

Weill Cornell Medicine-Qatar



ANNUAL REPORT

WELCOME TO WEILL CORNELL



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Dean's Leadership Report

Despite the challenge posed by the global coronavirus pandemic, I am gratified to say that the core work of WCM-Q carried on almost without pause. That we were able to do this was thanks to the immense resolve, community spirit and adaptability shown by faculty, staff and students, who quickly established new working and studying protocols that allowed WCM-Q to continue to fulfil its principal objectives of providing excellence in medical education, patient care and research. The speed with which this happened was truly impressive, with online classes up and running the very next day following the suspension of in-class instruction. It is a testament to the professionalism, technical ability and hard work of all involved that this was possible.

In a similar show of adaptability, many other exciting and ground-breaking projects. Furthermore, our student colleagues quickly moved to tailor their activities to help healthcare professionals researchers won first place in the highly competitive annual Undergraduate and the wider community meet the challenges posed by the coronavirus Research Experience Program (UREP) outbreak. Our researchers worked closely contest with a project focused on the with the Ministry of Public Health to role of the gut microbiome in human health, while WCM-Q was named the provide valuable scientific advice, and Best Research Office for 2019 at the a new series of webinars was launched, bringing the most up-to-date COVID-19 11th Annual Forum of Qatar National Research Fund (QNRF). We are thankful advice from leading experts at elite medical institutions all over the world for the extraordinarily generous and to the healthcare community in Qatar. steadfast support we receive from Qatar Public information campaigns were Foundation and the leadership of the guickly mobilized to help the community State of Qatar that make achievements in Qatar understand the nature of the such as these possible. coronavirus and what steps could be Even with these wonderful successes, the taken to limit its spread. Meanwhile, we looked on with great pride as news came highlight of the year was - as ever - our to us from hospitals across the globe of graduation ceremony, held fully online WCM-Q alumni working on the front line, for the first time in our history. It was using the skills and knowledge gained at remarkable to see people logging in from our institution to help people affected by locations all over the world to witness our COVID-19 and other diseases throughout talented graduates receiving their hard-earned MD degrees. I have no doubt the pandemic. It was a great privilege and honor for all of us at WCM-Q that our that their skills, knowledge and commitment institution was able to contribute to this to patient care will be of great value to the most important work. community in the years to come.

I hope you will find great satisfaction There were also many reasons to feel proud in the months before the pandemic reading about their successes and many reached our shores, with members of the others in our Annual Report 2020. WCM-Q community doing incredible work in a wide variety of fields.

In research, our scientists demonstrated how lifestyle interventions can reverse type-2 diabetes, teamed up with a US pharmaceutical company to begin developing a new cholesterol drug, and reprogrammed bacteria to synthesize and deliver an anti-cancer drug, among

WCM-Q Joint Advisory Board Members

The Joint Advisory Board provides advice and assistance to the dean and the governing parties of WCM-Q.

Qatar Foundation Representatives

- HE Dr. Hanan Mohammed Al Kuwari Co-Chair, WCM-Q Joint Advisory Board Minister of Public Health, Ministry of Public Health (MoPH) Managing Director, Hamad Medical Corporation
- Ziyad Hijazi, M.D., MPH, MSCAI, FACC Acting Chief Medical Officer and Executive Chair of Pediatric Medicine, Sidra Medicine
- Richard O'Kennedy, B.Sc., Ph.D., C.Biol., FRSB., F.I.Biol.I., Dip. F.S., Dip. C.S., Dip.Computing, MRIA

Vice-President for Research, Development and Innovation, Qatar Foundation Vice-President for Research, Hamad bin Khalifa University

Cornell University Representatives

- Augustine M.K. Choi, M.D. Co-Chair, WCM-Q Joint Advisory Board Stephen and Suzanne Weiss Dean, Weill Cornell Medicine Provost for Medical Affairs, Cornell University
- Ira Drukier, Ph.D.
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- Michael Stewart, M.D., MPH Senior Associate Dean for International Affairs and Affiliations, Weill Cornell Medical College

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- Jessica Bibliowicz Chairman of the Board of Overseers, Weill Cornell Medicine
- Ahmad M. Hasnah, Ph.D. President, Hamad Bin Khalifa University
- Javaid I. Sheikh, M.D., M.B.A Dean, Weill Cornell Medicine-Qatar

Independent Representatives

- Sir Graeme Catto, M.D. (Hons) Founder Member, Qatar Council for Healthcare Practitioners Emeritus Professor of Medicine, Universities of Aberdeen and London
- Victor J. Dzau, M.D. President, US National Academy of Medicine
- Charles Prober, M.D. Founding Executive Director, Stanford Center for Health Education Senior Associate Vice Provost for Health Education, Stanford University



Foundation and A



The foundation program exists to allow talented Qatari students to fulfill their potential.

The Foundation Program

The foundation program at WCM-Q fosters the knowledge and skills of academically talented Qatari students and builds a strong basis for success in the six-year medical program. By attending to individual needs, the foundation program enables students to reach their full potential as independent lifelong learners. Foundation students earn college credit through courses in science and English, and also attend pre-medical courses like the global health and disease seminar and special studies in biology. Students who successfully complete their courses earn a Certificate of Completion and, upon meeting the necessary criteria, promotion to WCM-Q's six-year medical program.

This year, a number of students were honored for their outstanding academic achievement. In March 2020, Haya Ali Al-Kuwari, Amal Abdulla AlNaemi, and Noor Faisal Al-Sayegh were awarded the Education Excellence Award at the

13th Qatar Education Excellence Awards, sponsored by His Highness the Emir Sheikh Tamim Bin Hamad Al-Thani. This honor recognized their outstanding accomplishments in secondary school, which places them among the best students in Qatar. Students also commemorated the achievements of great scientists from the past. On November 13, they celebrated the 2019 International Year of the Periodic Table of Chemical Elements, part of a global initiative launched by the International Union of Pure and Applied Chemistry and UNESCO. This celebration marked the 150th anniversary since Dmitri Mendeleev discovered the periodic system. Many WCM-Q students and faculty attended the event and a raffle was held.

Beyond the classroom, students participate in diverse programs and initiatives aimed at bringing medical careers to life. As in past years, they attended the Medical Career Seminar opportunities to apply their knowledge Series, which hosts distinguished in real-world settings, explore different speakers from the local healthcare medical specialties early in their community. These seminars introduce medical education, experience students to WCM-Q alumni and first-hand the healthcare system in healthcare professionals from WCM-Q, Qatar, and enhance their awareness of Hamad Medical Corporation (HMC), and the daily challenges facing physicians. Sidra Medicine, enabling them to benefit Building upon these experiences, from the knowledge and experiences Dr. Bendriss had his students complete of these accomplished professionals. a semester-long project aimed at They gain critical early exposure to fostering early professional identity and careers in medicine and meaningful appreciation for the various healthcare opportunities to pursue their academic professions working in Qatar's clinics and career interests. Another enriching and hospitals. Such creative projects pre-professional program is the Clinical encourage students to think critically Observership Experience, led by Dr. about what constitutes effective Rachid Bendriss, assistant dean for medical practice and reflect on their student recruitment, outreach, and own professional development. foundation programs. The observership, which takes place at HMC and Sidra Medicine, offers both foundation and pre-medical students valuable



Shahzad Jafri, senior executive director of administration at WCM-Q, delivers a lecture at the Medical Career Seminar Series.

The Pre-Medical Curriculum



The pre-medical component of the six-year medical program prepares students for medical studies through a varied curriculum emphasizing physical and social sciences, and the humanities. Through their experiences, students develop the requisite knowledge and skills to succeed in the medical curriculum, and advance according to key criteria like academic performance, professionalism, and commitment to the medical profession. This year, due to the COVID-19 lockdown, pre-medical faculty and students faced the additional challenge of adapting an already demanding curriculum to a remote learning environment. When the WCM-Q campus closed to ensure social distancing guidelines and prevent the virus from spreading on campus, faculty and students began teaching and learning from home, and in some cases, left Qatar to be with their families. Despite these challenges, pre-medical faculty and students made the best of the situation. guickly adopting online tools like Zoom, Padlet, and Panopto to successfully complete the semester. For example, writing faculty continued facilitating meaningful group discussions about class readings through asynchronous discussion boards and synchronous Zoom breakout rooms, while the WCM-Q Writing Center continued to provide one-on-one consultations for students, staff, and faculty. Such efforts helped the semester continue remotely with minimal disruptions to student learning.

Throughout their time at WCM-Q, pre-medical students engage in rich learning experiences. For instance, during the foundation and six-year medical program orientation program, students participated in the Reading



The Foundation and Pre-Medical programs allow students to reach their full potential and prepare them for the rigors of the medical program.

Project. Facilitated by Dr. Adam Larson, lecturer in English as a second language, the Reading Project invited students to discuss themes from Paul Kalanithi's When Breath Becomes Air, an illness memoir recounting the author's experience with lung cancer. Through their discussions, students explored how storytelling can communalize suffering, open up spaces for alternative possibilities, and become a medium of forgiveness for both patients and their families. The exercise concluded with students writing a short essay analyzing a passage from the book.

In the sciences, Dr. Ali Chaari, lecturer in biochemistry, and Dr. James Roach, professor of chemistry, recently published an article in the June 2020 edition of Biochemistry and Molecular Biology Education describing their innovative course-based capstone laboratory experience, which offers students the opportunity to explore biochemical concepts through project-based learning (PBL).

The pre-medical curriculum focuses on the physical and social sciences, and the humanities.

This multi-step enzyme-based laboratory project introduced students to fundamental laboratory techniques while simulating the scaffolded nature of authentic research environments. Alongside Dr. Chaari, several students presented their capstone experiences at the University of Calgary-Qatar's Symposium on Teaching and Learning. Additionally, when the COVID-19 pandemic arose, Dr. Clare McVeigh, senior lecturer in biology, offered an innovative approach to adapting the capstone to an online environment. Students conducted literature searches on various aspects of COVID-19 and presented their findings at an online 'press conference' in which faculty played the role of reporters from different countries with various political perspectives. Students played the role of public scientists, fielding questions from the press covering a range of topics covered earlier in the course.

Pre-medical students also participate in authentic learning beyond classroom and laboratory.

For instance, in February 2020, forty-six students from WCM-Q attended a two-day training session at HMC facilitated by HMC medical physicists. The purpose of the session was to raise awareness about the important work that medical physicists do to support health and healing in Qatar's hospitals. Additionally, six pre-medical students visited Vietnam to learn about the challenges facing Vietnamese healthcare providers while exploring Vietnamese culture. This twelve-day global health experiential trip, organized by the Institution of Population Health at WCM-Q, gave pre-medical students the chance to volunteer at the Orthopedic and Rehabilitation Hospital in Ho Chi Minh City. The students spent their days observing physicians conducting basic health checks and physiotherapy sessions, learning about health issues pertinent to Vietnam, working with special needs children, taking Vietnamese language classes, and studying the history and legacy of the Vietnam War. This program was designed to provide pre-medical students an opportunity to see how healthcare is organized and delivered in different countries and develop skills in providing care across cultural and linguistic boundaries.

Pre-medical students also take advantage of opportunities to participate in faculty research. For example, Dr. Keui-Chiu Chen, associate professor of biology, conducted research with help from pre-medical students into the biodiversity of the Al Karaana Lagoons, a series of pools formed by a wastewater treatment plant in 2017. The lagoons, located approximately 60 kilometers southwest of Doha, have become an important stopping place for many species of migratory birds. This study will document the various species of plants and wildlife and locate their greatest concentrations. Through their participation, students learn valuable field research skills used in biology and ecology while contributing to Qatar's environmental development. In addition, Dr. Ghizlane Bendriss, lecturer

in biology, and Dr. Dalia Zakaria, lecturer in biology, mentored students as part of the Undergraduate Research Experience Program (UREP). Their project, entitled 'Role of the Human Gut Microbiota in Autism Spectrum Disorders and Inflammatory Bowel Diseases', won first place at the 12th annual Qatar National Research Fund UREP contest, which included 46 projects from universities across Qatar.

The research team also published one of the most read articles in the Scandinavian Journal of Immunology entitled 'The Role of Gut Microbiota in Atopic Asthma and Allergy: Implications in the Understanding of Disease Pathogenesis.'

Pre-medical faculty also provided Science Olympiad, which hosted more leadership to support learning across than 400 students from 70 countries Education City and the wider Qatar from around the world. Dr. Yousef and community. For instance, Dr. Marco Dr. Sebah served as members of the Ameduri, senior associate dean for scientific committee and played key pre-medical education, and Dr. Rachid roles in preparing contest assessments, Bendriss served on an Education City leading discussions during the event, and projects committee which examined the evaluating the quality of scientific papers. role of artificial intelligence at Education Finally, in order to provide children in City. This committee has a mandate Qatar with high quality educational to drive cross-campus collaborative opportunities, Dr. Chen and teaching specialist Becky Cramer collaborated projects, including project design and implementation, to enhance the synergies with the National Museum of Qatar to among Education City institutions. deliver workshops, talks, and lectures Similarly, Dr. Mohammad Yousef, in biology. These activities demonstrate associate professor of physics, and the pre-medical department's firm Dr. Majda Sebah, lecturer in chemistry, commitment to helping Qatar achieve its supported the 16th International Junior 2030 vision goals.





The Division of Medical Education





The online graduation of the Class of 2020 was watched by friends and families across the world.

This year witnessed a first for WCM-Q with graduates having to receive their degrees virtually in front of an online audience of family, friends, WCM-Q faculty and staff. The online ceremony was held in May with 15 males and 23 females graduating with the Cornell University Doctor of Medicine degree, increasing the total number of WCM-Q alumni to 422.

The caliber of the 38 graduating students was truly outstanding with 12 graduating with academic distinction, four with honors in research, and one with honors in service. Many of these graduates also received individual accolades at the Convocation Ceremony which honored graduates for academic excellence and recognized individuals for specific professional and personal attributes that form the essential qualities of a good physician. Additionally, this was the first class to have completed WCM-Q's innovative six-year medical program, which comprises both pre-medical and medical curriculums.

Dr. Javaid Sheikh, Dean of WCM-Q presided over the graduation ceremony along with Dr. Augustine Choi, Dean of Weill Cornell Medicine in New York, and Provost for Medical Affairs at Cornell University.

WCM-Q **Celebrates with** the Class of 2020

Match Day Post-Graduate Training Placement Success



Students of WCM-Q's Class of 2020 receiving their white coats at the beginning of the medical program they are soon to complete. Students matched at elite medical institutions in Qatar and the US.

At the match day event in March, 32 students in the Class of 2020 celebrated matching at prestigious post-graduate training institutions in numerous specialties, including dermatology, general surgery, internal medicine, interventional radiology, neurology, ophthalmology, otolaryngology, pediatrics and psychiatry.

The medical students matched at residency training programs at leading healthcare institutions in Qatar and the US, including Hamad Medical Corporation,

NewYork-Presbyterian/Weill Cornell Medical Center, Icahn School of Medicine at Mount Sinai in New York City, Case Western/University Hospital Cleveland, Ohio, Cedars-Sinai Medical Center/ University of California, Los Angeles (UCLA), and the Johns Hopkins Hospital in Baltimore, Maryland, among others. The expansion of the locations of residency placements of our students in the US, including California was a great achievement to be celebrated this year.



Residency Program Matches in the United States Mainland





VCUHealth.

Brooklyn Methodist Hospital

University Hospitals Cleveland Medical Center



Icahn School of Medicine at Mount Sinai

Medical Curriculum Students and the Impact of COVID-19



With the establishment of WCM-Q, Cornell became the first US university to offer its M.D. degree overseas.

The academic year was off to a good start in the Fall of 2019, with the students in the Class of 2023 taking another step closer to achieving their aspirations to become the next generation of doctors. Of the 41 students, eight are Qatari and of the total number there are 23 women and 18 men.

Earlier in the summer, students in the Class of 2022 entered Phase II of the curriculum, which primarily involved getting exposure at the clinical affiliated hospital sites. These students spent the next months applying clinical knowledge and honing-in on their critical thinking and patient care and physicianship skills to care for patients as part of the healthcare team in a primary care or hospital setting during their rotations for specialty specific clerkships.

The class 2020 were the very first cohort of students to do the Areas of Concentration (AOC) Program with a total of 29 students. There are a total of 73 AOC final projects completed by the Class of 2020 and Class of 2021. There are 37 AOC final projects in clinical pathways, 20 in laboratory sciences, seven in medical education and nine in population sciences.

In March 2020 and as the full implications of the global coronavirus pandemic became clear, the Medical Education leadership team scheduled meetings to discuss an academic continuity plan in anticipation of potential disruption of delivery of the curriculum due to COVID-19. Central to the many challenges faced with the suspension of in-person classes were:

- Continuing remote delivery of the medical curriculum
- Examining students off-campus
- Alternatives for clinical experiences

Class of 2020 students who were completing clinical electives were removed from the clinical services and were offered non- clinical online electives. The Health Care and Public Health Clerkship and Medicine Patients Society III, were completed remotely. All students were able to complete their graduation requirements with no delay.

Class of 2021 clinical placements at local affiliate hospitals was suspended on March 11, 2020. At that time, the students were in the midst of their respective neurology, obstetrics and gynecology, primary care, and psychiatry clerkships. The clinical component of the clerkships was postponed until August 2020. To ensure that this class continues to progress, and since subinternships and electives in New York were suspended, the Areas of Concentration Program was brought forward and started on April 12, 2020. Additionally, on March 31, 2020 the National Board of Medical Examiners (NBME) approved web-conferencing tools for remote proctoring. Following that announcement, the system was thoroughly tested by Office of Curriculum Support and the neurology NBME subject exam was sat remotely on April 13, 2020 using a secure NBME browser, recorded with Panopto technology and remote proctored via Zoom.

Class of 2022 were scheduled to start pre-clerkship orientation week towards

the end of April 2020. However, due to the suspension of clinical activities this was no longer possible. Thus, to ensure progression of the students in their curriculum, their schedule was amended by frontloading non-clinical online electives. Several new two-week non-clinical online electives were developed by clinical science and foundational science faculty and were available as early as April 19, 2020 through the month of June 2020.

The pre-clerkship orientation week was rescheduled to June 28, 2020 followed by the clerkships on July 5, 2020.

In that period of time, multi-disciplinary teams were tasked with tailoring content usually delivered face-to-face to suit the online environment. The anatomy classes and skills mastery sessions cannot be delivered online. Therefore, the order in which the curriculum is delivered was adjusted. Furthermore, recordings of new and pre-existing lectures, as well as other course materials, including self-assessment exercises were provided by faculty, allowing students, who were outside Qatar and different time zones, to engage with them at a time that was suitable for them.

As the online teaching continued for the months to come, telemedicine, the use of online video conferencing apps and remote proctored exams were introduced to facilitate teaching, learning and assessment. The trainee doctors continued to have full access to their professors for feedback and support through virtual meetings. WCM-Q's Clinical Skills and Simulation Lab team transitioned to online patient encounters to support student remote education and to continue the clinical skills program.

Curricular Innovation and Student Support

The Division of Medical Education began the process of completing a phased implementation of a comprehensive curriculum and learning management system with a consortium and cloud model. This features robust and comprehensive reporting, assessment and evaluation, scheduling and calendar, curriculum mapping, and curriculum management. Once implementation is complete, the system will be a consolidated solution for faculty, staff, and students.

Outreach Initiatives



The visit from residency program directors allows them to meet both students and faculty at WCM-Q.

In continued efforts to promote WCM-Q as a center of excellence for graduating physicians, and to create more opportunities for WCM-Q graduates to match into post-graduate training programs, esteemed residency program directors from leading US teaching hospitals and academic health centers visited Weill Cornell Medicine-Qatar (WCM-Q) for a week to view the facilities. learn about the curriculum, and offer career development advice to students as part of the Visiting Professorship Program (VPP). This annual initiative brings leading figures in medical education and healthcare to WCM-Q in order to establish

strong links between the college and other preeminent medical institutions around the world.

This year's VPP brought nine residency program directors to WCM-Q from nine leading US medical schools: Weill Cornell Medicine in New York, Duke University School of Medicine, Penn State College of Medicine, the University of Colorado School of Medicine, the Western Michigan University Homer Stryker M.D. School of Medicine, St. Vincent Women's Hospital, the University of Illinois College of Medicine, Rush University Medical Center and the University of Arkansas for Medical Sciences.

Professional Development

The Clinical Skills and Simulation Lab successfully delivered the 3rd Annual **Optimizing Health Professions Education** with Simulation-Based Learning. The symposium aimed to maximize the benefits of the educational modality through the adoption of guidelines and best practices from experts in the field. Expert facilitators from the multi-institutional Qatar Simulation Consortium were consulted to identify and steer the programming to meet the needs of the Qatar healthcare community in regard to evidence-based methods in simulation-based medical education. The symposium provided a platform for identifying strengths and challenges and allow for participants to explore opportunities to address barriers through collaborative discussions and networking gatherings.

The Division of Medical Education has continued to run the Monthly Medical Education Journal Club for faculty members and staff from the academic units. This forum encouraged collaborations and discussions on the latest trends in leading medical education journal publications.

Faculty and staff continue to ensure they are staying abreast of the latest advances in their field and to share their research and best practice expertise with others. With the coronavirus pandemic causing lockdowns across the world, many of the conferences migrated online and WCM-Q faculty and staff embraced virtual learning, presenting their research online and participating in virtual panel discussions.

Honoring Faculty and Recognizing Teaching Excellence

The achievements of the medical school educators over the past year were recognized in an online ceremony held to announce the winners of the 2020 Excellence in Teaching Awards. This time-honored tradition recognizes the teachers who excel as role models in their field, imparting knowledge by sparking intellectual curiosity and inspiring critical thinking.



The winners of the annual teaching awards

Winners of the Excellence in Teaching Awards 2020

Pre-medical Education Awards

Foundation Year: Dr. Majda Sebah, Dr. Rachid Bendriss 1st Year Science: Dr. Dalia Zakaria, Dr. Mohammad Yousef English Writing: Dr. Rodney Sharkey 2nd Year Science: Dr. Dalia Zakaria, Dr. Sean Holroyd Teaching Specialist: Dr. Padmakumari Sarada, Dr. Simeon Scott Andrews Teaching Specialists Honorable Mention: Dr. Becky Cramer, Ms. Christine Gaskell

Medical Education Awards

Excellence in Teaching in the Foundational Sciences Curriculum: Dr. Mange Manyama, Dr. Ameed Raoof

Excellence in Teaching in the Clinical Curriculum: Dr. Ameed Raoof, Dr. Mohamed Elshazly

Excellence in Leadership in the Foundational Sciences Curriculum: Dr. Naim Haddad

Excellence in Leadership in the Clinical Curriculum: Dr. Salman Aljerdi

Visiting Faculty Excellence in Teaching – Foundational Sciences Curriculum: Dr. Meredith Turetz

Visiting Faculty Excellence in Teaching - Clinical Curriculum: Dr. Muthukumar Thangamani

Excellence in Mentoring in the Area of Concentration: Dr. Khaled Machaca, Dr. Ali Sultan

Excellence in Educational Innovation: Dr. Stella Major

Convocation Awards 2020

The Senior List (WCM-Q Faculty): Dr. Aicha Hind Rifai, Dr. Basim Uthman, Dr. Naim Haddad, Dr. Ameed Raoof, Dr. Amine Rakab, Dr. Mai Mahmoud

The Senior List (WCM-NY Visiting Faculty): Dr. Anthony Ogedegbe, Dr. Joseph Safdieh, Dr. Robert Kim

Humanism in Medicine Award: Dr. Aicha Hind Rifai

Excellence in Foundational Sciences Teaching Award: Dr. Avelin Malyango

Excellence in Clinical Teaching Award: Dr. Basim Uthman, Dr. Grigory Ostrovskiy



The annual appreciation event for affiliated teaching faculty is a chance for WCM-Q to honor and thank those who pass on their experience and practical skills to our students.

The 3rd annual Affiliated Teaching Faculty Appreciation Event took place in October 2019 to honor the local physicians who hold affiliated faculty appointments with WCM-Q and teach our medical students. These experiences help students learn the practical skills required to provide excellent patient care, develop very high standards of professionalism, and gain a keen understanding of the ethical and moral dimension of the doctor's role. Many affiliated faculty also teach in foundational sciences courses at WCM-Q.

A local musical ensemble provided a unique ambience for the event which was attended by physicians working at Hamad Medical Corporation, the Primary Health Care Corporation, Sidra Medicine, Aspetar Orthopedic and Sports Medicine Hospital and the Feto-Maternal Medical Centre. During the event, third-year medical student Raihan El-Naas of the Class of 2021, gave a heartfelt speech on behalf of her peers thanking the affiliated faculty for "helping shape our career paths and igniting our love for medicine with their immense knowledge and true interest in helping us learn and understand".

Faculty Achievements

This year the faculty in the Division of Medical Education disseminated 60 medical educational and clinical research presentations at local and international conferences and published 87 articles on a wide variety of topics in highly reputable journals.

Notably, several of our faculty received scholarly prizes and grant awards for research in medical education and appointments in a variety of editorial boards and professional societies over the past year include:

- Dr. Stella Major was appointed to be the IPE lead for the vaccination program CPD for the PHCC. This activity is led by the University of Calgary in Qatar.
- Dr. Ameed Raoof joined the Anatomical Terminology committee in the American Association of Clinical Anatomists (AACA).
- Dr. Thurayya Arayssi, Dr. Amine Rakab, Dr. Amal Khidir, Dr. Sumeja Zahirovic and Ms. Deema Al-Sheikhly collaborated with Dr. Eric Holmboe and Dr. Sandra A. Moutsios of the Accreditation Council for Graduate Medical Education to develop a regional hub to promote faculty development in the area of assessment in health professions education.
- Dr. Mohamed Elshazly and Amal Abdellatif (M4 student) were awarded the Paul Dudley White International Scholar prize at the American Heart Association Scientific Sessions for the highest ranked international abstract.



- Dr. Stella Major (PI) was awarded a WCM-Q Medical Education Research Grant for her project 'Exploring the use of virtual reality in undergraduate medical student training on empathy.' Research Question:
- 1. How do medical students engage with a virtual reality (VR) experience in exploring empathic behaviors?
- 2. What are the benefits and limitations of using VR to promote the development of empathic behaviors in medical students?
- 3. What characteristics influence participants' emotional response to a VR experience?

- Dr. Ameed Raoof (PI) was awarded a WCM-Q Medical Education Research Grant for his project 'Assessing the effectiveness of virtual (VR) and augmented reality (AR) in enhancing students' understanding of anatomy. Could VR enhance students' 3-D perception of the human body?'
- Dr. Adam Larson (PI) was awarded a WCM-Q Medical Education Research Grant for his project 'Fostering scientific identity in medical students: An exploration of the Areas of Concentration Program at Weill Cornell Medicine-Qatar.'
- Dr. Sean Holroyd was appointed a member of the Physiological Society of the UK and appointed as a member of the Australian Physiological Society
- Dr. Laith Abu-Raddad was invited to be a member of the Scientific Committee of the Epidemiology & Monitoring track for the STI & HIV 2021 World Congress (ISSTDR).
- Dr. Ziyad Mahfoud was invited to act as an external examiner for a candidate for the Master in Public Health thesis at Qatar University
- Dr. Ameed Raoof was awarded Best Research Mentor by the WCM-Q Student Research Association
- Dr. Stella Major was re-awarded CHSE (certification as simulation health educator) by the society of simulation in health care. This is a threeyearly certification, and requires a candidate to fulfil ongoing educational, scholarship and leadership criteria, as represented by submissions to a secure online portfolio in SSH website.

Dr. Sandra Sapia is collaborating with Carnegie Mellon University in Qatar to deliver the Blood Biology and Pathophysiology Course.

- Dr. Amal Khidir was appointed to run the Research and Scholarship Collaborative (former Task Force) meetings as the chairperson of the COMSEP collaborative during the conference.
- Dr. Stella Major and colleagues in CSSL created and tested an original web-OSCE - to offer clerkship directors an option to complete their clinical skills OSCEs and assessment, after the college was closed to in-person teaching due to COVID 19.
- Dr. Ziad Kronfol collaborated with local colleagues on a book chapter, 'Mental Health in Higher Education' in Mental Health in Qatar: Challenges and Prospects, by Haque A, Gilstrap L.L and Ghuloum S, book editors.
- Dr. Sandra Sapia is collaborating with Carnegie Mellon University in Qatar to deliver the Blood Biology and Pathophysiology Course. Listed as BIOG 2025 (Cornell University Registrar) 03-210 (W4) (Carnegie Mellon)
- Dr. Christopher Triggle was involved in the following international collaboration: Research integrity: Establishment of guidelines for the fair peer review of the scientific literature. Preparation of manuscript. With Professor Carl Taswell & colleagues, Brain Health Alliance and Adjunct Professor Electrical and Computer Engineering, University California San Diego.



Division of Continuing Professional Development (CPD)

The Division of Continuing Professional Development (CPD) has continued to stay true to its slogan of Embracing Lifelong Learning ensuring creativity and innovation in meeting its mission of providing high-quality professional development opportunities for physicians and other healthcare professionals. This is based on identified needs and the latest scientific and medical developments that will increase competence, enhance performance in practice and lead to improving healthcare for patients. This is in line with the goals of the Qatar National Health Strategy (2018-2022) priorities, including ensuring an efficient, capable, and sustainable healthcare workforce. Therefore, the division continues to work in pursuit of its strategic objective, "To enhance the knowledge and practice of the Qatari and regional physician workforce through graduate and continuing medical education."

The Accreditation with Commendation awarded to WCM-Q by the Accreditation Council for Continuing Medical Education (ACCME) along with the recognition locally as an accredited provider by the Qatar Council for Healthcare Practitioners (QCHP) is further evidence of the quality and depth of the CME/CPD activities developed at WCM-Q, that meet the needs of the healthcare workforce in Qatar and beyond

In 2020, despite the challenges of the COVID-19 pandemic, the CPD division ensured seamless continuity of most of the scheduled learning support programs. Furthermore, the CPD division identified an urgent need to support the ongoing learning of our healthcare community working through these unprecedented circumstances and swiftly launched a new COVID-19 Live Webinar Clinical Series. The series, which

features leading experts discussing both the global challenges and impact of the COVID-19 pandemic as well as the recommended management of the SARS-CoV-2 virus, continues to be extremely impactful.

The division is led by Dr. Thuravya Arayssi, professor of medicine and senior associate dean of medical education and continuing professional development, who is supported by Ms. Deema Al-Sheikhly, director of medical education and continuing professional development, Ms. Phyllis Navti, assistant director, continuing professional development, and Ms. Laudy Mattar, manager of the division. The remainder of the team includes the manager for marketing and evaluation, Ms. Zara Lamri, and the CPD coordinators, Ms. Ameena Abdul Rahim, Ms. Safia Rabia and Ms. Joan Montederamos.



The division is led by Dr. Thurayya Arayssi, senior associate dean for medical education and continuing professional development.

WCM-Q Continuing **Professional Development Milestones**

First activity accredited through the collaboration with Weill Cornell Medicine (WCM) CME Office in New York

Accreditation Council for Medical Education (ACCME) approved the eligibility of WCM-Q to apply to become an ACCME accredited provider

Accreditation of WCM-Q

ACCME for six years

with commendation by the





Establishment of the **Division of Graduate** Medical Education (GME)

The division was re-invented as the Division of Continuing **Professional Development** (CPD). Recognition of WCM-Q as an accredited CME/CPD by the Qatar Council for Healthcare Practitioners (QCHP)

Recognition of Weill Cornell Medicine-Qatar as an accredited CME/CPD provider by ACCME Re-accreditation of WCM-Q by QCHP for five years

Key Achievements

Training an increasing number of healthcare practitioners whilst meeting their needs through accredited activities such as the newly launched weekly COVID-19 Live Webinar Clinical Series. This series included leading experts discussing the global challenges brought about by the COVID-19 pandemic, its impact, recommended responses and treatment.

This year the Division of Continuing Professional Development accredited **71 activities** that were attended by **9,098 healthcare practitioners**. Issued **15,176** Qatar Council for health Care Practitioners (QCHP) hours and **6,069** AMA PRA Category 1 Credits[™].

Having a global impact on the education of healthcare practitioners in multiple area of clinical practice across several countries outside of Qatar.

Pivoting to online delivery of activities during the COVID-19 pandemic to meet the needs of the healthcare community.

Establishing the regional Accreditation Council for Graduate Medical Education (ACGME) training hub: WCM-Q is the regional training hub as part of a memorandum of understanding between the ACGME and WCM-Q.

CPD Mission & Vision

Our Mission

The Division of Continuing Professional Development's (CPD) mission aims to promote educational endeavors, which extend beyond the undergraduate program and align with the mission of Weill Cornell Medicine-Qatar. To this end, the mission of this division is to:

Provide high-quality professional development opportunities for physicians and other healthcare professionals based on identified needs and the latest scientific and medical developments that will lead to the improved health care of patients

Develop and disseminate best evidence-based practice and health education research

Our Vision

To build a community of healthcare professionals and educators committed to embracing lifelong learning in order to enhance patient care and healthcare outcomes.

