THE MAGAZINE OF WEILL CORNELL MEDICAL COLLEGE IN QATAR

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A discovery by researchers at WCMC-Q and Hamad Medical Corporation could lead to a quick, non-invasive screening test for diabetes, allowing patients to access treatment quicker.

Researchers at WCMC-Q have produced a comprehensive atlas identifying the genes that influence how the body keeps our blood levels of sugars, fats and amino acids in balance.

Researchers at WCMC-Q have shed light on the molecular and cellular mechanisms of one of the most widely used diabetes drugs, which have been poorly understood for more than 50 years.

Researchers at WCMC-Q have discovered genetic variations that could help doctors target interventions to reduce the prevalence of a variety of debilitating hereditary disorders.
Drummer Shawn Baltazor and bassist Matthew Rybicki usually play at Jazz at Lincoln Center Doha.
A live jazz event gave WCMC-Q’s Dr. Stephen Scott and jazz musicians the chance to explore the parallels between the art of jazz and the art of doctor-patient communication.

The ‘Jazz & the Art of Communication’ event featured internationally renowned singer Gregory Generet, bassist Matthew Rybicki, pianist Takeshi Ohbayashi, and drummer Shawn Baltazor, who played a number of pieces and also talked to Dr. Scott about the music, communication, and medicine. The musicians were all from Jazz at Lincoln Center Doha.

Addressing the audience, Dr. Scott, WCMC-Q’s associate dean for student affairs, said: “When we as physicians speak with our patients, we have to be aware that communication involves more than simply the content of the words. Body language, inflection, tone of voice and other cues have a great influence on what we hear as well as the way our message is interpreted.”

Generet added: “When we play a song, we can interpret it in many different ways. Each note I sing or that Takeshi or Matt plays can be sounded in a variety of ways. We can play fast or slow, we can make it strong or gentle, and Shawn can subtly change the rhythm. All the time we’re communicating with each other and communicating with the audience, and reacting to the feedback.

“One key similarity is authenticity – if you put your true self into the music, the audience is likely to react well to that. The same is true when you’re speaking to someone.”

Dr. Scott illustrated that students and physicians develop their own ‘voice,’ or ways of communicating with patients, and move beyond a rigid script. He said: “A script is a necessary starting point, but we need to be able to adapt in the moment and respond to our patients in ways that are more nuanced and intuitive than a script allows.”

The hour-and-a-half-long session finished with a question and answer session with the audience. Those in attendance showed their appreciation with a long and loud round of applause.

Speaking after the event, first-year medical student and avowed Charlie Parker fan Ahmed Mushannen said: “We are at the stage of our studies where we are just starting to interact with patients, so I gained some useful insights.

“I have read some of the attempts to create a formulaic approach to speaking with patients, but in the field I think you need to be able to react to the different ways of communicating of each individual patient, which probably comes with practice and by being willing to listen carefully to every patient and their needs.”

The event drew an impressive audience and was held at the Black Box Theater at the Hamad Bin Khalifa University Student Center.
There were scenes of jubilation at WCMC-Q as every student who sought a U.S. residency program secured a place at a hospital to continue their training after graduation.

The annual Match Day event is a fiercely competitive affair, with more than 40,000 graduating medical students around the world vying for approximately 25,000 residency positions.

The WCMC-Q students revealed the news of their successful matches in front of friends, family and faculty at an event held at the college on March 21. Students matched at internationally renowned medical institutions in the United States including Johns Hopkins Hospital in Baltimore, Yale-New Haven Hospital, the University of Rochester Medical Center in New York and New York-Presbyterian Hospital.

Of the 34 students of the Class of 2014, 25 sought and secured matches on residency programs in the United States. Two students were accepted to residency programs at Hamad Medical Corporation (HMC) and seven are pursuing a variety of alternative activities next year.

Dr. Javaid Sheikh, dean of WCMC-Q, paid tribute to the Class of 2014.

He said: “Achieving a match rate of 100 percent is a great honor for our college, an honor that has been made possible by the truly excellent levels of commitment, hard work and talent shown by our students during their time here, and by our faculty and staff who have supported them every step of the way.

“We now bid a fond farewell to our students as they embark on a new chapter in their careers by joining residency programs at elite-level institutions, both here in Qatar and overseas. We wish each and every one of them the very best of luck.

“We have faith that they will be great ambassadors for WCMC-Q, and that they will use the knowledge and skills they have learned here to improve the health and wellbeing of the patients they serve, wherever they are in the world.”

Match Day marks the culmination of four years of medical training for WCMC-Q’s students, who will graduate in May.

THIS YEAR WAS THE FIRST TIME IN THE HISTORY OF WCMC-Q THAT EVERY SINGLE GRADUATING STUDENT WHO APPLIED HAS BEEN GRANTED A U.S. RESIDENCY PLACE - AN EXTREMELY RARE AND COVETED ACHIEVEMENT FOR ANY MEDICAL COLLEGE.

Qatari graduate Abdulwahed Zainel secured a pediatric residency at HMC. He said: “I’m so happy and excited that I’m going to HMC, there are so
many things to look forward to. I’m sure there will be lots of hard work but I will have the chance to work with children to help them overcome their health problems, which is what I really want to do. “I learned science in Arabic at high school so it was a big transition for me to study medicine in English, but everyone at WCMC-Q gave me great support every step of the way and I’m very grateful for that.”

Maen Abou Ziki matched at Yale-New Haven Hospital in Connecticut, where he will join an internal medicine residency program.

He said: “This is the moment we have all been waiting for and working towards for a very long time now. I’m very proud of all of my classmates and I’m very happy that I have been accepted to a residency program at an institution with such an excellent academic reputation. I have had an amazing journey here at WCMC-Q.”

Nour Barakat will pursue an ophthalmology residency program at Hamad Medical Corporation.

She said: “I’m so happy because it has been my dream to be an ophthalmologist for so many years. I feel very privileged to have studied with so many amazing, hard working people and so proud that our Class of 2014 achieved this incredible 100 percent match rate.”

Achieving a match rate of 100 percent is a great honor for our college, an honor that has been made possible by the truly excellent levels of commitment, hard work and talent... 

Dr. Javaid Sheikh
STUDENTS TO EXPERIENCE TOP U.S RESEARCH LABORATORIES THANKS TO WCMC-Q

Four Qatar high school students are flying to the U.S to visit top research laboratories after winning a contest run by WCMC-Q.
Fahad Saad Al Suwaidi, Mai Nasser Al Subaie, Najlaa Abdulaziz Al Thani and Noof Ali Al Mazrooei all entered and won scholarships in WCMC-Q’s annual Healing Hands Essay Competition, which this year had the topic ‘Promoting Healthy Lives’. The four will now have the experience of a lifetime as they go on a two-week, fully funded summer trip to visit prominent research laboratories at WCMC in New York and spend time with distinguished Weill Cornell physicians in major New York hospitals.

