gordon Rule

• Discovery of new anti-fungal agents, Adel Fergatova



meetingminds.qatar.cmu.edu



Nui Vatanasakdakul, Chadi Aoun

 Exploring digital resilience in Qatar: A socio-technical perspective, Yara Al-Abdulghani

Nui Vatanasakdakul, Houda Bouamor

 Analyzing the impact of COVID-19 on the shipping industry in the GCC region, Andrew Edward, Abdullah Shaar

Annette Vincent

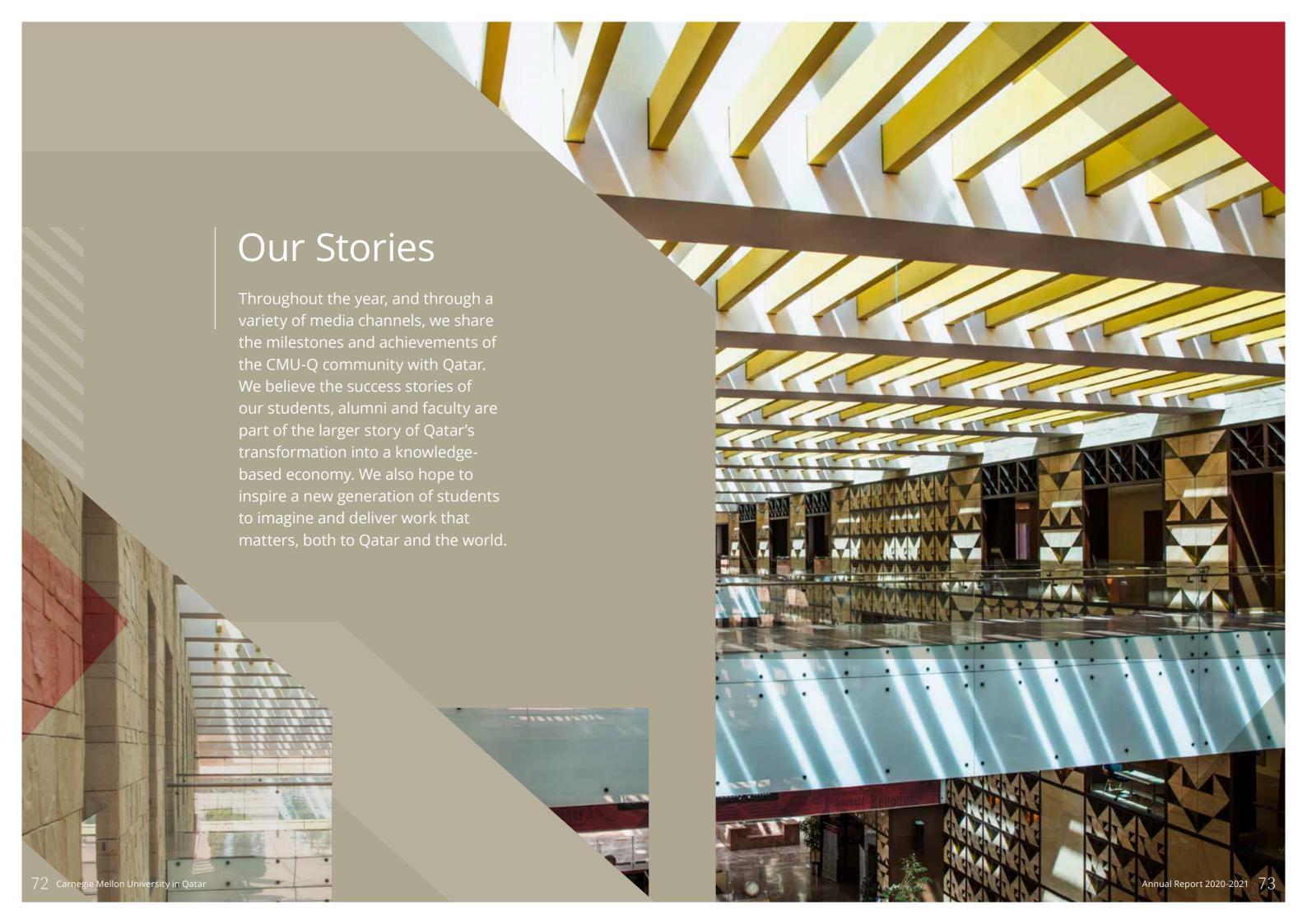
- What is the effeciency of Mg²⁺ as an activator for calf intestinal alkaline phosphatase (CIP)?,
 Noora Al-Mohannadi, Thamanna Muhammed Hashir
- Preventing and managing MIC for the oil and gas industry in collaboration with Curtin University, Sara Fakhroo
- Is magnesium good for the gut?, Ayah Salameh, Moza Al-Shukri
- Inhibition of human placental alkaline phosphatase by L-phenylalanine, Amna Al-Sayegh, Zenab Siddig
- Bacteriophage tail proteins as bacteria detection tools, Shahad Younis