Offer physicians and other healthcare professionals the opportunity to attain credits toward medical licensing requirements locally and internationally

Create opportunities for physicians and other healthcare professionals to develop a community of practice to interact with one another personally and professionally

Our Partners

CPD division would like to thank the following local and international recognized organizations for their partnerships and business collaborations.

Local Partner



Accrediting & Regulatory Bodies







Affiliates









Other Collaborators















Clinical Sciences

Research Education for Clinicians

Live Activities

- Assessment in Competency-Based Medical Education: A Faculty **Development Program**
- Bridging the Gap Medical Interpreters Training
- Cultural Competence in Healthcare Workshop
- ECG in Clinical Practice
- Mastering Emotional Intelligence
- Minor Surgical Skills Workshop
- Periodontics in Practice: Where do I start and what I should be doing?
- Understanding Basics of Health Research
- Updates in the Diagnosis and Management of Chronic Kidney Disease in Diabetes Mellitus
- Sample Size Determination for Clinical Research
- Systematic Review: An Introductory Workshop

Conferences

- 3rd Annual Optimizing Health Professions Education with Simulationbased Learning. Institutional Culture & Academic Journeys
- Congenital Dystrophies-Neuromuscular **Disorders Precision Medicine** Conference: Genomics to Care & Cure





Medical Education

Certificates

- Certificate in the Analysis of Medical Data: Applied Biostatistics for Healthcare Professionals
- Certificate in Lifestyle Medicine
- Certificate in the Fundamentals of Music Therapy

Online Courses

 Role of the Gut Microbiota in Health and Disease

Series

- Back to Basics for Clinicians Series: **Diagnosing and Managing Diabetes:** A 21st Century Approach
- Biostatistics for Healthcare Practitioners Live Webinar Series
- COVID-19 Live Webinar Clinical Series
- Intersection of Law and Medicine Series: Stem Cells and Artificial Intelligence: Ethical and legal Challenges in Healthcare
- Medical Education Journal Club
- WCM-Q Grand Rounds Series

Meeting the Needs of Our Healthcare Practitioners

WCM-Q CME/CPD Activities 2019-2020

Target **Audience**

WCM-Q's target audience includes faculty, staff, and alumni of WCM-Q, and physicians and other healthcare professionals in the State of Qatar and the region. From July 2019 to June 2020, up to **9,098** healthcare practitioners and educators participated in activities that were QCHP and ACCME accredited (Figure1), with the majority of the participants coming from the private sector.





WCM-Q's activities are varied in context. The monthly multi-disciplinary WCM-Q

Desirable Practitioner Attributes

CME/CPD activities are developed in the context of desirable physician/healthcare practitioner attributes that focus on elements of the Institute of Medicine (IOM), the Accreditation Council for Graduate Medical Education (ACGME), the American Board of Medical Specialties (ABMS) and/or the Inter-Professional Education Collaborative competencies (Figure 2).

How well WCM-Q designed activities around core competencies



Figure 2: Showing the variety of core competencies around which activities are designed.

Content

All CME/CPD presentations must be based on evidence that is accepted within the profession of medicine, be scientifically sound and free of commercial bias. Our accredited CME/CPD activities were found to be free of commercial bias (>90%), scientifically sound, evidence-based, objective and balanced (>94%).

CME Oversight **Committee Members**

The CPD Oversight Committee plays a critical role in ensuring that the mission and vision of the division are met and that accredited activities are developed in alignment with both the QCHP and ACCME standards and requirements.

CME committee members

Thurayya Arayssi, MD Senior Associate Dean, Medical Education and CPD Professor of Clinical Medicine, WCM-Q	Paul Dijkstra, Assistant Prof of Medicine, A
Liam Fernyhough, MD	Mohamed EIS
Assistant Professor of	Assistant Prof
Medicine, WCM-Q	Medicine, WC
Sandra Sapia, MD Assistant Professor of Pathology and Laboratory Medicine, WCM-Q	Barbara Blacl Associate Pro Pediatrics, Sid
Alicia Tártalo, PhD	Sohaila Cheer
Assistant Dean for Clinical	Assistant Dea
and Faculty Affairs/	for Population
Assistant Professor of	Assistant Prof
Education in Medicine,	Healthcare Po
WCM-Q	Research, WC





CPD Activities 2019-2020



The Division of Continuing Professional Development hosts dozens of activities each year.

CPD Activities, Local and International Partnerships

The division continues to collaborate with several local and international entities to ensure the diversity and quality of healthcare education programs offered to meet the needs and practice gap of the healthcare community in Qatar. Institutions with which CPD has collaborated include Hamad Bin Khalifa University, the University of Malaya of Kuala Lumpur, Sidra Medicine, Aspetar, Hamad Medical Corporation, Heart Hospital, Qatar Red Crescent, the Accreditation Council for Graduate Medical Education and Vanderbilt University.

Live Activities

Live activities welcomed up to 1,600 healthcare practitioners from both the public and private sector (Figure 3), who attended 33 presentations delivered by WCM-Q faculty and alumni, WCM faculty, and renowned local and international experts on diverse topics relevant to the practice of the healthcare community of Qatar.



Figure 3

Collaboration



The workshop was held in collaboration with Qatar Red Crescent.

Updates in the diagnosis and management of chronic kidney disease in diabetes mellitus

Division of CPD developed this one-day workshop, which was offered on two separate days, in collaboration with the Qatar Red Crescent Society (QRCS) and aimed specifically at doctors, who frequently encounter chronic kidney disease when providing emergency or primary care to patients. This activity is a great example of the importance of WCM-Q's collaboration with other entities to meet the needs of the healthcare community in Qatar, in order to support the Qatar National Health Strategy as evidence by the positive feedback received from the participants. 76 healthcare professionals completed this course that was offered twice. Accreditation: 280 Qatar Council for Health Care Practitioners (QCHP) hours and 216 AMA PRA Category 1 Credits[™] issued.



WCM-Q alumnus Dr. Mohamad Alkadi, nephrology consultant at Hamad Medical Corporation, was one of the speakers at the event.

Assessment in competency based medical education: A faculty development program

The three-day course was developed by CPD and Medical Education through a regional Accreditation Council for Graduate Medical Education (ACGME) training hub. The course featured speakers from the ACGME, WCM-Q and Vanderbilt University. The purpose was to advance health professions education in Qatar and the wider region in order to improve healthcare provision and population health. Forty-two healthcare professionals completed this program. Accreditation: 565 Qatar Council for Health Care Practitioners (QCHP) hours and 572 AMA PRA Category 1 Credits[™].



The assessment in competency-based medical education program was designed to ultimately improve healthcare in Qatar and the wider region.



Dr. Eric Holmboe, chief of research, milestones development and evaluation officer at the ACGME, delivers a component of the program.



The Division of Continuing Professional Development provides a wide range of learning opportunities for healthcare professionals at all stages of their careers.

ECG in clinical practice

CPD collaborated with the Heart Hospital and Hamad Medical Corporation for this one-day workshop explicitly aimed at ECG technicians, nurses, and physicians. The activity covered the basic skills of ECG interpretation (example: normal ECG, axis, intervals, ischemia, heart blocks, and tachyarrhythmias). 72 healthcare professionals completed this course. Accreditation: 441 Qatar Council for Health Care Practitioners (QCHP) hours and 148 AMA PRA Category 1 Credits[™] issued.



Dr Mohamed Elshazly, assistant professor of medicine at WCM-Q, delivering a section of the electrocardiogram workshop.

Intersection of Law and Medicine Series Stem cells and artificial intelligence: Ethical and legal challenges in healthcare

The day-long event was organized by CPD in collaboration with Hamad Bin Khalifa University and the University of Malaya of Kuala Lumpur, Malaysia, as part of the Law and Medicine Series. Expert speakers at this event discussed the impact of recent advances in stem cell science and Al on the practice of medicine in Qatar and explored how new legal frameworks could be developed to protect the rights and safety of patients in the MENA region. 107 healthcare professionals attended the workshop. Accreditation: 576 Qatar **Council for Health Care Practitioners** (QCHP) hours and 168 AMA PRA Category 1 Credits[™] issued.



Q&A sessions allow the audience to further explore the topic.



The Law and Medicine Series explores how the legal and medical worlds impact upon each other

Collaboration



The Certificate in Music Therapy covered the clinical applications of the approach.

Certificate in Fundamentals of Music Therapy

Developed by WCM-Q's CPD in collaboration with the Qatar Music Academy (QMA). Composed of nine online modules and a two-day practical workshop, covering evidence-based description of the main techniques used in music therapy and their clinical applications. Fifty three healthcare professionals completed the certificate. Accreditation: 165 Qatar Council for Health Care Practitioners (QCHP) hours and 153 AMA PRA Category 1 Credits[™] issued.



The certificate comprises nine online modules and a practical workshop.

Series

Back to basics for clinicians series Diagnosing and managing diabetes: A 21st century approach

The activity was designed to highlight the advances and application of omics in clinics for diagnosis of subtypes of type II diabetes and the development of personalized disease management. The activity was developed as a collaboration between the divisions of CPD and Research to introduce the attendees to a group of basic researchers and clinicians who have used this approach in diagnosing and managing some diabetic patients with genetic variations. Fifty three healthcare professionals attended. Accreditation: 111 Qatar Council for Health Care Practitioners (QCHP) hours and 75 AMA PRA Category 1 Credits[™] issued.



Fifty three healthcare professionals attended the course.



Dr. Rayaz Malik, professor of medicine and assistant dean for clinical investigations, delivers a talk.

Live Activities



The surgical skills workshop was aimed at family doctors.

Minor Surgical Skills Workshop

This one-day training workshop on minor surgical skills for family physicians included lectures and skill-based training on minor surgical procedures in a simulated environment under expert supervision. 21 physicians completed this workshop. Accreditation: 123 Qatar Council for Health Care Practitioners (QCHP) hours and 123 AMA PRA Category 1 Credits[™] issued.



Dr. Bakr Nour, senior adviser to the dean at WCM-Q. delivered part of the program.

Sample Size Determination for **Clinical Research**

The course developed by Dr. Ziyad Mahfoud, associate professor of healthcare policy and research, with the support of the division of CPD, was designed to help researchers determine the sample size needed for their study. 102 healthcare professionals completed this course, which was offered twice. Accreditation: 268 Qatar Council for Health Care Practitioners (QCHP) hours and 122 AMA PRA Category 1 Credits[™] issued.



The workshop was designed to help researchers determine the correct sample size.



Dr. Ziyad Mahfoud.



The course explained how to implement the new worldwide periodontal and implant classification system.

Periodontics in practice: Where do I start and what I should be doing?

Dentists, dental hygienists, and dental assistants were invited to attend a two-day periodontics training course developed by CPD in collaboration with Dr. Hatem Algraffee, periodontist from the Royal London Hospital. The course explained how to implement the new worldwide periodontal and implant classification system, how to assess and screen patients with periodontal disease and to co-ordinate and execute a successful treatment plan. Fourteen Dentists completed this course. Accreditation: 103 Qatar Council for Health Care Practitioners (QCHP) hours issued.



The course was developed by CPD in collaboration with the Royal London Hospital.



The workshops showed healthcare professionals how software could be used to improve their research projects.

Certificate in the analysis of medical data: Applied biostatistics for health care professionals

A new series of workshops developed by Dr. Ziyad Mahfoud with the support of CPD, showed healthcare professionals from several institutions how to use computer software to analyze data by applying advanced biostatistical techniques to enhance the quality of their research projects. Participants, physicians, nurses, dentists, pharmacists, allied health professionals, students, researchers, and educators, who completed all three workshops and passed a test at the end of each one received the Certificate of Analysis in Medical Data.

 Introductory Applied Biostatistics for Health Care Professionals: 91 healthcare professionals completed this course, which was offered twice. Accreditation: 439.5 Qatar Council for Health Care Practitioners (QCHP) hours and 174 AMA PRA Category 1 Credits[™] issued.



The series was developed Dr. Ziyad Mahfoud and the Division of CPD.

- Intermediate Applied Biostatistics for Health Care Professionals: 84 healthcare professionals completed this course, which was offered twice. Accreditation: 377 Qatar Council for Health Care Practitioners (QCHP) hours and 155 AMA PRA Category 1 Credits[™] issued.
- Advanced Applied Biostatistics for Health Care Professionals: 64 healthcare professionals completed this course, which was offered twice. Accreditation: 323 Qatar Council for Health Care Practitioners (QCHP) hours and 113 AMA PRA Category 1 Credits[™] issued.

WCM-Q Grand Rounds 2019-2020

Physicians and healthcare practitioners are challenged with staying abreast of the latest developments in medicine and the constraints of demanding workloads. The need exists for a platform for physicians to attend high-quality lectures on developments in medicine, ask questions, and network with peers to promote interdisciplinary collaborations for improved patient care.



Dr. Liam Fernyhough, assistant professor of medicine at WCM-Q delivers his Grand Rounds lecture, A New Era of Anticoagulation.

WCM-Q Grand Rounds



Leading the Way with Clinical Ultrasound in Undergraduate Medical Education: 5 Ways You Can Contribute February 12, 2020

Gillian M Baty, MD Residency Program Director Department of **Emergency Medicine Weill Cornell Medicine**



March 8, 2020

Molecular Scientist, Department of Pathology Sidra Medicine Assistant Professor, Department of Pathology and Laboratory Medicine Weill Cornell Medicine-Qatar



Sumeja Zahirovic, MD Assistant Professor of Medicine Weill Cornell Medicine-Qatar



Oral Cancer: Basic Facts and Early Detection January 27, 2019

Dominique Laatz Oral Surgeon Dental German Center



The Emerging Role of Smart Wearable Devices in Cardiovascular Disease Prevention and Management February 24, 2019

Mohamed B. Elshazly, MD, FACC Cardiologist & Assistant Professor of Medicine Weill Cornell Medicine-Qatar Consultant Cardiology Aspetar Consultant Cardiology Hamad Medical Corporation

On the Emergence of Candida Pathogens

Kin-Ming (Clement) Tsui, PhD

Diagnosis of Low Back Pain April 28, 2019

WCM-Q Grand Rounds - Live (face to face)

The series welcomed up to 957 healthcare practitioners from both the public and private sector (Figure 4) who attended 17 face to face presentations delivered by WCM-Q faculty and alumni, WCM faculty, and renowned local and international experts on diverse topics relevant to the practice of the healthcare community of Qatar.



WCM-Q Grand Rounds Committee Members

The WCM-Q Grand Rounds, a regularly scheduled series, plays an integral role in providing formal opportunities for the professional development of the WCM-Q community and local healthcare practitioners on current issues related to healthcare. The series is developed by an interdisciplinary committee of experts in various areas of healthcare and research. The members are drawn from multiple divisions within WCM-Q as well as from our affiliates, thereby enabling us to identify and meet the practice gap of our diverse target audience.

WCM-Q Grand Rounds Committee Members

Thurayya Arayssi, MD, FACP, FACR, FRCP Senior Associate Dean, Medical Education and CPD Professor of Clinical Medicine WCM-Q	Mary Parrott, MA CPD Coordinator CNA-Q	Ameena Abdul Rahim, BSc, MSc Coordinator, Continuing Professional Development WCM-Q
Deema Al-Sheikhly, MRes, MEHP Director of Medical Education and Continuing Professional Development WCM-Q	Christopher Triggle, PhD Professor of Pharmacology WCM-Q	Safia Rabia, MSc Coordinator, Continuing Professional Development WCM-Q
Sheila Qureshi, PhD Senior Lecturer, Chemistry WCM-Q	Aicha Hind Rifai, MD Assistant Professor of Clinical Psychiatry WCM-Q	Maria Paiva, BSP, BCPS, PharmD Manager - Business Operations, Cardiac Program, PICU, & Infectious Disease SIDRA
Sohaila Cheema, MBBS, MPH Director, Institute for Population Health Assistant Professor of Healthcare Policy and Research WCM-Q	Laudy Mattar, BSc, MMI Manager, Continuing Professional Development WCM-Q	Therese Lanigan, Nurse Clinical Nurse specialist SIDRA
Reshma Bholah, MD Assistant Professor of Pediatrics WCM-Q	Dominique Laatz Oral Surgeon Team of German Dental Center	Sherry George, MSW, RSW, Department Chair Pharmacy Technician, Diabetes Educator & Allied Health Promotion School of Health Sciences College of North Atlantic-Qatar

Transforming activities online and offering new virtual activities

The Division of CPD was able to transform in-person continuing education activities to online webinar format in a short period of time: Virtual meetings increased attendance and geographical diversity of participants accredited locally by the Qatar Council for Healthcare Practitioners-Accreditation Department (QCHP-AD) and internationally by the Accreditation Council for Continuing Medical Education (ACCME): 7,351 healthcare professionals attended these new online activities. Accreditation: 6,709 Qatar Council for Health Care Practitioners (QCHP) hours, 1,854 AMA PRA Category 1 Credits[™] issued



New COVID-19 Live Webinar Clinical Series: This series was developed by WCM-Q's Division of Continuing Professional Development to allow the healthcare community in Qatar to discuss the challenges posed by the COVID-19 pandemic, its impact, recommended responses and treatment protocols.

New Biostatistics for Healthcare Practitioners Live Webinar Series: This new series was developed by the division of CPD as a four-part series where Dr. Ziyad Mahfoud presented the concept of both summary and inferential statistics. He explained, with examples from the literature, how to interpret those statistics. Concepts to be discussed are means, medians, interquartile ranges, standard deviations, odds ratio, relative risk, confidence intervals, and p-value.

Launching the Pearls of Grand Rounds: This is a new electronic scholarly activity published on the CPD website and aims to update the community and promote discussion on relevant topics in continuing medical education. Speakers at Weill Cornell Medicine-Qatar's regularly scheduled series share their 'pearls of wisdom' about their chosen field of interest.

New WCM-Q Grand Rounds delivered online: During the pandemic, the division of CPD altered the in-person delivery of the WCM-Q Grand Rounds series to an online modality to support the physicians and healthcare professionals in staying abreast of the latest developments in medicine and the constraints of demanding workloads.

New Launching the first online activity titled "Role of the Gut Microbiota in Health and Diseases." The CPD division collaborated with Dr. Ghizlane Bendriss on this new activity format developed to allow participants to connect online anytime from anywhere, to learn and apply best practices through digital learning. This enduring material is composed of five online modules providing an evidence-based update on the role of the Gut Microbiota in health and diseases.















WCM-Q Grand Rounds **Live Webinar Series**







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- We are social beings and we need strong interpersonal relationsh
- Our <u>first relationships lay the foundation</u> for all of our relationships i Babies are <u>tuned in</u> from the beginning and their attunement in re
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Biostatistics for Healthcare Practitioners Live Webinar Series



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 In Comparative studies where the goal is to compare a disease/outcome between two groups, the results are acc two groups that you are comparing are similar on demog clinical characteristics variables other than the one defin groups. 	urate if the graphic and ing them into
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Publications and Presentations

Al-Sheikhly D and Mattar, L (2019) Digital Tools to Engage Our Lifelong Learners. ACCME 2019 Meeting: Spring Forward, Chicago, USA.

Al-Sheikhly D (2019) Innovative Programs to Meet the Needs of an Evolving Healthcare System. ACCME 2019 Meeting: Spring Forward, Chicago, USA.

Al-Sheikhly D, Stadler D, Mattar, L, and Arayssi T (2019) Strategies for building a CPD Program in an undergraduate medical school: Lessons Learned. Medical Education Research Forum, Doha, Qatar.

Major S, Brisseau G, Vognsen J, Sawan L, and Al-Sheikhly D (2019). Caught 'Tween Appendix and Fallopian, Why Not Just Dilate the Designer Anus? Medical Education Research Forum, Doha, Qatar.

Mattar, L, Al-Sheikhly D, Aboulsoud, S, Gordon, J, Campbell, C and Arayssi T (2019). Continuing Professional Development Practice Gaps of Primary Care Physicians: A Perceived Needs Assessment. Medical Education Research Forum, Doha, Qatar

Presentation on "A systematic Review of Remediation Strategies for Learners Struggling with Communication Skills": Ms. Deema AI-Sheikhly represented Weill Cornell Medicine- Qatar at the International Association for Medical Education in Europe (AMEE) 2019 Conference in Vienna and gave a presentation to an international audience of medical educators. Thereby spreading the word on the type and quality of medical education research being conducted in Qatar.

The Division of CPD works in pursuit of its strategic objective:

"To enhance the knowledge and practice of the Qatari and regional physician workforce through graduate and continuing medical education."

Congratulations!

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Clinical and Faculty Affairs

The Office of Clinical and Faculty Affairs supports the appointment and promotion processes for all WCM-Q academic staff, which includes WCM-Q employed faculty, research associates, and postdoctoral associates as well as affiliated faculty employed by the affiliated institutions. The office also supports the implementation of policies, guides faculty towards their promotion; oversees the annual performance review process, maintains academic staff records, is the repository for academic staff data, and facilitates and monitors the licensing and credentialing of our faculty.

Academic Staff for Academic Year 2019-2020

EMPLOYED FACULTY	APPOINTED
Medical Education	43
Pre-medical Education	19
Research	16
Total	78

AFFILIATED FACULTY	APPOINTED
Hamad Medical Corporation	454
Aspetar	14
Primary Health Care Corporation	30
Sidra Medicine	199
Other Institutions	13
Total	710

Appointments and Promotions

WCM-Q Employed Faculty

During the AY 2019-2020, WCM-Q welcomed six new full-time faculty members and celebrated the promotion of three of our colleagues:

New appointments:



Dr. Amit Thomas Abraham was appointed as instructor in healthcare policy and research on September 1, 2019. He holds an MD from WCM-Q and a Master of Public Health from Johns Hopkins Bloomberg School of Public Health. He has been an invaluable member of IPH since 2011 is an active participant in public health teaching programs for pre-medical and medical students, where he has taught topics such as environmental health, nutrition, and chronic disease risk factors. His research interest is in non-communicable diseases and their risk factors.



Dr. Karima Chaabna was appointed as instructor in healthcare policy and research on September 1, 2019. She holds a PhD in epidemiology from Claude Bernard University Lyon, France and trained as a postdoctoral associate for two years at WCM-Q before joining IPH in 2016. Dr. Chaabna is an active participant in educational workshops for healthcare professionals and teaches community medicine residents at HMC. In addition, she has developed and led multidisciplinary research projects on population health issues in MENA with a focus on Qatar.



Dr. Fatimah Isa was appointed as instructor of psychology in medicine on September 1, 2019. She holds an MSc in health psychology from the University of Indonesia and a PhD in psychology (2019) from Grand Canyon University, Arizona. She also holds certifications in the Myers-Briggs Type Indicator (MBTI) as analyst from the MBTI Accreditation Board of Australia and in cognitivebehavioral therapy from the National Association of Cognitive Behavior Therapists, USA. In addition to overseeing the appointment and promotion process for the affiliated faculty, she advises and mentors the faculty on promotion strategies and contributes to the development and delivery of continuing professional education courses. Her research interest is in leadership development. Her recent research work has focused on the antecedent factors of transformational leadership, specifically leaders' selfefficacy and emotional intelligence.

Dr. Dalia Zakaria was appointed visiting lecturer in biology on September 22, 2019. She holds a PhD in microbiology and molecular biology from the University of Exeter, UK and she conducted postdoctoral training at the University of Bristol and the University of Cardiff. In 2016, she joined WCM-Q as a teaching specialist in biology. She has been a three-time recipient of the Excellence in Teaching Award (2017, 2018, and 2019) and was the most recent recipient of the Student Appreciation Award in 2019. In addition to her teaching role, she conducts research in the areas of immunology, microbiology, and molecular biology, with a focus on the role of gut microbiota in health and disease. She has co-authored several publications and presented at several international conferences.





Ms. Danielle E. Jones was appointed as visiting lecturer in English as a second language on September 22, 2019. She holds a Master of Studies in creative writing (2011) from the University of Oxford, UK and a Bachelor of Science in neuroscience and behavior from Columbia University, USA. In her career as a writer, Ms. Jones has co-authored several full-length play translations from the original French, the first of which won Best New Comedy in Canada from the Playwright's Guild of Canada and the last of which was commissioned by the United States Consulate General of Montreal. She is also a television and short film writer, whose work has been honored at international film festivals.

As an educator, Ms. Jones has taught a variety of courses to diverse student bodies of native speakers and English as a second language learners.



Ms. Jamie Marie Gray was appointed as associate librarian on December 1, 2019. Prior to joining WCM-Q in June 2017 as the director of the Distributed eLibrary, she served as part of the library leadership team at both Stanford School of Medicine's Lane Medical Library and the University of Washington Health Sciences Library. Her professional interests include interprofessional leadership, evidence-based practice, and the library's role in helping to address the social determinants of health. During her career, she has worked as part of the hospital team developing standardized pathways of care for pediatric patients, redesigned library curricular activities around information literacy and evidence-based practice, participated in the development of the RRAIN app for first responders, and codeveloped an employee wellness and recognition program tailored to the needs of the library. Ms. Gray holds a Master of Library Science degree from the University at Buffalo in New York and an MS in healthcare administration and interprofessional leadership from the University of California at San Francisco.

Promotions:



Dr. Ali A. Sultan was promoted to professor of teaching in microbiology and immunology in February 2020 in recognition of his sustained contributions to medical education. He has been the recipient of numerous teaching awards, has contributed extensively to developing and improving our basic science curriculum, and has played an important role, as a faculty and a leader, in the implementation of the new medical education curriculum. In addition to his remarkable record of service to the educational mission, Dr. Sultan has maintained an active research program, focuses primarily on malaria, antibiotic resistance and human microbiome. His work has been published in major journals such as Cell and Nature. Dr. Sultan holds an MD from the University of Khartoum, Sudan and a PhD from the University of Edinburgh, UK.



Dr. Joel A. Malek was promoted to associate professor of genetic medicine (investigation) on April 1, 2020 in recognition of his regional and international reputation as a researcher and his substantial contributions to genetic medicine. He has published his work in highly regarded journals in genetic medicine and plant genomics, including Nature Communications, American Journal of Cardiology, Journal of Translational Medicine, PLoS Genetics, BMC Genomics, and BMC Cancer. His most significant scholarly accomplishment is his innovative genomic research on date palm sex chromosomes. He is, without doubt, the world leader in date palm molecular genetics, a field of research that is culturally relevant to the State of Qatar and the Middle East. Dr. Malek holds an MS in biotechnology from Johns Hopkins University, USA and a PhD in molecular and cellular biology - oncology from the University of Paris XI, France.



Dr. Alice Abdel Aleem was promoted to associate professor of research in neurology on June 1, 2020 in recognition of her strong regional reputation as an expert who is highly regarded in the field of human genetics and neurogenetics. Her research has contributed to new knowledge that has advanced the primary prevention, diagnostics, and management of several types of neurogenetic disease. She has published in renowned journals in the fields of clinical and molecular genetics, such as Human Genetics, Neurology, Nature Genetics, Annals of Neurology, and Clinical Genetics. Dr. Abdel Aleem holds an MBBCh from the Faculty of Medicine and Surgery of Cairo University, Cairo, Egypt, an MSc in human genetics from the Faculty of Medicine, Ain Shams University, Cairo, Egypt, and a doctoral degree in clinical human genetics from a joint program between Ain Shams University and the Human Genetics Institute, Medical School Hannover, Germany.

Affiliated Faculty

Faculty at affiliated institutions play a valued role in supporting the college's mission in Qatar by overseeing the clinical education of WCM-Q students and contributing to our research programs. During the academic year 2019-2020, 51 colleagues from Hamad Medical Corporation (HMC), the Primary Health Care Corporation (PHCC), Aspetar, Sidra Medicine, and Qatar Foundation (QF) received academic appointments at Weill Cornell Medical College, four of them at senior level ranks. Among the new faculty, we welcomed Dr. Mohammed Ahmad Al-Hijji (HMC), a graduate of WCM-Q who joined the affiliated faculty after completing his training in cardiology.



Orientation events allow affiliated faculty to meet senior college leaders and to feel more connected to the college.

In addition, during this academic year, nine faculty members achieved promotion:

- Dr. Abdul Latif Mohamed Al Khal (HMC), promoted to professor of clinical medicine
- Dr. Noora Al-Hammadi (HMC), promoted to associate professor of clinical radiation oncology
- Dr. Nidal Ahmed Asaad (HMC), promoted to associate professor of clinical medicine
- Dr. Ibrahim Mohamed Fawzy Hassan (HMC), promoted to associate professor of clinical medicine and associate professor of clinical genetic medicine

- Dr. Kulsoom Junejo (HMC), promoted to assistant professor of clinical surgery
- Dr. Aisha Larem (HMC), promoted to associate professor of clinical otolaryngology
- Dr. Suruchi Mohan (Sidra Medicine), promoted to Assistant Professor of Clinical Obstetrics and Gynecology
- Dr. Nagham Dhiaa Sadik (HMC), promoted to assistant professor of clinical medicine
- Dr. Khaleel Mohammad Khaleel Salameh (HMC), promoted to assistant professor of clinical pediatrics

Activities and Events

Faculty orientation

In September 2019, WCM-Q hosted its annual faculty orientation for affiliated faculty. The event attracted more than 41 physicians with recent WCMC faculty appointments. The goal of this orientation is to help new faculty feel more connected with the college and promote faculty success. The program introduced new faculty to the many resources the college provides. Attendees had the opportunity to meet key senior leaders as well as other newly appointed colleagues and explore teaching and research opportunities.

Luncheon to honor promoted faculty

In September 2019, Dr. Javaid Sheikh, dean of WCM-Q, and Dr. Robert Crone, the then vice dean for clinical and faculty affairs, hosted a recognition luncheon to honor the 11 faculty members from WCM-Q, HMC, Sidra, and Aspetar promoted during the previous academic year. The event, that was attended by faculty and staff, aimed to recognize the faculty achievements as well as facilitate communication and collaboration between faculty from the different institutions.



The annual meeting between faculty from WCM-Q and WCM took place in February 2020 in New York.

WCM-NY and WCM-Q faculty affairs annual meeting

The annual meeting in New York took place in February 2020. In addition to meeting with several department chairs and administrations to discuss how to support faculty applying for promotion better as well as strategies to improve appointment and promotion processes, Dr. Alicia Tártalo, assistant dean for clinical and faculty affairs and Dr. Fatimah Isa, associate director for clinical and faculty affairs hosted the traditional appreciation luncheon, which was attended by Dr. Jane E. Salmon, WCM associate dean for faculty affairs and 44 other colleagues from WCM departments, divisions, and centers.



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Research

As part of its tripartite mission WCM-Q is committed to conducting cutting-edge research focused on the health needs of Qatar, and to augment Qatar's technical and human capacity to perform and sustain biomedical research in support of a knowledge-based economy. WCM-Q strives to achieve these goals in close partnership with partner biomedical stakeholders in Qatar, toward a common goal and by consolidating resources and knowhow. The specific focus of the WCM-Q research effort has been to improve our understanding of disease factors specific to the local population, including obesity/metabolic syndrome/ diabetes and neurogenetic abnormalities, and to enable more efficient healthcare delivery by ushering in the era of precision medicine in Qatar.

The research effort at WCM-Q has continued to enjoy significant success this year, with prominent findings in



The Division of Research is led by Dr. Khaled Machaca, senior associate dean for research, innovations, and commercialization.

the fields of diabetes, cardiovascular disorders and human metabolism. This includes fundamental discoveries that underpin the basic functions of the human body. Studies conducted into basic science include the molecular mechanisms of disease and translational and clinical research findings aimed at improving health and healthcare throughout the region.

An institution is judged upon the quality of the research it conducts and the studies which it publishes. WCM-Q faculty have also been exceptionally productive, especially for a young research program, with more than 1,200 papers published to date since 2010, garnering over 46,000 citations and leading to an institutional h-index of 80.

In support of the visions of the State of Qatar and Qatar Foundation (QF) to translate research products into applied commercially viable solutions for the benefit of the local population, WCM-Q faculty have been involved in three startups and WCM-Q has executed six industry-sponsored research agreements. In addition, we are in discussions with commercial partners for potential commercialization leads.

To support local research and promote scientific collaborations, our state-of-theart core laboratories have been functioning as national cores available to QF and all other national stakeholders. The cores include expertise in microscopy, histology, flow cytometry, miRNA, biostatistics, clinical research support, genomics, and proteomics.

Administration:

WCM-Q currently has 25 active research laboratories investigating areas ranging from basic molecular and cellular pathways to translational and clinical projects, including research into some of the most pressing health issues facing Qatar and the wider region, such as diabetes, obesity and neurogenetic abnormalities. Nine central core laboratories support the research effort, providing a range of cutting-edge expertise and platforms, including deep phenotyping of clinical cohorts. The cores comprise: genomics; imaging; basic; proteomics; bioinformatics & metabolomics; miRNA; biostatistics; clinical research support; and a vivarium.

