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.
Acknowledgments

In 2004, Carnegie Mellon and Qatar Foundation began a partnership to deliver select programs that will contribute to the long-term development of Qatar. For 17 years, we have shared a mission: to provide a world-class education to students in Qatar.

Carnegie Mellon University in Qatar thanks His Highness Sheikh Tamim Bin Hamad Al Thani, Amir of the State of Qatar, for his leadership and commitment to progress and education.

We also express our deep appreciation to His Highness the Father Amir Sheikh Hamad Bin Khalifa Al Thani, Her Highness Sheikha Moza bint Nasser, Chairperson of Qatar Foundation, and Her Excellency Sheikha Hind Bint Hamad Al Thani, Vice Chairperson and CEO of Qatar Foundation, for their vision and leadership.
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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


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 cross-campus 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
Dean, Carnegie Mellon University in Qatar
Our Alumni

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.
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
Student speaker
Class of 2021

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.

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Dean

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Dina Abdelazeem
Student speaker
Class of 2021

Graduates by program

<table>
<thead>
<tr>
<th>Program</th>
<th>Graduates</th>
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<tbody>
<tr>
<td>Biological Sciences</td>
<td>15</td>
</tr>
<tr>
<td>Computer Science</td>
<td>11</td>
</tr>
<tr>
<td>Information Systems</td>
<td>26</td>
</tr>
<tr>
<td>Business Administration</td>
<td>43</td>
</tr>
</tbody>
</table>

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
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.

Most CMU-Q alumni live and work in Qatar

14 graduating classes
1,030 total alumni
57 nationalities
Alumni live on 5 continents

Alumni are working at top international organizations

San Francisco and Bay Area
- Airbnb
- Amazon Music
- Google
- Microsoft
- Square
- Uber

Pittsburgh
- PwC
- Robotic Institute, CMU
- Uber Advanced Technologies Group

London
- Citi United Kingdom
- KPMG

Dublin
- EY
- Indeed.com

Amsterdam
- EY
- Facebook

Zurich
- Baker Hughes
- Dots & Links
- EY

Dusseldorf
- McKinsey & Company

Kuwait City
- Kuwait International Bank

Dubai
- Boston Consulting Group
- J.P. Morgan
- PwC

Munich
- Fineway GmbH
- SAP

Melbourne
- EY

Tokyo
- Deloitte

Sydney
- EY

Beijing
- Changjiang WonderBay Private Equity Fund

Doha
- Abuissa Holding
- Al Faisal Holding
- Al Jazeera Media Network
- Barzan Holdings
- Boston Consulting Group
- ConocoPhillips
- Ecnomobile
- EY
- Qatari Airways
- Qibo
- Robotic Institute, CMU
- Siemens
- Supreme Committee for Delivery and Legacy

Kuwait
- Ministry of Finance
- Oman Investment Authority
- Petroleum Development Oman

Doha
- Ministry of Finance
- Oman Investment Authority
- Petroleum Development Oman

Paris
- Ministry of Interior
- Ministry of Transport and Communications
- Ministry of Interior
- Ministry of Transport and Communications

San Francisco
- Ministry of Commerce and Industry
- Ministry of Interior
- Ministry of Transport and Communications
- McKinsey & Company
- Nakilat

Doha
- Ministry of Finance
- Oman Investment Authority
- Petroleum Development Oman

Cairo
- Ahli United Bank
- Univer

Kuwait City
- Kuwait International Bank

Doha
- Ministry of Finance
- Oman Investment Authority
- Petroleum Development Oman

London
- Citi United Kingdom
- KPMG

Dublin
- EY
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- Qatari Airways
- Qibo
- Robotic Institute, CMU
- Siemens
- Supreme Committee for Delivery and Legacy
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).

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 lots at the edge,” is co-authored by Khaled Harras.

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.
Our Students

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.

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.