Dr. Rachid Bendriss, assistant dean for student recruitment, outreach and foundation programs said: “The winning students really do have the opportunity of a lifetime to experience something that money genuinely cannot buy. They will meet and talk to world-class researchers and academics in professional laboratories. I believe they will find it a truly inspirational experience that will encourage them all to forge a career in medicine and the wider scientific world.”

THE HEALING HANDS ESSAY COMPETITION IS NOW IN ITS SEVENTH YEAR. PREVIOUSLY ONLY THREE SCHOLARSHIPS WERE OFFERED, BUT BECAUSE OF THE SUCCESS OF THE PROGRAM AND THE HUGE INTEREST FROM STUDENTS, FOUR ARE NOW PROVIDED.

This year there were 54 entrants in the competition who came from 18 schools. They all submitted essays that were then judged by a panel of experts from WCMC-Q. The winners were announced at an event at WCMC-Q attended by friends and family of the entrants. There were also honorable mentions for those who were highly commended, and each entrant received a certificate of participation.

Current WCMC-Q medical student Ameneh Amini, who is in the Class of 2016, gave a talk offering her experiences at WCMC-Q and telling the high school students what it was like to study at the college.

Mai Nasser Al Subaie, of DeBakey High School for Health Professions, was one of the four winners. She wrote about health issues that are problems within the Qatari population including diabetes and obesity.

She said: “I wrote about that topic because even though Qatar is the wealthiest country in the world by GDP, there are still many health issues and the greatest wealth is health.”

For Fahad Saad Al Suwaidi, who attends Nasser bin Abdullah al-Attiyah Secondary Independent School for Boys, the death of a friend from cancer inspired him in his ambition to be a doctor.

Fahad said he was looking forward to learning more about the medical profession and what studying at a medical college would be like during his trip to New York.

Najlaa Abdulaziz Al Thani, who attends Al Arqam Academy for Girls, said she would be applying to WCMC-Q when she had the chance, like all the other winners. Najlaa’s essay was about people’s dependency on social approval.

She said: “I think it’s a recurring theme in the Gulf – eating disorders, anorexia, depression, they all go back to peer pressure in society. Every time I talked about these issues with people it always came back to society.”

The annual Healing Hands Essay Competition is open to Qatari students currently enrolled in high schools. The summer research scholarship also covers the travel cost of a parent escort who will accompany the students during their travel to New York this summer.
NEW TEST COULD REVOLUTIONIZE DIABETES SCREENING

A discovery by researchers at WCMC-Q and Hamad Medical Corporation (HMC) could lead to a quick, non-invasive screening test for diabetes, allowing sufferers who don’t know they have the disease to access treatment quicker.

Currently, doctors test for diabetes using either blood or urine analyses. But these are inconvenient and not suitable for a comprehensive public screening program as they generally have to be carried out by a nurse or doctor.

Now researchers at WCMC-Q and HMC have discovered a way of testing for diabetes using a swab of an individual’s saliva. The discovery means that samples could easily be taken in schools or sports associations, or even during regular visits to the dentist, making the implementation of diabetes screening programs – and thus early intervention - much more viable.

Dr. Karsten Suhre, professor of physiology and biophysics at WCMC-Q, said it is vitally important to diagnose patients who have diabetes as early as possible to allow them to access treatment, and the saliva test is one way of expediting that.

The researchers have discovered that people with diabetes have a reduced amount of 1,5-anhydroglucitol (1,5-AG) in their saliva. This is a substance similar to sugar. Scientists have long known that 1,5-AG can be used as a biomarker for diabetes in blood but the discovery by WCMC-Q and HMC that it can be tested for via a simple swab of the mouth greatly increases its potential importance as a quick, non-invasive test for diabetes.

Dr. Mohamed Mohy El Din Selim, senior consultant in the dermatology clinic at HMC, collaborated with WCMC-Q on the study.

He said: “To make this study happen we needed saliva, blood and urine samples from patients with diabetes, but also from people without diabetes. Many patients with diabetes also have skin problems and visit the Dermatology Clinic at HMC. Therefore, we could find both healthy and diabetic volunteers for our study in one place. This is essential for the data analysis since we needed to rule out potential influences that may be due to differences in sample collection.”

The study was conducted by researchers in Qatar and involved 369 people, approximately half of whom were Arabic, and half Asian. It is the first time that a new research technique called metabolomics has been used in a diabetes study of this size on saliva, plasma, and urine samples in parallel.

SUCH IS ITS IMPORTANCE THAT IT IS BEING PUBLISHED IN THE JOURNAL OF CLINICAL ENDOCRINOLOGY & METABOLISM.

Dr. Khaled Machaca, associate dean of research at WCMC-Q said: “This study provides proof of concept for the feasibility of identifying biomarkers for complex diseases such as diabetes in Qatar. The discovery has huge potential to improve diabetes screening and detection in Qatar. This is significant given the high rate of diabetes in the country.”
“Diabetes is a really vicious disease as initially when you get it you don’t feel any different; you can live for years without knowing about it but if you don’t adapt your lifestyle you’re slowly but continuously destroying your body. It’s like running an engine using the wrong kind of oil.”

Dr. Karsten Suhre
DOUBLE VICTORY FOR WCMC-Q IN UNDERGRADUATE RESEARCH AWARDS

WCMC-Q is celebrating a double success after winning first prize in both of the award categories at the 6th Annual Undergraduate Research Experience Program (UREP) Competition.

WCMC-Q research projects beat off stiff competition from other Hamad Bin Khalifa University (HBKU) colleges and Qatar University to scoop first place in both the oral presentation and poster presentation contests.

First prize in the oral presentation category was won by a project led by Dr. Alan Weber, WCMC-Q’s associate professor of English, and Dr. Mohamud Verjee, professor of family medicine. The project, entitled GCC Online Health Information Survey: Typology and Credibility, was presented by second-year medical student Zahra Habibur Rahman and also contributed to by fellow second-year medical students Shajeedha Ameerudeen and Nadeen Al-Baz.

First prize in the poster competition was won by a project entitled Mechanism of regulation of extracellular matrix modification upon endoplasmic reticulum stress; the role of TGF β pathway, led by Dr. Nasrin Mesaeli, associate professor of biochemistry, and research associate Dr. Hamid Massaeli. Second-year medical students Buchra Zakzok and Noor Anabtawi, and first-year medical students Anchalia Chandrakumaran and Lina Irshaid worked on the project.
The results were announced at the UREP Competition awards ceremony held at the HBKU Student Center on March 20.

Dr. Weber, whose project investigated the quality of GCC-based health information websites, said: “I’m extremely pleased that the hard work of the students has been acknowledged with this prize. They dedicated themselves to the project at every step of the way and they thoroughly deserve this success.”

Another project led by Dr. Mesaeli, entitled Characterization of growth factor receptor signaling upon loss of endoplasmic reticulum chaperones and contributed to by second-year medical students Afnan Albahri, Ameen Al-Aghil and Shereen Darwish, won fourth place in the oral presentation contest.