FY20 is closing with more than 130 employees - including 22 non-faculty (postdoctoral and research associates). The majority of employees in the research division are hired locally and trained in our labs. In line with WCM-Q's commitment to supporting human capital development in Qatar, 215 research specialists and clinical research coordinators have been trained since 2009 as well as more than 400 volunteers and visiting researchers have gained experience in our laboratories up to the close of fiscal year 2020.



Dr. Frank Schmidt and team.

Funding:

Our faculty have been quite successful at garnering extramural support for their research efforts. Over the past 11 years, we have obtained over \$120M of competitively funded extramural funding through QNRF and other international institutions.

Collaborations:

Our functional and research model is based on a collaborative effort with national stakeholders to advance the agenda of Qatar on the healthcare, research and economic fronts. With that principle in mind, we continue to collaborate with local institutions and have active research programs with HMC, Sidra, QBB, QGP, ADLQ, QU and HBKU. This collaborative approach extends to supporting training efforts at local institutions with adjunct faculty appointments for WCM-Q faculty at QU and HBKU allowing them to host graduate students in WCM-Q labs to pursue their research activities.

WCM-Q designated as WHO Collaborating Center

Her Highness Sheikha Moza bint Nasser, chairperson of Qatar Foundation for Education, Science and Community Development, attended an event marking the official designation of a research group at WCM-Q as a World Health Organization (WHO) Collaborating Centre for combating COVID-19 and other selected infectious diseases in the region.



Infectious Disease Epidemiology Group (IDEG) at WCM-Q will support WHO's regional and global efforts to promote health and wellbeing by providing scientific research and advice to inform policy decisions and public health programs in the Eastern Mediterranean Region (EMR). Led by Dr. Laith Abu-Raddad, WCM-Q professor of infectious disease epidemiology, IDEG has a special focus on viral hepatitis, which is especially prevalent in EMR countries and is one of the leading causes of deaths globally. The group contributed to efforts in combatting the spread of HIV/AIDS, reproductive tract infections, and, more recently, COVID-19. Since the start of the COVID-19 pandemic, IDEG has spearheaded WCM-Q's efforts to work closely with the Ministry of Public Health (MOPH) in Qatar and Hamad Medical Corporation (HMC) as they confront the infection's spread, working with healthcare and policy experts to provide scientific

Under the new designation, the

technical analyses that has supported the COVID-19 national response. The designation of the IDEG comes after a decade of high-profile studies on the epidemiology of infectious diseases on the national, regional, and international levels, which has helped inform public health policy and programs. The group will carry out activities in support of key WHO programs aimed at combating the spread of infectious diseases, specifically HIV/AIDS and hepatitis, that have a severe negative impact on the health and wellbeing of communities all over the EMR and beyond. This means that Qatar, thanks to its investment in biomedical research infrastructure and scientific human capital in recent years, will be host to a valuable resource working to promote the health and wellbeing of people right across the region and globally. This official designation of the IDEG as a WHO Collaborating Centre has been made possible by the support provided to WMC-Q by Qatar Foundation, the Ministry of Public Health and the visionary leadership of the State of Qatar.



HH Sheikha Moza bint Nasser, chairperson of Qatar Foundation (center) with HE Dr. Hanan Mohamed Al Kuwari, minister of public health (left) and Dr. Javaid Sheikh, dean of Weill Cornell Medicine - Qatar

Recognition/Awards:

Weill Cornell Medicine-Qatar was named the Best Research Office for 2019 at the 11th Annual Forum of Qatar National Research Fund (QNRF).

The honor was bestowed by QNRF on WCM-Q, a QF partner institution, for showing diligence in support of QNRF's processes and research efforts.

WCM-Q was also awarded grants for nine research proposals for studies investigating breast cancer, diabetes, heart disease, dementia and the potential impact of climate change on the built environment in Doha, among others. In addition, WCM-Q will serve as a sub-awardee on five other research grants awarded to collaborating institutions.

Dr. Laith Abu-Raddad

Publications:

WCM-Q study reveals role of chlamydia infections in infertility among women in MENA region

Researchers at WCM-Q discovered unexpectedly high levels of chlamydia infection among the general population in the Middle East and North Africa (MENA), and higher levels still among women in the region who are infertile or suffer pregnancy complications.

The research, published in the prestigious UK journal *The Lancet Global Health*, reports that chlamydia infection appears to be responsible for a substantial proportion of infertility cases among women in this part of the world.

The study, 'Epidemiology of Chlamydia trachomatis in the Middle East and North Africa: a systematic review, meta-analysis, and meta-regression', was conducted at WCM-Q with funding from Qatar National Research Fund (NPRP 9-040-3-008). Funding was also provided by the WCM-Q Biomedical Research Program.

WCM-Q teams with US pharma company to develop new cholesterol drug

WCM-Q signed a research agreement with pioneering US biotechnology company Moderna, Inc. to develop a new cholesterol-controlling drug that could lead to radically improved treatments for type 2 diabetes and cardiovascular disease.

Under the agreement, Moderna, which is based in Cambridge, Massachusetts, will sponsor a study by WCM-Q researcher Dr. Hani Najafi to develop and test a new therapy for rebalancing levels of circulating blood lipids by effectively increasing the clearance of atherogenic lipids and enhancing the production of functional, anti-inflammatory lipid species.



Dr. Hani Najafi will develop and test a new therapy for balanacing blood lipids.



The Division of Research undertakes biomedical research at the basic, translational and community levels, to address the most pressing health needs in Qatar and the wider region.

WCM-Q research probes causal link between obesity and diabetes

Researchers at WCM-Q made new discoveries that could help explain a problem that has perplexed scientists for years – why do some obese people get type-2 diabetes while others do not?

The multi-institutional team of researchers, led by WCM-Q's Dr. Nayef Mazloum, analyzed blood samples from 107 people resident in Qatar and identified significant differences in the metabolites of those who were obese but insulin sensitive and did not have type 2 diabetes compared to equally obese individuals with insulin resistance and/or type-2 diabetes.

The team comprised researchers from WCM-Q, Qatar Biomedical Research Institute, the Biomedical Research Center (BRC) at Qatar University, the Royal College of Surgeons in Ireland – Bahrain, and the University of Groningen in the Netherlands. The research, titled 'Metabolic signature of obesity-associated insulin resistance and type 2 diabetes', was published in the Journal of Translational Medicine.

Support for the study was received from QNRF (NPRP8-059-1-009) for this study, as well as the Biomedical Research Program of WCM-Q.

WCM-Q and HMC doctors publish book to boost physician communication skills

Doctors at WCM-Q and Hamad Medical Corporation (HMC) published a book to help medical students and postgraduate doctors enhance their ability to communicate with patients and pass their clinical exams.

Dr. Rayaz Malik of WCM-Q and HMC, Dr. Wanis H. Ibrahim and Dr. Mushtaq Ahmed of HMC, and Dr. Muhammad A. Waheed of Northampton General Hospital in England, who was formerly an HMC physician, drew on their collective experience of many years as practicing physicians and postgraduate examiners to write the book, titled *History Taking and Communication Skill Stations for Internal Medicine Examinations.*

History Taking and Communication Skill Stations for Internal Medicine Examinations is published by JP Medical Publishers in London and New Delhi and has the ISBN number 978-1-909836-99-0.

WCM-Q research helps identify body's 'detox' genes

Researchers at WCM-Q contributed to an international study which identified 90 genes that together determine how the human metabolism works to allow the body to rid itself of toxins via the kidneys.

The laboratory of Dr. Karsten Suhre, director of the bioinformatics core at WCM-Q, helped to analyze vast amounts of genetic and metabolic data collected from the 1,600 participants in the study, which was led by the University of Freiburg in Germany. The study involved researchers at institutions in Austria, Germany, the US and Qatar and was published in *Nature Genetics*, a world-renowned biomedical research journal.

The research sheds light on the genes that influence metabolism and detoxification of the body via the kidneys and urine and whose roles in these processes were previously largely unknown.

The work of Dr. Suhre was supported by the Biomedical Research Program at WCM-Q.

WCM-Q project probes anti-cancer properties of plant-based compounds

A large-scale international research project led by scientists at WCM-Q painstakingly reviewed the anti-cancer properties of dozens of naturally occurring compounds found in plants.

Researchers at WCM-Q and contributing institutions in India, Korea, Taiwan, Slovakia, Poland and the Czech Republic analyzed thousands of research papers to uncover the tumor-busting effects of compounds found in a long list of plant or plant-derived natural products, including tea, berries, grapes, carrots, fungi, garlic, nuts, cardamom, turmeric, vitamin C, wasabi, mustard, lichen and many more.

The results of the investigations were published in a series of 17 articles (10 review articles and seven research papers) in a special issue of the journal *Biomolecules* that was commissioned by the publishers following the success of an earlier paper by WCM-Q's Dr. Dietrich Büsselberg, which investigated the effects of various natural compounds on 'triple-negative' breast cancers, a highly aggressive, treatment-resistant form of the disease. That paper, titled The Yin and Yang of Natural Compounds in Anticancer Therapy of Triple-Negative Breast Cancers, was published in the journal *Cancers* in September 2018.

Dr. Büsselberg and his team were supported by NPRP grant (NPRP 11S 1214 170101) from the QNRF.



WCM-Q researchers Dr. Dietrich Büsselberg and Dr. Samson Mathews Samuel were central to a large-scale international research project investigating the anti-cancer properties of dozens of plant-based compounds.

WCM-Q researchers discover anti-cancer properties of a popular diabetes drug

Researchers at WCM-Q are hoping they may have found a therapy for multiple types of cancer using a widely-used diabetes drug.

Writing in the journal *Cancers*, the scientists believe that the drug metformin may have anti-cancer properties when used in conjunction with other therapies.

Dr. Samson Samuel, research associate in physiology and biophysics at WCM-Q and lead researcher on the paper, said the investigation was initiated after it was noticed that diabetics who have been using metformin to control their condition have lower instances of certain types of cancer, namely breast cancer, colorectal cancer, pancreatic cancer and prostate cancer, all of which are of particular concern in the Middle East.

Work began to examine the phenomenon in the laboratory using cells, and was supported by the NPRP grant (NPRP: 04–910-3–244), the Junior Scientist Research Experience Program grant (JSREP: 03–016-3–009), and BMRP grant and pilot project grant.

Researchers say COVID-19 could be stopped with even a moderately effective vaccine

Researchers at WCM-Q and Qatar University argued that even a moderately effective vaccine could be enough to stop the current coronavirus pandemic.

The study – Epidemiological impact of SARS-CoV-2 vaccination: mathematical modeling analyses – was funded by NPRP grant number 9-040-3-008 and NPRP grant number 12S-0216-190094 from the Qatar National Research Fund, and was conducted by the Infectious Disease Epidemiology Group at WCM-Q in collaboration with Dr. Houssein Ayoub from QU.

Using mathematical modeling of COVID-19 spread in China, the scientists argue that a vaccine that reduces susceptibility to contracting the infection by more than 70 per cent is needed to eliminate the infection.

WCM-Q researchers help reprogram bacteria cells to deliver anti-cancer drugs

Researchers at WCM-Q have taken part in a landmark international study in which bacteria cells were reprogrammed to synthesize and deliver a potent anti-cancer drug.

The WCM-Q researchers worked with scientists at the University of Oxford and the University of Sheffield in the UK and the University of Greifswald in Germany to help construct reprogrammable cells from three species of bacteria, *Escherichia coli, Pseudomonas putida,* and *Ralstonia eutropha*.



Dr. Laith Abu-Raddad heads the Infectious Disease Epidemiology Group.

In the study, titled 'Chromosomefree bacterial cells are safe and programmable platforms for synthetic biology', the research team used reprogrammed SimCells to synthesize catechol (a potent anticancer drug) from salicylic acid to inhibit lung, brain, and soft-tissue cancer cells in the lab. They also demonstrated that SimCells can be used as a 'safe agent' to manufacture and deliver therapeutic drugs because they cannot replicate and do not interfere with the host genome as they do not have chromosomal DNA.

Dr. Frank Schmidt, director of the proteomics core at WCM-Q, is one of the authors of the paper, which has been published in the Proceedings of the National Academy of Sciences of the United States of America (PNAS), a high-profile journal.

WCM-Q's contribution to the study was supported by the Biomedical Research Program at WCM-Q, a program funded by Qatar Foundation.



Dr. Frank Schmidt, director of the proteomics core at WCM-Q

WCM-Q research links proteins to diabetes

Researchers at WCM-Q and the University of Iceland identified a group of proteins that are involved in causing type 2 diabetes in humans.

Using advanced analysis techniques, the researchers measured over 4,000 different proteins in blood samples from more than 5,000 Icelandic individuals and identified 536 proteins that were associated with type 2 diabetes. They confirmed their findings with the results of the Qatar Metabolomics Study of Diabetes, a 2012 study of 374 human subjects conducted in Qatar by Hamad Medical Corporation and WCM-Q.

Following further analysis, the researchers determined that 15 proteins appear to have a causal role in the development of type 2 diabetes, while a further 23 proteins are markedly more prevalent in blood after the development of the condition.

The research was based on samples of elderly Icelandic individuals and was conducted in collaboration with scientists at the University of Iceland in Reykjavik, the Icelandic Heart Association, GNF Novartis in San Diego, California, and the Novartis Institutes for Biomedical Research in Cambridge, Massachusetts. The study – titled "Circulating protein signatures and causal candidates for type 2 diabetes" – was published in *Diabetes*, the journal of the American Diabetes Association.

The research was supported by the Biomedical Research Program at WCM-Q, a Qatar Foundation partner university. Dr. Suhre's work is also supported by QNRF grant NPRP11C-0115-180010 to the Qatar Diabetes Prevention Program (QDPP), a cluster of research projects aiming to understand the disease in greater detail and pave the way for new treatments.

Training and Outreach

WCM-Q remains committed to the training of Qatari nationals and long-term residents in all aspects of biomedical research, from from the bench and the clinic through to administration and regulation.

This is accomplished primarily through three training programs designed to build capacity within Qatar and which give priority to Qatari nationals. These programs are:

The **Biomedical Research Training Program for Nationals** continues to train recent national graduates from local universities, with more than three dozen graduates to date. Nearly 100% continue their graduate studies after our program and/or obtain positions at biomedical institutions in Qatar. For this period, one of last year's interns managed to get three publications after her training program ended and she was awarded a GSRA in September 2019 by QNRF.

The Research Internship for National College Students continues to attract national college students pursuing their studies in biomedical research-related fields. To date, over half a dozen students have completed the program.



WCM-Q invests a great deal of time and efffort into offering reserach opportunities to young people and Qatari nationals

Two Qatari nationals with a flair for science completed a summer of biomedical research training courtesy of the WCM-Q Research Internship for National College Students program. Hissa Al-Thani and Noora Abusheraida, both students at Qatar University, completed the program, which is designed to give Qatari nationals a solid grounding in the practical and administrative skills required for a successful career in research.

The **Research Internship for National High School Students** continues to inspire high school students to explore the field of research. This year we trained over a dozen national high schoolers in biomedical research. The training program covered workshops designed specifically for high school students to enhance their abilities in communication, note taking, planning, and they had several modules introducing them to the basics of biomedical research laboratories and research administrations. As research is an integral part of physician training at WCM-Q the institution offers three programs that students can apply for to enhance their research skills and better prepare them for residency and their clinical career. These are:

Student Research Mentorship Program (SRMP). This year, six second year WCM-Q pre-medical students were awarded. The award aims to train students in securing labs and writing research proposals, give the students the tools needed to seek out research opportunities, and train students in approaching and resolving a research question rigorously. The SRMP provides funding for yearlong research projects in any of WCM-Q's research laboratory. One student has already published a review article in the International Journal of Molecular Sciences and is in the process of writing a new one. Three other students have submitted a review to Frontiers in Nutrition.

Medical Student Research Award

(MSRA). WCM-Q continues to provide opportunities for WCM-Q students to become involved in research before they graduate. This year, almost 80% of first year WCM-Q medical students applied to the MSRA to conduct research rotations internationally. Three of the students have published their study results in the Nature group and BMJ journals.

Presentation Award (PA). The

Research Division also funds students to present the results of their research in professional meetings through the Presentation Award. To date, over a dozen WCM-Q medical students have disseminated their research findings at international conferences through this program which supports the ultimate publication of their research.

The **Student Research Association** has also been working hard to ensure that their fellow students are able to utilize

research opportunities at WCM-Q by hosting journal clubs and organizing competitions for presenting research articles. The association presented awards for the SRA journal club competition during the research retreat that took place early in 2020.

External funding opportunities within Qatar (QNRF):

The High School Research Experience **Program (HSREP)** is a Qatar National Research Fund sponsored program designed especially for high school students in line with QNRF's mission of supporting original research across all levels. This program aims to build a solid research foundation in students before they pursue their undergraduate studies by introducing them to research design and methodologies in various disciplines. WCM-Q received its first HSREP grant this year: under the grant, WCM-Q will train two high school students from independent government schools in Qatar.

The **Undergraduate Research Experience Program (UREP)** is also a QNRF sponsored program designed to give undergraduate students hands-on research experience. WCM-Q has been awarded 117 UREP grants since the UREP program was first launched. During the past year the UREP program enabled WCM-Q to provide research training to 28 students across eight projects.

Researchers at WCM-Q won 1st place in the 12th annual Undergraduate Research Experience Program, run by QNRF. The project, titled "Role of the Human Gut Microbiota in Autism Spectrum Disorders and Inflammatory Bowel Diseases" was led by Dr. Ghizlane Bendriss, lecturer in biology. Her research team, comprised of two other faculty mentors and six students, was awarded first prize in recognition of the important achievements and outcomes of this project.

Events

To date, WCM-Q's research division has hosted more than 200 departmental seminars, 14 international conferences and multiple local conferences and workshops focusing on diverse areas. The special research seminar delivered three presentations in FY 2019-2020 (see Table 1).

Table 1:

Special Research Seminars

DATE	SPEAKER	TOPIC
August 28, 2019	Suzanna Schmeelk, Ed.D., DPS, Assistant Professor of Cybersecurity St. John's University, New York (NY), USA	Healthcare Information Security HHS-OCR Data Breach Research 2018 - 2019
December 15, 2019	Dr Arend Kuester Director Funder Relations - Springer Nature	Making Your Research Count!
February 5, 2020	Dr Jonathan Soboloff Professor, Fels Institute for Cancer Research Professor, Dept. of Med Gen & Mol Biochem Member, FCCC Blood Cell Development & Function Program	Roles of STIM- dependant Ca2+ Signals in T Cell Activation and Differentiation



Dr. Alice Abdel Aleem organized the conference on congenital dystrophies, neuromuscular disorders and precision medicine.

Notable Research Events For FY20:

1st Mini Symposium on Proteomics, September 11-12, 2019

Proteomics is the large-scale study of all the proteins in a cell – a proteome is the complete set of proteins produced in an organism - and the two-day symposium saw researchers from a variety of organizations including Hamad Medical Corporation, Sidra Medical and Qatar Biomedical Research Institute gather to hear about the potential applications of proteomics and how advances in the subject is providing data that will impact upon many other areas of medicine and biomedical research.

The mini-symposium was organized by Dr. Frank Schmidt, assistant professor of biochemistry at WCM-Q, and director of the college's Proteomics Core.

1st Preceptorship Atopic Dermatitis, November 29-30, 2019

The two-day Global Preceptorship Meeting brought in world-leading experts in the field of atopic dermatitis who are pioneers in this area, and whose contributions led to a new understanding and better treatment of this complex and most frequent inflammatory skin disease. The meeting featured interactive discussions about the pathophysiology, the diagnosis, assessment and complex therapies of Atopic Dermatitis, and discussed means to improve the quality of life of the affected patients.

Congenital Dystrophies-Neuromuscular Disorders Precision Medicine, January 11-13, 2020

The three-day conference took place at Qatar National Conference Centre and involved experts from the region, Europe and the US lecturing on a variety of topics surrounding neuromuscular disorders, with particular reference to congenital dystrophies and myopathies. These conditions are prevalent in Qatar and the wider Gulf, with the conference also focusing on the potential for personalized medicines and new, emerging treatments as well as the challenges in implementing the therapies. The third day of the conference was open to the public and allowed members of the community and patients' families to meet and discuss issues with the international experts and local physicians.

The event was organized by Dr. Alice Abdel Aleem, assistant professor of research in neurology, and assistant professor of research in neuroscience at WCM-Q, and consultant in clinical genetics at Hamad Medical Corporation. The conference was funded by a grant from Qatar National Research Fund, a member of Qatar Foundation, under its Workshop Conference Sponsor Program Cycle 16.

10th Annual Research Retreat, February 22, 2020

The retreat featured presentations from young and established researchers at WCM-Q who have built a significant portion of their career in Qatar with considerable success. This was followed by the poster session that featured close to 100 posters from students, research specialists, postdoctoral fellows and research associates at WCM-Q. The posters were judged by scientists from various institutions in Qatar, including Hamad Bin Khalifa University, Sidra Medicine, Carnegie Mellon University in Qatar, Anti-Doping Lab Qatar, Hamad Medical Corporation, Qatar Biomedical Research Institute, Qatar University and Qatar Foundation.

WCM-Q recently instituted the Mariam Astrolabi Award for Biomedical Research Advancement, an award for institutions and/or individuals who have had an indelible impact on advancing the biomedical research enterprise in Qatar, in support of WCM-Q efforts and mission. This year's awardee was Dr. Asma Al-Thani, the founding dean of the College of Health Sciences at Qatar University and the founding director of Qatar University's Biomedical Research Center (BRC) for her contributions to the establishment of both the Qatar Genome Project and the Qatar BioBank.



Population Health

Institute for Population Health

Health is a shared responsibility; it matters to everyone and is the foundation of every society. The Institute for Population Health (IPH) takes pride in following the principle that health problems are best addressed by cooperative actions, approaches guided by experience and sound scientific research. The institute focuses on improving people's health. There is more to a healthy population than just medical treatment and surgical procedures. It is important to look beyond the narrow lens of the medical field and consider lifestyle factors, the environment and other health determinants to achieve optimum health outcomes. IPH designs, develops and implements, and supports, when necessary, programs and activities to reduce premature mortality, prevent chronic disease, promote health and improve the quality of life for the population in the State of Qatar, the region and beyond. IPH guiding principles are aligned with the Qatar National Vision 2030 and its national strategy - whereby IPH collaborates with local and global partners; has established innovative educational courses; engages in population health research; and empowers people and communities to enhance their capabilities aimed at health promotion and disease prevention



IPH Team Members

Ravinder Mamtani, MD, MSc, FACPM, FACOEM, ABolM, Dip ABLM Vice Dean for Admissions -Student Affairs, Population Health and Lifestvle. Medicine, Professor of Population Health Sciences and Professor of Medicine

(Center for Global Health)

Karima Chaabna, PhD

Population Health and

and Instructor of

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Amit Abraham, MD, MPH Project Specialist and Instructor of Population Health Sciences

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Educational Programs and Activities

Capacity Building Programs for Healthcare Professionals

IPH offers needs-based innovative continuing medical education (CME)/continuing professional development (CPD) programs for healthcare professionals in Qatar. Activities are learner-centric (didactic and interactive discussions) utilizing synchronous, asynchronous and hybrid approaches to address the needs of all learners. From 2014 to 2020, 1,843 healthcare professionals have attended and participated in IPH activities (Figure 1). Activities are designed and implemented by IPH and accredited by the Qatar Council for Healthcare Practitioners (QCHP) and/or Accreditation Council for Continuing Medical Education (ACCME). The CME/CPD credits which healthcare practitioners gain can also be utilized for re-licensure.

IPH CME/CPD Activities 2014 - 2020 | 1843 attendees



Figure 1

In 2019-2020, IPH offered 10 CME/CPD activities attended by health professionals (Figure 2). With the onset of COVID-19 in Qatar, all face-to-face CME/CPD activities from March 9, 2020 were postponed.

IPH CME/CPD Activities 2019-2020 | 305 ATTENDEES



IPH capacity-building activities and programs for the year 2019-20

Healthcare Workshop

S	Pharmacists	Dentists	Professionals	Others
	3	2	7	15
	1	0	3	17
	0	0	1	6
	1	1	2	4
	1	2	10	17
	9	3	18	24
	3	0	3	10

Lifestyle Medicine Interest Group - Qatar (LMIG-Q)

Evidence tells us that a vast majority of chronic diseases can be prevented, treated and often reversed with lifestyle measures such as healthy food, good nutrition practices, physical activity, stress management, good sleep hygiene, social connectedness and cessation of smoking and other risky substances, all of which are the core pillars of lifestyle medicine, an emerging discipline in healthcare. Dr. Ravinder Mamtani and Dr. Sohaila Cheema co-founded the Lifestyle Medicine Interest Group - Qatar (LMIG-Q). LMIG-Q supports and cultivates a community of dedicated professionals who strive to promote healthy behaviors and lifestyles to reduce the burden of disease and improve the health of future generations. Currently, LMIG-Q has over 400 members.

https://qatar-weill.cornell.edu/institute-for-population-health/lifestyle-medicine-interest-group-qatar



A cookery competition was held as part of Lifestyle Medicine Week 2019.

Certificate in Lifestyle Medicine



The Certificate in Lifestyle Medicine was designed to provide healthcare professionals with the knowledge to help chronic lifestyle related conditions.

To provide rigorous training, equip healthcare professionals with lifestyle medicine education (knowledge and skills) and competencies to aid in the prevention, evaluation and management of lifestyle-related chronic health conditions, which are currently the leading causes of premature mortality around the world, IPH developed and implemented a 60-hour Certificate in Lifestyle Medicine course. It consists of a 30-hour, five-day face-to-face component and an asynchronous 30-hour online component consisting of the Foundations of Lifestyle Medicine Board Review Course 2nd Edition course.

http://qatar-weill.cornell.edu/event/certificate-in-lifestyle-medicine https://qatar-weill.cornell.edu/media-and-news/news/story/wcm-qcourse-leading-the-way-in-battle-against-lifestyle-related-diseases

International Board of Lifestyle Medicine Exam

The International Board of Lifestyle Medicine (IBLM) sets and maintains global standards for assessment and credentialing of physicians and other health professionals in lifestyle medicine (LM). Becoming board certified in LM signifies specialized knowledge in the practice of evidence-based LM and distinguishes a health professional as having achieved competency in LM. IPH supported the IBLM in offering a board certification examination in Qatar. The inaugural IBLM exam was held at Weill Cornell Medicine-Qatar on February 15, 2020 for healthcare professionals.

Understanding Basics of Health Research

This new two-day 14-hour workshop focuses on the key principles of health research. Topics include study design, introductory epidemiology and biostatistics, and research methodology. Undertaking the course allows healthcare professionals to improve their knowledge and skills to review, evaluate and interpret published research and available evidence. This enables them to practice evidence-based medicine ultimately leading to improved patient outcomes.

http://qatar-weill.cornell.edu/event/understanding-basics-of-health-research https://qatar-weill.cornell.edu/media-and-news/news/story/wcm-q-workshopboosts-health-research-in-qatar

Systematic Review: An Introductory Workshop

It is well established that systematic reviews provide invaluable guidance on evidence-based healthcare and medical practice and inform best practices in public health, research and education. This workshop introduces participants to the process of conducting a rigorous systematic review based on scientific principles, systematic methodology and standardized guidelines.

https://qatar-weill.cornell.edu/event/srw/

https://qatar-weill.cornell.edu/media-and-news/news/story/wcm-q-systematic-review-workshop-boosts-scientific-rigor-in-medical-research



Systematic Review - An Introductory Workshop September 2019

IPH Contribution to WCM-Q Pre-Medical and Medical Education

IPH faculty and staff contribute across the continuum of the premedical and medical curriculum at WCM-Q. Key contributions are highlighted.

	Γ	Health and Disease: A Global Perspective - Foundation/Premedical Course Director/Faculty: Dr. Ravinder Mamtan and Dr. Sohaila Cheema. Faculty: Dr. Sathyanarayanan Doraiswamy, Dr. Amit Abraham & Ms. Maha Elnashar
נו		
		Essential Principles of Medicine and Health Illness & Disease II (Medical) Dr. Ravinder Mamtani & Dr. Sohaila Cheema
ובתורמו		Complementary and Alternative Medicine, Health Systems and Global Health, Epidemics and Physician Response
5		
		Infectious Disease Outbreak: A Public Health Response (Medical) Course Sponsors/Faculty: Dr. Ravinder Mamta
2		& Sohaila Cheema. Faculty: Dr. Sathyanarayan Doraiswamy, Dr. Amit Abraham COVID-19 Elective (Medical): Invited faculty: Glo Health Implications of COVID-19 Dr. Sobaila Chee



Drs. Karima Chabnaa, Sohaila Cheema, Sonia Chaabane and Amit Abraham, all from the Division of IPH, with participants of the Systematic Review.

ni	Area of Concentration Global Health (Medical) Mentors: Dr. Ravinder Mamtani and Sohaila Cheema Co-mentors: Dr. Karima Chaabna / Dr. Sathyanarayanan Doraiswamy
	Medical education orientation, Know your community and patient perspective, Bias and stereotyping, Cross-Cultural Communication at
;	for the US (Medical) Ms. Maha Elnashar & Ms. Huda Abdelrahim
ani nan lobal ema	Healthcare and Public Health Clerkship (Medical) Course Director & Associate Course Director/Faculty Dr. Ravinder Mamtani & Sohaila Cheema Faculty: Dr. Sathyanarayanan Doraiswamy, Dr. Amit Abraham

IPH offered the following elective opportunities to WCM-Q medical students.

Global Health Opportunities for WCM-Q and non-WCM-Q Students



An Evidence-Based Approach to Lifestyle Medicine A four-week clinical elective course supported and guided by the American College of Lifestyle Medicine is available to WCM-Q senior medical students. The elective provides knowledge and skills required in the prevention and treatment of lifestyle-related chronic disease.

Population Health and Primary Care Perspectives Elective Senior medical students from WCM-Q and around the world are eligible to apply for this four-week elective.

During the elective, students are introduced to various global health topics with a focus on population health and primary healthcare.

Infectious Disease Outbreak: A Public Health Response

During the COVID-19 outbreak in Qatar, IPH developed and implemented a new four-week elective for WCM-Q students titled, 'Infectious Disease Outbreak: A Public Health Response' in collaboration with the Ministry of Public Health (MOPH), Qatar. The elective focused on the public health approach in controlling epidemics and pandemics such as COVID-19 and influenza. This elective was designed to enable students to gain knowledge and skills required to control an infectious disease outbreak and experience working with the MOPH during the current outbreak, while also contributing to efforts to contain the spread of the virus. Seven third-year medical students enrolled in the elective.

https://gatar-weill.cornell.edu/media-and-news/news/story/ wcm-q-students-learning-lessons-of-covid-19-outbreakwith-moph-doha

Global Health Service Learning Program: Service learning is widely accepted as a form of experiential education which can provide students with the foundations for emphasizing the relevance and realities of global health. Students are able to engage in activities that address human and community needs together with structured opportunities intentionally designed to promote student learning and development

IPH sponsored six first year premedical students to participate in the Global Health Service Learning Program for two weeks in August 2019. Dr. Sohaila Cheema and Dr. Amit Abraham accompanied the students. The service learning primarily took place at an Orthopedic & Rehabilitation Hospital in Ho Chi Minh City, Vietnam. Students also had the opportunity to work alongside special needs children. The students were able to examine the healthcare system in a lower middle-income country; develop medical knowledge commensurate with their level of experience and education; identify challenges associated while working with special needs children & develop understanding of a new culture and the working environment.

https://gatar-weill.cornell.edu/institute-for-population-health/education/ detail/global-health-service-learning-program



Global Health Service Learning Program August 2019

The Global Educational Exchange in Medicine and the Health Professions (GEMx) is a worldwide partnership of exchange in medical education that connects medical schools, students and faculty worldwide administered by the Educational Commission for Foreign Medical Graduates (ECFMG), USA. WCM-Q is a partner school with GEMx. Dr. Ravinder Mamtani is the past chair of the GEMx Advisory Committee, while Dr. Sohaila Cheema serves as the manager for the GEMx program at WCM-Q.

http://gatar-weill.cornell.edu/institute-for-population-health/education/ detail/gemx

In September 2019, IPH welcomed a 6th year medical student from Ain Shams University in Cairo to the college through GEMx. Mohamed Wafa Khoudeir, originally from Syria spent four weeks at WCM-Q taking the population health and primary care perspectives elective course.

https://gatar-weill.cornell.edu/media-and-news/news/story/wcm-gwelcomes-international-medical-student-to-gatar



The Institute for Population Health is concerned with educational activities, research initiatives and community health awareness to improve the health of all people in Qatar.