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

124 first-year students
45 Qatari students
34 international students

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

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 | COLOMBIA | CÔTE D'IVOIRE | EGYPT | ETHIOPIA | ESwATINI | FRANCE | GEORGIA | INDIA | INDONESIA | IRAN | IRAQ | JAPAN | JORDAN | KAZAKHSTAN | KENYA | KOREA | 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 |
|---------|---------|-----------|---------|------------|--------|-------|----------|--------------|-------|----------|---------|---------|---------|------|--------|------|------|-------|-------|-------------|-------|------|---------|--------|---------|-------|--------|--------|----------|---------|--------|---------|--------|----------------|--------|------|---------|--------|---------|

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
- Embassy of the State of Kuwait
- Ministry of Education and Higher Education
- Ministry of Interior
- Qatar Airways
- Qatar Armed Forces
- Qatar National Bank
- Qatar Petroleum
- Sidra Medicine
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.

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

Education in a Pandemic

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, Geoffrey McGovern
- 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

Cross-registration with Pittsburgh campus

Summer 2020
- Pittsburgh students took Qatar courses: 9
- Qatar students took Pittsburgh courses: 168

Fall 2020
- Pittsburgh students took Qatar courses: 12
- Qatar students took Pittsburgh courses: 164

Spring 2021
- Pittsburgh students took Qatar courses: 34
- Qatar students took Pittsburgh courses: 103

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

Courses offered
- Biological Sciences
- Business Administration
- Computer Science
- Information Systems
- Arts and Sciences

272 courses offered over 3 semesters
82 first-years completed Edge Summer Program 2020
100+ students took micro courses each semester

Andrew Edward
Information Systems, Class of 2021

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.
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.

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 Akguç
Assistant Teaching Professor, Finance

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

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.

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.

Promotions

Jennifer Bruder, associate teaching professor, psychology
Hasan Demirkoparan, teaching professor, mathematics
Mohammad Hammoud, associate teaching professor, computer science
Silvia Pessoa, teaching professor, English
Zelealem Yilma, associate teaching professor, mathematics

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

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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
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.

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.

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.

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.

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.

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.

Carnegie Mellon University in Qatar
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.

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.

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.
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.

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.

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.

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.

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.

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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.

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.

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.

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.

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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 variety 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.

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.

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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.

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.

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
- GPA 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

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

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 AI 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-AI interactions on QF Alumni Instagram.

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

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.
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.

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.

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.

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 pre-college 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

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.
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.

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.

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

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.

Mohammed Al-Qassabi
President, Qatari Student Association
Information Systems, Class of 2022

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.

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 Gulnazar Serikbay contributed multi-media pieces to the project.

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.

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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 Gulnazar 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.

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.

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 Shahzai 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

Career networking

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
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.

TEDx

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.

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

University debate

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 the top ten list of speakers.

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

Research

A research institute like no other, Carnegie Mellon is home to the world’s leading experts in a range of fields. In this tradition, Carnegie Mellon University in Qatar nurtures and develops opportunities for faculty members and students to pursue regionally relevant projects in their areas of expertise.
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, including publications, professional organizations, and academic conferences.

Faculty research

- 59 published articles
- 5 book chapters
- 34 conference presentations and talks

QNRF Post-Doctoral Research Award

Hend Gedawy (CS 2009) received CMU-Q's first Post Doctoral Research Award (PDRA) from Qatar National ResearchFund. Khaled Harras will serve as mentor. The project, which will harness edge resources for deep learning, could have profound 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.

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 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.

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 AI. His work was also featured in the QNRF newsletter for November 2020.

New seed research grant

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

Nature journal article on quantum materials

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Annual Report 2020-2021
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 Legacy
PI: Paolo Rosso, Universitat Politècnica de Valencia
PI: Joe Cannataci, University of Groningen
PI: Aitana Radu, University of Malta

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

Postdoctoral researcher: Hend Gedawy
Faculty mentor: Khaled Harras

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 University
PI: Albert Liberski, Hamad Bin Khalifa University
PI: Adriaan Luyt, Qatar University
PI: Mabrouk Querderni, Qatar Petrochemical Company

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 Kolikat, Qatar Biomedical Research Institution, HBKU
PI: Udeogu Osunwogh, 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
Subaward partners:
PI: Houda Bouamor
PI: Mohamed Mahgoub, Doha International Family Institute
PI: Aisha Sultan, Doha International Family Institute
PI: Hany Abdediheem, Georgetown University in Qatar

Bringing computer science to secondary schools – Curriculum design and implementation

Lead PI: Saqib 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.