George White

- Success factors for small and medium enterprises in Qatar, Alanoud Al-Ghamdi
- Female entrepreneurship in Qatar: Challenges and recommendations, Aisha Al-Jabir
- Success factors of business incubators in Qatar: Investigating the factors that affect the success rate of tenant companies in business incubators from the perspective of entrepreneurs, Ali Al-Maadid

Ihab Younis

- Computational analysis of minor intron splicing in breast cancer, Lulwa Al-Haddad
- The effects of the inhibition of minor intron splicing in breast cancer cells, Merna Al-Obaidli
- Inhibiting PARP1 splicing along with inducing DNA damage as potential breast cancer therapy, Reem Al-Sayed
- Splicing regulation of alternative splicing regulators as a novel therapeutic approach in breast cancer, Mariam El-Esnawy
- Analysis of RNA binding proteins on regulation of tumor suppressor gene PTEN, **Thamanna Muhammed Hashir**



Public Relations

With our audiences shifting to online sources of media and information, CMU-Q's marketing and public relations emphasized our digital channels. Through targeted campaigns, we reached out to the Qatar community, connected with prospective students, and raised awareness of our talented graduates with potential employers.



89 news stories

54 events supported

18 websites

201,000 340,000 visitors visits

276
Instagram stories

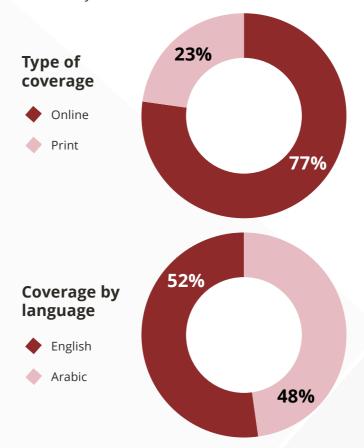
119
Instagram
posts

143 tweets



CMU-Q in the news

Local, regional and international media published 421 articles about our accomplishments over the academic year.



Digital channels

We reach out to our audiences by producing stories, posters, photo galleries, posts and video and promoting that content through targeted use of social media.

News highlights

- CMU-Q students take two top spots at Al Fikra 2020
- CMU-Q uses Al and robots to explore Qatar's waters
- Carnegie Mellon Qatar launches online showcase of student research
- CMU-Q students win Qatar national Arabic debate championship
- Carnegie Mellon Qatar graduates recognized for excellence in education
- QF partners TAMU-Q and CMU-Q teach advanced robotics to QSTSS students
- Carnegie Mellon team wins Qatar Stock Exchange competition
- Carnegie Mellon Qatar celebrates Class of 2021
- CMU-Q Class of 2021: Largest percentage of Qataris in more than a decade
- Carnegie Mellon holds online welcome for Class of 2025

Collaboration with Qatar Foundation

As a Qatar Foundation partner university, CMU-Q is proud to work with QF to showcase the achievements of our faculty and students. In the past academic year, CMU-Q participated in six interviews or story collaborations with QF.