Invited Presentations

various topics for healthcare professionals in 2019-2020 (Figure 3).

Serving the pandemic crisis: Stress and lifestyle management Dr. Ravinder Mamtani University of Delhi Webinar Jun 27, 2020

The evolving face of the COVID-19 pandemic Dr. Ravinder Mamtani WCM-Q Division of CPD - COVID-19 Live Webinar Clinical Series Jun 24, 2020

Introduction to Emotional Intelligence Ms. Maha Elnashar & Ms. Huda Abdelrahim Neonatal Intensive Care Women Wellness & Research Center, Hamad Medical Corporation Dec 16, 2019

Evolving face of Public Health & Public Health Aspects of Nutrition Dr. Ravinder Mamtani Communication in Public Health Contexts Dr. Sohaila Cheema PHCC Community Medicine Residency Seminars Dec 5, 2019

Panel discussion: Global public health issues and strategies for the future Dr. Ravinder Mamtani Qatar Public Health Conference Nov 18, 2019

Workshop on Lifestyle medicine: New methods for healthcare delivery Dr. Ravinder Mamtani, Dr. Wayne Dysinger and Dr. Sohaila Cheema Qatar Public Health Conference Nov 18, 2019

Figure 3: IPH Invited Presentations

IPH faculty and staff were invited by entities in Qatar/internationally to present on

Health and Well Being and Public Health and Well Being Dr. Sohaila Cheema Virginia Common University-Qatar HUSI 491 Wellbeing course Sep 11 & Sep 18, 2019 Jan 13 & Feb 3, 2020

An Evidence-based approach to complementary and alternative medicine and its promise Dr. Ravinder Mamtani Hamad Medical Corporation - Internal Medicine Grand Rounds Nov 17, 2019

An Evidence-based Approach to Acupuncture Dr. Ravinder Mamtani Aspetar Tuesday Lecture Series Sep 17, 2019

A. Research

IPH's research program adheres to and advocates for a robustly evidence-based approach to population health, both in the State of Qatar and in the wider region.



Figure 4- IPH Research Themes

Utilizing various methodologies and diverse analytical tools, IPH conducts rigorous population-based health-related research with the ultimate aim of producing reliable data which is beneficial to policymakers, clinicians, educators and researchers.



The Division of IPH is led by Dr. Ravinder Mamtani, vice dean for student affairs-admissions, population health, and lifestyle medicine.



Figure 5: IPH Research Aims

Recently IPH published a research paper in *Scientific Reports*, an open access journal belonging to the prestigious Nature group of publications titled 'Physical activity and sedentary behavior in the Middle East and North Africa: An overview of systematic reviews and meta-analysis'. This overview is the first to bring together the available evidence on sedentary behavior and physical activity and will serve as a benchmark for epidemiologists and public health interventionists. The study estimates that about 49% of adults and 75% of the youth population are not sufficiently active as per the international guidelines for physical activity and suggests a lower participation in physical activity by the youth in comparison to adults in the region. Additionally, more males engage in sufficient levels of physical activity compared to females.



The study estimates that 49% of adults in the MENA region do not take enough exercise.

Middle East and North Africa



Figure 6: Physical Activity Prevalence in the MENA and GCC



A 'laughter yoga' class during Lifestyle Medicine Week.

Local and International Research Presentations by IPH Faculty/Staff

Conference: International Conference on Medical Education (ICME) 2019, Islamabad, Pakistan **Date:** Oct 21, 2019 **Oral Presentation Title:** Assessing Effectiveness of Student-Centered Active Learning Classroom Strategies to Enhance Student Engagement and Learning **Authors:** Sohaila Cheema, Rachid Bendriss, Ravinder Mamtani

Conference: 11th World Congress of the International Society for Developmental Origins of Health and Disease, Australia (DOHaD 2019) Date: Oct 22, 2019 Poster Title: Variations of Physical Activity and Sedentary Behaviors in The Middle East and North Africa: A Systematic Overview, Meta-Analysis, and Evidence Gap Mapping Authors: Sonia Chaabane, Karima Chaabna, Amit Abraham, Ravinder Mamtani, Sohaila Cheema

Conference: Qatar Public Health Conference (QPHC) 2019 Date: Nov 18, 2019 **Poster Title:** The State of Physical Activity and Sedentary Behaviour in Qatar and other MENA countries Authors: Sonia Chaabane, Karima Chaabna, Amit Abraham, Ravinder Mamtani, Sohaila Cheema **Poster Title:** Dietary Habits and Physical Activity Levels of University Students in Education City, Qatar - A Cross-sectional Study Authors: Amit Abraham, Karima Chaabna, Tasnim Mushannen, Wajiha Yousuf, Abdallah Tom, Hania Ibrahim, Ravinder Mamtani, Sohaila Cheema

Conference: 10th Annual Research Retreat, Weill Cornell Medicine-Qatar, Doha, Qatar Date: Feb 22, 2020 Poster Title: Sex-Specific Differences in the Prevalence of Diabetic Microvascular Complications among Non-Smokers in Qatar Authors: Amit Abraham, Sohaila Cheema, Ravinder Mamtani, Zirie M, Jayyousi A, Albert B Lowenfels, Patrick Maisonneuve

Poster Title: Perceived stress, Stressors and Coping Strategies among Nursing Students in the Middle East and North Africa: An Overview of Systematic Reviews Authors: Sonia Chaabane, Karima Chaabna, Sapna Bhagat, Amit Abraham, Ravinder Mamtani, Sohaila Cheema Poster Title: Perinatal Mental Illness in the Middle East and North Africa Region - A Systematic Overview Authors: Sathyanarayanan Doraiswamy, Anupama Jitesh, Sonia Chaabane, Amit Abraham, Karima Chaabna, Ravinder Mamtani, Sohaila Cheema

Conference: Ottawa 2020 Conference, Kuala Lumpur, Malaysia. **Date:** Feb 29, 2020 **Poster Title:** Assessing effectiveness of an introductory workshop on systematic review for healthcare professionals. **Authors:** Sohaila Cheema, Chaabna K, Ravinder Mamtani

Conference: CUGH 2020 Conference, Washington, DC, USA (Conference cancelled due to Covid-19) **Date**: April 18-20, 2020 **Poster Title**: Assessing Usage and Perceived Effectiveness of the Interprofessional Global Health Competencies Tool Kit **Authors**: B. Astle, Cheema S, A Dougherty, A. Moore, S Matthews, I.N. Opara

Conference: Current Understanding in Diabetes, Obesity and related Syndromes (CUDOS) CONGRESS 2019, Qatar Date: Nov 25, 2019 **Poster Title:** Physical activity and sedentary behavior: An overview of systematic reviews and meta-analysis Authors: Sonia Chaabane, Karima Chaabna, Amit Abraham, Ravinder Mamtani, Sohaila Cheema **Poster Title:** Sex Differences in the Prevalence of Microvascular Complications of Diabetes among Non-Smokers in Qatar Authors: Amit Abraham, Sohaila Cheema, Ravinder Mamtani, Mahmoud Zirie, Amin Jayyousi, Albert B. Lowenfels, Patrick Maisonneuve

Conference: NAFSA 2020 Annual Conference & Expo. St. Louis, Missouri, USA (Conference cancelled due to Covid-19) Date: May 24-29, 2020 Technology Fair Poster, Title of presentation: Framework for a multi-channel digital marketing strategy. Authors: Rajalakshmi Anand, Sohaila Cheema

Conference: 2020 NAFSA eConnection Link: https://www.nafsa.org/ conferences/2020-nafsa-econnection Date: May 27, 2020 Poster Title: Framework for a multi-channel digital marketing strategy. Authors: Rajalakshmi Anand, Sohaila Cheema



IPH hosted a stall extolling the benefits of a healthy diet at a meeting of the Indian Women's Association.

B. Community Initiatives

IPH contributes towards building a healthier population in Qatar and participates in educational and community outreach programs aimed at health awareness and promotion, wellness, lifestyle health, disease and injury prevention. In recent years, 7605 attendees comprising students, corporates and the larger Qatar community have benefitted (see Figure 7).

IPH Face to Face Community Outreach 2013 - 2020 | 7605 attendees



Figure 7

Attendees

In 2019-2020, IPH community outreach programs benefitted 1,940 attendees including Education City faculty, staff, students and their families, corporate entities. Awareness on topics related to healthy nutrition, road safety and lifestyle medicine were conducted (Figure 8).

Theme	Activity	Approximate numbers
Healthy Nutrition	Education City Health and Wellness Fair	80
	Indian Women's Association	65
	Medicine Unlimited	600
Lifestyle Medicine	6 th Institute of Chartered Accountants of India Forum	300
	Lifestyle Medicine Week	345
Road Safety	Newton British Academy	550

Figure 8 - IPH Face to Face Community Outreach 2019-2020

Year

Additionally, IPH utilizes website, email campaigns and social media to enhance health awareness and boost engagement with the audience in Qatar and internationally. In keeping with it's broader mission, IPH uses a multi-channel approach to reach out to local, regional and global communities across various demographics for health promotion. IPH launched its presence on social media in 2019 and has seen a steady growth in its following (Figure 9).

2000 1843 1722 1800 1600 1400 1258 1200 1000 800 600 347 400 264 155 135 72 200 0

	Jul-Sep Q1	Oct-Dec Q2	Jan-Mar Q3	Apr-Jun Q4
LinkedIn	264	1258	1722	1843
Facebook	72	135	155	347
lnstagram	66	111	142	161
Twitter	60	84	108	115

Figure 9

COVID-19 awareness

IPH utilized social media and e-newsletters for community outreach to disseminate credible information to create awareness about the novel coronavirus pandemic to help mitigate the spread of the virus. IPH content guides the public to navigate and access trusted and reputable sources for helpful tips to manage and adapt their lifestyle to this unprecedented situation.

https://qatar-weill.cornell.edu/institute-for-population-health/community/covid-19-awareness

#StayHome#StaySafe Newsletters

IPH launched a weekly newsletter beginning March 29, 2020 entitled "#StayHome#StaySafe". To date the newsletters have covered a wide range of topics to help people deal with issues related specifically to the COVID-19 pandemic.

https://qatar-weill.cornell.edu/institute-for-population-health/community/covid-19-awareness/newsletters





Other Community Engagements

Center for International and Regional Studies (CIRS)-Georgetown University Qatar Drs. Mamtani and Cheema spoke to CIRS as part of their Expert Insight series on the impact of the coronavirus pandemic on lifestyles, and vulnerable populations, and healthcare systems.

FM 107 Urdu Radio Qatar - Qatar Media Corporation

Dr. Sohaila Cheema was invited by FM 107 Urdu Radio Qatar in March 2020 to raise awareness about the novel coronavirus and COVID-19 disease. During the session, Dr. Cheema also took live questions from the community.

Webisode: COVID-19-Fighting the pandemic

Dr. Ravinder Mamtani recorded a session for the public in a webisode on COVID-19 – Fighting the pandemic. He highlighted the public health aspects of how we can fight the pandemic together.



Dr. Mamtani spoke at the Qatar Petroleum health and wellness forum.

Road Safety Awareness

In November 2019, Dr. Sohaila Cheema and Dr. Sathyanarayanan Doraiswamy from IPH visited Newton British Academy - Barwa City, speaking to 400 primary school students, and then 150 secondary school students, about the importance of road safety.

Nutrition Awareness

- The IPH team interacted with the Indian Women's Association on Being Food Smart: Let's Get it Right!
 Dr. Sohaila Cheema spoke about healthy eating and the importance of reducing the amount of fat, sugar and highly refined carbohydrates in food in order to prevent obesity and associated illnesses like heart disease, diabetes, high blood pressure and cancer.
- The Health and Wellness Fair is organized by the universities of Education City to raise awareness about health-related issues among students, staff and faculty. IPH designed two activities for the fair which took place at Carnegie Mellon University - Qatar: one to equip participants to read and interpret nutrition labels; and the other to comprehend the sugar content of commonly consumed food items.
- IPH interacted with 600 high school students and their families during Medicine Unlimited 2019. Participants were informed about healthy food choices, appropriate food portions, what is healthy snacking and how to read food labels.

Lifestyle Medicine

- Dr. Ravinder Mamtani addressed an audience of nearly 300, comprising dignitaries & guests, chapter members, senior finance professionals, sponsors representatives & students at the 6th International Conference by Doha Chapter of Institute of Chartered Accountants of India in November 2019. Dr. Mamtani spoke about Lifestyle Medicine: An Inspirational Trend for Optimum Health.
- Dr. Mamtani also spoke at the Qatar Petroleum: Occupational Health & Wellness Forum 2019 on the topic Lifestyle Medicine and Its Promise in the Workplace.
- IPH organized the Lifestyle Medicine week in November 2019 for Education City students, faculty, staff and their families to create awareness about the need for making good lifestyle choices. This year there were sessions on guitting smoking and other addictive substances, a fun team-based trivia guiz to improve connectedness, and a workshop on the power of laughter and yoga to help one relax and relieve stress. The 'Walk for Life' was held at Qatar Foundation's Oxygen Park, and once again demonstrated the ease in which everyone can engage in moderate exercise for at least thirty minutes a day. New for this year was the Cornell Super Chef competition, which saw teams battle it out to make the best salad using a variety of greens, vegetables, nuts, oil and vinegar.

IPH representation on local, national and international committees

Public Health Committee, Ministry of Public Health, Qatar: Dr. Ravinder Mamtani (member)	Public Health Implementation Group (PHIG), Ministry of Public Health, Qatar: Dr. Ravinder Mamtani (member) and Dr. Sohaila Cheema (designee)	Healthcare Practitioners Committee, Qatar: Dr. Ravinder Mamtani (member)
Advisory Board of the International Board of Lifestyle Medicine: Dr. Ravinder Mamtani (member)	Consortium of Universities for Global Health, Global Health Competency subcommittee: Dr. Sohaila Cheema (member)	Consortium of Universities for Global Health, Global Health Competency subcommittee, Research and Analytic taskforce: Dr. Sohaila Cheema (co-chair)
Sustaining Technical and		

Analytical Resources (STAR) is a five-year project of the Public Health Institute, supported by the United States Agency for International Development (USAID): Dr. Sohaila Cheema (member)



Faculty and participants of IPH's Bridging the Gap medical interpreter training.

Center for Cultural Competence in Healthcare

The Center for Cultural Competence in Health Care (CCCHC) is an integral component of IPH that is led by Ms. Maha Elnashar and supported by Ms. Huda Abdelrahim. CCCHC is dedicated to promoting the practice and concept of culturally and linguistically appropriate healthcare in Qatar.

Education

CCCHC provides various cultural competence training sessions to WCM-Q students. The sessions are integrated into the premedical and medical curriculum. Through didactic lectures, group discussions, interactive exercises, and videos, students learn about the culture and its impact on healthcare, how to be sensitized to bias and stereotyping, how to explore patient's perspective, and the community health beliefs & traditional healing practices.

Cultural Competence in Healthcare

This is a four-hour workshop for healthcare professionals. The main objective of the workshop is for healthcare professionals to understand the impact of culture and diversity in healthcare and learn how to communicate effectively when faced with communication barriers in healthcare settings. The workshop was offered twice this year and 26 attendees benefited from the training. Since its initiation, 333 participants have attended this workshop.

19 workshops hosted to-date

Bridging the Gap Medical Interpreters Training

Since 2012 CCCHC has offered this 40-hour course biannually to train bilingual/ multilingual professionals to overcome language and cultural barriers in healthcare services to the diverse community of Qatar. To date, 16 offerings have trained 332 medical interpreters representing over 20 languages. The BTG program has contributed to a unique pool of trained medical interpreters which can be hired by healthcare institutions in Qatar.



(6), Tigrinya (1) and Urdu (7).





The International Society for The Prevention Of Child Abuse & Neglect's international conference is an international congress that focuses on spreading awareness and prevention of child maltreatment and domestic violence. Maha Elnashar and Huda Abdelrahim presented a workshop with Dr. Amal Khidir at this conference on February 15, 2020 titled, 'How to design and deliver a workshop in Arabic language.' The workshop was delivered in Arabic.

Communication Skills Training at Hamad Medical Corporation

Mastering Emotional Intelligence (MEI) - Level 1 and 2

MEI - Level 1 is a 10-hour training course which was initiated in 2018. This course is designed for all healthcare and educational professionals. The course helps individuals to enhance their skills on managing their emotions and behaviors (self-awareness), learn how to handle emotional triggers (self-management), reflect on social awareness and establish healthy social relationships. After five successful offerings of the first level, CCCHC developed and implemented the MEI - Level 2 course in February 2020. This is an advanced course built on the knowledge and skills learned in MEI - Level 1.

https://gatar-weill.cornell.edu/event/ mastering-emotional-intelligence-level-2

ISPCAN workshop

This activity is a Hamad Medical Corporation medical education communication skills training program. IPH's participation by Maha Elnashar and Huda Abdelrahim, includes a two-hour module titled 'Cultural Sensitivity and Communicating via Untrained Medical Interpreters.' Twelve sessions were conducted for HMC consultants and specialists from September to December 2019.

Weill Cornell Medicine-Qatar

QATAR DOCTORS OF THE FUTURE SCHOLARSHIP



CERTIFICATE OF COAHPLETION

Development and each Educational Student

1- Local recruitment:

- School visits: During the period October 2019 March 2020, the OED team conducted 29 school visits to Qatari private, independent and international schools to present to more than 300 students about our educational programs and application requirements, and answer inquiries. Between March and June 30, one virtual school visit was conducted that included 13 students and two counselors.
- Open Houses: Between October 2019 and March 2020, the OED team hosted ten Thursday Open Houses accommodating around 150 participants on-campus. This event was converted to a virtual open house in April 2020 due to the COVID-19 pandemic (please see information below regarding virtual open houses).
- Doha Counselors' Day: On October 3, 2019 we collaborated with EC branch campuses to host this event, during which 120 school counselors from across Qatar participated in panel discussions and information sessions regarding our educational programs.
- Discover Education City: On October 7 and 8, 2019 about 200 students and school representatives attended this event, which is a collaborative recruitment fair between all EC branch campuses.
- The International Year of the Periodic Table of Chemical Elements Symposium: In collaboration with Dr. Sheila Qureshi, associate professor of chemistry, this symposium was organized by the OED office hosting 60 students from ten schools in Qatar. The symposium included an open competition among high school students to highlight the impact of the invention of the periodic table on science and medicine in general.
- University Expo at Doha Convention Center: On October 16 and 17, this university expo endorsed by the Ministry of Education and Higher Education brought more than 260 student visitors to our booth.



The Office of Student Outreach and Educational Development has a range of programs designed to foster a potential student's interest in science and medicine, promote their confidence, and encourage them to apply for a career as a physician.

2- Community outreach / Educational development programs:



Drs. Marco Ameduri and Rachid Bendriss with the winners of the High School Medical Conference.

Ongoing programs:

- on November 23, the conference hosted more than 500 participants and included competition (about 200 participants) and the Medicine Unlimited event. The latter showcased more than 20 science and activity tables with the participation of more than 25 faculty and staff members.
- Qatar Aspiring Doctors Program: This year-long program (October-March) offered academic support through online modules and face-to-face sessions to about 40 students, out of which 21 received completion certificates.
- Healing Hands Essay Competition: Four awardees who visited our NY campus on an educational trip in the summer of 2019, were hosted by the dean to receive their certificates of completion of the program on October 22, 2019. This year's competition was open in February 2020, in which 17 students wrote about the impact of social media on health.
- University Expo at Doha Convention Center: On October 16 and 17, 2019, this university expo endorsed by the Ministry of Education and Higher Education brought more than 260 student visitors to our booth.

• The High School Medical Conference and Medicine Unlimited Community Event: Held professional development workshops for teachers (around 60 participants); a research

3- Regional outreach and school visits:

- School visits to Jordan, Oman, Morocco, and Kuwait were conducted in collaboration with EC campuses, allowing us to reach out to more than 20 regional schools.
- The Education City Regional Counselors' Program took place on January 19 and 20 2020. This flyin program hosted in collaboration between EC branch campuses included 21 international school counselors from 12 countries namely: Bangladesh, France, Kenya, Kuwait, Lebanon, Morocco, Oman, Rwanda, Somaliland, Tunisia and Turkey. The counselors attended admissions workshops, facilities visits and met with current students.
- The Uni Virtual Fair (new initiative): On April 19 and 20, the team participated for the first time in this university virtual fair, in which more than 20 regional and international higher education institutions participated.



High school students regularly visited WCM-Q before the coronavirus pandemic, when outreach programs were moved online

4- New initiatives:

- Tabeeb Program: Offered exclusively for the Qatar Science and Technology Secondary School for Boys (a STEM school), and in collaboration with the Ministry of Education and Higher Education, this online program engaged 55 students from grades 10 and 11 as a first phase. The program offered academic support to the students, who in phase 2 of the program will be invited oncampus for hands on activities.
- The Science for All program: This is a faculty-led initiative to develop a series of videos to popularize science to the public in general, and students in particular. Dr. Ghizlane Bendriss is leading this project and is involving current students in the curation of content and production of videos that will be pushed through the OED social media platforms.
- All About Science Summer Camp: In collaboration with the National Museum of Qatar, this one-week program was hosted between June 28 and July 2, targeting high school students to discover the biology of the COVID-19 pandemic and better understand historical and current spread of the virus. Drs. Becky Cramer, Kuei-Chiu Chen and Dalia Zakaria are the faculty designing and delivering the curriculum of the program.

5- Other initiatives (virtual delivery):

- Virtual Open Houses every Thursday: Starting on April 16 2020, the first virtual open house was successfully conducted. Promoted via social media and mass virtual events up to June 30.
- Virtual office hours (via live chat): Starting on April 19, the office offered a twohour live chat on daily basis, to engage students, parents and schools and respond to Q&As.
- Virtual Summer Program: Hosted during the period July 5-9 via Zoom.





The OED team overcame the difficulties caused by the coronavirus pandemic to hold its annual Summer Program online.

emails sent to prospective students, more than 15 students participated in three



Office of Admissions

Office of Admissions

The success, reputation and visibility of WCM-Q and its programs continue to grow from strength to strength, leading to strong competition from applicants for a place at the college. The Office of Admissions report for the year 2019-2020 summarizes the admissions process, number of expected incoming students and their demographics for Fall 2020 entry, admission workshops, and the student information system utilized by the Office of Admissions.



Farhan Aziz, director of admissions said the Committee on Admissions is tasked with finding the best qualified candidates.

Background

The six-year medical program integrates the two-year pre-medical curriculum and the four-year medical curriculum. The successful completion of this program leads to the award of the Cornell University Doctor of Medicine degree.

The sixth class of the six-year medical program joined WCM-Q in August 2020. The students will progress through the six-year medical program according to advancement criteria, which include academic performance, professionalism, and commitment to the profession of medicine.

The four-year medical curriculum component of the medical program continues to remain available to external applicants who have completed a baccalaureate program at other colleges or universities from around the world.

The WCM-Q foundation program, a one-year program available to academically talented Qatari students, allows the students to study the relevant subjects, in addition to helping them further develop their study skills and critical thinking abilities. After successfully completing the program students are promoted to the six-year medical program. The program has been very successful and continues to yield positive results.

Admissions process

WCM-Q seeks applicants who uphold the highest academic and personal standards. The Committee on Admissions at WCM-Q is tasked to identify the bestqualified applicants from diverse academic and personal backgrounds. Appointed by the dean of WCM-Q, the Committee on Admissions comprises members of the faculty. The dean also appoints student representatives and ex-officio members to the committee, as appropriate. The committee makes final decisions on the suitability of applicants for the respective programs. The Office of Admissions continues to support the Committee on Admissions in their holistic and balanced approach in selecting a diverse and academically well-prepared entering class.

Due to the COVID-19 WCM-Q, including its Office of Admissions, adjusted well to the public health crisis. Typically, candidates selected for admission interviews are required to attend an in-person campus interview. However, due to the pandemic, the admissions process was adapted this year from an on-campus approach to an online video conference platform. This allowed the Committee on Admissions and Office of Admissions to continue with the admissions process without any hindrance. Staff from the Office of Admissions also adjusted well to working remotely while maintaining the efficiency and smooth operations of the division, allowing applicants to continue communicating with admissions staff.



The admissions team selects only the very best candidates and operates on a need-blind basis.

Incoming students

During the 2019-2020 academic year, 450 applications for the six-year medical program were submitted for Fall 2020 admission. Of the 450 applications, the Committee on Admissions accepted 36 candidates directly into the program. A further 23 students were promoted from the foundation program into the six-year medical program.

As of September 2020, 50 students entered the six-year medical program starting in August 2020. In this class of 50 students, 11 nationalities are represented with approximately 72 percent making their home in Qatar.of the 50 students, 25 are citizens of Qatar (50 percent).

Admission was offered to 25 candidates for the foundation program for Fall 2020 entry and 22 actually enrolled in the program. All 22 students are citizens of Qatar.

Direct admission to the four-year medical curriculum was very competitive for Fall 2020. Twenty-nine candidates submitted applications for admission to this component of the medical program. Of these, four were accepted. As of September 2020, one student enrolled in Fall 2020, a graduate of Carnegie Mellon University in Qatar.

Of the 73 new students who joined WCM-Q's foundation, six-year and four-year medical programs, 48 (66%) are citizens of Qatar. The remaining students with diverse cultural and ethnic backgrounds come from other nations. This data indicates a strong and rising interest among citizens of Qatar to pursue a medical education at WCM-Q.

Total Number of Students who joined WCM-Q Programs in 2020			
	Total	Qatari Citizens	
Foundation Program	22	22	
Six-Year Medical Program	50	25	
Four-Year Medical Curriculum	1	1	
Total Number	73	48 (66%)	

Admissions Workshops

During the 2019-2020 academic Year, the Office of Admissions hosted five workshops for applicants applying for Fall 2020 to provide further additional guidance in the admissions process to the six-year medical program.

The workshop, 'First Step Towards a Complete Application' was held on October 29, 2019, November 5, 2019, and December 3, 2019 which covered the online application process. The total attendance for all three workshops was 86 applicants, of whom 24 were citizens of Qatar.

The workshop, 'Next Steps Towards a Complete Application' was conducted on January 6, 2020 and February 4, 2020. Topics discussed in the workshops included required documents for a complete admission file, tips about interviewing, and other relevant areas of common interest. The total attendance for these two workshops was 122 applicants, of whom 28 applicants were citizens of Qatar.

An additional workshop was introduced this year for high school counselors based in Qatar. The purpose was to help familiarize highs school counselors further with WCM-Q's admission requirements and process. The workshop was held on January 7, 2020 where 10 high school counselors attended.

The Office of Admissions will continue to enhance the scope and quality of these workshops in the upcoming admissions cycles and provide a comprehensive understanding about the overall admissions process at WCM-Q.

Student Information System

The application software Jenzabar-EX, in strong collaboration with the Business and Education Solutions Team, continues to be utilized very effectively. The system allows WCM-Q to capture student information from when applicants makes initial inquiry all the way through to when they become graduates of the college.

The Office of Admissions continues to utilize the system to improve its efforts in providing appropriate guidance and timely processing of all applications. This in turn allows and facilitates timely and careful review of applications by the Committee on Admissions.



Farhan Aziz, director of admissions at WCM-Q.



Division of Student Affairs

DIVISION OF STUDENT AFFAIRS

The Division of Student Affairs supports the academic, personal and professional growth and development of all WCM-Q students.

The core services provided by the division are coordinating and implementing orientation programs and special events, student academic and career counselling, personal counselling; health and wellness, registration and academic record-keeping in addition to administrative support to all pre-medical and medical student organizations. In partnership with Qatar Foundation, government and local organizations, the division also provides support to students seeking to secure residency permits, housing, local health insurance, international visas and exit permits.

The following is a description of support services, student life and community engagement for the year 2019-2020.



The Division of Student Affairs not only supports students academically and professionally, but also looks after their physical, emotional and social welfare.

Academic counseling

Committed to creating a nurturing environment to optimize student learning, the academic counselors offer student academic, personal, and career support. They coordinate and provide vital workshops, seminars, and individual counseling with students to foster the development of study skills and effective time-management. Counselors also assist students with registration for standardized exams (MCAT and USMLE), develop their medical school interviewing skills and help them prepare personal statements and resumes. They also conduct structured academic advising committee meetings and work closely with the health and wellness team, referring students with personal and special learning issues as needed.

Events & activities

The events and activities team strive to provide educational opportunities outside the classroom to enrich the holistic growth and development of our students. They organize student's major events around the year, starting with orientation to welcome new students, the dean's honor list to celebrate their success and graduation to commemorate the end of their journey at WCM-Q.

The team supports the students' council (MSEC-Q) and act as their advisor, they help them with their election process and their annual activities. The team is in charge of the club and organization annual registration process and supports clubs' events, travel, charity campaigns and awareness sessions.



The Student Affairs' team helps support WCM-Q's varied clubs and organizations.

Health & wellness

The health and wellness team provides various services to students such as individual counseling, diagnostic and learning assessments. It also develops, implements, and evaluates educational and preventive programs for students that promote selfawareness, effective thinking and reasoning, emotional intelligence, interpersonal effectiveness, multicultural competence, psychological wellbeing, and resiliency.

The team holds lots of events and activities that promote healthy and balanced life style all over the year.

In addition, students can also reach out to the new WCM-Q Employee Wellbeing Program which offers students free access to an online portal packed with information on various aspects of personal wellbeing: work, life skills, emotional health, physical health, family and managing people. It also has videos, podcasts, guizzes and other interactive content.

The Office of Student Affairs maintains a confidential crisis support helpline which is available for 24 hours a day, seven days a week.



The Health and Wellness team's activities include a mobile breast cancer unit.



The team hosts various events to support breast cancer screening.

Health insurance

Students who reside in Qatar are eligible for a government insurance card that enables them visit all government clinical centers. In addition, the Division of Student Affairs provides all students with local and international insurance that covers them if they get sick or injured. Both insurance plans cover the recommended vaccines.

Disability accommodation services

WCM-Q provides equal educational opportunities for all its students including those with disabilities. Students with disabilities can approach the director of student affairs with requests for accommodation. The process is confidential. Examples of accommodations considered include extra time for tests and assignment, guiet space testing and mobility access.

Registrar's Office

The Office of the Registrar delivers high-quality business practices and provides accurate data management of academic records that support the student cycle from enrollment to post graduation.

The office is responsible for keeping and maintaining students' and alumni records including grades, immunization, dean's letters, course registration, diplomas and personal information.

It provides registration support to the pre-medical curriculum and medical curriculum programs including program scheduling, preparing grade reports, managing student policy database, and reporting statistical data. The office oversees student certification and document preparation for the ERAS (residency application).

Student Life

Orientation Programs

At the beginning of the academic year. foundation and first year pre-medical and medical students participate in an onsite three-day orientation program in August. The foundation and pre-medical students are welcomed to WCM-Q, and the medical students are introduced to the medical program. In addition to the onsite orientation program, students participate in an online CANVAS course in July, get introduced to the staff and faculty, review information about the program and submit the required documents.

Orientation activities are carefully coordinated to welcome the foundation and pre-medical students to the campus and to introduce them, the administration, faculty and staff to each other in person. With the collaborative efforts of the faculty, staff, student orientation leaders, and the Medical Student Executive Council in Qatar (MSECQ), the students engage in interactive sessions to develop pride in their new WCM-Q community and to understand their academic requirements. Students also participate in different activities and icebreakers that focus on teamwork, cooperation, cultural awareness and communication skills.

Medical students participate in a series of activities and seminars that introduce them to the medical curriculum, medical training, professionalism, academic integrity, the teacher-learner environment and other important aspects of the program. These sessions build stronger student-faculty/staff relationships and improve communication.

Students also participate in a community service activity that helps them begin the connection with their chosen profession and develop a deeper understanding of their role in treating patients, and not just their diseases.

For the past three years, the students have collected, sorted, and packed donations from the college for donation to Qatar Charities. Afterward, the hard work of our custodial staff and security guards is celebrated by hosting a meal in their honor.

The three-day orientation program culminates for the medical students with the annual Opening Exercises ceremony to celebrate the students' entrance to the medical program. Students, family members, friends and colleagues are invited to this event.

Student Council and Clubs

The Medical Student Executive Council - Qatar (MSEC-Q) is the student governing body of the college and its aim is to support and advocate for students' interests. The council is comprised of four representatives of each of the six premedical and medical classes, and two members from the Foundation Program, MSEC-Q members meet regularly with the management in the Dean's Office, the Division of Student Affairs, medical and premedical programs to discuss future plans and issues of concerns that students might have. To foster transparency and communication between students and the administration, MSEC-Q hosts an annual Dean's Town Hall with Dr. Javaid Sheikh.

MSEC-Q also hosts a number of annual events to celebrate the culture and diversity of the WCM-Q community such as the international night, faculty mailis, basant and the med gala.

In addition to the student council, WCM-Q has officially recognized 34 clubs, organizations, and interest groups which help students to meet their personal and professional interests in our diverse community.