#### 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.

#### 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.

#### 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: Frewonyi Birhane, Thamanna Hashir
  
  Mentor: Annette Vincent
  
  Lead mentor: Mohammad Farhan, Hamad Bin Khalifa University

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  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. Houla Bouamor and Nui Vatanasakdakul were advisors and co-authors.

#### 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 Abduljallil
- Yara Al-Abdulghani
- Reem Al-Gayed
- Alanoud Al-Ghamdi
- Aisha Al-Jabir
- Shouq Al-Khuzaei
- Ali Al-Maadid
- Fajer Al-Marzoqi
- Imane Bendou
- Laila El-Beheiry
- Mariam El-Esnawy
- Joud Ghalayini
- Joana Khatib
- Weilin Li
- Auguste Piromalli

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.

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Michael Trick

College Honors presentations, Class of 2021
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

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

Chadi Aoun
- The present and future of data security, Huda Baig, Samir Abdaljalil
- We protect what we like: Further evidence from a large multinational Qatar sample on attitudes towards Qatar’s threatened animal species, Sara Al-Hemaidi, Reem Al-Haddad, Amal Al-Korbi

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

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

Jennifer Bruder, Lauren Burakowski
- We protect what we like: Further evidence from a large multinational Qatar sample on attitudes towards Qatar’s threatened animal species, Sara Al-Hemaidi, Reem Al-Haddad, Amal Al-Korbi

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

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 micro-interactions to keep students engaged in reading, Shouq Al-Khuzaei

Khaled Harras, Giselle Reis
- FemtoCOF: An offloading framework tailored for FemtoClouds, Laila El-Beheiry

Valentin Ilyin
- Genome sequencing of bacteriophage, Ahmed Warraich

Agustin Indaco
- What’s in a song? Natural Language Processing (NLP) analysis of Billboard Top 100 songs, Noor Mohamed

Agustin Indaco, Fuad Farooqi
- Natural resource dependence 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, Alanoud Al-Thani, Aisha Al-Remaillih

Saqib Razak, Eduardo Feo-Flushing
- Deep learning of indoor radio link quality in wireless networks using floor plans, Yaqoob Ansari, Noouha 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

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 efficiency of Mg++ as an activator for calf intestinal alkaline phosphatase (CIP)?, Noora Al-Mohannadi, Thamanna Muhammed Hashir
- Preventing and managing MC 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-Maadd

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-Obaidii
- 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
Our Stories

Throughout the year, and through a variety of media channels, we share the milestones and achievements of the CMU-Q community with Qatar. We believe the success stories of our students, alumni and faculty are part of the larger story of Qatar’s transformation into a knowledge-based economy. We also hope to inspire a new generation of students to imagine and deliver work that matters, both to Qatar and the world.
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.

CMU-Q in the news
Local, regional and international media published 421 articles about our accomplishments over the academic year.

Coverage by language
- English: 52%
- Arabic: 48%

Type of coverage
- Online: 77%
- Print: 23%

News highlights
- CMU-Q students take two top spots at Al Fikra 2020
- CMU-Q uses AI 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 Qatars 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.

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.

- 89 news stories
- 54 events supported
- 18 websites
- 201,000 visitors
- 340,000 visits
- 276 Instagram stories
- 119 Instagram posts
- 143 tweets
The Year in the News

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

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

Oct 2020
CMU-Q faculty members discuss women in leadership at Education City forum
Virtual Experience CMU-Q welcomes record number of students
CMU-Q announces scholars for the Class of 2021

Nov 2020
Business administration students earn Refinitiv Eikon certification
Chadi Aoun on sustainability: “It is about taking an ethical perspective.”
CMU-Q’s Ryan Riley wins CyberStars Qatar

Dec 2020
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

Jan 2021
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 AI
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

**Feb 2021**
- CMU-Q student researchers use Twitter to assess the pandemic’s impact on GCC shipping
- 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 Award success
- 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

**Mar 2021**
- Carnegie Mellon uses AI and robots to explore Qatar’s waters
- Wellin 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