Dr. Mesaeli said: “I am proud of both groups of students from my lab, they did excellent work. They carefully followed instructions in the lab and were fully involved in discussions about the progress of the projects. I’m very pleased with the contributions they made and I am happy that they gained experience that will be of great benefit to them in their future clinical work.”

The UREP program is run by Qatar National Research Fund, a member of Qatar Foundation, and offers funding to enable undergraduate students to take part in research projects.

Dr. Khaled Machaca, associate dean for research, said: “The achievements of our students never cease to amaze me. They are the heart of our institution and I have no doubt will continue to produce at a very high level. Their success is a reflection of the high caliber of research currently ongoing at WCMC-Q. Also our faculty mentors are exceptional in their guidance and leadership. Our gratitude and acknowledgments go out to QNRF for their lucid vision in initiating and supporting the UREP program, without which students in Qatar would not have such opportunities to participate in research at such an early stage in their career.”
RESEARCH RETREAT SHOWCASES PIONEERING WORK

The cutting-edge research being conducted at WCMC-Q was showcased at the college’s fourth Annual Research Retreat.

WCMC-Q faculty and students gathered on 25 January to give presentations about the research studies being conducted at the university in a wide range of fields, including breast and ovarian cancer, inborn genetic disorders, diabetes and cardiovascular disease.

The annual event is a chance for WCMC-Q investigators to share their findings with their counterparts within the scientific community in Qatar, and for attendees to learn more about the university’s ongoing mission to contribute to the burgeoning research environment in Qatar, and to target health issues most relevant to the regional and Qatari population.

Dr. Khaled Machaca, associate dean of research at WCMC-Q, gave the welcome address at the event. He said: “The significant investments that Qatar Foundation has made in the WCMC-Q Research Program are beginning to bear fruit as illustrated by the presentations and papers from our scientists. Significant impact is obvious in areas of critical importance to the health of the Qatari population such as monogenetic disorders, breast cancer, and diabetes. These studies are ushering in the era of precision medicine in Qatar.”

Dr. David Clapham, professor of cardiovascular research and professor of neurobiology at Harvard Medical School, then made the keynote address, followed by presentations from WCMC-Q faculty.

Among many talks and presentations, Dr. Karsten Suhre, professor of physiology and biophysics, described the identification of a salivary biomarker for diabetes identified in the Qatari population. Dr. Lotfi Chouchane, professor of genetic medicine, discussed specific genomics signatures for breast cancer patients in Qatar and the region, while Dr. Alice Aleem summarized ongoing studies aimed at identifying the genetic cause of several monogenetic disorders in Qatari families through genomics studies.

Furthermore, Dr. Shahrad Taheri, professor of medicine, spoke about research gaps in the study of diabetes and obesity.

The event also featured a total of 92 poster presentations by research specialists, students and postdoctoral fellows relating the findings of projects conducted at the university over the past year.

WCMC-Q CURRENTLY HAS 36 ACTIVE RESEARCH LABORATORIES INVESTIGATING DIVERSE AREAS, RANGING FROM THE BASIC MOLECULAR AND CELLULAR PROCESSES THROUGH TO TRANSLATIONAL, CLINICAL AND POPULATION-BASED STUDIES.

There are now 165 staff and faculty members at WCMC-Q engaged in research, and in 2013 WCMC-Q research projects won grants from the 6th cycle of Qatar Foundation’s National Priorities Research Program (NPRP) totaling more than $10.3 million.

Dr. Javaid Sheikh, dean of WCMC-Q, said: “The annual research retreat is a great opportunity for us to see and appreciate the groundbreaking work taking place in our laboratories here at WCMC-Q. Our talented students, research specialists and postdoctoral fellows, supported by members of our faculty, are doing great work and making a fantastic contribution towards our ambition to establish WCMC-Q as a center of excellence in research in the region.”
“Their hard work and ingenuity, guided by the aspirations of Qatar Vision 2030, have led to many exciting new discoveries, positioning WCMC-Q at the very forefront of medical research and increasing our understanding of serious conditions like cancer, diabetes and cardiovascular disease that affect people in Qatar and all over the world.”

The event closed with the announcement of awards for the most accomplished poster presentations in three categories. First place in the student category was a tie between Ahmad Almeer for his poster about the bone properties of genetically modified mice, and Vignesh Shanmugam for his study of the effect of shisha smoking on the human small airway epithelium transcriptome. First prize in the research specialist category was won by Dr. Divya Viswanathan for a presentation about glandular cancer tumors. First place in the postdoctoral fellow category was scooped by Dr. Rawad Hodeify for his poster on the trafficking of a protein critical for cell function.

**Fourth Annual Research Retreat**
**Best Poster Presentation Award Winners**
**January 25, 2014**

**Category 1 – Students**

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Researchers at WCMC-Q have published the first genetic map of the date palm, paving the way for Qatar to become a leader in date palm genetics and biotechnology.

The map has been produced by the genomics group under the direction of Dr. Joel Malek, assistant professor of genetic medicine at WCMC-Q, in collaboration with Dr. Karsten Suhre, professor of physiology and biophysics at WCMC-Q, and with help from colleagues at the Ministry of Environment’s Biotechnology Center and the Department of Agricultural Affairs. The program, entitled ‘Establishing World Leadership in Date Palm Research in Qatar’ (NPRP-EP X-014-4-001) was funded by Qatar National Research Fund’s NPRP Exceptional Proposal program that provided $4.5 million to the research.

THE GENETIC MAP SHOWS THE ORDER IN WHICH THE DATE PALM’S CHROMOSOMES ARE PLACED AND ALSO WHICH CHROMOSOME IS RESPONSIBLE FOR REPRODUCTION.

In theory, the information could one day allow growers to manipulate the development of seeds, creating more female fruit-bearing plants than male plants - which do not produce dates. It also places Qatar at the head of research into the date palm, an important food source for much of the Middle East.

Dr. Malek said: “This is us laying the foundation for establishing world leadership in date palm research. To be a world leader you have to have infrastructure and I consider this to be a genetic infrastructure that will allow us to be the leaders when it comes date palm biotechnology.”

Three years ago Dr. Malek and his team produced a draft version of the date palm genome. It was this that paved the way for the more accurate map.

To create the map, Drs. Malek and Suhre worked with the Ministry of the Environment. The ministry provided the researchers with 150 seeds from a single female tree and they were then propagated by Ameena Al-Malki at the Biotechnology Center. Once they were large enough, leaves and DNA were taken from the seedlings. A new process called genotyping-by-sequencing was then applied which sequenced portions of the genomes of all 150 seedlings. It allowed the researchers to look at the parent tree and ascertain how she passed her DNA to her offspring. Dr. Malek explained that if you always see two genetic variations being passed to the seedlings, this meant they were placed closely together on the chromosome. But if the variations were rarely seen together then it was likely they are on different chromosomes. Through scanning 5,000 variations in 150 seedlings and noting how often they appeared, the researchers were able to build a map of where the chromosomes lie. More work now needs to be done to ascertain for exactly what each gene is responsible, for example, gender, size of date, or resistance to drought.