New students with charitable donations during Orientation Week

Recognition of Academic Achievement

Each semester, full-time undergraduate students who have earned a GPA of 3.75 or higher are honored for their accomplishments. These students and their parents are invited to celebrate their academic excellence at a dinner with the dean of WCM-Q. Last academic year, six foundation students were recognized for their academic achieve for the year, whilst more than 30 students of the six-year medical program were proudly honored.

Financial Aid & Scholarship

WCM-Q selects students on the basis of merit, and the Committee on Admission screens, evaluates, and accepts students without knowledge of their ability to pay. Students who require financial assistance apply directly to QF's financial aid program. Depending upon their citizenship, several avenues of financial assistance are available to WCM-Q students. Qatari students may be sponsored by Sidra Medicine, or by the Qatari government through the Higher Education Institute or the Military Armed Forces. Sponsored students are usually provided tuition assistance as well as a stipend to cover their books, supplies, and other costs. Non-Qatari students can also apply for Sidra sponsorship, but most are self-funded or apply to Qatar Foundation for financial assistance through an interest-free loan program established by the foundation. In addition, Qatar Foundation may offer a number of merit scholarships per year for students of the six-year medical program in the second-year or above. WCM-Q has established a scholarship program entitled Leadership in Medicine to benefit students who excel at both academic and extracurricular levels. The program offers two full and two half scholarships on an annual basis. Students who face financial problems can apply to Student Affairs to receive financial support from the Dean's Discretionary Fund. In cooperation with the Dean's Office, student applications are reviewed and support is provided based on students' needs and funds availability.

Student Employment

Student Affairs offers paid tutoring jobs for students to teach their colleagues who need academic support in junior classes. These students are hired on annual basis as part-timers, who get paid by the hour. In consultation with MSEC-Q, Student Affairs created the Student Employment Program in 2019 to help the needed students support their daily expenses and financial needs. The program also provides part-time job opportunities for students in the WCM-Q divisions.

International Service Learning and Exchange Programs

To expand students' horizons and maximize their experience, Student Affairs organizes two experiences for student.

The Pre-Medical Service-Learning Trip in Tanzania

The 10-day trip to Tanzania, is open to the pre-medical students. The program aims to expose the students to different population health issues and allows them to engage in different service-learning opportunities within the local villages and hospitals in Tanzania. In addition students explore the beautiful nature of Tanzania and learn about the local culture and customs.



The pre-medical service learning trip to Tanzania exposes students to different population health issues.



The International Student Exchange Program allows trainee doctors from other medical schools to visit the world-class facilities at WCM-Q.

The International Student Exchange Program

The international student exchange program aims to create opportunities for WCM-Q and other medical school students in the region.

This program is comprised of two trips; 10 medical schools from the region visit WCM-Q in the fall semester and the WCM-Q team visit one of the 10 medical schools during the spring semester.

In November 2019, a team of 18 medical students and nine faculty members from medical colleges in Iraq, India, Pakistan, Jordan, Palestine, Lebanon, Oman, Kuwait and Tanzania spent a week at WCM-Q as part of the International Exchange Program (IEP).

The team met with WCM-Q students and faculty and learnt about the college's integrated six-year medical program, its cutting-edge teaching and research facilities. The program also provided an opportunity for WCM-Q students, faculty and staff to learn from the visiting students and their school programs.

The international students also had the chance to tour Education City and healthcare institutions around Doha, including Hamad Medical Corporation and two Primary Health Care Corporation facilities, Gharrafat Al Rayyan Health Center and Rawdat Al Khail Wellness Center.

In January 2020, a team of 10 first year medical students and two chaperones visited Jordan for one week as guests of the University of Jordan in Amman. During their visit, the team learnt about the institution's medical curriculum, observed encounters between patients and students during clinical rotations, visited the university hospital and a stem cell therapy center, toured the medical school, and engaged in discussions about country- and region-specific population health issues. They also visited health centers in rural areas and met with local people. Under the supervision of qualified doctors, the students were able to carry out basic patient health examinations.




Virtual Graduation Ceremony 2020

At the conclusion of each academic year, WCM-Q hosts the annual senior honors convocation at which the academic achievements of the graduating students are recognized. Awards are given based on outstanding performance in courses and clerkships as well as in research, public health, and community service. At the graduation ceremony, which follows the senior honors convocation, graduating students take the Hippocratic Oath and receive their diplomas.

Due to Covid 19, the two ceremonies were merged into one online ceremony during which students took the Hippocratic Oath and were celebrated by the large community of WCM-Q, students' families and friends.

Graduation & Convocation



Community Development

OFFICE OF COMMUNICATIONS

The 2019-20 year has undoubtedly been overshadowed by the novel coronavirus pandemic, but by presenting huge challenges to continued operations, it has allowed the Office of Communications to demonstrate its resilience, resourcefulness and innovation. Not only has the department continued its day-to-day work through lockdown with the use of home-working and online conference apps, it has developed new programs and campaigns designed to provide the community with trusted information and facts during this uncertain time. Detailed below are the Office of Communications most significant operations of the 2019-2020 academic year.

Coronavirus website

In response to the COVID-19 pandemic and unsubstantiated rumours that spread across social media, the Office of Communications developed a microsite accessible from the main WCM-Q homepage, that provided clear, accurate and trustworthy information to the community.

Utilizing the expertise of WCM-Q's faculty members, the Office of Communications organised and produced ten webisodes about various aspects of the virus including disease prevention, reducing anxiety, and diabetes and the disease.

Further information was provided about mask-wearing, the government's Ehteraz app and safe travel, alongside articles about keeping children entertained during lockdown and the importance of creating routines while at home.

A section dealt with common myths and conceptions that could be found on social media and there was also a Q&A facility where the public could email a member of WCM-Q's faculty with questions about the virus.

Graduation

With large gatherings banned to halt the spread of the novel coronavirus, the Office of Communications took WCM-Q's 2020 graduation ceremony online, with the college determined to honor the hard work, commitment and academic excellence of its newest graduates.

Using video conferencing technology, speeches from senior faculty members and the class speaker were pre-recorded and students' pictures broadcast to family friends, faculty and staff watching from Qatar and across the globe.

A microsite was developed and the graduation ceremony made accessible from the WCM-Q homepage for anyone wishing to watch it at a later stage.

Khayr Qatarna

Khayr Qatarna has gone from strength to strength and is now producing lietrally tons of food for the local market.

The program now has 17 greenhouses based at high schools in Qatar growing a diverse range of crops including tomatoes, cucumbers, green beans and peppers. Not only does this boost national food security and sustainability but the program also teaches students about agriculture, logistics, economics and healthy food. All profits are reinvested in the scheme and the food has been granted the status of 'Premium Produce by the ministry of Municipality and Environment. The fruit and vegetables are distributed via 23 of the leading supermarkets around Doha.

As of 30 June 2020, the scheme had grown and distributed:

- 58.175 tons of cucumbers
- 19.993 tons of tomatoes
- 4.019 tons of peppers
- 7 tons of green beans
- 2.5 tons of broccoli
- 1.198 tons of leafy vegetables
- I ton of cherry tomatoes



Students help pack a crop of tomatoes for Khayr Qatarna

Color Run

Doha was covered in color once again as The Color Run presented by Sahtak Awalan: Your Health First returned to the Qatar National Convention Centre.

A record-breaking turnout of more than 10,000 Color Runners completed the Happiest 5K on the Planet as they walked, ran, or skipped their way to the finish line on in their most colorful attire. One of the biggest events that Doha has ever seen, this edition of the Color Run was part of The Love Tour, featuring an all-new Super Zone and Foam Zone as part of the 5k course.

As always, the aim was to encourage more people to take part in sport and exercise and to demonstrate that anyone can get involved, whatever their age or level of fitness.

People of all fitness levels gathered for the warm up, before the first wave jetted off on the 5k course in clean white shirts, capes, tutus, socks and sunglasses before getting doused from head to toe in color.

At the finish line, runners were bursting with colors, energy, and pride as they collected their medals, before heading to the Finish Festival to celebrate with their friends, families and colleagues, enjoying the live music and games.



More than 10,000 participants of all ages tuned out for the Color Run 2020.



The event encourages people to take more exercise.

Qatar National Day

Sahtak Awalan – Your Health First once again helped people celebrate Qatar National Day, providing an interactive installation that proves exercise can be fun.

Your Health First was invited to participate in the Darb Al Saai celebrations inside the Qatar Foundation tent for the fifth time, having attracted tens of thousands of people in previous years. For 2019, Sahtak Awalan showcased its virtual reality sports machines, that both entertained visitors and encouraged them to take more exercise. A virtual reality rowing machine allowed visitors to experience rowing on a river and lake, while the cycling machine offered them the chance to cycle along mountain roads or at a velodrome.

Cross trainers gave them the chance to go up against previous participants to beat times or reps, and a giant snakes and ladders game gave the younger members of the family a chance to get involved. The virtual reality exercise machines proved particularly popular with children.

Your Health First is supported by its strategic partners: Qatar Foundation, the Ministry of Public Health, the Ministry of Education and Higher Education, the Ministry of Municipality and Environment and ExxonMobil.



The virtual reality exercise machines proved particularly popular with children.

National Sports' Day

WCM-Q and the Office of Communications continued its support of Qatar National Sports Day, with one of the college's doctors celebrating the occasion by running non-stop for 24 hours.

Dr. Arash Rafii-Tabrizi, professor of genetic medicine in obstetrics and gynecology, took on the grueling challenge to raise awareness of the benefits of running and healthy lifestyles in general.

Supported by Sahtak Awalan - Your Health First, WCM-Q's public health campaign, Dr. Tabrizi set off from the Green Spine at Qatar Foundation at 4pm on Monday 10 February, finishing at the same spot at 4pm on Tuesday 11 February, having repeatedly run a lengthy route around Education City. He estimated he ran around 140km.

Dr. Tabrizi, who is an experienced ultra-runner, said his motivation was to highlight the amazing journey over the last 25 years of Qatar Foundation, an organisation that has made education a priority.

Your Health First also participated in National Sports' Day at the Women's Police Academy, taking virtual exercise machines to demonstrate the myriad ways of exercise that are available.



Dr. Arash Rafii-Tabrizi (far right) was joined by other runners for sections of the route.

Back to School



All the gifts distributed had the Sahtak Awalan - Your Health First branding.

WCM-Q's Your Health First campaign worked with the Ministry for Education and Higher Education to ensure children returned to school with an understanding about the importance of health.

As part of the Ministry's Back to School program, Your Health First distributed school bags, lunchboxes, water bottles, and activity books to children preparing for their first day back at school after the long summer holiday vacation.

The activity books explained the health benefits of a variety of different foods, helping parents and children plan meals to ensure they are nutritionally beneficial, while the water bottles remind children to stay sufficiently hydrated.

All of the gifts distributed had the Sahtak Awalan - Your Health First branding, which has become synonymous with high-impact health initiatives like Khayr Qatarna, the Color Run, Project Greenhouse and Yalla Natural.

WISH and WISE

Weill Cornell Medicine – Qatar took a prominent role in both WISE and WISH, showcasing the success of the college and encouraging the community to lead healthier lifestyles.

The WISE (The World Innovation Summit for Education) events came first and saw WCM-Q's Office of Communications take its award-winning Sahtak Awalan campaign to Qatar Academy Al Wakra. During online sessions, third year students learned about the environment, Sahtak Awalan's Khayr Qatarna greenhouses and how they are contributing to Qatar's self-sufficiency and sustainability, and the agricultural cycle.

The event also supported the municipality of AI Wakra in their efforts to achieve sustainable development goals as set out by the UNESCO Learning Cities' Network.

The World Innovation Summit for Health began with Doha Healthcare Week and Sahtak Awalan once again balanced the need for education with fun by launching its healthy lunchbox competition. Families were encouraged to use fresh fruit, vegetables, yogurts and wholegrains to create the most colorful, tastiest and healthiest lunch in Qatar. Photographs were then posted on social media. Hundreds of entries were received from families across Qatar with the best winning prizes.

During the week, WCM-Q's Dr. Ravinder Mamtani, vice dean for student affairsadmissions, population health and lifestyle medicine, also lead an online session discussing nutrition and lifestyle. With lifestyle-related diseases like diabetes and heart disease among the biggest causes of premature death in the world, Dr. Mamtani discussed strategies to improve the community's health.

For the WISH summit itself, which took place online from 15-19 November, WCM-Q hosted a virtual booth showcasing the college's research successes, its faculty, students and its alumni. Office of Communications also demonstrated the college's commitment to community health with the Your Health First campaign and the Khayr Qatarna program.



مؤسسةقطر Oatar Foundation World Innovation Summit for Health

مؤتهر القمة العالمى للابتكار فى الرعابة الصحبة



values of vegetables and fruits.



As part of WISE Sustainability Week, WCM-Q's Office of Communications delivered virtual presentations to schools highlighting the need for sustainability

WCM-Q's Office of Communications broadcast a film during the WISH conference that showcased the college's research successes.



STATISTICS

FACULTY & STAFF NUMBERS, 2001-2019



Figures for faculty include all those on the WCM-Q payroll considered active within the academic year. Figures for staff are as of September 1, 2019 and include those residing in New York. Academic non-faculty includes postdoctoral positions in the research program.

TOTAL NUMBER OF STUDENTS, 2002-2019



Enrollment Applicants





Figures are as of September 2019, and reflect any attrition from incoming classes in subsequent years.

PROFILE OF CLASSES ENTERING THE SIX-YEAR MEDICAL PROGRAM 2002-2019

Total Enrollment and Applicants

Gender Profile

CITIZENSHIP OF STUDENT BODY 2019



Turkey Egypt Albania Germany Canada Algeria Spain Morocco United Kingdom of Great Britain & Northern Ireland Sudan United States of America State of Palestine

Students of WCM-Q come from across the world.





Leadership Structure

LEADERSHIP STRUCTURE

CORNELL UNIVERSITY

Robert S. Harrison Chairman, Board of Trustees

Martha E. Pollack, PhD President

WEILL CORNELL MEDICINE

Jessica Bibliowicz	Robert Appel	Robert A. Belfer
Chair, Board of Overseers	Vice Chair	Vice Chair
Jeffrey Feil	Barbara B. Friedman	Sanford I. Weill
Vice Chair	Vice Chair	Chair Emeritus
Augustine M.K. Choi, MD Dean, Weill Cornell Medicine Provost for Medical Affairs, Cornell University		

WEILL CORNELL MEDICINE - QATAR

Javaid I. Sheikh, MD Dean, Weill Cornell Medicine - Qatar	Ravinder Mamtani, MBBS, MD, MSc Vice Dean for Student Affairs, Admissions, Population Health, and Lifestyle Medicine	Shahzad Jafri Senior Executive Director of Administration
Marco Ameduri, PhD Senior Associate Dean for Premedical Education and Education City Collaborative Curricular Affairs	Thurayya Arayssi, MD Senior Associate Dean for Medical Education and Continuing Professional Development	Khaled Machaca, PhD Senior Associate Dean for Research, Innovations and Commercialization
Bakr Nour, MD Senior Advisor to the Dean	Nesreen Al-Rifai Chief Communications Officer	Omar Baki Director, Human Resources
Jamie Marie Gray Director, Distributed eLibrary	Sameer Kalash Director, Finance and Business Services	Badar Khan Director, IT Operations
Andrew Adair Director, Facilities, Health, and Safety and Security		



Weill Cornell Medicine - Qatar Faculty Publications 1 July 2019 - 30 June 2020

(The list also includes some items published too late to appear in the previous year's list. It does not include items listed as "in press" or "ahead of print" etc.)

Abdel Aleem, Alice

Abdel Aleem A. DNA sequencing resolves misdiagnosed and rare genetic disorders. In: Boldura OM, editor. Biochemical analysis tools: methods for bio-molecules studies [Internet]. London, England: InTechOpen; 2019 Sep 30. [17 p]. Available from: https://doi. org/10.5772/intechopen.86556

Abdel Aleem A, Elsaid MF, Chalhoub N, Chakroun A, Mohamed KAS, AlShami R, Kuzu O, Mohamed RB, Ibrahim K, AlMudheki N, Osman O, Ross ME, O EL. Clinical and genomic characteristics of LAMA2 related congenital muscular dystrophy in a patients' cohort from Qatar. A population specific founder variant. Neuromuscul Disord. 2020 Jun 1;30(6): P457-71. doi: 10.1016/j. nmd.2020.03.009

Bendriem RM, Singh S, **Abdel Aleem A**, Antonetti DA, Ross ME. Tight junction protein occludin regulates progenitor self-renewal and survival in developing cortex. Elife [Internet]. 2019 Dec 3 [cited 2020 Jul 7];8. Available from: https://doi. org/10.7554/eLife.49376

Mohammed EEA, Beherei HH, El-Zawahry M, Farrag ARH, Kholoussi N, Helwa I, Gaber K, Allam MA, Mabrouk M, Abdel Aleem A. Combination of human amniotic fluid derived-mesenchymal stem cells and nano-hydroxyapatite scaffold enhances bone regeneration. Open Access Maced J Med Sci [Internet]. 2019 Sep 15 [cited 2020 Jul 7]; 7(17):2739-50. Available from: https:// doi.org/10.3889/oamjms.2019.730

Abi Khalil, Charbel

Abi Khalil C, Zubaid M, Mekhaimar M, Asaad N, Mahfoud ZR, Al Suwaidi J. Betablockers and short-term cardiovascular outcomes in patients hospitalized for acute coronary syndrome and a left ventricular ejection fraction ≥40. Sci Rep [Internet]. 2020 Feb 26 [cited 2020 Jul 7]; 10(1):3520. Available from: https://doi. org/10.1038/s41598-020-60528-y

Ahmed LHM, Butler AE, Dargham SR, Latif A, Robay A, Chidiac OM, Jayyousi A, AI Suwaidi J, Crystal RG, Atkin SL, **Abi Khalil C.** Association of vitamin D2 and D3 with type 2 diabetes complications. BMC Endocr Disord [Internet]. 2020 May 15 [cited 2020 Jul 7];20(1):65. Available from: https://doi. org/10.1186/s12902-020-00549-w

Al-Kindi SG, Al-Suwaidi J, Jayyousi A, Oliveira GH, **Abi Khalil C.** Impact of diabetes mellitus on survival in patients bridged to transplantation with left ventricular assist devices in the United States. ASAIO journal [Internet]. 2019 Aug [cited 2020 Jul 7];65(6):587-92. Available from: https://doi.org/10.1097/ mat.00000000000896

Arasaratnam D, Bell KM, Sim CB, Koutsis K, Anderson DJ, Qian EL, Stanley EG, Elefanty AG, Cheung MM, Oshlack A, White AJ, **Abi Khalil C,** Hudson JE, Porrello ER, Elliott DA. Publisher correction: The role of cardiac transcription factor NKX2-5 in regulating the human cardiac miRNAome. Sci Rep [Internet]. 2019 Dec 27 [cited 2020 Jul 7]; 9(1):20269. Available from: https://doi. org/10.1038/s41598-019-55970-6

Arasaratnam D, Bell KM, Sim CB, Koutsis K, Anderson DJ, Qian EL, Stanley EG, Elefanty AG, Cheung MM, Oshlack A, White AJ, **Abi Khalil C,** Hudson JE, Porrello ER, Elliott DA. The role of cardiac transcription factor NKX2-5 in regulating the human cardiac miRNAome. Sci Rep [Internet]. 2019 Nov 4 [cited 2020 Jul 7]; 9(1):15928. Available from: https://doi. org/10.1038/s41598-019-52280-9 Ramanjaneya M, Bettahi I, Jerobin J, Awad SF, O'Flaherty M, El-Nahas KG, Chandra P, Abi Khalil C, Skarulis M, Atkin Al-Hamag AO, Critchlev JA, Abu-Raddad LJ, SL, Abou-Samra AB. Mitochondrial-Preventing type 2 diabetes mellitus in derived peptides are down regulated Qatar by reducing obesity, smoking, in diabetes subjects. Front Endocrinol and physical inactivity: mathematical (Lausanne) [Internet]. 2019 May 31 modeling analyses. Popul Health Metr [cited 2020 Jul 7]; 10:331. Available from: [Internet]. 2019 Dec 30 [cited 2020 Jul 7]; https://doi.org/10.3389/fendo.2019.00331 17(1):20. Available from: https://doi. org/10.1186/s12963-019-0200-1

Abraham, Amit

Chaabane S, Chaabna K, **Abraham A,** Mamtani R, Cheema S. Physical activity and sedentary behaviour in the Middle East and North Africa: an overview of systematic reviews and meta-analysis. Sci Rep [Internet]. 2020 Jun 9 [cited 2020 Jul 7];10(1):9363. Available from: https://doi.org/10.1038/s41598-020-66163-x

Abu-Raddad, Laith J.

Al-Hajj S, El Bcheraoui C, Daoud F, Khalil I, Moradi-Lakeh M, **Abu-Raddad LJ**, Hamadeh RR, Mokdad A. Child and adolescent injury burden in the eastern mediterranean region: Findings from the Global Burden of Disease 1990-2017. BMC Public Health [Internet]. 2020 Apr 3 [cited 2020 Jul 7];20(1):433. Available from: https://doi.org/10.1186/s12889-020-08523-w

Awad SF, Critchley JA, **Abu-Raddad LJ**. Epidemiological impact of targeted interventions for people with diabetes mellitus on tuberculosis transmission in India: modelling based predictions. Epidemics [Internet]. 2019 Dec 2 [cited 2020 Jul 7]; 30:100381. Available from: https://doi.org/10.1016/j. epidem.2019.100381

Awad SF, Huangfu P, Ayoub HH, 51(12):1749-68. Available from: https:// Pearson F, Dargham SR, Critchley JA, doi.org/10.1001/jamaoncol.2019.2996 Abu-Raddad LJ. Forecasting the impact GBD 2017 HIV collaborators of diabetes mellitus on tuberculosis [incl. Abu-Raddad LJ]. Global, regional, disease incidence and mortality in India. and national incidence, prevalence, J Glob Health [Internet]. 2019 Dec [cited and mortality of HIV, 1980-2017, and 2020 Jul 7];9(2):020415. Available from: forecasts to 2030, for 195 countries https://doi.org/10.7189/jogh.09.020415 and territories: a systematic analysis

Chemaitelly H, Mahmud S, Mumtaz GR, Benova L, Ayoub HH, Kouyoumjian SP, Al-Kanaani Z, **Abu-Raddad LJ**. Hepatitis C virus in the Middle East and North Africa: its epidemiology and the way forward. In: Laher I, editor. Handbook of healthcare in the Arab world [Internet]. Cham, Switzerland: Springer; 2019 Jul 8 [ciited 2020 Jul 16]. [27 p.]. Available from: https://doi. org/10.1007/978-3-319-74365-3_138-1

Chemaitelly H, Weiss HA, Smolak A, Majed E, **Abu-Raddad LJ.** Epidemiology of Treponema pallidum, Chlamydia trachomatis, Neisseria gonorrhoeae, Trichomonas vaginalis, and herpes simplex virus type 2 among female sex workers in the Middle East and North Africa: systematic review and metaanalytics. J Glob Health [Internet]. 2019 Dec [cited 2020 Jul 7];9(2):020408. Available from: https://doi.org/10.7189/ jogh.09.020408

Global Burden of Disease Cancer Collaboration **[incl. Abu-Raddad LJ].** Global, regional, and national cancer incidence, mortality, years of life lost, years lived with disability, and disabilityadjusted life-years for 29 cancer groups, 1990 to 2017: a systematic analysis for the Global Burden of Disease Study. JAMA Oncol [Internet]. 2019 Sep 27 [cited 2020 Jul 7]; 51(12):1749-68. Available from: https:// doi.org/10.1001/jamaoncol.2019.2996 for the Global Burden of Diseases, Injuries, and Risk Factors Study 2017. Lancet HIV [Internet]. 2019 Dec [cited 2020 Jul 7];6(12):e831-59. Available from: https://doi.org/10.1016/S2352-3018(19)30196-1

Gottlieb SL, Ndowa F, Hook EW, 3rd, Deal C, Bachmann L, Abu-Raddad LJ, Chen XS, Jerse A, Low N, MacLennan CA, Petousis-Harris H, Seib KL, Unemo M, Vincent L, Giersing BK. Gonococcal vaccines: public health value and preferred product characteristics: report of a WHO global stakeholder consultation, January 2019. Vaccine [Internet]. 2020 Jun 9 [cited 2020 Jul 7]; 38(28):4362-73. Available from: https:// doi.org/10.1016/j.vaccine.2020.02.073

Harfouche M, Chemaitelly H, Abu-Raddad LJ. Herpes simplex virus type 1 epidemiology in Africa: systematic review, meta-analyses, and meta-regressions. J Infect [Internet]. 2019 Oct [cited 2020 Jul 7];79(4):289-99. Available from: https://doi.org/10.1016/j. jinf.2019.07.012

James C, Harfouche M, Welton NJ, Turner KME, Abu-Raddad LJ, Gottlieb SL, Looker KJ. Herpes simplex virus: global infection prevalence and incidence estimates, 2016. Bull World Health Organ [Internet], 2020 May [cited 2020 Jul 7];98(5):315-29. Available from: https://doi.org/10.2471/BLT.19.237149

Mahmud S, Al Kanaani Z, Abu-Raddad LJ. Characterization of the hepatitis C virus epidemic in Pakistan. BMC Infect Dis [Internet]. 2019 Sep 14 [cited 2020 Jul 7]; 19(1):809. Available from: https://doi. ora/10.1186/s12879-019-4403-7

Mahmud S, Chemaitelly H, Al Kanaani Z, Kouyoumjian SP, Abu-Raddad LJ. Hepatitis C virus infection in populations Indian and Filipino migrant populations with liver-related diseases in the Middle East and North Africa. Hepatol Commun [Internet]. 2020 Apr [cited 2020 Jul 7]; 4(4):577-87. Available from: https://doi. org/10.1002/hep4.1491

Mahmud S, Chemaitelly HS, Kouvoumiian SP, Al Kanaani Z, Abu-Raddad LJ. Key associations for hepatitis C virus genotypes in the Middle East and North Africa. J Med Virol [Internet]. 2020 Mar [cited 2020 Jul 7]; 92(3):386-93. Available from: https://doi. org/10.1002/jmv.25614

Mahmud S, Mumtaz GR, Chemaitelly H, Al Kanaani Z, Kouvoumiian SP, Hermez JG, Abu-Raddad LJ. The status of hepatitis C virus infection among people who inject drugs in the Middle East and North Africa. Addiction [Internet]. 2020 Feb 3 [cited 2020 Jul 7]; 115(7):1244-62. Available from: https:// doi.org/10.1111/add.14944

Mumtaz GR, Ayoub HH, Makhoul M, Seedat S, Chemaitelly H, Abu-Raddad LJ. Can the COVID-19 pandemic still be suppressed? Putting essential pieces together. J Glob Health Rep [Internet]. 2020 May 11 [cited 2020 Jul 7]; 4:e2020030. Available from: https://doi. org/10.29392/001c.12731

Mumtaz GR, Hilmi N, Majed EZ, Abu-Raddad LJ. Characterising HIV/ AIDS knowledge and attitudes in the Middle East and North Africa: systematic review and data synthesis. Glob Public Health. 2020 Feb;15(2):275-98. doi: 10.1080/17441692.2019.1668452

Nasrallah GK, Dargham SR, Abu-Raddad LJ. Negative epidemiological association between HSV-1 and HSV-2 infections. Heliyon [Internet]. 2019 Oct [cited 2020 Jul 7]; 5(10):e02549. Available from: https://doi. org/10.1016/j.heliyon.2019.e02549

Nasrallah G, Dargham S, Harfouche M, Abu-Raddad LJ. Seroprevalence of Herpes simplex virus types 1 and 2 in in Qatar: a cross-sectional survey. East Mediterr Health J [Internet]. 2020 May 21 [cited 2020 Jul 7];26(5):609-15. Available from: https:// doi.org/10.26719/2020.26.5.609

Rowley J, Vander Hoorn S, Korenromp E, Low N, Unemo M, Abu-Raddad LJ, Chico RM, Smolak A, Newman L, Gottlieb S, Thwin SS, Broutet N, Taylor MM. Chlamydia, gonorrhoea, trichomoniasis and syphilis: global prevalence and incidence estimates, 2016. Bull World Health Organ [Internet]. 2019 Aug 1 [cited 2020 Jul 7];97(8):548-62p. Available from: https://doi.org/10.2471/ blt.18.228486

Schwarzer G, Chemaitelly H, Abu-Raddad LJ, Rucker G. Seriously misleading results using inverse of Freeman-Tukey double arcsine transformation in meta-analysis of single proportions. Res Synth Methods [Internet]. 2019 Apr 4 [cited 2020 Jul 7]; 10(3):476-83. Available from: https://doi. org/10.1002/jrsm.1348

Smolak A, Chemaitelly H, Hermez JG, Low N, Abu-Raddad LJ. Epidemiology of Chlamydia trachomatis in the Middle East and north Africa: a systematic review, meta-analysis, and meta-regression. Lancet Glob Health [Internet]. 2019 Sep [cited 2020 Jul 7];7(9):e1197-e225. Available from: https://doi.org/10.1016/s2214-109x(19)30279-7

Al Jerdi, Salman

Al Jerdi S, Aleyadeh R, Imam Y. Management of cognitive impairment after stroke. Curr Treat Options Neurol. 2020 Jun 16;22(7):20. doi: 10.1007/s11940-020-00627-3

Al-Amin, Hassen

Amro I, Ghuloum S, Mahfoud ZR, Opler M, Khan A, Hammoudeh S, Hani Y, Yehya A, Al-Amin H. Cross-cultural adaptation of the Arabic Positive and Negative Syndrome Scale in schizophrenia: qualitative analysis of a focus group. Transcult Psychiatry [Internet]. 2019 May 27 [cited 2020 Jul 7]; 56(5):973-91. Available from: https://doi. org/10.1177/1363461519850345

Chamali R, Ghuloum S, Sheehan DV, Mahfoud ZR, Yehva A, Opler MGA, Khan A, Hammoudeh S, Hani Y, Al-Amin H. Cross-validation of the Arabic Mini International Neuropsychiatric Interview, Module K, for diagnosis of schizophrenia and the Arabic Positive and Negative Syndrome Scale. J Psychopathol Behav Assess [Internet]. 2020 Mar [cited 2020 Jul 7]; 42(1):139-49. Available from: https://doi. ora/10.1007/s10862-019-09759-6

Ghuloum S, Al-Amin H. Introduction to mental health services. In: Hague A, Gilstrap LL, Ghuloum S, editors. Mental health in Qatar: challenges and prospects. Newcastle upon Tyne, England: Cambridge Scholars Publishing; 2020. p. 2-18.