**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 Shra"
Our Leadership, Our Faculty, Our Partners
## Leadership and Advisory

### JOINT ADVISORY BOARD

<table>
<thead>
<tr>
<th>Qatar Foundation members</th>
<th>Carnegie Mellon University members</th>
<th>Independent members</th>
<th>Ex officio members</th>
<th>Secretary</th>
</tr>
</thead>
<tbody>
<tr>
<td>H.E. Dr. Hessa Sultan Al Jaber</td>
<td>James H. Garrett, Jr.</td>
<td>N. Balakrishnan</td>
<td>Francisco Marmolejo</td>
<td>Richard Mundy</td>
</tr>
<tr>
<td>Chairperson, Es’hailSat, The Qatar Satellite Company</td>
<td>Provost and Chief Academic Officer</td>
<td>Associate Director</td>
<td>President of Higher Education</td>
<td>Chief Operations Officer</td>
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<tr>
<td>Omran H. Al-Kuwari</td>
<td>Mary Jo Dively</td>
<td>Gabriel Hawawini</td>
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<td>Carnegie Mellon University in Qatar</td>
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<tr>
<td>CEO, Qatar Foundation International</td>
<td>Vice President and General Counsel</td>
<td>The Henry Grunfield Professor of Operations Research and Public Policy</td>
<td>President of Higher Education</td>
<td>Carnegie Mellon University in Qatar</td>
</tr>
<tr>
<td>H.E. Sheikh Faisal Bin Qassim Al Thani</td>
<td>Amy Burkert</td>
<td>Kurt Mehlhorn</td>
<td>Director, Max Planck Institute for Informatics</td>
<td>Carnegie Mellon University in Qatar</td>
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<tr>
<td>Chairman, Al Faisal Holding</td>
<td>Vice Provost for Education</td>
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<td>Saarland University</td>
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<td>Reem Al Mansoori</td>
<td>Jonathan Caulkins</td>
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<td>Director, Max Planck Institute for Informatics</td>
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<tr>
<td>Assistant Undersecretary, Digital Society Development Sector</td>
<td>H. Guyford Stever University Professor of Operations Research and Public Policy</td>
<td>Saarland University</td>
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<td>Amy Burkert</td>
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<tr>
<td>Executive Director, Qatar Computing Research Institute</td>
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### DEAN’S OFFICE

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<thead>
<tr>
<th>Name</th>
<th>Position</th>
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<tbody>
<tr>
<td>Michael Trick</td>
<td>Dean Harry B. and James H. Higgins Professor of Operations Research</td>
</tr>
<tr>
<td>Selma Limam Mansar</td>
<td>Senior Associate Dean, Education Teaching Professor, Information Systems</td>
</tr>
<tr>
<td>John O’Brien</td>
<td>Senior Associate Dean, Faculty and Outreach Associate Professor, Accounting and Experimental Economics</td>
</tr>
<tr>
<td>Kemal Oflazer</td>
<td>Associate Dean, Research Teaching Professor, Computer Science</td>
</tr>
<tr>
<td>Annette Vincent</td>
<td>Associate Dean, Diversity and Climate Associate Teaching Professor, Biological Sciences</td>
</tr>
<tr>
<td>Renee Camerlengo</td>
<td>Associate Dean, Student Affairs and International Education</td>
</tr>
<tr>
<td>Edna Jackson</td>
<td>Director, Dean’s Office</td>
</tr>
<tr>
<td>Richard Mundy</td>
<td>Chief Operations Officer</td>
</tr>
<tr>
<td>Kara Nesimiuk</td>
<td>Executive Director, Marketing and Public Relations</td>
</tr>
<tr>
<td>Khalid Sarwar Warraich</td>
<td>Chief Information Officer</td>
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### FACULTY LEADERSHIP