Dr. Khaled Machaca, associate dean for research at WCMC-Q, said the research demonstrates the value of funding novel, regionally relevant, collaborative research between different organizations in Qatar.

Dr. Machaca said: “The NPRP exceptional proposal (NPRP-EP) funding the date palm research was the first NPRP-EP awarded by QNRF. It funds regionally relevant research that has a high likelihood of contributing toward Qatar’s knowledge-based economy vision. This funding is beginning to bear fruits by generating the first chromosome map for date palm through collaborative efforts of multiple institutions in Qatar.”
This is us laying the foundation for establishing world leadership in date palm research. To be a world leader you have to have infrastructure and I consider this to be a genetic infrastructure that will allow us to be the leaders when it comes date palm biotechnology.

Dr. Joel Malek
CONFERENCE HEARS OF LATEST DEVELOPMENTS IN NEUROLOGY

Qatar Clinical Neuroscience Conference was held for the first time this year and saw two and a half days of high-level discussion of the latest advances in neurological treatments.

The conference was organized by Qatar Foundation (QF), WCMC-Q and The New York Academy of Sciences (The Academy) to bring together the world’s finest minds in the arena of neuroscience.

The symposium was developed to incorporate two of the most common neurological issues facing academia and the medical profession - affective disorders like depression, and strokes and traumatic brain injury.

Dr. Javaid Sheikh, dean of WCMC-Q, addresses the conference.
THE AUDIENCE HEARD THAT THESE ISSUES HAVE BEEN DEFINED BY THE WORLD HEALTH ORGANIZATION AS TWO OF THE MOST SERIOUS HEALTH PROBLEMS TODAY, AFFECTING NOT JUST QATAR BUT THE ENTIRE GLOBE. IN FACT, OF THE 20 LEADING CAUSES OF DEATH, 14 OF THEM ARE BASED IN NEUROSCIENCE WHILE ONE IN SIX PEOPLE WILL EXPERIENCE A SERIOUS EPISODE OF DEPRESSION AT SOME POINT IN THEIR LIVES.

Dr. Javaid Sheikh, dean of WCMC-Q, said one of the aims of the conference was to facilitate collaboration between neuroscientists at institutions across the globe. In addition, he said that the latest research would be shared with physicians in Qatar, improving patient care and encouraging further research locally.

Dr. Sheikh said: “One of the outcomes of a conference like this is the creation of a network and the building of relationships.

“Qatar’s National Research Strategy states that institutions should come together and work together. That is happening and will happen more in the future as a direct result of this symposium.

“Over the course of the conference we heard from some of the finest minds working today in the field of neuroscience. It was hugely beneficial to hear of the latest research data and advances in clinical care and this has opened up new opportunities and areas of research for us all.”

Conference delegates heard from such world-renowned authorities as Dr. Matthew E. Fink, Louis and Gertrude Feil professor and chairman of the Department of Neurology at Weill Cornell Medical College in New York.

Dr. Fink said that strokes are the second leading cause of death in the world but that if the knowledge we have is applied to the general population, 80 per cent of strokes can be prevented. He said that epidemiological studies had shown that stress was a huge risk factor for strokes - and not just ‘bad’ stress. Even joyful occasions feature stress and, startlingly, the risk of suffering a stroke doubles in the two weeks following a birthday.

The very latest research was also showcased at the conference with Dr. Karl Deisseroth, the D. H. Chen professor of bioengineering and of psychiatry and behavioral sciences at Stanford University in the U.S., explaining how new techniques could provide a precise 3D image of a brain, allowing scientists to examine regions which otherwise would require surgery. He also demonstrated how fiber optics could shine light on specific areas of the brain, so affecting the anxiety response in mice. Similar research is being conducted on how the same technique could be used to learn more about disorders like depression, social dysfunction and even drug addiction.

Ellis Rubinstein, president and CEO of The New York Academy of Sciences, said Dr. Deisseroth’s lecture was a prime example of how such conferences could spur on the generation of knowledge.

Mr. Rubinstein said: “Symposia like Qatar Clinical Neuroscience Conference disseminate information across national boundaries and provide new avenues of research for scientists and physicians working across a broad spectrum of specialties. They also encourage debate through direct interaction with the speakers, allowing for critical analysis in an informal environment.

“The Academy’s collaboration with WCMC-Q and QF can help achieve HH Sheikha Moza’s goal of creating a knowledge-based economy by connecting what happens here with the rest of the world.”

Among the presentations directly related to Qatar was Dr. Ziad Kronfol’s talk entitled Bipolar Disorders in the Arab World: Clinical and Genomic Data. Dr. Kronfol, professor of psychiatry at WCMC-Q, and a consultant at Hamad Medical Corporation, explained to delegates that his research within Qatar and the region showed that while many of the characteristics of patients with bipolar disorder were shared across international borders, there were some aspects more common to the Arab world.

“Bipolar patients in the Arab world more often exhibit conditions not typically associated with bipolar disorder, like diabetes and obesity,” said Dr. Kronfol. “The disorder also tends to run in families. However, bipolar patients in the Arab world do not display as many additional psychiatric conditions as those in other regions.”

In all, 33 lectures were given by academics from across the world from institutions in the U.S., the Middle East and Europe.
Dr. Jeremie Arash Rafii Tabrizi, associate professor of genetic medicine, spent four days running through the harsh conditions of the Qatari desert, covering the equivalent distance of eight-and-a-half marathons.

Setting off from the WCMC-Q campus at Education City, Dr. Tabrizi headed north on the Al Shamal Road as far as Al Ghuwayriyah, before turning southwest to reach Zekreet on the west coast. He then ran south to within approximately 30km of the border with Saudi Arabia before heading northeast towards Doha on Salwa Road, eventually arriving at the Corniche four days later to a hero’s welcome from friends and family.

Dr. Tabrizi, who specializes in research into ovarian and breast cancer and runs the Stem Cell and Microenvironment Laboratory at WCMC-Q, explained his motivation for undertaking the challenge.

“The main reason I wanted to run is that there is a real taboo in the Middle East around cancer,” he said. “People who fear they have the disease can be very reluctant to seek treatment—because of this taboo and I think that can change if people know more about cancer.

“There is a widespread belief that if you are diagnosed with cancer then it will definitely be fatal, but this is not correct at all. Because of this fear, patients in the Middle East often present with cancers that are well advanced because they don’t go to the doctor when they first realize something is wrong.

“I want people to understand that in many cases cancer can be treated— for example, breast cancer can very often be cured with an operation and radiotherapy if action is taken at the appropriate time. So my message is that if you think there is something wrong, don’t be afraid to go to see your doctor straight away to get it checked.”
He added: “I think this is particularly important for women because in the Middle East they play such a key role in society as the center of the household. So the wellbeing of the family is often very dependent on the health of the mother.”

The grueling challenge was run alone by Dr. Tabrizi, with his wife driving a support vehicle carrying food, equipment and supplies. Dr. Tabrizi organized the run independently and has named it the Qatar Ultra Running Event (QURE).