Hammoudeh S, Al Lawati H, Ghuloum S, Iram H, Yehya A, Becetti I, Al-Fakhri N, Ghabrash H, Shehata M, Ajmal N, Amro I, Safdar H, Eltorki Y, Al-Amin H. Risk factors of metabolic syndrome among patients receiving antipsychotics: a retrospective study. Community Ment Health J [Internet]. 2020 May [cited 2020 Jul 7];56(4):760-70. Available from: https://doi. ora/10.1007/s10597-019-00537-v

Kiwan N, Mahfoud ZR, Ghuloum S, Chamali R, Yehva A, Hammoudeh S, Hani Y, Amro I, Al-Amin H. Correction to: Self-reported sleep and exercise patterns in patients with schizophrenia: a cross-sectional comparative study. Int J Behav Med [Internet]. 2020 Apr [cited 2020 Jul 7]; 27(2):255. Available from: https://doi. org/10.1007/s12529-020-09851-2

Kiwan N, Mahfoud ZR, Ghuloum S, Yehya A, Hammoudeh S, Hani Y, Chamali R, Amro I, Mook-Kanamori D, Al-Amin H. Relationships between sleep patterns and metabolic profile in patients maintained on antipsychotics: a cross-sectional comparative study. Neuropsychiatr Dis Treat [Internet]. 2019 Jul 19 [cited 2020 Jul 7];15:2035-47. Available from: https://doi. org/10.2147/ndt.S207987

Mahfoud ZR, Emam R, Anchassi D, Omran S, Alhaj N, Al-Abdulla S, El-Amin A, Shehata M, Aly S, Al Emadi N, Al-Meer F, **Al-Amin H.** Premenstrual dysphoric disorder in Arab women: validation and cultural adaptation of the Arabic version of the premenstrual screening tool. Women Health. 2019 Jul;59(6):631-45. doi: 10. 1080/03630242.2018.1539433

Sankaranarayanan A, **Al-Amin H,** Ghuloum S. Correlates of near-fatal deliberate self-harm in Qatar. Crisis. 2020 Mar;41(2):121-7. doi: 10.1027/0227-5910/a000613

Arayssi, Thurayya

Brenner JM, **Arayssi T,** Conigliaro RL, Friedman K. The revised medical school performance evaluation: does it meet the needs of its readers? J Grad Med Educ. 2019 Aug;11(4):475-8. doi: 10.4300/JGME-D-19-00089.1

Sakaue S, Hirata J, Kanai M, Suzuki K, Akiyama M, Lai Too C, **Arayssi T,** Hammoudeh M, Al Emadi S, Masri BK, Halabi H, Badsha H, Uthman IW, Saxena R, Padyukov L, Hirata M, Matsuda K, Murakami Y, Kamatani Y, Okada Y. Dimensionality reduction reveals fine-scale structure in the Japanese population with consequences for polygenic risk prediction. Nat Commun [Internet]. 2020 Mar 26 [cited 2020 Jul 7]; 11(1):1569. Available from: https://doi. org/10.1038/s41467-020-15194-z

Song Y, Darzi A, Ballesteros M, Martinez Garcia L, Alonso-Coello P, **Arayssi T,** Bhaumik S, Chen Y, Cluzeau F, Ghersi D, Padilla PF, Langlois EV, Schunemann HJ, Vernooij RWM, Akl EA. Extending the RIGHT statement for reporting adapted practice guidelines in healthcare: the RIGHT-Ad@pt Checklist protocol. BMJ Open [Internet]. 2019 Sep 24 [cited 2020 Jul 7]; 9(9):e031767. Available from: https:// doi.org/10.1136/bmjopen-2019-031767

Bendriss, Ghizlane

Abdellatif B, McVeigh C, **Bendriss G, Chaari A.** The promising role of probiotics in managing the altered gut in autism spectrum disorders. Int J Mol Sci [Internet]. 2020 Jun 10 [cited 2020 Jul 7];21(11):4159. Available from: https://doi.org/10.3390/ ijms21114159

Salameh M, Burney Z, Mhaimeed N, Laswi I, Yousri NA, **Bendriss G,** Zakaria D. The role of gut microbiota in atopic asthma and allergy, implications in the understanding of disease pathogenesis. Scand J Immunol [Internet]. 2020 Mar [cited 2020 Jul 7]; 91(3):e12855. Available from: https:// doi.org/10.1111/sji.12855

Bendriss, Rachid

Saliba R, **Bendriss R.** Experiential learning in premedical education: enhancing students' experience through e-learning. In: Evans R, Nygaard C, editors. E-learning 1.0, 2.0, and 3.0 in higher education. Faringdon, England: Libri Publishing Ltd; 2019. p. 165-88.

Bholah, Reshma

Xiao N, Stolfi A, Malatesta-Muncher R, **Bholah R,** Kogon A, Eddington A, Chand D, Greenbaum LA, Hanevold C, Tran CL, Chishti A, Davis K, Matloff R, Woroniecki R, Klosterman C, Luckritz K, Omoloja A. Risk behaviors in teens with chronic kidney disease: a study from the Midwest Pediatric Nephrology Consortium. Int J Nephrol [Internet]. 2019 Dec 4 [cited 2020 Jul 7];2019:7828406. Available from: https://doi.org/10.1155/2019/7828406

Büsselberg, Dietrich

Abotaleb M, Samuel SM, Varghese E, Varghese S, Kubatka P, Liskova A, **Büsselberg D.** Flavonoids in cancer and apoptosis. Cancers (Basel) [Internet]. 2019 Jan [cited 2020 Jul 7]; 11(1):28. Available from: https://doi. org/10.3390/cancers11010028

Abotaleb M, Liskova A, Kubatka P, **Büsselberg D.** Therapeutic Potential of Plant Phenolic Acids in the Treatment of Cancer. Biomolecules [Internet]. 2020 Feb 3 [cited 2020 Jul 7];10(2):221. Available from: https://doi.org/10.3390/ biom10020221

Abu Samaan TM, Samec M, Liskova A, Kubatka P, **Büsselberg D.** Paclitaxel's mechanistic and clinical effects on breast cancer. Biomolecules [Internet]. 2019 Nov 27 [cited 2020 Jul 7]; 9(12):789. Available from: https://doi. org/10.3390/biom9120789

Al-Ishaq RK, Abotaleb M, Kubatka P, Kajo K, **Büsselberg D.** Flavonoids and their anti-diabetic effects: cellular mechanisms and effects to improve blood sugar levels. Biomolecules [Internet]. 2019 Sep 1 [cited 2020 Jul 7]; 9(9):430. Available from: https://doi. org/10.3390/biom9090430

Al-Ishaq RK, Overy AJ, **Büsselberg D**. Phytochemicals and gastrointestinal cancer: cellular mechanisms and effects to change cancer progression. Biomolecules [Internet]. 2020 Jan 8 [cited 2020 Jul 7];10(1):105. Available from: https://doi.org/10.3390/ biom10010105

Jasek K, Kubatka P, Samec M, Liskova A, Smejkal K, Vybohova D, Bugos O, Biskupska-Bodova K, Bielik T, Zubor P, Danko J, Adamkov M, Kwon TK, **Büsselberg D.** DNA methylation status in cancer disease: modulations by plant-derived natural compounds and dietary interventions. Biomolecules [Internet]. 2019 Jul 18 [cited 2020 Jul 23]; 9(7):289. Available from: https://doi. org/10.3390/biom9070289

Kapinova A, Kubatka P, Liskova A, Baranenko D, Kruzliak P, Matta M, **Büsselberg D,** Malicherova B, Zulli A, Kwon TK, Jezkova E, Blahutova D, Zubor P, Danko J. Controlling metastatic cancer: the role of phytochemicals in cell signaling. Journal of cancer research and clinical oncology. 2019 May;145(5):1087-109. doi: 10.1007/s00432-019-02892-5

Kiskova T, Kubatka P, **Büsselberg D,** Kassayova M. The plant-derived compound resveratrol in brain cancer: a review. Biomolecules [Internet]. 2020 Jan 19 [cited 2020 Jul 7];10(1):161. Available from: https://doi.org/10.3390/ biom10010161

Koklesova L, Liskova A, Samec M, Qaradakhi T, Zulli A, Smejkal K, Kajo K, Jakubikova J, Behzadi P, Pec M, Zubor P, Biringer K, Kwon TK, **Büsselberg D,** Sarria GR, Giordano FA, Golubnitschaja O, Kubatka P. Genoprotective activities of plant natural substances in cancer and chemopreventive strategies in the context of 3P medicine. Empa J [Internet]. 2020 Jun [cited 2020 Jul 7]; 11(2):261-87. Available from: https://doi. org/10.1007/s13167-020-00210-5

Kubatka P, Kello M, Kajo K, Samec M, Jasek K, Vybohova D, Uramova S, Liskova A, Sadlonova V, Koklesova L, Murin R, Adamkov M, Smejkal K, Svajdlenka E, Solar P, Samuel SM, Kassayova M, Kwon TK, Zubor P, Pec M, Danko J, **Büsselberg D,** Mojzis J. Chemopreventive and therapeutic efficacy of Cinnamomum zeylanicum L. bark in experimental breast carcinoma: mechanistic in vivo and in vitro analyses. Molecules [Internet]. 2020 Mar 19 [cited 2020 Jul 7]; 25(6):1399. Available from: https://doi. org/10.3390/molecules25061399

Liskova A, Koklesova L, Samec M, Smejkal K, Samuel SM, Varghese E, Abotaleb M, Biringer K, Kudela E, Danko J, Shakbaei M, Kwon TK, **Büsselberg D,** Kubatka P. Flavonoids in cancer metastasis. Cancers (Basel) [Internet]. 2020 2020 Jun 8 [cited 2020 Jul 7];12(6):1498. Available from: https://doi.org/10.3390/ cancers12061498 Liskova A, Stefanicka P, Samec M, Smejkal K, Zubor P, Bielik T, Biskupska-Bodova K, Kwon TK, Danko J, **Büsselberg D,** Adamek M, Rodrigo L, Kruzliak P, Shleikin A, Kubatka P. Dietary phytochemicals as the potential protectors against carcinogenesis and their role in cancer chemoprevention. Clin Exp Med. 2020 May;20(2):173-90. doi: 10.1007/s10238-020-00611-w

Mathews Samuel S, Satheesh NJ, Ghosh S, **Büsselberg D,** Majeed Y, Ding H, Triggle CR. Treatment with a combination of metformin and 2-deoxyglucose upregulates thrombospondin-1 in microvascular endothelial cells: implications in antiangiogenic cancer therapy. Cancers (Basel) [Internet]. 2019 Nov 6 [cited 2020 Jul 7];11(11):1737. Available from: https://doi.org/10.3390/cancers11111737

Salehi B, Selamoglu Z, Sevindik M, Fahmy NM, Al-Sayed E, Elshazly MB, Csupor-Löffler B, Csupor D, Yazdi SE, Sharifi-Rad J, Arserim-Uçar DK, Arserim EH, Karazhan N, Jahani A, Dey A, Azadi H, Vakili SA, Sharopov F, Martins N, **Büsselberg D.** Achillea spp.: a comprehensive review on its ethnobotany, phytochemistry, phytopharmacology and industrial applications. Cell Mol Biol (Noisy-legrand). 2020 Jun 25;66(4):78-103.

Samec M, Liskova A, Koklesova L, Mestanova V, Franekova M, Kassayova M, Bojkova B, Uramova S, Zubor P, Janikova K, Danko J, Samuel SM, **Büsselberg D,** Kubatka P. Fluctuations of histone chemical modifications in breast, prostate, and colorectal cancer: an implication of phytochemicals as defenders of chromatin equilibrium. Biomolecules [Internet]. 2019 Dec 5 [cited 2020 Jul 7]; 9(12):829. Available from: https://doi. org/10.3390/biom9120829

Samec M, Liskova A, Kubatka P, Uramova S, Zubor P, Samuel SM, Zulli A, Pec M, Bielik T, Biringer K, Kudela E, Benacka J, Adamek M, Rodrigo L, Ciccocioppo R, Kwon TK, Baranenko D, Kruzliak P, **Büsselberg D.** The role of dietary phytochemicals in the carcinogenesis via the modulation of miRNA expression. Journal of cancer research and clinical oncology. 2019 Jul;145(7):1665-79. doi: 10.1007/ s00432-019-02940-0

Samuel SM, Varghese E, Kubatka P, Triggle CR, **Büsselberg D.** Metformin: the answer to cancer in a flower? Current knowledge and future prospects of metformin as an anticancer agent in breast cancer. Biomolecules [Internet]. 2019 Dec 9 [cited 2020 Jul 7];9(12):846. Available from: https://doi.org/10.3390/ biom9120846

Satheesh NJ, Samuel SM, **Büsselberg D.** Combination therapy with vitamin C could eradicate cancer stem cells. Biomolecules [Internet]. 2020 Jan 3 [cited 2020 Jul 7];10(1):79. Available from: https://doi.org/10.3390/ biom10010079

Solarova Z, Liskova A, Samec M, Kubatka P, **Büsselberg D,** Solar P. Anticancer potential of lichens' secondary metabolites. Biomolecules [Internet]. 2020 Jan 5 [cited 2020 Jul 7]; 10(1):87. Available from: https://doi. org/10.3390/biom10010087

Vanova B, Kalman M, Jasek K, Kasubova I, Burjanivova T, Farkasova A, Kruzliak P, **Büsselberg D**, Plank L, Lasabova Z. Droplet digital PCR revealed high concordance between primary tumors and lymph node metastases in multiplex screening of KRAS mutations in colorectal cancer. Clin Exp Med. 2019 May;19(2):219-24. doi: 10.1007/s10238-019-00545-y

Varghese E, Samuel SM, Sadiq Z, Kubatka P, Liskova A, Benacka J, Pazinka P, Kruzliak P, **Büsselberg D.** Anti-cancer agents in proliferation and cell death: the calcium connection. Int J Mol Sci [Internet]. 2019 Jun 20 [cited 2020 Jul 7];20(12):3017. Available from: https://doi.org/10.3390/ijms20123017 Varghese E, Liskova A, Kubatka P, Mathews Samuel S, **Büsselberg D**. Anti-angiogenic effects of phytochemicals on miRNA regulating breast cancer progression. Biomolecules [Internet]. 2020 Jan 27 [cited 2020 Jul 7];10(2):191. Available from: https://doi.org/10.3390/ biom10020191

Zhai K, Liskova A, Kubatka P, **Büsselberg D.** Calcium entry through TRPV1: a potential target for the regulation of proliferation and apoptosis in cancerous and healthy cells. Int J Mol Sci [Internet]. 2020 Jun 11 [cited 2020 Jul 7];21(11):4177. Available from: https:// doi.org/10.3390/ijms21114177

Chaabna, Karima

Al-Rifai RH, **Chaabna K,** Denagamage T, Alali WQ. Prevalence of enteric non-typhoidal Salmonella in humans in the Middle East and North Africa: a systematic review and meta-analysis. Zoonoses Public Health. 2019 Nov;66(7):701-28. doi: 10.1111/zph.12631

Al-Rifai RH, **Chaabna K**, Denagamage T, Alali WQ. Prevalence of non-typhoidal Salmonella enterica in food products in the Middle East and North Africa: a systematic review and meta-analysis. Food Control. 2020 Mar;109. doi: 10.1016/j.foodcont.2019.106908

Chaabane S, **Chaabna K,** Abraham A, Mamtani R, Cheema S. Physical activity and sedentary behaviour in the Middle East and North Africa: an overview of systematic reviews and meta-analysis. Sci Rep [Internet]. 2020 Jun 9 [cited 2020 Jul 7];10(1):9363. Available from: https:// doi.org/10.1038/s41598-020-66163-x

Chaari, Ali

Abdellatif B, McVeigh C, Bendriss G, **Chaari A.** The promising role of

probiotics in managing the altered gut in autism spectrum disorders. Int J Mol Sci [Internet]. 2020 Jun 10 [cited 2020 Jul 7];21(11):4159. Available from: https://doi.org/10.3390/ijms21114159

Chaari A. Molecular chaperones biochemistry and role in neurodegenerative diseases. Int J Biol Macromol. 2019 Jun 15;131:396-411. doi: 10.1016/j.ijbiomac.2019.02.148

Chaari A, Fahy C, Chevillot-Biraud A, Rholam M. Investigating the effects of different natural molecules on the structure and oligomerization propensity of hen egg-white lysozyme. Int J Biol Macromol. 2019 Aug;134:189-201. doi: 10.1016/j.ijbiomac.2019.05.048

Chaari A, Ladjimi M. Human islet amyloid polypeptide (hIAPP) aggregation in type 2 diabetes: correlation between intrinsic physicochemical properties of hIAPP aggregates and their cytotoxicity. Int J Biol Macromol. 2019 Sep 1;136(7):57-65. doi: 10.1016/j.ijbiomac.2019.06.050

Chaari A. Inhibition of human islet amyloid polypeptide aggregation and cellular toxicity by oleuropein and derivatives from olive oil. Int J Biol Macromol. 2020 Jun 15;131:396-411. doi: 10.1016/j.ijbiomac.2020.06.170

Cheema, Sohaila

Chaabane S, Chaabna K, Abraham A, Mamtani R, **Cheema S.** Physical activity and sedentary behaviour in the Middle East and North Africa: an overview of systematic reviews and meta-analysis. Sci Rep [Internet]. 2020 Jun 9 [cited 2020 Jul 7];10(1):9363. Available from: https://doi.org/10.1038/ s41598-020-66163-x

Doraiswamy S, **Cheema S,** Mamtani R. Older people and epidemics: a call for empathy. Age Ageing [Internet]. 2020 May [cited 2020 Jul 7];49(3):493. Available from: https://doi.org/10.1093/ ageing/afaa060

Chouchane, Lotfi

Al Hashmi M, Sastry KS, Silcock L, **Chouchane L,** Mattei V, James N, Mathew R, Bedognetti D, De Giorgi V, Murtas D, Liu W, Chouchane A, Temanni R, Seliger B, Wang E, Marincola FM, Tomei S. Differential responsiveness to BRAF inhibitors of melanoma cell lines BRAF V600Emutated. J Transl Med [Internet]. 2020 May 11 [cited 2020 Jul 7];18(1):192. Available from: https://doi.org/10.1186/ s12967-020-02350-8

Hamdi Y, Jerbi M, Romdhane L, Ben Rekaya M, El Benna H, **Chouchane L,** Boubaker MS, Abdelhak S, Yacoub-Youssef H. Genetic diversity and functional effect of common polymorphisms in genes involved in the first heterodimeric complex of the Nucleotide Excision Repair pathway. DNA Repair (Amst). 2020 Feb;86:102770. doi: 10.1016/j. dnarep.2019.102770

Pasquier J, Ghiabi P, **Chouchane L,** Razzouk K, Rafii S, Rafii A. Angiocrine endothelium: from physiology to cancer. J Transl Med [Internet]. 2020 Feb 3 [cited 2020 Jul 7];18(1):52. Available from: https://doi.org/10.1186/ s12967-020-02244-9

Razzouk K, Fitoussi A, Al Khori N, Pasquier J, **Chouchane L,** Tabrizi AR. Breast reconstruction combining lipofilling and prepectoral prosthesis after radiotherapy. Plast Reconstr Surg Glob Open [Internet]. 2020 May [cited 2020 Jul 7];8(5):e2659. Available from: https://doi.org/10.1097/ GOX.00000000002659

Roelands J, Hendrickx W, Zoppoli G, Mall R, Saad M, Halliwill K, Curigliano G, Rinchai D, Decock J, Delogu LG, Turan T, Samayoa J, **Chouchane L,** Ballestrero A, Wang E, Finetti P, Bertucci F, Miller LD, Galon J, Marincola FM, Kuppen PJK, Ceccarelli M, Bedognetti D. Oncogenic states dictate the prognostic and predictive connotations of intratumoral immune response. J Immunother Cancer [Internet]. 2020 Apr [cited 2020 Jul 7]; 8(1):e000617. Available from: https:// doi.org/10.1136/jitc-2020-000617

Roelands J, Hendrickx W, Zoppoli G, Mall R, Saad M, Halliwill K, Curigliano G, Rinchai D, Decock J, Delogu LG, Turan T, Samayoa J, Chouchane L, Ballestrero A, Wang E, Finetti P, Bertucci F, Miller LD, Galon J, Marincola FM, Kuppen PJK, Ceccarelli M, Bedognetti D. Correction: Oncogenic states dictate the prognostic and predictive connotations of intratumoral immune response. J Immunother Cancer [Internet]. 2020 Jun [cited 2020 Jul 7]; 8(1):e000617corr1. Available from: https://doi.org/10.1136/jitc-2020-000617corr1

Shan J, Al-Muftah MA, Al-Kowari MK, Abuaqel SWJ, Al-Rumaihi K, Al-Bozom I, Li P, Chouchane L. Targeting Wnt/ EZH2/microRNA-708 signaling pathway inhibits neuroendocrine differentiation in prostate cancer. Cell Death Discov [Internet]. 2019 Sep 30 [cited 2020 Jul 7]; 5:139. Available from: https://doi. org/10.1038/s41420-019-0218-y

Shan J, Chouchane A, Mokrab Y, Saad M, Boujassoum S, Sayaman RW, Ziv E, Bouaouina N, Remadi Y, Gabbouj S, Roelands J, Ma X, Bedognetti D, Chouchane L. Genetic variation in CCL5 signaling genes and triple negative breast cancer: susceptibility and prognosis implications. Front Oncol [Internet]. 2019 Dec 6 [cited 2020 Jul 7];9:1328. Available from: https://doi.org/10.3389/ fonc.2019.01328

Song M, Wang C, Wang H, Zhang T, Li J, Benezra R, **Chouchane L,** Sun YH, Cui XG, Ma X. Targeting ubiquitin protein ligase E3 component N-recognin 5 in cancer cells induces a CD8+ T cell mediated immune response. Oncoimmunology [Internet]. 2020 Apr 14 [cited 2020 Jul 7]; 9(1):1746148. Available from: https:// doi.org/10.1080/2162402x.2020.1746148

Ding, Hong

Mathews Samuel S, Satheesh NJ, Ghosh S, Büsselberg D, Majeed Y, **Ding H,** Triggle CR. Treatment with a combination of metformin and 2-deoxyglucose upregulates thrombospondin-1 in microvascular endothelial cells: implications in antiangiogenic cancer therapy. Cancers (Basel) [Internet]. 2019 Nov 6 [cited 2020 Jul 7];11(11):1737. Available from: https://doi.org/10.3390/cancers11111737

Pulakazhi Venu VK, EI-Daly M, Saifeddine M, Hirota SA, **Ding H,** Triggle CR, Hollenberg MD. Minimizing hyperglycemia-induced vascular endothelial dysfunction by inhibiting endothelial sodium-glucose cotransporter 2 and attenuating oxidative stress: implications for treating individuals with type 2 diabetes. Can J Diabetes. 2019 Oct 1;43(7):P510-4. doi: 10.1016/j. jcjd.2019.01.005

Triggle CR, Bansal D, Farag E, **Ding H,** Sultan AA. COVID-19: learning from lessons to guide treatment and prevention interventions. mSphere [Internet]. 2020 May 13 [cited 2020 Jul 7]; 5(3):e00317-20. Available from: https:// doi.org/10.1128/mSphere.00317-20

Elshazly, Mohamed Badreldin

Bayoumy K, Gaber M, Mani P, Puri R, Donnellan E, Cho L, Clark D, Martin SS, **Elshazly MB.** LDL-C targets in secondary prevention: how low should we go? Curr Cardiovascu Risk Rep [Internet]. 2019 2019/06/18 [cited 2020 Jul 7]; 13(8):23. Available from: https://doi. org/10.1007/s12170-019-0619-8

Clark D, 3rd, Nicholls SJ, St John J, **Elshazly MB,** Ahmed HM, Khraishah H, Nissen SE, Puri R. Visit-to-visit blood pressure variability, coronary atheroma progression, and clinical outcomes. JAMA Cardiol [Internet]. 2019 May 1 [cited 2020 Jul 7];4(5):437-43. Available from: https://doi. org/10.1001/jamacardio.2019.0751 **Elshazly MB,** Mani P, Nissen S, Brennan DM, Clark D, Martin S, Jones SR, Quispe R, Donnellan E, Nicholls SJ, Puri R. Remnant cholesterol, coronary atheroma progression and clinical events in statin-treated patients with coronary artery disease. Eur J Prev Cardiol. 2019 Nov 19;27(10):1091-100. doi: 10.1177/2047487319887578

Quispe R, Michos ED, Martin SS, Puri R, Toth PP, Al Suwaidi J, Banach M, Virani SS, Blumenthal RS, Jones SR, **Elshazly MB.** High-sensitivity C-reactive protein discordance with atherogenic lipid measures and incidence of atherosclerotic cardiovascular disease in primary prevention: the ARIC study. J Am Heart Assoc [Internet]. 2020 Feb 4 [cited 2020 Jul 7]; 9(3):e013600. Available from: https:// doi.org/10.1161/jaha.119.013600

Salehi B, Selamoglu Z, Sevindik M, Fahmy NM, Al-Sayed E, **Elshazly MB,** Csupor-Löffler B, Csupor D, Yazdi SE, Sharifi-Rad J, Arserim-Uçar DK, Arserim EH, Karazhan N, Jahani A, Dey A, Azadi H, Vakili SA, Sharopov F, Martins N, Büsselberg D. Achillea spp.: a comprehensive review on its ethnobotany, phytochemistry, phytopharmacology and industrial applications. Cell Mol Biol (Noisy-legrand). 2020 Jun 25;66(4):78-103.

Golkowska, Krystyna

Weber AS, Jones D, **Golkowska K,** Sharkey R, Larson A, editors. Qira'at: readings from the students of Weill Cornell Medicine in Qatar. Doha, Qatar: Weill Cornell Medicine - Qatar; 2019. 251 p.

Haddad, Naim

Mesraoua B, Deleu D, Al Hail HJ, Melikyan G, Abdalhalim Ali M, **Haddad N,** Mohamed Ali YO, Elsheikh L, Ayyad A, Perkins J, Palomo GA, Asadi-Pooya AA. Prevalence and incidence of drugresistant temporal lobe epilepsy in Qatar. J Cent Nerv Syst Dis [Internet]. 2020 Jun 27 [cited 2020 Jul 121;12:1179573520935031. Available from: https://doi. org/10.1177/1179573520935031

Halama, Anna

Achkar IW, Kader S, Dib SS, Junejo K, Al-Bader SB, Hayat S, Bhagwat AM, Rousset X, Wang Y, Viallet J, Suhre K, Halama A. Metabolic signatures of tumor responses to doxorubicin elucidated by metabolic profiling in ovo. Metabolites [Internet]. 2020 Jun 28 [cited 2020 Jul 71:10(7):268. Available from: https://doi. org/10.3390/metabo10070268

Kahal H, Halama A, Aburima A, Bhagwat AM, Butler AE, Grauman J, Suhre K, Sathyapalan T, Atkin SL. Effect of induced hypoglycemia on inflammation and oxidative stress in type 2 diabetes and control subjects. Sci Rep [Internet], 2020 Mar 16 [cited 2020 Jul 7];10(1):4750. Available from: https://doi.org/10.1038/s41598-020-61531-z

Kahal H, **Halama A**, Aburima A, Bhagwat AM, Butler AE, Graumann J, Suhre K, Sathyapalan T, Atkin SL. Author correction: Effect of induced hypoglycemia on inflammation and oxidative stress in type 2 diabetes and control subjects. Sci Rep [Internet]. 2020 Jun 19 [cited 2020 Jul 7]; 10(1):10233. Available from: https://doi. org/10.1038/s41598-020-66189-1

Zaghlool SB, Kuhnel B, Elhadad MA, Kader S, Halama A, Thareja G, Engelke R, Sarwath H, Al-Dous EK, Mohamoud YA, Meitinger T, Wilson R, Strauch K, Peters A, Mook-Kanamori DO, Graumann J, Malek JA, Gieger C, Waldenberger M, Suhre K. Epigenetics meets proteomics in an epigenomewide association study with circulating blood plasma protein traits. Nat Commun [Internet]. 2020 Jan 3 [cited 2020 Jul 7];11(1):15. Available from: https://doi.org/10.1038/s41467-019-13831-w

Hunt, Steven C.

Clark DW, Okada Y, Moore KHS, Mason D, Pirastu N, Gandin I, Mattsson H, Barnes CLK, Lin K, Zhao JH, Deelen P, Rohde R, Schurmann C, Guo X, Giulianini F, Zhang W, Medina-Gomez C, Karlsson R, Bao Y, Bartz TM, Baumbach C, Biino G, Bixley MJ, Brumat M, Chai JF, et al. [incl. Hunt SC]. Associations of autozygosity with a broad range of human phenotypes. Nat Commun [Internet]. 2019 Oct 31 [cited 2020 Jul 7];10(1):4957. Available from: https://doi.org/10.1038/s41467-019-12283-6

Davidson LE, Hunt SC, Adams TD. Fitness versus adiposity in cardiovascular disease risk. Eur J Clin Nutr. 2019 Feb;73(2):225-30. doi: 10.1038/s41430-018-0333-5

DePaoli AM, Zhou M, Kaplan DD, Hunt SC, Adams TD, Learned RM, Tian H, Ling L. FGF19 analog as a surgical factor mimetic that contributes to metabolic effects beyond glucose homeostasis. Diabetes [Internet]. 2019 Jun [cited 2020 Jul 7];68(6):1315-28. Available from: https://doi.org/10.2337/db18-1305

Kraja AT, Liu CY, Fetterman JL, Graff M, Have CT, Gu C, Yanek LR, Feitosa MF, Arking DE, Chasman DI, Young K, Ligthart S, Hill WD, Weiss S, Luan JA, Giulianini F, Li-Gao RF, Hartwig FP, Lin SJ, Wang LH, Richardson TG, Yao J, Fernandez EP, Ghanbari M, Wojczynski MK, et al. [incl. Hunt SC]. Associations of mitochondrial and nuclear mitochondrial variants and genes with seven metabolic traits. Am J Hum Genet [Internet]. 2019 Jan 3 [cited 2020 Jul 7];104(1):112-38. Available from: https://doi.org/10.1016/j. ajhg.2018.12.001

Lamina C, Kronenberg F, Mack S, Coassin S, Rueedi R, Yousri NA, Seppala I, Gieger C, Schonherr S, Forer L, Erhart G, Margues-Vidal P, Ried JS, Waeber G, Bergmann S, Dahnhardt D, Stockl A, Raitakari OT, Kahonen M, Peters A, Meitinger T,

Strauch K, Kedenko L, Paulweber B, Lehtimaki T, et al. [incl. Hunt SC]. Estimation of the required lipoprotein(a)-lowering therapeutic effect size for reduction in coronary heart disease outcomes: a mendelian randomization analysis. JAMA Cardiol [Internet]. 2019 Jun [cited 2020 Jul 7]; 4(6):575-9. Available from: https://doi. org/10.1001/jamacardio.2019.1041

Litwin SE, Adams TD, Davidson LE, McKinlay R, Simper SC, Ranson L, Hunt SC. Longitudinal changes in cardiac structure and function in severe obesity: 11-year follow-up in the Utah Obesity Study. J Am Heart Assoc [Internet]. 2020 Jun 16 [cited 2020 Jul 7]; 9(12):e014542. Available from: https:// doi.org/10.1161/iaha.119.014542

Poss AM, Maschek JA, Cox JE, Hauner BJ, Hopkins PN, Hunt SC, Holland WL, Summers SA, Playdon MC. Machine learning reveals serum sphingolipids as cholesterol-independent biomarkers of coronary artery disease. J Clin Invest [Internet]. 2020 Mar 2 [cited 2020 Jul 7]; 130(3):1363-76. Available from: https://doi.org/10.1172/jci131838

Sung YJ, de Las Fuentes L, Winkler TW, Chasman DI, Bentley AR, Kraja AT, Larson, Adam Ntalla I, Warren HR, Guo X, Schwander K, Manning AK, Brown MR, Aschard H, Weber AS, Jones D, Golkowska K, Sharkey R, Feitosa MF, Franceschini N, Lu Y, Larson A, editors. Qira'at: readings from Cheng CY, Sim X, Vojinovic D, Marten J, the students of Weill Cornell Medicine in Musani SK, Kilpelainen TO, Richard MA, Qatar. Doha, Qatar: Weill Cornell Medicine Aslibekyan S, Bartz TM, et al. [incl. - Qatar; 2019. 251 p. Hunt SC]. A multi-ancestry genomewide study incorporating gene-smoking interactions identifies multiple new loci Machaca, Khaled for pulse pressure and mean arterial Emrich SM, Yoast RE, Xin P, Zhang X, pressure, Hum Mol Genet [Internet]. Pathak T, Nwokonko R, Gueguinou MF, 2019 Apr 10 [cited 2020 Jul 7];28(15): Subedi KP, Zhou Y, Ambudkar IS, 2615-33. Available from: Hempel N, Machaca K, Gill DL, https://doi.org/10.1093/hmg/ddz070

Kronfol, Ziad

Hawi DR, Albanna M, Kronfol Z. Mental health in higher education: psychology and psychiatry. In: Hague A, Gilstrap LL,

Ghuloum S, editors. Mental health in Qatar: challenges and prospects. Newcastle upon Tyne, England: Cambridge Scholars Publishing; 2020. p. 41-68.

Kronfol Z, Ghuloum S, Weber AS, Qoronfleh MW. Challenges facing the youth in Qatar: a mental health perspective. In: Alkhateeb HM, editor. Qatar: political, economic and social issues. Hauppauge, NY: Nova Science Publishers, Inc.; 2019. p. 385-403

Weber AS, Kronfol Z. Qatar's education revolution: K-12 and higher education reform in a rapidly developing country. In: Alkhateeb HM, editor. Qatar: political, economic and social issues. Hauppauge, NY: Nova Science Publishers, Inc.; 2019. p. 337-47

Ladjimi, Moncef

Chaari A, Ladjimi M. Human islet amyloid polypeptide (hIAPP) aggregation in type 2 diabetes: correlation between intrinsic physicochemical properties of hIAPP aggregates and their cytotoxicity. Int J Biol Macromol. 2019 Sep 1;136(7):57-65. doi: 10.1016/j.ijbiomac.2019.06.050

Trebak M. Cross-talk between N-terminal and C-terminal domains in stromal interaction molecule 2 (STIM2) determines enhanced STIM2 sensitivity. J Biol Chem. 2019 Apr 19;294(16):6318-32. doi: 10.1074/jbc. RA118.006801

Kulkarni RP, Elmi A, Alcantara-Adap E, Hubrack S, Nader N, Yu F, Dib M, Ramachandran V, Najafi-Shoushtari SH, Machaca K. miRNA-dependent regulation of STIM1 expression in breast cancer. Sci Rep [Internet]. 2019 Sep 10 [cited 2020 Jul 7]; 9(1):13076. Available from: https://doi. org/10.1038/s41598-019-49629-5

Schaefer-Ramadan S, Barlog M, Roach J, Al-Hashimi M, Bazzi HS, Machaca K. Synthesis of TPEN variants to improve cancer cells selective killing capacity. Bioorg Chem. 2019 Jun;87:366-72. doi: 10.1016/j.bioorg.2019.03.045

Taylor CW, Machaca K. IP3 receptors and store-operated Ca2+ entry: a license to fill. Curr Opin Cell Biol. 2019 Apr; 57:1-7. doi: 10.1016/j.ceb.2018.10.001

Yu F, Hubrack SZ, Chakraborty S, Sun L, Alcantara-Adap E, Kulkarni R, Billing AM, Graumann J, Taylor CW, Machaca K. Remodeling of ER-plasma membrane contact sites but not STIM1 phosphorylation inhibits Ca2+ influx in mitosis. Proc Natl Acad Sci U S A [Internet]. 2019 May 21 [cited 2020 Jul 7]; 116(21):10392-401. Available from: https://doi.org/10.1073/pnas.1821399116

Mahfoud, Ziyad R.