The Year in the News



Press release



CMU-Q website story



Jul 2020

CMU-Q students take top spots in Qatar Sports Tech Virtual Hackathon 2020

Bio Sci grad receives CMU research award

Information Systems alum co-authors award-winning research paper

Class of 2019, one year later: Zeina Darwiche is a hybrid professional, combining computer science and consulting

Class of 2019, one year later: Khalid Al-Naemi prepares to make his mark in academia

Carnegie Mellon Qatar launches online showcase of student research

Aug 2020

Information Systems student builds business out of class project

CMU-Q finance experts share knowledge with Qatar investment community

Class of 2019, one year later: Aldana Al-Mohannadi explores how tech can help the elderly and persons with disabilities

Carnegie Mellon Qatar appoints associate dean for diversity, climate

Students delve into Qatar's attitudes about wildlife

Opportunities for language education in a (post) pandemic world

Class of 2019, one year later: Haris Syed turns to global opportunities

CMU-Q professor praises Qatar's diverse classrooms at WISE Global Learning Festival 2020

CMU-Q Library wins award for engaging PR campaign

Carnegie Mellon Qatar appoints associate dean for diversity, climate

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Sep 2020

Qatari Quality Mark, a competitive edge for local companies

CMU-Q's Annette Vincent leads promotion of diversity, on-campus inclusion

Carnegie Mellon University in Qatar starts semester with the highest student enrollment in campus history

How CMU-Q innovators learn lessons online

How CMU-Q innovators learn lessons online, Part 2

QF creates culture of well-being through a connected and caring campus

Pandemic inspires creative summer course offerings at CMU-Q

Largest first-year class begins studies at CMU-Q

Computer science grad recognized for research in online disinformation

Largest first-year class begins studies at CMII-0

Oct 2020

Nov 2020

CMU-Q faculty members discuss women in leadership at Education City

Virtual Experience CMU-Q welcomes record number of students

Business administration students earn Refinitiv Eikon certification

Chadi Aoun on sustainability: "It is about taking an ethical perspective."

CMU-Q announces scholars for the Class of 2021

CMU-Q's Ryan Riley wins CyberStars Qatar



CMU-Q shares expertise with Qatar community in new virtual lecture series

Qatar National Day 2020: Carnegie Mellon celebrates the year's contributions to national development

CMU-Q student showcases photography at Ajyal

Teams coached by Texas A&M at Qatar and CMU-Q in international competition to solve real-world challenges

CMU-Q students take two top spots at Al Fikra 2020

IS faculty fosters innovation, entrepreneurship at Ooredoo 5G Hackathon

CMU-Q faculty discusses COVID-19 impact on working mothers

Alumna awarded CMU-Q's first grant for post-doctoral research



CMU-Q student's art brings hope, inspiration to people of Doha

CMU-Q welcomes first students of Class of 2025

CMU-Q's Houda Bouamor on underrepresentation of women in Al

CMU-Q launches 'Respect for All' campaign on Martin Luther King Jr. Day

'Social media language' hurting future of Arabic: CMU-Q's Zeinab Ibrahim

Government of Ireland recognizes CMU-Q alum for educational excellence

The Year in the News



Press release



CMU-Q website story



News coverage

Feb 2021

CMU-Q student researchers use Twitter to assess the pandemic's impact

Unique opportunities seen for Qatar Islamic banks as regional markets open up

Education City panel marks International Day for Women and Girls in Science

In her own words: We must realize that there should be no limits for girls

Carnegie Mellon ranks second for U.S. undergraduate computer science

Al Arab: Selma Limam Mansar reflects on CMU-Q's Education Excellence Day

To what extent can mothers support children's education on their own, CMU-Q professor asks

CMU-Q game development competition fosters learning, community

Carnegie Mellon hosts first International Collegiate Programming Contest in Qatar

CMU-Q alum Hassan Al-Mulla named Silatech's new CEO

CMU-Q hosts first international collegiate programming contest







Mar 2021

Carnegie Mellon uses Al and robots to explore Qatar's waters

Weilin Li, Class of 2021, discovers a passion for research

Carnegie Mellon Qatar recognizes students for academic excellence

World Water Day at CMU-Q: Student researchers discuss global impact of water research

Educational computer science program expands to Pakistan

Al Khor International, Al Arqam Academy take top spots at Carnegie Mellon Qatar competition

Dean Trick on the milestone of 1000 CMU-Q graduates

Qatar seen to play key role in Islamic finance growth in non-Muslim countries: CMU-Q experts

Carnegie Mellon Qatar graduates recognized for excellence in education



Apr 2021

Ali Al-Maadid, Class of 2021, is inspired by entrepreneurship

Student researchers present senior projects at College Honors 2021

New research provides insights on thermodynamics of quantum materials

CMU-Q Class of 2021: Largest percentage of Qataris in more than a decade

Carnegie Mellon holds online welcome for Class of 2025

Susan Hagan named Dean's Innovation Scholar

First official Qatar teams participate in Arab Collegiate Programming Competition