In 2012, Dr. Tabrizi completed the 119km Ultra-Trail Mont du Blanc race that follows a mountainous route through France, Italy and Switzerland, but he said the run around Qatar was a very different experience.

“Running in the desert is all about the mental challenge,” he said. “Of course, it appears to be easier because you don’t have to worry about running up and down hills but in fact I found it just as challenging. The landscape is very featureless so you feel you are not making progress and then you are in a mental battle to just keep going.”

The researcher said that the endurance required for the long-distance run made it an appropriate challenge to raise awareness of cancer issues.

He said: “The difficult, long fight of the patients against the disease, with many ups and downs along the way, is similar to the emotions you feel as you are running for a long period of time. There are also parallels between the run and the long path of research we have to follow as we try to find new treatments for cancer and move to a knowledge-based society. All of these require patience and a strong will, but with perseverance we have hope that we might eventually succeed.”

Dr. Tabrizi, who also works as a gynecologic oncologist at Hamad Medical Corporation (HMC), started running at between 3 and 4am each day, at which time the temperature in the desert was about 5°C, rising to 24-25°C in the middle of the day. He said: “The heat was not too bad but I was still drinking about one liter of water every hour during the hottest part of the day. In fact, the wind was very violent and that was more difficult to deal with than the sun.”

Dr. Tabrizi stopped to set up camp each evening between 6 and 8pm. Along the way he found a stray saluki dog, which he rescued and now has at home while he searches for someone to adopt it.

He added: “It was a tough experience but I hope it will have a positive effect in terms of raising awareness of women’s cancer issues and our research. The support for research in Qatar has been very strong and we are carrying out some very valuable studies at WCMC-Q - I hope we will be able to continue on this track.”

WCMC-Q’s research facility was established in 2008 and now has 36 active laboratories conducting biomedical research at the basic, translational and community levels, with particular focus on the most pressing health needs in Qatar and the region.

Dr. Khaled Machaca, associate dean for research at WCMC-Q, said: “It is rare to encounter a colleague as accomplished and multitalented as Arash. He is a talented researcher, dedicated surgeon and an ultra-runner to boot. Before Arash set off, I asked him what his motivation for such a difficult challenge was. His answer was simple: to promote awareness for biomedical research and women’s cancer issues.

“Arash joined the Research Department at WCMC-Q more than five years ago as one of our first recruits. At that time our research program was non-existent and many considered his decision to join us as bold as his idea to take on this incredible 360km ultra-run. As always, he has proven his skeptics wrong as he has completed the ultra-run and his research has flourished. Arash’s lab has completed exciting research in the areas of cancer and stem cells and has been extremely productive, with many publications. In addition, he has cared for many patients with gynecologic cancers. This required a sheer determination to succeed no matter what it takes. In that regard, Arash represents the vision and determination of the research program at WCMC-Q.”
The latest graduates of WCMC-Q were presented with their M.D degrees in front of an audience of family and friends.

In all, 34 students received their degrees during the traditional ceremony at Qatar National Convention Center, and can now officially call themselves “doctor” for the first time. The graduates will now go on to their residencies at hospitals in the U.S and Qatar, or take up research positions.

Dr. Javaid Sheikh, dean of WCMC-Q, congratulated the new doctors on their achievements.

Dr. Sheikh said: “This is a proud day not only for you and your families but also for all of us at Weill Cornell Medical College in Qatar. It is a great honor that we can gather to celebrate your hard work and ultimately your success.

“You will now go on to take residencies or embark on a career in research. I have no doubt that the determination you have shown in completing the first phase of your medical studies will stand you in great stead for the rest of your lives.

“I am confident that you will be wonderful ambassadors for Qatar, for the college and for the medical profession. You are the building blocks of Qatar’s knowledge-based economy and proof that the creation of Qatar Foundation was both visionary and inspired.”

THE 34 NEW DOCTORS ARE MADE UP EQUALLY OF 17 WOMEN AND 17 MEN. BETWEEN THEM THEY REPRESENT 13 DIFFERENT COUNTRIES, WITH FOUR OF THE GRADUATES COMING FROM QATAR.

Student speaker and Class of 2014 graduate Dr. Mouhamed Yazan Abou-Ismail said he and his peers were the future of medicine.

Dr. Abou-Ismail said: “From now on, we are responsible not only for the lives of others, but for the changing shape and nature of medicine itself.

“From now on, we can no longer blame misfortunes on the system – we have become part of it and must work hard to make that system better. And with every step, we must remain true to our profession, generate new knowledge, and pass it on to the younger generations who will fill the seats we once filled.”
Arunima Bera and Nour Barakat wait for the graduation ceremony.
Abdulwahed Zainel leads the prayer.
“As of today, my friends, the torch has finally been passed on to us, and I am ever so certain that it has been placed in the right hands.”

Along with receiving their U.S-accredited M.D degrees – Cornell University is the only American institution to offer its M.D degree overseas – the students also recited the Hippocratic Oath.

Watching them take it was Dr. Laurie Glimcher, dean of Weill Cornell Medical College in New York.

Dr. Glimcher said: “I am so pleased to be here to offer my congratulations to the Class of 2014 as they receive their medical degrees.

“Every member of the graduating class has worked with great diligence to realize his or her potential and reach this important milestone in their lives. Each graduate has displayed the virtues of integrity, civic responsibility and the highest levels of academic achievement that Cornell stands for, not only in the way they have approached their studies, but also through their contributions to the life of the college.

“These young men and women have also made a wonderful contribution to the ongoing mission of Weill Cornell Medical College in Qatar to establish a culture of excellence in the practice of medicine in the Middle East, and for that they have the gratitude of every member of the Cornell family.”

Dr. David Skorton, president of Cornell University, addressed the audience via a recorded video message and spoke of Cornell’s pride in the new graduates and of Qatar Foundation.

He said: “I offer my congratulations to the graduates, to their families and all faculty and staff at Weill Cornell Medical College in Qatar. Cornell University is honored to be a partner of this path-breaking endeavor which the whole world is watching with admiration.”

“From now on, we are responsible not only for the lives of others, but for the changing shape and nature of medicine itself.