Abi Khalil C, Zubaid M, Mekhaimar M, Asaad N, Mahfoud ZR, Al Suwaidi J. Beta-blockers and short-term cardiovascular outcomes in patients hospitalized for acute coronary syndrome and a left ventricular ejection fraction \geq 40. Sci Rep [Internet]. 2020 Feb 26 [cited 2020 Jul 7]: 10(1):3520. Available from: https://doi. org/10.1038/s41598-020-60528-y

Amro I, Ghuloum S, Mahfoud ZR, Opler M, Khan A, Hammoudeh S, Hani Y, Yehya A, Al-Amin H. Cross-cultural adaptation of the Arabic Positive and Negative Syndrome Scale in schizophrenia: qualitative analysis of a focus group. Transcult Psychiatry [Internet]. 2019 May 27 [cited 2020 Jul 7];

56(5):973-91. Available from: https:// doi.ora/10.1177/1363461519850345

Chamali R, Ghuloum S, Sheehan DV, Mahfoud ZR, Yehya A, Opler MGA, Khan A, Hammoudeh S, Hani Y, Al-Amin H. Cross-validation of the Arabic Mini International Neuropsychiatric Interview, Module K, for diagnosis of schizophrenia and the Arabic Positive and Negative Syndrome Scale. J Psychopathol Behav Assess [Internet]. 2020 Mar [cited 2020 Jul 7]; 42(1):139-49. Available from: https://doi. org/10.1007/s10862-019-09759-6

Kiwan N, Mahfoud ZR, Ghuloum S, Chamali R, Yehya A, Hammoudeh S, Hani Y, Amro I, Al-Amin H. Correction to: Self-reported sleep and exercise patterns in patients with schizophrenia: a cross-sectional comparative study. Int J Behav Med [Internet]. 2020 Apr [cited 2020 Jul 7]; 27(2):255. Available from: https://doi. org/10.1007/s12529-020-09851-2

Kiwan N, Mahfoud ZR, Ghuloum S, Yehya A, Hammoudeh S, Hani Y, Chamali R, Amro I, Mook-Kanamori D, Al-Amin H. Relationships between sleep patterns and metabolic profile in patients maintained on antipsychotics: a cross-sectional comparative study. Neuropsychiatr Dis Treat [Internet]. 2019 Jul 19 [cited 2020 Jul 7];15:2035-47. Available from: https://doi.org/10.2147/ ndt.S207987

Mahfoud ZR, Emam R, Anchassi D, Omran S, Alhaj N, Al-Abdulla S, El-Amin A, Shehata M, Aly S, Al Emadi N, Al-Meer F, Al-Amin H. Premenstrual dysphoric disorder in Arab women: validation and cultural adaptation of the Arabic version of the premenstrual screening tool. Women Health. 2019 Jul;59(6):631-45. doi: 10.1080/03630242.2018.1539433

Ponirakis G, Al Hamad H, Sankaranarayanan A, Khan A, Chandran M, Ramadan M, Tosino R, Gawhale PV, Alobaidi M, AlSulaiti E, Elsotouhy A, Elorrabi M, Khan S,

Nadukkandiyil N, Osman S, Thodi N, Almuhannadi H, Gad H, Mahfoud ZR, Al-Shibani F, Petropoulos IN, Own A, Al Kuwari M, Shuaib A, Malik RA. Association of corneal nerve fiber measures with cognitive function in dementia. Ann Clin Transl Neurol [Internet]. 2019 Apr [cited 2020 Jul 7]; 6(4):689-97. Available from: https:// doi.org/10.1002/acn3.746

Ponirakis G, Elhadd T, Chinnaiyan S, doi: 10.1177/1120672119832171 Dabbous Z, Siddiqui M, Al-Muhannadi H, Salem M, Dargham SR, Kamal M, Petropoulos I, Khan A, Ashawesh KA, Eldeeb N, Alyafei KA, Lynch MA, Mian M, Dukhan KM, Mahfoud ZR, Murgatroyd C, Mahfoud ZR. Effect of gender on Slevin M, Malik RA. Prevalence and risk childhood maltreatment in the state factors for painful diabetic neuropathy of Qatar: Retrospective study. Child in secondary healthcare in Qatar. J Abuse Negl. 2020 Mar;101:104314. doi: Diabetes Investig [Internet]. 2019 Mar 12 10.1016/j.chiabu.2019.104314 [cited 2020 Jul 7];10(6):15581564. Available from: https://doi.org/10.1111/ jdi.13037

Ponirakis G, Petropoulos IN, Alam U, Ferdousi M, Asghar O, Marshall A, Azmi S, Jeziorska M, Mahfoud ZR, Boulton AJM, Efron N, Nukada H, Malik RA. Hypertension contributes to neuropathy in patients with type 1 diabetes. Am J Hypertens [Internet]. 2019 Aug [cited 2020 Jul 7];32(8):796-803. Available from: https://doi.org/10.1093/ ajh/hpz058

Ponirakis G, Abdul-Ghani MA, Javvousi A, Almuhannadi H, Petropoulos IN, Khan A, Gad H, Migahid O, Megahed A, DeFronzo R, Mahfoud ZR, Hassan M, Al Hamad H, Ramadan M, Alam U, Malik RA. Effect of treatment with exenatide and pioglitazone or basalbolus insulin on diabetic neuropathy: a substudy of the Qatar Study. BMJ Open Diabetes Res Care [Internet]. 2020 Jun [cited 2020 Jul 7];8(1). Available from: https://doi.org/10.1136/ bmjdrc-2020-001420

Ponirakis G, Elhadd T, Chinnaiyan S, Dabbous Z, Siddigui M, Al-Muhannadi H, Petropoulos IN, Khan A, Ashawesh KAE, Dukhan KMO, Mahfoud ZR, Murgatroyd C, Slevin M, Malik RA. Prevalence and management of diabetic neuropathy in secondary

care in Qatar. Diabetes Metab Res Rev. 2020 May:36(4):e3286. doi: 10.1002/ dmrr.3286

Rebeiz AG, Mahfoud ZR, Abdul Fattah M, Saad A, Safar A, Bashshur ZF. Change in cardiac troponin T level after intravitreal anti-vascular endothelial growth factor treatment: prospective pilot study. Eur J Ophthalmol. 2020 May:30(3):563-9.

Mahmoud, Mai

Goren E, Kogan J. Internal Medicine 07: 28-year-old female with lightheadedness [Internet]. Mahmoud M. editor. Lebanon, NH: Aquifer, Inc.; 2019 [cited 2020 Jul 13]. Available from: https://aquifer.org/courses/aquiferinternal-medicine/

Malek, Joel A.

Ahmed I, Karedath T, Al-Dasim FM, Malek JA. Identification of human genetic variants controlling circular RNA expression. RNA [Internet]. 2019 Dec [cited 2020 Jul 7];25(12): 1765-78. Available from: https://doi. org/10.1261/rna.071654.119

Al Ameri W, Ahmed I, Al-Dasim FM, Ali Mohamoud Y, Al-Azwani IK, Malek JA, Karedath T. Cell type-specific TGF-beta mediated EMT in 3D and 2D models and its reversal by TGF-beta receptor kinase inhibitor in ovarian cancer cell lines. Int J Mol Sci [Internet]. 2019 Jul 22 [cited 2020 Jul 7]; 20(14):3568. Available from: https://doi. org/10.3390/ijms20143568

Andrews SS, Schaefer-Ramadan S, Al-Thani NM, Ahmed I, Mohamoud YA, Malek JA. High-resolution protein-protein interaction mapping using all-versus-all sequencing (AVA-Seq). J Biol Chem. 2019 Jun 10;294:11549-58. doi: 10.1074/ jbc.RA119.008792

Butler AE, Hayat S, Dargham SR, **Malek JA,** Abdulla SA, Mohamoud YA, Suhre K, Sathyapalan T, Atkin SL. Alterations in long noncoding RNAs in women with and without polycystic ovarian syndrome. Clin Endocrinol (Oxf). 2019 Dec;91(6):793-7. doi: 10.1111/ cen.14087

Cosgrove EJ, Sadeghi R, Schlamp F, Holl HM, Moradi-Shahrbabak M, Miraei-Ashtiani SR, Abdalla S, Shykind B, Troedsson M, Stefaniuk-Szmukier M, Prabhu A, Bucca S, Bugno-Poniewierska M, Wallner B, **Malek JA**, Miller DC, Clark AG, Antczak DF, Brooks SA. Genome diversity and the origin of the Arabian horse. Sci Rep [Internet]. 2020 Jun 16 [cited 2020 Jul 7];10(1):9702. Available from: https://doi.org/10.1038/s41598-020-66232-1

Fakhro KA, Robay A, Rodrigues-Flores JL, Mezey JG, Al-Shakaki AA, Chidiac O, Stadler D, **Malek JA**, Imam AB, Sheikh A, Azzam A, Janahi I, Khanjar I, Osman K, Ziki MA, Mahmah MA, Selim M, Numeiri N, Ali R, Lakhani S, Butt F, Omran TB, Crystal RG. Point of care exome sequencing reveals allelic and phenotypic heterogeneity underlying Mendelian disease in Qatar. Hum Mol Genet. 2019 Dec 1;28(23):3970-81. doi: 10.1093/hmg/ddz134

Malek JA, Mathew S, Mathew LS, Younuskunju S, Mohamoud YA, Suhre K. Deletion of beta-fructofuranosidase (invertase) genes is associated with sucrose content in date palm fruit. Plant Direct [Internet]. 2020 May [cited 2020 Jul 7];4(5):e00214. Available from: https://doi.org/10.1002/pld3.214

Zaghlool SB, Kuhnel B, Elhadad MA, Kader S, Halama A, Thareja G, Engelke R, Sarwath H, Al-Dous EK, Mohamoud YA, Meitinger T, Wilson R, Strauch K, Peters A, Mook-Kanamori DO, Graumann J, **Malek JA,** Gieger C, Waldenberger M, Suhre K. Epigenetics meets proteomics in an epigenomewide association study with circulating blood plasma protein traits. Nat Commun [Internet]. 2020 Jan 3 [cited 2020 Jul 7];11(1):15. Available from: https://doi.org/10.1038/ s41467-019-13831-w

Malik, Rayaz A.

Akhtar N, Kamran S, Singh R, **Malik RA**, Deleu D, Bourke PJ, Joseph S, Santos MD, Morgan DM, Wadiwala FM, Francis R, Babu BM, George P, Ibrahim R, Garcia-Bermejo P, Shuaib A. The impact of diabetes on outcomes after acute ischemic stroke: a prospective observational study. J Stroke Cerebrovasc Dis. 2019 Mar;28(3):619-26. doi: 10.1016/j. jstrokecerebrovasdis.2018.11.003

Alam U, Jeziorska M, Petropoulos IN, Pritchard N, Edwards K, Dehghani C, Srinivasan S, Asghar O, Ferdousi M, Ponirakis G, Marshall A, Boulton AJM, Efron N, **Malik RA.** Latent autoimmune diabetes of adulthood (LADA) is associated with small fibre neuropathy. Diabet Med. 2019 Sep;36(9):1118-24. doi: 10.1111/dme.13888

Ammori BJ, Skarulis MC, Soran H, Syed AA, Eledrisi M, **Malik RA**. Medical and surgical management of obesity and diabetes: what's new? Diabet Med [Internet]. 2020 Feb [cited 2020 Jul 7]; 37(2):203-10. Available from: https://doi. org/10.1111/dme.14215

Azmi S, Jeziorska M, Ferdousi M, Petropoulos IN, Ponirakis G, Marshall A, Alam U, Asghar O, Atkinson A, Jones W, Boulton AJM, Brines M, Augustine T, **Malik RA.** Early nerve fibre regeneration in individuals with type 1 diabetes after simultaneous pancreas and kidney transplantation. Diabetologia [Internet]. 2019 Jun 7 [cited 2020 Jul 7];62:1478-87. Available from: https://doi.org/10.1007/ s00125-019-4897-y Burgess J, Javed S, Frank B, **Malik RA**, Alam U. Mirogabalin besylate in the treatment of neuropathic pain. Drugs Today (Barc). 2020 Feb;56(2):135-49. doi: 10.1358/dot.2020.56.2.3100504

Dabbous Z, Bashir M, Elzouki AN, Ahmed MS, Farouk S, Hassanien M, **Malik RA,** Abou Samra AB, Elhadd T. Differential effects of gender and patient background diversity on the changes in metabolic and biophysical profiles in people with type-2 diabetes from different ethnicities who fast during Ramadan (H1439); a prospective study from Qatar. Diabetes Res Clin Pract. 2019 Jun;152:171-6. doi: 10.1016/j. diabres.2019.03.032

Dhage S, Ho JH, Ferdousi M, Kalteniece A, Azmi S, Adam S, Marshall A, Jeziorska M, Donn R, Soran H, **Malik RA**. Small fibre pathology is associated with erectile dysfunction in men with type 2 diabetes. Diabetes Metab Res Rev. 2020 Mar; 36(3):e3263. doi: 10.1002/dmrr.3263

Evdokimov D, Frank J, Klitsch A, Unterecker S, Warrings B, Serra J, Papagianni A, Saffer N, Meyer Zu Altenschildesche C, Kampik D, **Malik RA,** Sommer C, Uceyler N. Reduction of skin innervation is associated with a severe fibromyalgia phenotype. Ann Neurol [Internet]. 2019 Oct [cited 2020 Jul 7]; 86(4):504-16. Available from: https://doi. org/10.1002/ana.25565

Ferdousi M, Kalteniece A, Petropoulos I, Azmi S, Dhage S, Marshall A, Boulton AJM, Efron N, Faber CG, Lauria G, Soran H, **Malik RA.** Diabetic neuropathy is characterized by progressive corneal nerve fiber loss in the central and inferior whorl regions. Investig Ophthalmol Vis Sci [Internet]. 2020 Mar [cited 2020 Jul 7];61(3):48. Available from: https://doi.org/10.1167/iovs.61.3.48

Gad H, Al-Muhannadi H, Purra H, Mussleman P, **Malik RA.** The effect of Ramadan focused education on patients with type 2 diabetes: a systematic review and meta-analysis. Diabetes Res Clin Pract [Internet]. 2020 Apr [cited 2020 Jul 7];162:108122. Available from: https://doi.org/10.1016/j. diabres.2020.108122

Gerrits N, Elen B, Craenendonck TV, Triantafyllidou D, Petropoulos IN, **Malik RA**, Boever P. Age and sex affect deep learning prediction of cardiometabolic risk factors from retinal images. Sci Rep [Internet]. 2020 Jun 10 [cited 2020 Jul 7]; 10(1):9432. Available from: https://doi. org/10.1038/s41598-020-65794-4

Ho JH, Adam S, Azmi S, Ferdousi M, Liu Y, Kalteniece A, Dhage SS, Keevil BG, Syed AA, Ammori BJ, Ahern T, Donn R, **Malik RA,** Soran H. Male sexual dysfunction in obesity: the role of sex hormones and small fibre neuropathy. PLoS One [Internet]. 2019 Sep 11 [cited 2020 Jul 7];14(9):e0221992. Available from: https://doi.org/10.1371/journal. pone.0221992

Imam YZ, Kamran S, Akhtar N, Deleu D, Singh R, **Malik RA**, Abdelmoneim MS, Bermejo P, Bourke P, Morgan D, Santos M, Joseph S, Shuaib A. Incidence, clinical features and outcomes of atrial fibrillation and stroke in Qatar. Int J Stroke. 2020 Jan;15(1):85-9. doi: 10.1177/1747493019830577

Iqbal Z, Dhage S, Mohamad JB, Abdel-Razik A, Donn R, **Malik RA,** Ho JH, Liu Y, Adam S, Isa B, Stefanutti C, Soran H. Efficacy and safety of PCSK9 monoclonal antibodies. Expert Opin Drug Saf. 2019 Dec;18(12):1191-201. doi: 10.1080/14740338.2019.1681395

Javed S, Hayat T, Menon L, Alam U, **Malik RA.** Diabetic peripheral neuropathy in people with type 2 diabetes: too little too late. Diabet Med. 2020 Apr;37(4):573-9. doi: 10.1111/dme.14194

Jeziorska M, Atkinson A, Kass-Iliyya L, Kobylecki C, Gosal D, Marshall A, **Malik RA**, Silverdale M. Small fibre neuropathy in Parkinson's disease: comparison of skin biopsies from the more affected and less affected sides. J Parkinsons Dis [Internet]. 2019 Oct 11 [cited 2020 Jul 7]; 9(4):761-5. Available from: https://doi. org/10.3233/JPD-191697 Kalteniece A, Ferdousi M, Azmi S, Mubita WM, Marshall A, Lauria G, Faber CG, Soran H, **Malik RA**. Corneal confocal microscopy detects small nerve fibre damage in patients with painful diabetic neuropathy. Sci Rep [Internet]. 2020 Feb 25 [cited 2020 Jul 7];10(1):3371. Available from: https://doi.org/10.1038/s41598-020-60422-7

Kamran S, Khan A, Salam A, Akhtar N, Petropoulos I, Ponirakis G, Babu B, George P, Shuaib A, **Malik RA.** Cornea: a window to white matter changes in stroke; corneal confocal microscopy a surrogate marker for the presence and severity of white matter hyperintensities in ischemic stroke. J Stroke Cerebrovasc Dis. 2020 Mar;29(3):104543. doi: 10.1016/j. jstrokecerebrovasdis.2019.104543

Khan A, Akhtar N, Kamran S, Almuhannadi H, Ponirakis G, Petropoulos IN, Babu B, Jose NR, Ibrahim RG, Gad H, Bourke P, Saqqur M, Shuaib A, **Malik RA.** Corneal confocal microscopy identifies greater corneal nerve damage in patients with a recurrent compared to first ischemic stroke. PLoS One [Internet]. 2020 Apr 22 [cited 2020 Jul 7];15(4):e0231987. Available from: https://doi.org/10.1371/ journal.pone.0231987

Klitsch A, Evdokimov D, Frank J, Thomas D, Saffer N, Meyer Zu Altenschildesche C, Sisignano M, Kampik D, **Malik RA**, Sommer C, Uceyler N. Reduced association between dendritic cells and corneal sub-basal nerve fibers in patients with fibromyalgia syndrome. J Peripher Nerv Syst [Internet]. 2020 Mar [cited 2020 Jul 7];25(1):9-18. Available from: https://doi.org/10.1111/jns.12360

Malik RA. Diabetic neuropathy: a focus on small fibres. In: Bus SA, Lipsky BA, van Netten JJ, Schaper N, Monteiro Soares M, editors. International Symposium on the Diabetic Foot (ISDF) proceedings; 2020 Mar. (Diabetes Metab Res Rev; vol. 36 Suppl 1, p. e3255). Available from: https://doi.org/10.1002/ dmrr.3255 Malik RA, Calcutt NA. Translating diabetic peripheral neuropathy. J Peripher Nerv Syst [Internet]. 2020 May 11 [cited 2020 Jul 7];25(2):64-5. Available from: https://doi.org/10.1111/jns.12384

O'Neill F, Marshall A, Ferdousi M, **Malik RA**. Corneal confocal microscopy detects small-fiber neuropathy in burning mouth syndrome: a cross-sectional study. J Oral Facial Pain Headache [Internet]. 2019 Apr 24 [cited 2020 Jul 7]; 92(3):386-93. Available from: https://doi. org/10.11607/ofph.2338

Petropoulos IN, Ponirakis G, Khan A, Gad H, Almuhannadi H, Brines M, Cerami A, **Malik RA.** Corneal confocal microscopy: ready for prime time. Clin Exp Optom [Internet]. 2020 May [cited 2020 Jul 7];103(3):265-77. Available from: https://doi.org/10.1111/cxo.12887

Ponirakis G, Al Hamad H,

Sankaranarayanan A, Khan A, Chandran M, Ramadan M, Tosino R, Gawhale PV, Alobaidi M, AlSulaiti E, Elsotouhy A, Elorrabi M, Khan S, Nadukkandiyil N, Osman S, Thodi N, Almuhannadi H, Gad H, Mahfoud ZR, Al-Shibani F, Petropoulos IN, Own A, Al Kuwari M, Shuaib A, **Malik RA**. Association of corneal nerve fiber measures with cognitive function in dementia. Ann Clin Transl Neurol [Internet]. 2019 Apr [cited 2020 Jul 7]; 6(4):689-97. Available from: https://doi. org/10.1002/acn3.746

Ponirakis G, Elhadd T, Chinnaiyan S, Dabbous Z, Siddiqui M, Al-Muhannadi H, Petropoulos I, Khan A, Ashawesh KA, Dukhan KM, Mahfoud ZR, Murgatroyd C, Slevin M, **Malik RA**. Prevalence and risk factors for painful diabetic neuropathy in secondary healthcare in Qatar. J Diabetes Investig [Internet]. 2019 Mar 12 [cited 2020 Jul 7];10(6):15581564. Available from: https://doi.org/10.1111/ jdi.13037

Ponirakis G, Petropoulos IN, Alam U, Ferdousi M, Asghar O, Marshall A, Azmi S, Jeziorska M, Mahfoud ZR, Boulton AJM, Efron N, Nukada H, **Malik RA.** Hypertension contributes to neuropathy in patients with type 1 diabetes. Am J Hypertens [Internet]. 2019 Aug [cited 2020 Jul 7];32(8):796-803. Available from: https://doi.org/10.1093/ajh/hpz058

Ponirakis G, Abdul-Ghani MA, Jayyousi A, Almuhannadi H, Petropoulos IN, Khan A, Gad H, Migahid O, Megahed A, DeFronzo R, Mahfoud ZR, Hassan M, Al Hamad H, Ramadan M, Alam U, **Malik RA.** Effect of treatment with exenatide and pioglitazone or basal-bolus insulin on diabetic neuropathy: a substudy of the Qatar Study. BMJ Open Diabetes Res Care [Internet]. 2020 Jun [cited 2020 Jul 7]; 8(1). Available from: https://doi. org/10.1136/bmjdrc-2020-001420

Ponirakis G, Elhadd T, Chinnaiyan S, Dabbous Z, Siddiqui M, Al-Muhannadi H, Petropoulos IN, Khan A, Ashawesh KAE, Dukhan KMO, Mahfoud ZR, Murgatroyd C, Slevin M, **Malik RA**. Prevalence and management of diabetic neuropathy in secondary care in Qatar. Diabetes Metab Res Rev. 2020 May;36(4):e3286. doi: 10.1002/dmrr.3286

Sturm D, Vollert J, Greiner T, Rice ASC, Kemp H, Treede RD, Schuh-Hofer S, Nielsen SE, Eitner L, Tegenthoff M, Petropoulos IN, **Malik RA**, Maier C, Schmidt-Wilcke T, Schargus M. Implementation of a quality index for improvement of quantification of corneal nerves in corneal confocal microcopy images: a multicenter study. Cornea. 2019 Jul;38(7):921-6. doi: 10.1097/ ico.00000000001949

Williams BM, Borroni D, Liu R, Zhao Y, Zhang J, Lim J, Ma B, Romano V, Qi H, Ferdousi M, Petropoulos IN, Ponirakis G, Kaye S, **Malik RA**, Alam U, Zheng Y. An artificial intelligence-based deep learning algorithm for the diagnosis of diabetic neuropathy using corneal confocal microscopy: a development and validation study. Diabetologia [Internet]. 2020 Feb [cited 2020 Jul 7]; 63(2):419-30. Available from: https://doi. org/10.1007/s00125-019-05023-4

Malyango, Avelin A.

Manyama M, **Malyango AA**, Raoof A, Mligiliche NL, Msuya C, Nassir N, Mtui E. A variant source of arterial supply to the ascending, transverse and descending colon. Surg Radiol Anat[Internet]. 2019 Nov [cited 2020 Jul 7]; 41(11):1383-6. Available from: https://doi. org/10.1007/s00276-019-02245-4

Mamtani, Ravinder

Chaabane S, Chaabna K, Abraham A, **Mamtani R,** Cheema S. Physical activity and sedentary behaviour in the Middle East and North Africa: an overview of systematic reviews and meta-analysis. Sci Rep [Internet]. 2020 Jun 9 [cited 2020 Jul 7];10(1):9363. Available from: https://doi.org/10.1038/s41598-020-66163-x

Doraiswamy S, Cheema S, **Mamtani R.** Older people and epidemics: a call for empathy. Age Ageing [Internet]. 2020 May [cited 2020 Jul 7];49(3):493. Available from: https://doi.org/10.1093/ ageing/afaa060

Manyama, Mange

Manyama M, Malyango AA, Raoof A, Mligiliche NL, Msuya C, Nassir N, Mtui E. A variant source of arterial supply to the ascending, transverse and descending colon. Surg Radiol Anat [Internet]. 2019 Nov [cited 2020 Jul 7]; 41(11):1383-6. Available from: https://doi. org/10.1007/s00276-019-02245-4

Nyanza EC, Dewey D, Manyama M, Martin JW, Hatfield J, Bernier FP. Maternal exposure to arsenic and mercury and associated risk of adverse birth outcomes in small-scale gold mining communities in Northern Tanzania. Environ Int [Internet]. 2020 Apr [cited 2020 Jul 7];137:105450. Available from: https://doi.org/10.1016/j. envint.2019.105450

Mazloum, Nayef A.

Al-Sulaiti H, Diboun I, Agha MV, Mohamed FFS, Atkin S, Domling AS, Elrayess MA, **Mazloum NA.** Metabolic signature of obesity-associated insulin resistance and type 2 diabetes. J Transl Med [Internet]. 2019 Oct 22 [cited 2020 Jul 7]; 17(1):348. Available from: https://doi. org/10.1186/s12967-019-2096-8

Gandra UR, Sinopoli A, Moncho S, NandaKumar M, Ninkovic DB, Zaric SD, Sohail M, Al-Meer S, Brothers EN, **Mazloum NA,** Al-Hashimi M, Bazzi HS. Green light-responsive CO-releasing polymeric materials derived from ring-opening metathesis polymerization. ACS Appl Mater Interfaces. 2019 Sep 6; 11(37):34376-84. doi: 10.1021/ acsami.9b12628

McVeigh, Clare

Abdellatif B, **McVeigh C,** Bendriss G, Chaari A. The promising role of probiotics in managing the altered gut in autism spectrum disorders. Int J Mol Sci [Internet]. 2020 Jun 10 [cited 2020 Jul 7]; 21(11):4159. Available from: https://doi. org/10.3390/ijms21114159

Mian, Marcellina

Salem M, Dargham SR, Kamal M, Eldeeb N, Alyafei KA, Lynch MA, **Mian M,** Mahfoud ZR. Effect of gender on childhood maltreatment in the state of Qatar: Retrospective study. Child Abuse Negl. 2020 Mar;101:104314. doi: 10.1016/j. chiabu.2019.104314

Najafi-Shoushtari, S. Hani

Butler AE, Ramachandran V, Hayat S, Dargham SR, Cunningham TK, Benurwar M, Sathyapalan T, **Najafi-Shoushtari SH,** Atkin SL. Expression of microRNA in follicular fluid in women with and without PCOS. Sci Rep [Internet]. 2019 Nov 8 [cited 2020 Jul 7];9(1):16306. Available from: https://doi.org/10.1038/ s41598-019-52856-5 Butler AE, Ramachandran V, Sathypalan T, David R, Gooderham NJ, Benurwar M, Dargham SR, Hayat S, **Najafi-Shoushtari SH,** Atkin SL. microRNA expression in women with and without Polycystic Ovarian Syndrome matched for Body Mass Index. Front Endocrinol (Lausanne) [Internet]. 2020 Apr 28 [cited 2020 Jul 7]; 11:206. Available from: https://doi. org/10.3389/fendo.2020.00206

Kulkarni RP, Elmi A, Alcantara-Adap E, Hubrack S, Nader N, Yu F, Dib M, Ramachandran V, **Najafi-Shoushtari SH,** Machaca K. miRNA-dependent regulation of STIM1 expression in breast cancer. Sci Rep [Internet]. 2019 Sep 10 [cited 2020 Jul 7];9(1):13076. Available from: https://doi.org/10.1038/s41598-019-49629-5

Van der Auwera S, Ameling S, Wittfeld K, d'Harcourt Rowold E, Nauck M, Volzke H, Suhre K, **Najafi-Shoushtari SH,** Methew J, Ramachandran V, Bulow R, Volker U, Grabe HJ. Association of childhood traumatization and neuropsychiatric outcomes with altered plasma micro RNA-levels. Neuropsychopharmacology. 2019 Nov;44(12):2030-7. doi: 10.1038/ s41386-019-0460-2

Nour, Bakr

Jayendiran R, **Nour B,** Ruimi A. Computational analysis of Nitinol stent-graft for endovascular aortic repair (EVAR) of abdominal aortic aneurysm (AAA): crimping, sealing and fluidstructure interaction (FSI). Int J Cardiol. 2020 Apr 1;304:164-71. doi: 10.1016/j. ijcard.2019.11.091

Qureshi, Sheila S.