CMU-Q and MADA partnership promotes inclusion, accessibility

"Our QF journey has been filled with challenges and memories – and this is how we grow": CMU-Q alumni

QF partners Texas A&M at Qatar and Carnegie Mellon Qatar teach advanced robotics to Qatar STEM school students

May 2021

Dean Trick to Class of 2021: Trust that your career, like your education at CMU-Q, is a journey

Students use research, data visualization to study structure costs of Islamic banking

Carnegie Mellon Qatar celebrates Class of 2021

CMU-Q faculty members awarded inclusive teaching fellowships

Reem Al-Haddad, Class of 2021, explores the interdisciplinary opportunities in information systems

Muhammad Ahmad Khan, Class of 2021, makes an impact with computer science

Carnegie Mellon team wins Qatar Stock Exchange competition

New CMU-Q grads speak to Al Raya: We aspire to serve the nation

CMU-Q graduate to continue QF's lesson of lifelong learning

CMU-Q Class of 2021 graduates









Jun 2021

Cecile Le Roux receives 2021 Meritorious Teaching Award

CMU-Q students win Qatar national Arabic debate championship

BA student becomes first Innovation Scholar from the Qatar campus

CMU-Q student club overcomes obstacles to host TEDx event

CMU award recognizes Qatar campus bio sci student

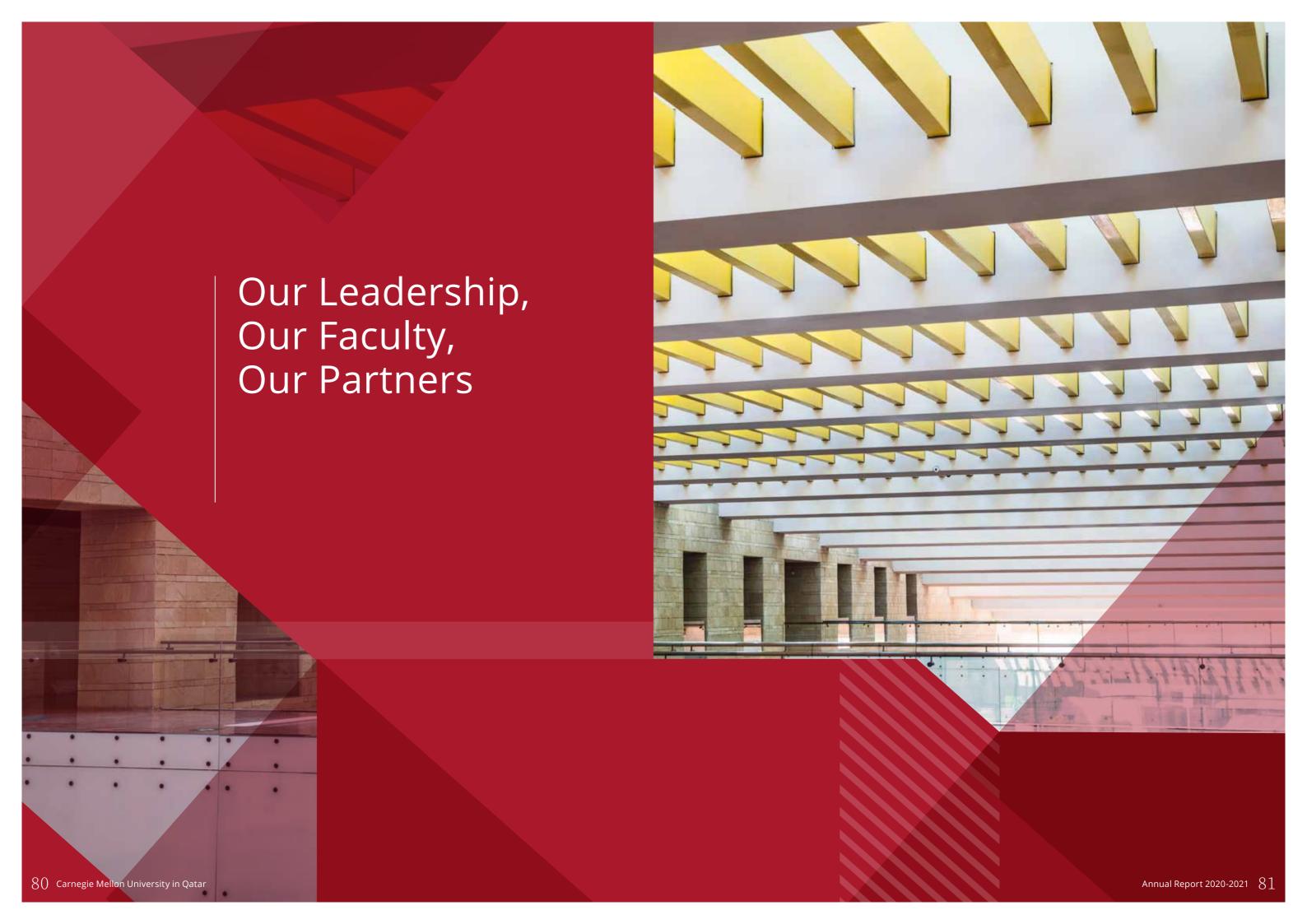
Carnegie Mellon announces new senior associate deans