<table>
<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Fuad Farooqi</td>
<td>Area Head, Business Administration Associate Teaching Professor, Finance</td>
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<tr>
<td>Khaled Harras</td>
<td>Area Head, Computer Science Teaching Professor, Computer Science</td>
</tr>
<tr>
<td>Patrick McGinnis</td>
<td>Associate Area Head, Business Administration Distinguished Career Professor, Business Communication</td>
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<tr>
<td>Marion Oliver</td>
<td>Area Co-Head, Arts and Sciences Teaching Professor, Mathematics</td>
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<tr>
<td>Daniel C. Phelps</td>
<td>Area Head, Information Systems Associate Teaching Professor, Information Systems</td>
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<tr>
<td>Saquib Razak</td>
<td>Associate Area Head, Computer Science Associate Teaching Professor, Computer Science</td>
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<tr>
<td>Gordon Rule</td>
<td>Area Head, Biological Sciences Professor, Biological Sciences</td>
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<tr>
<td>Ihab Younis</td>
<td>Associate Area Head, Biological Sciences Associate Teaching Professor, Biological Sciences</td>
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# Faculty Members

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<thead>
<tr>
<th>Name</th>
<th>Title</th>
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<tbody>
<tr>
<td>Iman Adeinat</td>
<td>Visiting Assistant Professor, Operations Management</td>
</tr>
<tr>
<td>Nesrine Affara</td>
<td>Assistant Teaching Professor, Biological Sciences</td>
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<tr>
<td>Serkan Akgüç</td>
<td>Assistant Teaching Professor, Finance</td>
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<tr>
<td>Chadi Aoun</td>
<td>Associate Teaching Professor, Information Systems</td>
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<tr>
<td>Ravichandra Bachu</td>
<td>Assistant Teaching Professor, Chemistry</td>
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<tr>
<td>Houda Bouamor</td>
<td>Assistant Teaching Professor, Information Systems</td>
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<tr>
<td>Mohamed Bouaouina</td>
<td>Associate Teaching Professor, Biological Sciences</td>
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<tr>
<td>Jennifer Bruder</td>
<td>Associate Teaching Professor, Psychology</td>
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<tr>
<td>Lauren Burakowski</td>
<td>Assistant Teaching Professor, Psychology</td>
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<tr>
<td>Anis Charfi</td>
<td>Associate Teaching Professor, Information Systems</td>
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<tr>
<td>Milton Cofield</td>
<td>Distinguished Service Professor, Business Management</td>
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<tr>
<td>Hasan Demirkoparan</td>
<td>Teaching Professor, Mathematics</td>
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<tr>
<td>Gianni Di Caro</td>
<td>Associate Teaching Professor, Computer Science</td>
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<td>Kira Dreher</td>
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<td>Simon Faulkner</td>
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<td>Maria Pia Gómez-Laich</td>
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<tr>
<td>Susan Hagan</td>
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<tr>
<td>Samaneh Hamidi</td>
<td>Visiting Assistant Professor, Mathematical Sciences</td>
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<td>Mohammad Hammoud</td>
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<tr>
<td>Erik Helin</td>
<td>Special Lecturer, Spanish</td>
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<tr>
<td>Zeinab Ibrahim</td>
<td>Teaching Professor, Arabic Studies</td>
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<tr>
<td>Valentin Ilyin</td>
<td>Associate Teaching Professor, Computational Biology</td>
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<td>Agustin Indaco</td>
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<td>Christos Kapsoutsis</td>
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<td>Niraj Khare</td>
<td>Assistant Teaching Professor, Mathematical Sciences</td>
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<tr>
<td>Jasmine Kirby</td>
<td>Instruction and Engagement Librarian</td>
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<tr>
<td>Cecile Le Roux</td>
<td>Assistant Teaching Professor, Organization and Behavior</td>
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<td>Teresa MacGregor</td>
<td>Director, Library</td>
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<td>Sameer Mathur</td>
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<td>Assistant Teaching Professor, Philosophy</td>
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<td>George White</td>
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<td>Zelealem Yilma</td>
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**Department Heads**

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- Mohamed Zayed: Associate Teaching Professor, Physics

**Areas Co-Heads**

- Dudley Reynolds: Area Co-Head, Arts and Sciences
- Zelealem Yilma: Associate Teaching Professor, Mathematics
- Ihab Younis: Associate Area Head, Biological Sciences
- Mohamed Zayed: Associate Teaching Professor, Physics
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.
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.