Graduate Dr. Mouhamed Yazan Abou-Ismail

The Class of 2014.
CONVOCATION Awardees 2014

Excellence in the Molecules, Genes and Cells Course: Mohamed Abdulhai and Mahmoud Awad
Excellence in the Human Structure and Function Course: Maen Abou Ziki
Excellence in the Basis of Disease Course: Mahmoud Awad and Fathima Zahra Kamil Faiz
Excellence in the Pre-Clinical Curriculum: Mahmoud Awad
Excellence in the Brain and Mind Course: Fathima Zahra Kamil Faiz
Excellence in the Host Defenses Course: Tayseer Mosleh and Emad Mansoor
Excellence in the Medicine, Patients and Society II Course: Danial Mir
Excellence in the Medicine, Patients and Society I Course: Nadine Mary Saad
Excellence In the Clinical Curriculum: Mahmoud Awad and Tayseer Mosleh
Excellence in Psychiatry: Nora Biary
Excellence in Pediatrics: Abdelaziz Farhat
Excellence in Internal Medicine: Fathima Zahra Kamil Faiz and Afaf Osman
Excellence in Obstetrics and Gynecology: Saad Kubba
Excellence in Public Health: Danial Mir and Tayseer Mosleh
Excellence in the Medicine, Patients and Society III: Tayseer Mosleh
Excellence in Primary Care: Tayseer Mosleh
Excellence in Surgery: Tayseer Mosleh,
Excellence in Neurology: Prashanth Venkatesh
Leadership in Medicine: Maen Abou Ziki
Biomedical Research: Nora Biary and Maen Abu Ziki
Outstanding Community Service: Emad Mansoor and Marwa Saleh
The Good Physician Award: Emad Mansoor
Class of 2008 Student Leadership: Mouhamed Yazan Abou-Ismail
Global and Public Health Award of Merit: Marwa Saleh
Outstanding Public Health and Community Medicine Research: Marwa Saleh and Alhasan Sedeeq
Humanism in Medicine: Nour Barakat & Emad Mansoor

FACULTY AND HOUSE OFFICER AWARDS

House Staff Teaching Award: Dr. Khalid Mohamed Ali Dousa Abdulrahman
Senior List: Dr. Laith Abu-Raddad; Dr. Thurayya Arayssi; Dr. Hassen Al-Amin; Dr. Gerardo Guiter; Dr. Naim Haddad; Dr. Wanis Hamad Ibrahim; Dr. Amal Khidir; Dr. Bakr Nour; Dr. Robert Kim as visiting faculty; Dr. Mark Pecker as visiting faculty

Humanism in Medicine: Dr. Mohamud Verjee.
Excellence for Pre-Clinical Teaching: Dr. Gerardo Guiter
Excellence for Clinical Teaching: Dr. Bakr Nour
Aljazy Al Maraghi takes the Hippocratic Oath.
THE 2014 DEAN’S HONOR LIST:

Aya Youssef
Ramez Rawhani
Said Alnajjar
Farah Bshesh
Suresh Menik Arachchige
George Sadek
Tarek Taha
Yahya Othman
Irfan Helmy
Nada Darwish
Tina Bharani
Merna Hussien
Syeda Razia Haider
Aulia Ahmad
Sahar Abida Mahadik

Mohammed Salama Chaker
Mountasir El-Tohami
Ahmad Salah Sami
Farah Al-Sayyed
Safa Mahgoub
Nahel Tunio
Youmna Abdelghany
Fatima Al-Maadid
Faryal Malick
Nora AlFakhri
Basem Oraby
Imen Becetti
Adham Musthak
Mu Ji Hwang and Hawra Al Lawati
TOP STUDENTS RECEIVE ACADEMIC HONOR

Thirty WCMC-Q students were named on the Dean’s Honors List at a ceremony held at Hamad Bin Khalifa University’s Student Center.

First and second-year pre-medical students who posted GPA scores of 3.75 or higher in the Fall 2013 term qualified for inclusion on the list, which is announced annually to formally acknowledge the achievement of academic excellence.

Dr. Javaid Sheikh, dean of WCMC-Q, presented each of the high-achieving students with an award at the ceremony as Dr. Dietrich Busselberg, assistant dean for student affairs and professor of physiology and biophysics, called them to the stage.

Congratulating the students on their achievements, Dr. Sheikh said: “Every one of you named on this list has the right to feel very proud of what you have achieved.

“The level of commitment and dedication you have shown to your studies is truly impressive. I want to thank and congratulate each one of you for your efforts, and I extend those sentiments to our talented faculty members who have helped each of you to fulfill your academic potential.

“Every one of you named on this list has the right to feel very proud of what you have achieved.

Dr. Javaid Sheikh

“In a very short time, our medical school has reached a standard that allows us to compete with the very best medical schools in the U.S., in terms of quality of teaching, academic achievement and the residency programs for which our graduates are selected. This success is the result of the hard work of students like yourselves and your predecessors and the wonderful faculty that we have.”

The event also featured a speech by Dr. Jehan Al Rayahi, a graduate of WCMC-Q’s inaugural class of 2008.

Dr. Al Rayahi, who completed her residency training in radiology at Hamad Medical Corporation in 2012, told the students: “It gives me great pleasure to extend my sincere congratulations to all of you for this wonderful achievement. I also congratulate your parents for supporting you, and I urge you to keep working hard towards your goals. There is a lot of hard work ahead, but you have shown that with dedication and perseverance you can achieve great things.”
One of the first members of that new generation is Qatari national Dr. Noora Al-Shahwani, who graduated from the university in 2011 and is now a pediatric surgery resident at Hamad Medical Corporation (HMC).

Born and educated in Qatar, Dr. Al-Shahwani joined WCMC-Q’s pre-medical program in 2005. Having discovered a keen interest in biology during her years at Albayan Scientific High School, the decision to study medicine was a straightforward one for her.

“I had always liked science subjects as a young child and at high school I found the dissection classes particularly fascinating,” she explained. “Discovering the physiology of animals, examining cells under the microscope and understanding how everything functioned – at that age, it just amazed me. Healing is also a big motivator, not only from a philosophical or moral point of view, but also from a purely mechanical point of view. Being able to fix something that is not functioning correctly is extremely gratifying and that is what attracted me to surgery.

“I came to know quite early on in my training, during the first year of the med course, that I had this love of surgery and that I would pursue that route.”

Now Dr. Al-Shahwani spends her days working with adult patients as she learns the skills of general surgery by rotating through the various departments at HMC.

The six-year residency program involves spending two years learning general surgery, followed by three months on the trauma service to learn to be comfortable dealing with acute emergency cases that need resuscitation under time pressure. Dr. Al-Shahwani will then spend three months learning vascular surgery, followed by two-months in the urology and plastic surgery departments, before working for one month in the pediatric intensive care unit (ICU) and a further month in the neonatal ICU. Having then gained a solid foundation in general surgery, she will spend the final three years of the program learning her specialty of pediatric surgery.

“Producing a new generation of doctors to meet the healthcare needs of Qatar’s rapidly growing community is one of the key components of WCMC-Q’s mission.”
The decision to work with children came about while Dr. Al-Shahwani was studying at WCMC-Q, she said.

“During my pediatric rotation I found that I really enjoyed working with kids. Combined with my earlier feeling that surgery was for me, it made sense to go into pediatric surgery. In my fourth year of the medical program I took an elective in pediatric surgery at HMC and it gave me an instant idea of what my life would be like as a resident here - it just felt right so I went for it.”

Being able to study medicine in her hometown was an important factor in Dr. Al-Shahwani’s decision to pursue a career in the field.

“When Cornell opened its campus in Doha, it was a great boost for me,” she said. “The fact that I could study medicine here without leaving my home and my family was extremely important to me.