CMU-Q graduates in Al Sharq

طلاب «كارنيجي فيلون» يتصدرون البد الوطنية لمناظرات الجامعات



Annual Report 2020-2021 79 78 Carnegie Mellon University in Qatar



Leadership and Advisory

	H.E. Dr. Hessa Sultan Al Jaber Chairperson, Es'hailSat, The Qatar Satellite Company
	Omran H. Al-Kuwari
	CEO, Qatar Foundation International
Qatar Foundation	H.E. Sheikh Faisal Bin Qassim Al Thani Chairman, Al Faisal Holding
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	Ahmed Elmagarmid Executive Director, Qatar Computing Research Institute Hamad Bin Khalifa University
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	Mary Jo Dively Vice President and General Counsel
	Amy Burkert Vice Provost for Education
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	N. Balakrishnan Associate Director
	Indian Institute of Science
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	Kurt Mehlhorn Director, Max Planck Institute for Informatics Saarland University
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	President of Higher Education Qatar Foundation Office of Higher Education
	Michael Trick
	Dean
	Carnegie Mellon University in Qatar
Secretary	Richard Mundy Chief Operations Officer
Secretary	Carnegie Mellon University in Qatar

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John O'Brien	Senior Associate Dean, Faculty and Outreach Associate Professor, Accounting and Experimental Economics
Kemal Oflazer	Associate Dean, Research Teaching Professor, Computer Science
Annette Vincent	Associate Dean, Diversity and Climate Associate Teaching Professor, Biological Sciences
Fadhel Annan	Associate Dean, Government and Corporate Affairs
Renee Camerlengo	Associate Dean, Student Affairs and International Education
Edna Jackson	Director, Dean's Office
Richard Mundy	Chief Operations Officer
Kara Nesimiuk	Executive Director, Marketing and Public Relations
Khalid Sarwar Warraich	Chief Information Officer

FACULTY LEADERSHI	P
Fuad Farooqi	Area Head, Business Administration Associate Teaching Professor, Finance
Khaled Harras	Area Head, Computer Science Teaching Professor, Computer Science
Patrick McGinnis	Associate Area Head, Business Administration Distinguished Career Professor, Business Communication
Marion Oliver	Area Co-Head, Arts and Sciences Teaching Professor, Mathematics
Daniel C. Phelps	Area Head, Information Systems Associate Teaching Professor, Information Systems
Saquib Razak	Associate Area Head, Computer Science Associate Teaching Professor, Computer Science
Dudley Reynolds	Area Co-Head, Arts and Sciences Teaching Professor, English
Gordon Rule	Area Head, Biological Sciences Professor, Biological Sciences
Ihab Younis	Associate Area Head, Biological Sciences Associate Teaching Professor, Biological Sciences