Treagust DF, **Qureshi SS**, Vishnumolakala VR, Ojeil J, Mocerino M, Southam DC. Process-Oriented Guided Inquiry Learning (POGIL) as a Culturally Relevant Pedagogy (CRP) in Qatar: a perspective from grade 10 chemistry classes. Res Sci Educ. 2020;50(3):813-31. doi: 10.1007/ s11165-018-9712-0

Rafii Tabrizi, Arash

Billing AM, Dib SS, Bhagwat AM, da Silva IT, Drummond RD, Hayat S, Al-Mismar R, Ben-Hamidane H, Goswami N, Engholm-Keller K, Larsen MR, Suhre K, **Rafii A,** Graumann J. A systems-level characterization of the differentiation of human embryonic stem cells into mesenchymal stem cells. Mol Cell Proteomics. 2019 Oct;18(10):1950-66. doi: 10.1074/mcp.RA119.001356

Pasquier J, Ghiabi P, Chouchane L, Razzouk K, Rafii S, **Rafii A.** Angiocrine endothelium: from physiology to cancer. J Transl Med [Internet]. 2020 Feb 3 [cited 2020 Jul 7];18(1):52. Available from: https://doi.org/10.1186/s12967-020-02244-9

Pillai P, Abualsaud R, Awni Z, **Rafii A,** Ahmed B. OHVIRA syndrome. Donald Sch J Ultrasound Obstet Gynecol [Internet]. 2019 Apr-May [cited 2020 Jul 7]; 13(2):78-9. Available from: https://doi. org/10.5005/jp-journals-10009-1589

Razzouk K, Fitoussi A, Al Khori N, Pasquier J, Chouchane L, **Tabrizi AR**. Breast reconstruction combining lipofilling and prepectoral prosthesis after radiotherapy. Plast Reconstr Surg Glob Open [Internet]. 2020 May [cited 2020 Jul 7];8(5):e2659. Available from: https://doi.org/10.1097/ GOX.00000000002659

Razzouk K, Humbert P, Borens B, Gozzi M, Al Khori N, Pasquier J, **Rafii Tabrizi A.** Skin trophicity improvement by mechanotherapy for lipofilling-based breast reconstruction postradiation therapy. Breast J. 2020 Apr;26(4):725-8. doi: 10.1111/tbj.13645

Raoof, Ameed

Manyama M, Malyango AA, **Raoof A**, Mligiliche NL, Msuya C, Nassir N, Mtui E. A variant source of arterial supply to the ascending, transverse and descending colon. Surg Radiol Anat [Internet]. 2019 Nov [cited 2020 Jul 7]; 41(11):1383-6. Available from: https://doi. org/10.1007/s00276-019-02245-4

Roach, James

Schaefer-Ramadan S, Barlog M, **Roach J**, Al-Hashimi M, Bazzi HS, Machaca K. Synthesis of TPEN variants to improve cancer cells selective killing capacity. Bioorg Chem. 2019 Jun;87:366-72. doi: 10.1016/j.bioorg.2019.03.045

Robay, Amal

Ahmed LHM, Butler AE, Dargham SR, Latif A, **Robay A**, Chidiac OM, Jayyousi A, Al Suwaidi J, Crystal RG, Atkin SL, Abi Khalil C. Association of vitamin D2 and D3 with type 2 diabetes complications. BMC Endocr Disord [Internet]. 2020 May 15 [cited 2020 Jul 7]; 20(1):65. Available from: https://doi. org/10.1186/s12902-020-00549-w

Dakroury Y, Atkin SL, Dargham SR, **Robay A,** Rodriguez-Flores J, Crystal RG, Butler AE. Qatari genotype may contribute to complications in type 2 diabetes. J Diabetes Res [Internet]. 2020 Jun 10 [cited 2020 Jul 7]; 2020:6356973. Available from: https:// doi.org/10.1155/2020/6356973

Dakroury Y, Butler AE, Dargham SR, Latif A, **Robay A**, Crystal RG, Atkin SL. Association of differing Qatari genotypes with vitamin D metabolites. Int J Endocrinol [Internet]. 2020 Apr 13 [cited 2020 Jul 7];2020:7831590. Available from: https://doi. org/10.1155/2020/7831590

Fakhro KA, **Robay A,** Rodrigues-Flores JL, Mezey JG, Al-Shakaki AA, Chidiac O, Stadler D, Malek JA, Imam AB, Sheikh A, Azzam A, Janahi I, Khanjar I, Osman K, Ziki MA, Mahmah MA, Selim M, Numeiri N, Ali R, Lakhani S, Butt F, Omran TB, Crystal RG. Point of care exome sequencing reveals allelic and phenotypic heterogeneity underlying Mendelian disease in Qatar. Hum Mol Genet. 2019 Dec 1;28(23):3970-81. doi: 10.1093/hmg/ddz134

Schmidt, Frank

Alvarez Hayes J, Surmann K, Lamberti Y, Depke M, Dhople V, Blancá B, Ruiz E, Vecerek B, **Schmidt F,** Völker U, Rodriguez ME. Hfq modulates global protein pattern and stress response in Bordetella pertussis. J Proteomics. 2020 Jan 16;211:103559. doi: 10.1016/j. jprot.2019.103559

Brandi A, Piersimoni L, Feto NA, Spurio R, Alix JH, **Schmidt F,** Gualerzi CO. Translation initiation factor IF2 contributes to ribosome assembly and maturation during cold adaptation. Nucleic Acids Res [Internet]. 2019 May 21 [cited 2020 Jul 16];47(9):4652-62. Available from: https://doi.org/10.1093/ nar/gkz188

Fan C, Wu YH, Decker CM, Rohani R, Gesell Salazar M, Ye H, Cui Z, **Schmidt F,** Huang WE. Defensive function of transposable elements in bacteria. ACS Synth Biol [Internet]. 2019 Aug 2 [cited 2020 Jul 7];8(9):2141-51. Available from: https://doi.org/10.1021/ acssynbio.9b00218

Fan C, Davison PA, Habgood R, Zeng H, Decker CM, Gesell Salazar M, Lueangwattanapong K, Townley HE, Yang A, Thompson IP, Ye H, Cui Z, **Schmidt F,** Hunter CN, Huang WE. Chromosome-free bacterial cells are safe and programmable platforms for synthetic biology. Proc Natl Acad Sci U S A [Internet]. 2020 Mar 24 [cited 2020 Jul 7]; 117(12):6752-61. Available from: https:// doi.org/10.1073/pnas.1918859117

Meyer TC, **Schmidt F,** Steinke J, Bröker BM, Völker U, Michalik S. Technical report: xMAPr - High-dynamic-range (HDR) quantification of antigen-specific antibody binding. J Proteomics. 2020 Feb 10;212:103577. doi: 10.1016/j. jprot.2019.103577

Michalik S, Sundaramoorthy N, Murr A, Depke M, Völker U, Bröker BM, Aamot HV, **Schmidt F.** Early-Stage Staphylococcus aureus bloodstream infection causes changes in the concentrations of lipoproteins and acute-phase proteins and is associated with low antibody titers against bacterial virulence factors. mSystems [Internet]. 2020 Jan/Feb [cited 2020 Jul 16];5(1):e00632-19. Available from: https://doi.org/10.1128/ mSystems.00632-19

Schmidt F, Kakar N, Meyer TC, Depke M, Masouris I, Burchhardt G, Gómez-Mejia A, Dhople V, Håvarstein LS, Sun Z, Moritz RL, Völker U, Koedel U, Hammerschmidt S. In vivo proteomics identifies the competence regulon and AliB oligopeptide transporter as pathogenic factors in pneumococcal meningitis. PLoS Pathog [Internet]. 2019 Jul 29 [cited 2020 Jul 16];15(7):e1007987. Available from: https://doi.org/10.1371/ journal.ppat.1007987

Sharkey, Rodney

Sharkey R. Untitled (or 'They gave me money to teach'). J Beckett Stud. 2019 Apr;29(1):123-4.

Sharkey R. Stillborn. Ascensus [Internet]. 2019 Aug 28 [cited 2020 Jun 12];8:10. Available from: https:// issuu.com/allisonmaritzalasky/docs/ ascensus_journal_of_humanities_vol.viii

Sharkey R. The Cypriot imbroglio (for Suzannah). Ascensus [Internet]. 2019 Aug 28 [cited 2020 Jun 12];8:44-6. Available from: https://issuu.com/ allisonmaritzalasky/docs/ascensus_ journal_of_humanities_vol.viii

Weber AS, Jones D, Golkowska K, **Sharkey R,** Larson A, editors. Qira'at: readings from the students of Weill Cornell Medicine in Qatar. Doha, Qatar: Weill Cornell Medicine - Qatar; 2019. 251 p.

Suhre, Karsten

Achkar IW, Kader S, Dib SS, Junejo K, AI-Bader SB, Hayat S, Bhagwat AM, Rousset X, Wang Y, Viallet J, **Suhre K,** Halama A. Metabolic signatures of tumor responses to doxorubicin elucidated by metabolic profiling in ovo. Metabolites [Internet]. 2020 Jun 28 [cited 2020 Jul 7];10(7):268. Available from: https://doi.org/10.3390/ metabo10070268

Al-Khelaifi F, Diboun I, Donati F, Botre F, Abraham D, Hingorani A, Albagha O, Georgakopoulos C, **Suhre K,** Yousri NA, Elrayess MA. Metabolic GWAS of elite athletes reveals novel genetically influenced metabolites associated with athletic performance. Sci Rep [Internet]. 2019 Dec 27 [cited 2020 Jul 7]; 9(1):19889. Available from: https://doi. org/10.1038/s41598-019-56496-7

Al-Khelaifi F, Donati F, Botre F, Latiff A, Abraham D, Hingorani A, Georgakopoulos C, **Suhre K,** Yousri NA, Elrayess MA. Metabolic profiling of elite athletes with different cardiovascular demand. Scand J Med Sci Sports. 2019 Jul 22;29(7):933-43. doi: 10.1111/ sms.13425

Al-Khelaifi F, Diboun I, Donati F, Botrè F, Abraham D, Hingorani A, Albagha O, Georgakopoulos C, **Suhre K,** Yousri NA, Elrayess MA. Author Correction: Metabolic GWAS of elite athletes reveals novel genetically-influenced metabolites associated with athletic performance. Sci Rep [Internet]. 2020 Jun 23 [cited 2020 Jul 7];10(1):10473. Available from: https://doi.org/10.1038/ s41598-020-67555-9

Al-Khelaifi F, Yousri NA, Diboun I, Available from: https://doi.org/10.1038/ Semenova EA, Kostryukova ES, Kulemin NA, s41598-020-66189-1 Borisov OV, Andryushchenko LB, Larin AK, Generozov EV, Miyamoto-Mikami E, Malek JA, Mathew S, Mathew LS, Murakami H, Zempo H, Miyachi M, Younuskunju S, Mohamoud YA, Suhre K. Takaragawa M, Kumagai H, Naito H, Fuku N, Deletion of beta-fructofuranosidase Abraham D, Hingorani A, (invertase) genes is associated with Donati F, Botrè F, Georgakopoulos C, sucrose content in Date Palm fruit. Suhre K, Ahmetov II, et al. Genome-Plant Direct [Internet]. 2020 May [cited wide association study reveals a novel 2020 Jul 7];4(5):e00214. Available from: association between MYBPC3 gene https://doi.org/10.1002/pld3.214 polymorphism, endurance athlete Menni C, McCallum L, Pietzner M, status, aerobic capacity and steroid Zierer J, Aman A, Suhre K, Mohney RP, metabolism. Front Genet [Internet]. Mangino M, Friedrich N, Spector TD, 2020 Jun 16 [cited 2020 Jul 7];11:595. Padmanabhan S. Metabolomic profiling Available from: https://doi.org/10.3389/ identifies novel associations with fgene.2020.00595 Electrolyte and Acid-Base Homeostatic

Billing AM, Dib SS, Bhagwat AM, da Silva IT, Drummond RD, Hayat S, Al-Mismar R, Ben-Hamidane H, Goswami N, Engholm-Keller K, Larsen MR, **Suhre K,** Rafii A, Graumann J. A systems-level characterization of the differentiation of human embryonic stem cells into mesenchymal stem cells. Mol Cell Proteomics. 2019 Oct;18(10):1950-66. doi: 10.1074/mcp.RA119.001356

Butler AE, Hayat S, Dargham SR, Malek JA, Abdulla SA, Mohamoud YA, **Suhre K,** Sathyapalan T, Atkin SL. Alterations in long noncoding RNAs in women with and without polycystic ovarian syndrome. Clin Endocrinol (Oxf). 2019 Dec;91(6):793-7. doi: 10.1111/cen.14087

Kahal H, Halama A, Aburima A, Bhagwat AM, Butler AE, Grauman J, **Suhre K,** Sathyapalan T, Atkin SL. Effect of induced hypoglycemia on inflammation and oxidative stress in type 2 diabetes and control subjects. Sci Rep [Internet]. 2020 Mar 16 [cited 2020 Jul 7];10(1):4750. Available from: https://doi.org/10.1038/ s41598-020-61531-z

Kahal H, Halama A, Aburima A, Bhagwat AM, Butler AE, Graumann J, **Suhre K,** Sathyapalan T, Atkin SL. Author correction: Effect of induced hypoglycemia on inflammation and oxidative stress in type 2 diabetes and control subjects. Sci Rep [Internet]. 2020 Jun 19 [cited 2020 Jul 7];10(1):10233. Available from: https://doi.org/10.1038/ s41598-020-66189-1 patterns. Sci Rep [Internet]. 2019 Oct 21 [cited 2020 Jul 7];9(1):15088. Available from: https://doi.org/10.1038/s41598-019-51492-3

Nag A, Kurushima Y, Bowyer RCE, Wells PM, Weiss S, Pietzner M, Kocher T, Raffler J, Volker U, Mangino M, Spector TD, Milburn MV, Kastenmuller G, Mohney RP, **Suhre K,** Menni C, Steves CJ. Genomewide scan identifies novel genetic loci regulating salivary metabolite levels. Hum Mol Genet [Internet]. 2020 Mar 27 [cited 2020 Jul 7];29(5):864-75. Available from: https://doi.org/10.1093/hmg/ ddz308

Schlosser P, Li Y, Sekula P, Raffler J, Grundner-Culemann F, Pietzner M, Cheng Y, Wuttke M, Steinbrenner I, Schultheiss UT, Kotsis F, Kacprowski T, Forer L, Hausknecht B, Ekici AB, Nauck M, Volker U, Walz G, Oefner PJ, Kronenberg F, Mohney RP, Kottgen M, **Suhre K,** Eckardt KU, Kastenmuller G, Kottgen A. Genetic studies of urinary metabolites illuminate mechanisms of detoxification and excretion in humans. Nat Genet. 2020 Feb;52(2):167-76. doi: 10.1038/s41588-019-0567-8

Van der Auwera S, Ameling S, Wittfeld K, d'Harcourt Rowold E, Nauck M, Volzke H, **Suhre K,** Najafi-Shoushtari SH, Methew J, Ramachandran V, Bulow R, Volker U, Grabe HJ. Association of childhood traumatization and neuropsychiatric outcomes with altered plasma micro RNA-levels. Neuropsychopharmacology. 2019 Nov;44(12):2030-7. doi: 10.1038/ s41386-019-0460-2

Verma A, Muthukumar T, Yang H, Lubetzky M, Cassidy MF, Lee JR, Dadhania DM, Snopkowski C, Shankaranarayanan D, Salvatore SP, Sharma VK, Xiang JZ, De Vlaminck I, Seshan SV, Mueller FB, **Suhre K,** Elemento O, Suthanthiran M. Urinary cell transcriptomics and acute rejection in human kidney allografts. JCI Insight [Internet]. 2020 Feb 27 [cited 2020 Jul 7]; 5(4):e131552. Available from: https://doi. org/10.1172/jci.insight.131552 Yee SW, Stecula A, Chien HC, Zou L, Feofanova EV, van Borselen M, Cheung KWK, Yousri NA, **Suhre K,** Kinchen JM, Boerwinkle E, Irannejad R, Yu B, Giacomini KM. Unraveling the functional role of the orphan solute carrier, SLC22A24 in the transport of steroid conjugates through metabolomic and genome-wide association studies. PLoS Genet [Internet]. 2019 Sep 25 [cited 2020 Jul 7];15(9):e1008208. Available from: https://doi.org/10.1371/journal. pgen.1008208

Zaghlool SB, Kuhnel B, Elhadad MA, Kader S, Halama A, Thareja G, Engelke R, Sarwath H, Al-Dous EK, Mohamoud YA, Meitinger T, Wilson R, Strauch K, Peters A, Mook-Kanamori DO, Graumann J, Malek JA, Gieger C, Waldenberger M, **Suhre K.** Epigenetics meets proteomics in an epigenomewide association study with circulating blood plasma protein traits. Nat Commun [Internet]. 2020 Jan 3 [cited 2020 Jul 7];11(1):15. Available from: https://doi.org/10.1038/s41467-019-13831-w

Sultan, Ali A. (12)

Abdulrehman T, Qadri S, Skariah S, **Sultan AA**, Mansour S, Azzi J, Haik Y. Boron doped silver-copper alloy nanoparticle targeting intracellular S. aureus in bone cells. PLoS One [Internet]. 2020 Apr 10 [cited 2020 Jul 7]; 15(4):e0231276. Available from: https:// doi.org/10.1371/journal.pone.0231276

Al-Rumhi A, Al-Hashami Z, Al-Hamidhi S, Gadalla A, Naeem R, Ranford-Cartwright L, Pain A, **Sultan AA**, Babiker HA. Influx of diverse, drug resistant and transmissible Plasmodium falciparum into a malaria-free setting in Qatar. BMC Infect Dis [Internet]. 2020 Jun 15 [cited 2020 Jul 7];20(1):413. Available from: https://doi.org/10.1186/s12879-020-05111-6

Bakhiet AMA, Abdelraheem MH, Kheir A, Omer S, Gismelseed L, Abdel-Muhsin AA, Naiem A, Al Hosni A, Al Dhuhli A, Al Rubkhi M, Al-Hamidhi S, Gadalla A, Mukhtar M, **Sultan AA**, Babiker HA. Evolution of Plasmodium falciparum drug resistance genes following artemisinin combination therapy in Sudan. Trans R Soc Trop Med Hyg. 2019 Nov 1;113(11):693-700. doi: 10.1093/ trstmh/trz059

Bansal D, Bharti PK, Acharya A, 9(1):13704. Available from: https://doi. Abdelraheem MH, Patel P, Elmalik A, org/10.1038/s41598-019-50152-w Abosalah S, Khan FY, ElKhalifa M, Kaur H, Farag E, Sarmah NP, Mohapatra PK, Sid Ahmed MA, Abdel Hadi H, Hassan AAI, Abu Jarir S, Al-Maslamani MA, Eltai NO, Sehgal R, Mahanta J, Sultan AA. Molecular surveillance of putative Dousa KM, Hujer AM, Sultan AA, Soderquist B, Bonomo RA, Ibrahim EB, drug resistance markers of antifolate and artemisinin among imported Jass J. Omrani AS. Evaluation of in vitro Plasmodium falciparum in Qatar. Pathog activity of ceftazidime/avibactam and Glob Health [Internet]. 2019 Jun [cited ceftolozane/tazobactam against MDR 2020 Jul 7]:113(4):158-66. Available from: Pseudomonas aeruginosa isolates https://doi.org/10.1080/20477724.2019.16 from Qatar. J Antimicrob Chemother. 39018 2019 Dec 1;74(12):3497-504. doi: 10.1093/ jac/dkz379

Bedri S, **Sultan AA**, Alkhalaf M, Al Moustafa AE, Vranic S. Epstein-Barr virus (EBV) status in colorectal cancer: a mini review. Hum Vaccin Immunother [Internet]. 2019 Mar [cited 2020 Jul 7]; 15(3):603-10. Available from: https://doi. org/10.1080/21645515.2018.1543525

Gupta I, Nasrallah GK, Sharma A, Jabeen A, Smatti MK, Al-Thawadi HA, **Sultan AA**, Alkhalaf M, Vranic S, Moustafa AA. Co-prevalence of Human Papillomaviruses (HPV) and Epstein-Barr virus (EBV) in healthy blood donors from diverse nationalities in Qatar. Cancer Cell Int [Internet]. 2020 Apr 3 [cited 2020 Jul 7];20:107. Available from: https://doi.org/10.1186/s12935-020-01190-2

Kaur H, Sehgal R, Kumar A, Sehgal A, Bharti PK, Bansal D, Mohapatra PK, Mahanta J, **Sultan AA**. Exploration of genetic diversity of Plasmodium vivax circumsporozoite protein (Pvcsp) and Plasmodium vivax sexual stage antigen (Pvs25) among North Indian isolates. Malar J [Internet]. 2019 Sep 6 [cited 2020 Jul 7];18(1):308. Available from: https://doi.org/10.1186/s12936-019-2939-z Patgiri SJ, Sarma K, Sarmah N, Bhattacharyya N, Sarma DK, Nirmolia T, Bhattacharyya DR, Mohapatra PK, Bansal D, Bharti PK, Sehgal R, Mahanta J, **Sultan AA.** Characterization of drug resistance and genetic diversity of Plasmodium falciparum parasites from Tripura, Northeast India. Sci Rep [Internet]. 2019 Sep 23 [cited 2020 Jul 7]; 9(1):13704. Available from: https://doi. org/10.1038/s41598-019-50152-w

Sid Ahmed MA, Hassan AAI, Abu Jarir S, Abdel Hadi H, Bansal D, Abdul Wahab A, Muneer M, Mohamed SF, Zahraldin K, Hamid JM, Alyazidi MA, Mohamed M, **Sultan AA**, Söderquist B, Ibrahim EB, Jass J. Emergence of multidrug- and pandrug- resistant Pseudomonas aeruginosa from five hospitals in Qatar. Infect Prev Pract [Internet]. 2019 Dec [cited 2020 Jul 7];1(3):100027. Available from: https://doi.org/https://doi. org/10.1016/j.infpip.2019.100027

Triggle CR, Bansal D, Farag E, Ding H, **Sultan AA.** COVID-19: learning from lessons to guide treatment and prevention interventions. mSphere [Internet]. 2020 May 13 [cited 2020 Jul 7];5(3):e00317-20. Available from: https://doi.org/10.1128/ mSphere.00317-20

Taheri, Shahrad

Ali G, Elsayed AK, Nandakumar M, Bashir M, Younis I, Abu Aqel Y, Memon B, Temanni R, Abubaker F, **Taheri S,** Abdelalim EM. Keratinocytes derived from patient-specific induced pluripotent stem cells recapitulate the genetic signature of psoriasis disease. Stem Cells Dev [Internet]. 2020 Apr 1 [cited 2020 Jul 7];29(7):383-400. Available from: https://doi.org/10.1089/ scd.2019.0150

Brown A, Dornhorst A, McGowan B, Omar O, Leeds AR, **Taheri S,** Frost GS. Low-energy total diet replacement intervention in patients with type 2 diabetes mellitus and obesity treated with insulin: a randomized trial. BMJ Open Diabetes Res Care [Internet]. 2020 Jan [cited 2020 Jul 7];8(1). Available from: https://doi.org/10.1136/ bmjdrc-2019-001012

Palotti J, Mall R, Aupetit M, Rueschman M, Singh M, Sathyanarayana A, **Taheri S**, Fernandez-Luque L. Benchmark on a large cohort for sleep-wake classification with machine learning techniques. NPJ Digit Med [Internet]. 2019 Jun 7 [cited 2020 Jul 7];2:50. Available from: https://doi.org/10.1038/ s41746-019-0126-9

Perez-Pozuelo I, Zhai B, Palotti J, Mall R, Aupetit M, Garcia-Gomez JM, **Taheri S**, Guan Y, Fernandez-Luque L. The future of sleep health: a data-driven revolution in sleep science and medicine. NPJ Digit Med [Internet]. 2020 Mar 23 [cited 2020 Jul 7];3:42. Available from: https:// doi.org/10.1038/s41746-020-0244-4

Taheri S, Chagoury O, Tourette M, Skaroni I, Othman M, Bashir M, Dukhan K, Al Mohannadi D, Hassan D, Ghadban W. Managing diabetes in Qatar during the COVID-19 pandemic [Letter]. Lancet Diabetes Endocrinol [Internet]. 2020 Mar 4 [cited 2020 Jul 7];8(6):473-4. Available from: https://doi.org/10.1016/S2213-8587(20)30154-6

Taheri S, Zaghloul H, Chagoury O, Elhadad S, Ahmed SH, El Khatib N, Amona RA, El Nahas K, Suleiman N, Alnaama A, Al-Hamaq A, Charlson M, Wells MT, Al-Abdulla S, Abou-Samra AB. Effect of intensive lifestyle intervention on bodyweight and glycaemia in early type 2 diabetes (DIADEM-I): an openlabel, parallel-group, randomised controlled trial. Lancet Diabetes Endocrinol. 2020 Jun;8(6):477-89. doi: 10.1016/s2213-8587(20)30117-0

Triggle, Christopher Robert

Mathews Samuel S, Satheesh NJ, Ghosh S, Büsselberg D, Majeed Y, Ding H, **Triggle CR.** Treatment with a combination of metformin and 2-deoxyglucose upregulates thrombospondin-1 in microvascular endothelial cells: implications in antiangiogenic cancer therapy. Cancers (Basel) [Internet]. 2019 Nov 6 [cited 2020 Jul 7];11(11):1737. Available from: https://doi.org/10.3390/cancers11111737

Pulakazhi Venu VK, El-Daly M, Saifeddine M, Hirota SA, Ding H, **Triggle CR,** Hollenberg MD. Minimizing hyperglycemia-induced vascular endothelial dysfunction by inhibiting endothelial sodium-glucose cotransporter 2 and attenuating oxidative stress: implications for treating individuals with type 2 diabetes. Can J Diabetes. 2019 Oct 1;43(7):P510-4. doi: 10.1016/j.jcjd.2019.01.005

Triggle CR, Bansal D, Farag E, Ding H, Sultan AA. COVID-19: learning from lessons to guide treatment and prevention interventions. mSphere [Internet]. 2020 May 13 [cited 2020 Jul 7];5(3):e00317-20. Available from: https://doi.org/10.1128/ mSphere.00317-20

Samuel SM, Varghese E, Kubatka P, **Triggle CR,** Büsselberg D. Metformin: the answer to cancer in a flower? Current knowledge and future prospects of metformin as an anti-cancer agent in breast cancer. Biomolecules [Internet]. 2019 Dec 9 [cited 2020 Jul 7];9(12):846. Available from: https://doi.org/10.3390/ biom9120846

Verjee, Mohamud A.

Alinier G, **Verjee MA.** Learning through play. In: Chiniara G, editor. Clinical simulation: education, operations and engineering. London, England: Elsevier; 2019. p. 157-69

El-Awaisi A, Awaisu A, Jaam M, Saffouh El Hajj M, **Verjee MA**. Does the delivery of interprofessional education have an effect on stereotypical views of healthcare students in Qatar? J Interprof Care. 2020 Jan-Feb;34(1):44-9. doi: 10.1080/13561820.2019.1612863

Verjee MA. Schistosomiasis: still a cause of significant morbidity and mortality. Res Rep Trop Med [Internet]. 2010 Jan 3 [cited 2020 Jul 7];10:153-63. Available from: https://doi.org/10.2147/rrtm.S204345

Weber, Alan S.

Hamlaoui S, **Weber AS.** The Internet of Things (IoT) in Tunisian education and healthcare: prospects and barriers to improved educational and medical outcomes. In: 2020 IEEE International Conference on Informatics, IoT, and Enabling Technologies (ICIoT); 2020 Feb 2-5; Doha, Qatar. Institute of Electrical and Electronics Engineers Inc. p. 603-7. doi: 10.1109/ICIoT48696.2020.9089585

Kronfol Z, Ghuloum S, **Weber AS,** Qoronfleh MW. Challenges facing the youth in Qatar: a mental health perspective. In: Alkhateeb HM, editor. Qatar: political, economic and social issues. Hauppauge, NY: Nova Science Publishers, Inc.; 2019. p. 385-403

Weber AS. Graphic reproduction: a comics anthology [Book review]. Configurations [Internet]. 2019 Sum [cited 2020 Jul 7];27(3):423-4. Available from: https://doi.org/10.1353/ con.2019.0025

Weber AS. Power and belonging in the medical education 'hidden curriculum': literary and graphic medicine responses to a persistent problem in

medical training and practice. In: Berthier-Foglar S, Saidi E, Dhouib JA, editors. Proceedings of the Fourth International Conference on "Narratives of Power and Empowerment"; 2018 Nov 23-24; Sousse, Tunisia. Tunisian Association for English Language Studies; 2019. p. 111-32

Weber AS. The ethics of the Internet of Things (IoT) in educational contexts. In: INTED2020 Proceedings: 14th International Technology, Education and Development Conference; 2020 Mar; Valencia, Spain. IATED Digital Library; 2020. p. 4546-51. doi: 10.21125/ inted.2020.1265

Weber AS. Ethics concerns in artificial intelligence use in education. In: INTED2020 Proceedings: 14th International Technology, Education and Development Conference; 2020 Mar 2-4; Valencia, Spain. IATED Digital Library; 2020. p. 4539-44. doi: 10.21125/inted.2020.1262

Weber AS. Counteracting abuse in medical education and practice: lessons from literary theories of humor and satire. In: EDULEARN19 Proceedings: 11th International Conference on Education and New Learning Technologies; 2019 Jul 1-3; Palma, Spain. IATED Digital Library; 2019. p. 6604-8. doi: 10.21125/ edulearn.2019.1585

Weber AS. e-learning in the Middle East and North Africa (MENA) region: review of trends from the first comprehensive regional handbook. In: EDULEARN19 Proceedings: 11th International Conference on Education and New Learning Technologies; 2019 Jul 1-3; Palma, Spain. 2019. p. 6544-9. doi: 10.21125/edulearn.2019.1566

Weber AS, Jones D, Golkowska K, Sharkey R, Larson A, editors. Qira'at: readings from the students of Weill Cornell Medicine in Qatar. Doha, Qatar: Weill Cornell Medicine - Qatar; 2019. 251 p. Weber AS, Kronfol Z. Qatar's education revolution: K-12 and higher education reform in a rapidly developing country. In: Alkhateeb HM, editor. Qatar: political, economic and social issues. Hauppauge, NY: Nova Science Publishers, Inc.; 2019. p. 337-47

Weber AS. Your remedy book. Ars Medica [Internet]. 2020 Jun 30 [cited 2020 Jul 7];15(1):16-7. Available from: https://ars-medica.ca/index.php/ journal/article/view/853

Yousef, Mohammad S.

Biggers L, Elhabashy H, Ackad E, Yousef MS. Molecular dynamics simulations of an engineered T4 lysozyme exclude helix to sheet transition, and provide insights into long distance, intra-protein switchable motion. Protein Sci. 2020 Feb;29(2):542-54. doi: 10.1002/pro.3780

Yousri, Noha A.

Al-Khelaifi F, Diboun I, Donati F, Botre F, Abraham D, Hingorani A, Albagha O, Georgakopoulos C, Suhre K, **Yousri NA,** Elrayess MA. Metabolic GWAS of elite athletes reveals novel geneticallyinfluenced metabolites associated with athletic performance. Sci Rep [Internet]. 2019 Dec 27 [cited 2020 Jul 7];9(1):19889. Available from: https://doi.org/10.1038/ s41598-019-56496-7

Al-Khelaifi F, Donati F, Botre F, Latiff A, Abraham D, Hingorani A, Georgakopoulos C, Suhre K, **Yousri NA,** Elrayess MA. Metabolic profiling of elite athletes with different cardiovascular demand. Scand J Med Sci Sports. 2019 Jul 22;29(7):933-43. doi: 10.1111/ sms.13425

Al-Khelaifi F, Diboun I, Donati F, Botrè F, Abraham D, Hingorani A, Albagha O, Georgakopoulos C, Suhre K, **Yousri NA**, Elrayess MA. Author Correction: Metabolic GWAS of elite athletes reveals novel genetically-influenced metabolites associated with athletic performance. Sci Rep [Internet]. 2020 Jun 23 [cited 2020 Jul 7];10(1):10473. Available from: https://doi.org/10.1038/s41598-020-67555-9

Al-Khelaifi F, Yousri NA, Diboun I, Semenova EA, Kostryukova ES, Kulemin NA, Borisov OV, Andryushchenko LB, Larin AK, Generozov EV, Miyamoto-Mikami E, Murakami H, Zempo H, Miyachi M, Takaragawa M, Kumagai H, Naito H, Fuku N, Abraham D, Hingorani A, Donati F, Botrè F, Georgakopoulos C, Suhre K, Ahmetov II, Albagha O, Elrayess MA. Genome-wide association study reveals a novel association between MYBPC3 gene polymorphism, endurance athlete status, aerobic capacity and steroid metabolism. Front Genet [Internet]. 2020 Jun 16 [cited 2020 Jul 7];11:595. Available from: https://doi.org/10.3389/ faene.2020.00595

Clark DW, Okada Y, Moore KHS, Mason D, Pirastu N, Gandin I, Mattsson H, Barnes CLK, Lin K, Zhao JH, Deelen P, Rohde R, Schurmann C, Guo X, Giulianini F, Zhang W, Medina-Gomez C, Karlsson R, Bao Y, Bartz TM, Baumbach C, Biino G, Bixley MJ, Brumat M, Chai JF, et al. [incl. **Yousri NA**]. Associations of autozygosity with a broad range of human phenotypes. Nat Commun [Internet]. 2019 Oct 31 [cited 2020 Jul 7]; 10(1):4957. Available from: https://doi. org/10.1038/s41467-019-12283-6

Lamina C, Kronenberg F, Mack S, Coassin S, Rueedi R, Yousri NA, Seppala I, Gieger C, Schonherr S, Forer L, Erhart G, Margues-Vidal P, Ried JS, Waeber G, Bergmann S, Dahnhardt D, Stockl A, Raitakari OT, Kahonen M, Peters A, Meitinger T, Strauch K, Kedenko L, Paulweber B, Lehtimaki T, et al. [incl. Hunt SC]. Estimation of the required lipoprotein(a)-lowering therapeutic effect size for reduction in coronary heart disease outcomes: a mendelian randomization analysis. JAMA Cardiol [Internet]. 2019 Jun [cited 2020 Jul 7]; 4(6):575-9. Available from: https://doi. org/10.1001/jamacardio.2019.1041

Salameh M, Burney Z, Mhaimeed N, Laswi I, **Yousri NA,** Bendriss G, **Zakaria D.** The role of gut microbiota in atopic asthma and allergy, implications in the understanding of disease pathogenesis. Scand J Immunol [Internet]. 2020 Mar [cited 2020 Jul 7];91(3):e12855. Available from: https://doi.org/10.1111/sji.12855

Yee SW, Stecula A, Chien HC, Zou L, Feofanova EV, van Borselen M, Cheung KWK, **Yousri NA**, Suhre K, Kinchen JM, Boerwinkle E, Irannejad R, Yu B, Giacomini KM. Unraveling the functional role of the orphan solute carrier, SLC22A24 in the transport of steroid conjugates through metabolomic and genome-wide association studies. PLoS Genet [Internet]. 2019 Sep 25 [cited 2020 Jul 7];15(9):e1008208. Available from: https://doi.org/10.1371/ journal.pgen.1008208

Zakaria, Dalia

Salameh M, Burney Z, Mhaimeed N, Laswi I, **Yousri NA,** Bendriss G, **Zakaria D.** The role of gut microbiota in atopic asthma and allergy, implications in the understanding of disease pathogenesis. Scand J Immunol [Internet]. 2020 Mar [cited 2020 Jul 7];91(3):e12855. Available from: https://doi.org/10.1111/sji.12855