“I enjoyed my time at WCMC-Q immensely. I loved the fact that the college was so international because I met so many interesting people and developed such good friendships while I was there. It really helped me to develop as a person because when I arrived I was a bit shy and introverted, but meeting all these fascinating people from all over the world helped me to become far more confident.”

Dr. Al-Shahwani’s desire to stay close to her family also played a part in her decision to take her residency at HMC, she explained.

“Being away from my family on the other side of the world for seven years would just have been too much for me. We are very close and that would have been very difficult. Besides, I wanted to stay in Qatar and contribute to the growth of the healthcare system here.”

Working in healthcare means taking on a substantial workload and Dr. Al-Shahwani typically spends between 60 and 70 hours at the hospital each week, but she relishes her time there.

“The hospital is like a second home to me,” she said. “Yes, there are times when you are fatigued, but when you are doing something you love the hard work just becomes a way of life. You have to give 100 percent of yourself to it, but the payoff is that you get to see the results of your hard work – it is gratifying to see your patients are doing well and that they and their families are happy because you have been able to help them.”

Dr. Al-Shahwani also gains great satisfaction from performing procedures.

She explained: “The whole process of operating is interesting. We see the patients before their operation; then they are rolled into the operating room, anaesthetized and covered. At that point, from the surgeon’s point of view, the patient as a human being with a distinct personality and a family and so on, ceases to exist – the entire focus is on the pathology, the problem that needs to be fixed. You then go through the process of dissection, finding the problem, fixing it and closing the incision again.

“In just two or three or four short hours that you have been operating, you have really done something that could make a huge improvement to the life of the patient. Finally, they are uncovered and later on you see them when they have woken up. They have ceased to be just a problem to be fixed and they are a human being again - hopefully a much happier and healthier human being than when they went in. The whole process is fascinating and extremely satisfying.”

Looking to the future, Dr. Al-Shahwani plans to undertake a fellowship of one or two years in the United States or Canada after her residency program finishes in 2017. But her long-term plans focus on serving the community in Qatar.

She said: “I will be away from home for a short time but my aim is to return to Qatar after the fellowship to work at Sidra Medical and Research Center in the department of pediatric surgery.

“Maybe at some point in the future I will have the opportunity to take up a position as an assistant professor back at WCMC-Q, which I would love to do.”
OPPORTUNITIES FOR EDUCATION EXCHANGE PROGRAMS

WCMC-Q has hosted a meeting of the Global Education in Medicine Exchange (GEMx), a program that promotes international student exchanges among elite medical universities.

GEMx, an initiative of the United States Educational Commission for Foreign Medical Graduates (ECFMG), connects the world’s medical schools and students, and will allow medical students and educators to engage in a global dialogue.

The meeting at WCMC-Q on January 15 brought the GEMx advisory committee together with members of the ECFMG leadership to discuss strategies to expand and enhance the GEMx program. The first item on the agenda was to announce the appointment of Dr. Ravinder Mamtani, WCMC-Q’s associate dean for global and public health, as chairman of the International Advisory Committee.

Welcoming the members, who had traveled from the U.S and other countries around the world, Dr. Javaid Sheikh, dean of WCMC-Q, said: “I am very excited at the opportunities that being a part of GEMx offers us. As we enter a new era of medical education that is far more global in outlook than ever before, GEMx provides a network through which our students can access truly valuable learning experiences in a variety of locations all over the world.

“I think GEMx and WCMC-Q share a desire to embrace the exchange of knowledge and experience among institutions around the world, and we are looking forward to a long and fruitful working relationship with GEMx and ECFMG.”

The key function of GEMx is an innovative online system through which universities can publish details of the electives they offer. Students can use the system to apply for the electives, safe in the knowledge that the host school has signed up to the ECFMG charter, which guarantees established standards of student support and pre-agreed learning outcomes. Students who use GEMx can currently apply for electives in Australia, Bahrain, Colombia, Mexico, the Netherlands, Chile, Malaysia, India and Lebanon, among other countries.

Dennis Donohue, ECFMG senior vice president and chief financial officer, said: “We are happy to announce the appointment of Dr. Ravinder Mamtani as chair of the GEMx Advisory Committee. As chair, Dr. Mamtani brings a strong belief in the value of international medical student exchanges and a deep appreciation for the need to develop a mutual understanding amongst diverse cultures, so necessary in our increasingly global society. To all who know him, Dr. Mamtani brings a vibrancy of thought and the power of new ideas to the GEMx program. ECFMG is honored by his acceptance and by Dean Sheikh’s willingness to provide such a valuable resource to the GEMx program.”
The meeting then viewed a presentation by second-year medical student Ahmed Saleh about his eight-week visit to the Weill Bugando Medical Center in Mwanza, Tanzania for the WCMC-Q Global Health Education and Research Program, which saw him take part in clinical rounds and contribute to a research project.

Dr. Mamtani said: “The purpose of the program and the visit to Tanzania is to provide experience to students both of conducting research and working with patients in a very different environment than they are used to.

“We find that such experiences are of immediate benefit to students because they are able to observe and practice different approaches to medicine while also learning how to relate to patients from a different culture. It is this sort of beneficial experience that GEMx really aims to provide to students.”

Dr. Emmanuel G. Cassimatis, M.D., president and CEO of ECFMG said: “The meeting of our Global Education in Medicine Exchange International Advisory Committee (GEMx IAC) at Weill Cornell Medical College in Qatar was very successful. I am particularly pleased, not only about what was accomplished, but about what is just beginning, through Dean Javaid Sheikh’s enthusiastic sponsorship of and support for our meeting, and Dr. Ravinder Mamtani’s chairship of the GEMx IAC, which is a growing partnership between ECFMG and WCMC-Q in support of high quality global medical education.”

The purpose of the program and the visit to Tanzania is to provide experience to students both of conducting research and working with patients in a very different environment than they are used to.

Dr. Ravinder Mamtani

Medical student Ahmed Saleh addressed the meeting about his time at Weill Bugando Medical Center in Tanzania.
A researcher at WCMC-Q has contributed to a discovery that could one day rival statins as a means of regulating cholesterol.
The discovery of how a form of microRNA helps control cholesterol could have huge implications, improving the quality of life and preventing the premature deaths of tens of thousands of people each year.

Dr. Hani Najafi, assistant professor of cell and development biology at WCMC-Q, and his fellow researchers at Massachusetts General Hospital and Harvard Medical School have conducted the research published in the leading high impact Journal of Science Translational Medicine.

Dr. Najafi said: “The work that has been done so far has had very significant results and although we’re not yet at the stage of announcing a new drug, I am hopeful that the treatment will one day be clinically important. High cholesterol levels are associated with heart disease, diabetes and atherosclerosis – some of the main causes of premature death – and it would be very satisfying for myself, my team and WCMC-Q to think that we have helped prevent some of those deaths.”

Dr. Najafi said that the foundation of the research was established in 2010 when he found a novel mechanism that contributes to proper cholesterol/lipid levels in the human body. This led him to look at the microRNA miR33. MicroRNA helps regulate gene behavior and although scientists already knew about the existence and location of miR33 - which comes in forms a and b - they did not understand its function and purpose.