Faculty Members





Thomas Mitchell Associate Teaching Professor, English Ezzohra Moufid Lecturer, French Deepa Nair Assistant Teaching Professor, History John O'Brien Senior Associate Dean, Faculty and Outreach Associate Professor, Accounting and Experimental Economics Kemal Oflazer Associate Dean, Research Teaching Professor, Computer Science Marion Oliver Area Co-Head, Arts and Sciences Teaching Professor, Mathematics Taeyong Park Visiting Assistant Teaching Professor, Statistics Silvia Pessoa Teaching Professor, English Daniel C. Phelps Area Head, Information Systems Associate Teaching Professor, Information Systems Saquib Razak Associate Area Head, Computer Science Associate Teaching Professor, Computer Science Benjamin Reilly Teaching Professor, History Giselle Reis Assistant Teaching Professor, Computer Science	
Deepa Nair Assistant Teaching Professor, History John O'Brien Senior Associate Dean, Faculty and Outreach Associate Professor, Accounting and Experimental Economics Kemal Oflazer Associate Dean, Research Teaching Professor, Computer Science Marion Oliver Area Co-Head, Arts and Sciences Teaching Professor, Mathematics Taeyong Park Visiting Assistant Teaching Professor, Statistics Silvia Pessoa Teaching Professor, English Daniel C. Phelps Area Head, Information Systems Associate Teaching Professor, Information Systems Saquib Razak Associate Area Head, Computer Science Associate Teaching Professor, Computer Science Teaching Professor, History	
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Patrick Walsh Assistant Teaching Professor, Philosophy	
George White Distinguished Career Professor, Entrepreneurship	
Zelealem Yilma Associate Teaching Professor, Mathematics	
Ihab Younis Associate Area Head, Biological Sciences Associate Teaching Professor, Biological Sciences	
Mohamed Zayed Associate Teaching Professor, Physics	

Community Partners

Carnegie Mellon has built relationships with companies and organizations across various sectors. Our partners work closely with us by speaking through our Career Development Office, providing internships and jobs, participating in Community Partner Workshops, sponsoring students, sponsoring events and strengthening ties through Memoranda of Understanding.

004 Arabia	Education USA
Abulssa Holding	Embassy of Belgium in Qatar
ADabisc	Embassy of Canada to Qatar
Adecco Group	Embassy of France, Doha
Al Emadi Enterprises	Embassy of Italy in Doha
Al Faisal Holding	Embassy of the Republic of Serbia
Al Jazeera Media Network	Embassy of the State of Kuwait
Al Khalij Commercial Bank (al khaliji)	Equine Veterinary Medical Center
Al Sawari Holding	ExxonMobil Qatar
AlFaisal Without Borders Foundation	EY
Alfardan Group	GE
Ali Bin Ali Group	Georgetown University in Qatar
Amiri Diwan	German Embassy in Doha
Aspire Zone Foundation	Girnaas
Bain	Gulf Bridge International
Barzan Holdings	Gulf Business Machines
Bayt.com	Hamad Bin Khalifa University
bein Media Group	Hamad Medical Corporation
Boeing	Henkel
Boston Consulting Group	Hilti
Canon	Hochtief Vicon
Careem	Huawei
Center for GIS Qatar	INJAZ Qatar
Cisco	Internal Security Force (Lekhwiya)
Citi Bank	Intesa Sanpaolo
Coca-Cola	Investment Promotion Agency Qatar
Commercial Bank of Qatar	Jassim and Hamad Bin Jassim Charitable Foundation
Communications Regulatory Authority	Katara Cultural Village
Cosette Solutions	Kearney
Council of Ministers	KPMG
Credit Suisse Bank	Mada - Assistive Technology Center Qatar
Darwish Holding	Malomatia
Davidson Consulting	Marzooq Al Shamlan
Deloitte	Mazars
DHL	Mazaya Qatar
Digital Incubation Center	McKinsey & Company
EBLA Computer Consultancy Company	Meddy
EButler	Medihealth Solutions At-Home-Doc
Education Above All	

Ministry of Administrative Development, Labour and	Qatar Investment Authority
Social Affairs	Qatar Mobility Innovation Center
Ministry of Commerce and Industry	Qatar Museums Authority
Ministry of Defense	Qatar National Bank
Ministry of Education and Higher Education	Qatar National Research Fund
Ministry of Finance	Qatar Olympic Committee
Ministry of Foreign Affairs	Qatar Petrochemical Company (QAPCO)
Ministry of Interior	Qatar Petroleum
Ministry of Municipality and Environment	Qatar Science and Technology Park
Ministry of Transport and Communications	Qatar Shell
Modaris	Qatar Solar Technologies
Msheireb Properties	Qatar Stock Exchange
Nakilat	Qatar University
National Center for Cancer Care and Research	QatarGas
Nestlé	QInvest
Northwestern University in Qatar	QLife Pharma
Oliver Wymann	Queen Hospital
Olympic Stars	Regency Group Holding
Omani Embassy in Doha, Qatar	Rheinmetall Barzan Advanced Technology Acade
One Foods	Salam Technology
Oola Sportswear	Saleh Hamad Al Mana Co.
Ooredoo	SAP
Oryx GTL	SDK Marketing
Planning and Statistics Authority	Sidra Medicine
PricewaterhouseCoopers	Siemens Qatar
Qatar Airways	Silatech
Qatar Armed Forces	Snoonu
Qatar Biobank	Social and Sport Contribution Fund (Daam)
Qatar Biomedical Research Institute	STA Enterprises
Qatar Business Incubation Center	Standard Chartered
Qatar Cancer Society	State Audit Bureau
Qatar Central Bank	Subol Innovation
Qatar Chemical Company Ltd (Q-Chem)	Supreme Committee for Delivery and Legacy
Qatar Computing Research Institute	Supreme Council for Economy and Investment
Qatar Credit Bureau	Talabat
Qatar Development Bank	Teach For Qatar
Qatar Electricity & Water Co.	TESOL International Association
Qatar Environment and Energy Research Institute	Texas A&M University at Qatar
Qatar Fertilizer Company	Trio Investment
Qatar Finance and Business Academy	U.S. Embassy in Qatar
Qatar Financial Center	VCUarts Qatar
Qatar Financial Center Regulatory Authority	Vodafone Qatar
Qatar First Bank	Weill Cornell Medicine—Qatar
Qatar Foundation	World Innovation Summit for Education (WISE)
Qatar Foundation Research, Development and	Woqood
Innovation	Zomato

	Qatar Investment Authority
	Qatar Mobility Innovation Center
	Qatar Museums Authority
	Qatar National Bank
	Qatar National Research Fund
	Qatar Olympic Committee
	Qatar Petrochemical Company (QAPCO)
	Qatar Petroleum
	Qatar Science and Technology Park
	Qatar Shell
	Qatar Solar Technologies
	Qatar Stock Exchange
	Qatar University
	QatarGas
	QInvest
	QLife Pharma
	Queen Hospital
	Regency Group Holding
	Rheinmetall Barzan Advanced Technology Academy
	Salam Technology
	Saleh Hamad Al Mana Co.
	SAP
	SDK Marketing
	Sidra Medicine
	Siemens Qatar
	Silatech
	Snoonu
	Social and Sport Contribution Fund (Daam)
_	STA Enterprises
	Standard Chartered
_	State Audit Bureau
	Subol Innovation
	Supreme Committee for Delivery and Legacy
	Supreme Council for Economy and Investment
	Talabat
	Teach For Qatar
	TESOL International Association
	Texas A&M University at Qatar
	Trio Investment
	U.S. Embassy in Qatar
	VCUarts Qatar
_	Vodafone Qatar
_	Weill Cornell Medicine—Qatar

About Carnegie Mellon University in Qatar

For more than a century, Carnegie Mellon University has challenged the curious and passionate to imagine and deliver work that matters. A private, top-ranked and global university, Carnegie Mellon sets its own course with programs that inspire creativity and collaboration.

In 2004, Carnegie Mellon and Qatar Foundation began a partnership to deliver select programs that will contribute to the long-term development of Qatar. Today, Carnegie Mellon Qatar offers undergraduate programs in biological sciences, business administration, computer science, and information systems.

More than 1000 students have graduated from CMU-Q since our first class completed studies in 2008. These young professionals are forging their career paths in top organizations within Qatar and around the world.

To learn more, visit www.qatar.cmu.edu and follow us on:

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- in Carnegie Mellon Qatar

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Produced by the Office of Marketing and Public Relations at CMU-Q. Special thanks to Stephen MacNeil for photographing a quiet building that was waiting for students to return.

IDEAS THAT SHAPE YOUR WORLD START HERE