**WORKING WITH MICE, WHICH ONLY POSSESS MIR33A, DR. NAJAFI AND HIS COLLABORATORS FOUND THAT THE MIR ACTS WITH THE GENE IT IS LOCATED ON, TO PROMOTE CHOLESTEROL BIOSYNTHESIS.**

All miRs are known to target certain genes and it was found that the main target of miR33a is a transmembrane protein called ABCA1. This regulates the levels of high-density lipoproteins (HDL) – commonly known as good cholesterol – by promoting biosynthesis; cells make cholesterol and ABCA1 gets rid of it in the form of HDL.

HDL is beneficial cholesterol so the more you have of it the better you can reverse the initial symptoms of metabolic syndrome. This has been associated with type-2 diabetes and heart disease and can ultimately lead to atherosclerosis and heart attack.

However, Dr. Najafi and his fellow researchers found that if they inhibited miR33a then they could increase the amount of HDL in the body.

HDL is important as it is implicated in the pathway called reverse cholesterol transport (RTC) whereby excess cholesterol is taken from the blood and transported to the liver. Here it is processed and cleared from the body, so the more HDL the stronger the reverse cholesterol transport and the more cholesterol is removed. In mice, Dr. Najafi found that the amount of HDL could be increased by between 20 and 30 percent if the microRNA was inhibited (Najafi-Shoushtari et al Science, 2010).

However, mice only possess miR33a. Humans and other primates possess both miR33a and miR33b so the team needed a new concept that would target both forms for inhibition. They did this by utilizing an “antisense” strand that forms a robust double strand with miR-33a and b. Usually miRs are single-stranded but when double-stranded they are inactive. These specific antisense-miRs were then injected into a population of monkeys that had been kept on a high-fat diet with excess cholesterol.

**THE MONKEYS WERE OBESE WHEN THE MIR33 INHIBITORS WERE INJECTED BUT AFTER THE PROCEDURE IT WAS FOUND THAT THEIR HDL LEVELS INCREASED BY 40 PER CENT COMPARED TO THEIR COUNTERPARTS WHO DID NOT RECEIVE THE INHIBITOR.**

The findings could have huge implications for the treatment of cholesterol-related problems, and also those who need to maintain low cholesterol levels due to previous illnesses and procedures. Currently, statins are used to control cholesterol levels by blocking its production but these are not without side-effects; statins can cause headaches, nausea, abdominal pain and, in rare cases, liver failure and skeletal muscle damage. But so far miR33 is believed to be non-toxic as well as being easy to administer.

References.
A groundbreaking study conducted by WCMC-Q researchers has shown the importance of the relationship between healthy cells and those affected by cancer.

Entitled ‘Preferential transfer of mitochondria from endothelial to cancer cells through tunneling nanotubes modulates chemoresistance’, the study was lead-authored by Dr. Jennifer Pasquier, WCMC-Q’s postdoctoral associate in genetic medicine, and was originally published in the Journal of Translational Medicine.

The research team observed the transfer of structures within cells – in this case, mitochondria – from healthy cells to cancer cells through so-called ‘tunneling nanotubes’. These are microscopic structures that form a bridge between healthy cells and tumor cells, allowing transfer of materials that facilitate tumor growth.

**CRUCIALLY, THE RESEARCHERS FOUND THAT THIS PROCESS MODIFIES THE HEALTHY CELLS IN SUCH A WAY THAT THEY FACILITATE THE RETURN OF TUMOR CELLS EVEN AFTER THE ORIGINAL CANCER HAS BEEN DESTROYED BY CHEMOTHERAPY.**

Dr. Arash Rafii, WCMC-Q’s associate professor of genetic medicine, was corresponding author of the research project. He said: “Such interactions modify our perception of cancer cells as being autonomous. We show here that they interact with normal cells of the body. The transfer of mitochondria, which
is an important organelle for dealing with stress, helps cancer cells to resist chemotherapy and eventually give rise to a recurrence."

The study focused on endothelial cells, which together form a thin layer lining the interior surfaces of blood and lymph vessels, known as the endothelium. Within the endothelial cells – as is the case with most of the cells of living creatures – are mitochondria, structures that perform a variety of important functions such as generating chemical energy and coordinating key cell actions like growth, cell repair and cell death. In the laboratory, the researchers took cultured breast and ovarian tumor cells and observed how they reacted with endothelial cells and bone marrow cells derived from stem cells. Using a microscope and time-lapse photography the team was able to observe the formation of tunneling nanotubes between the cells. The nanotubes, which are formed of plasma membrane - the same material that cell walls are made of – were then observed to allow the transportation of materials including mitochondria from endothelial cells to tumor cells. Furthermore, the team found that there was preferential transfer of mitochondria from endothelial cells to tumor cells compared to the bone marrow cells, indicating that a specific process exists that mediates such intercellular exchanges.

The team then sorted cells that had gained mitochondria from the intercellular exchanges from cells that had acquired cytoplasmic content but no mitochondria and exposed both groups to doxorubicin, a widely used anticancer chemotherapy drug. The experiment showed that both groups of cells exhibited chemoresistance but that the cells that had acquired mitochondria did so to a significantly greater degree.

Dr. Rafii said: “The study shows that, in a sense, the normal pathways and structures of healthy cells are ‘hijacked’ by the tumor cells and used to further their progression throughout the body. Significantly, the study has also increased our understanding of the way that chemoresistance develops, and this presents us with useful new avenues for research.

“The support of our leadership at Cornell, as well as that of QF’s National Priorities Research Fund and their Biomedical Research Program (BMRP), have allowed us to make significant progresses in the field of tumor microenvironment and will lead to better understanding of the mechanisms of dialogue between tumor and stroma, and help to set up strategies to disrupt such cross talk.”

Explaining the implications of the WCMC-Q research, Dr. Pasquier said: “This is the second work led by our team showing the importance of tunneling nanotubes in resistance to chemotherapy. After describing the role of tunneling nanotubes in intercellular exchange of P-glycoprotein between breast cancer cells [in the first study], we demonstrated here their implication in the transfer of mitochondria. While our first work was focused on the exchange within the cancer, here we revealed an interaction between cancer cells and normal cells from their microenvironment. This underlines the importance of taking into account the fact that the cancer is not anymore considered an isolated structure, but a complex organization interacting with the surrounding cells.

This study illustrates one more time the importance of intercellular communication. While the common receptor-cytokines interactions are subsequently described in the literature, the idea of direct cell-to-cell exchange of material is growing in the scientific community.

Dr. Jennifer Pasquier
“This study illustrates one more time the importance of intercellular communication. While the common receptor-cytokines interactions are subsequently described in the literature, the idea of direct cell-to-cell exchange of material is growing in the scientific community. The multiplication of discoveries of intercellular exchanges is questioning the cell theory itself. The theory states that the cell is the most basic unit of structure, function, and organization in all organisms. This holds that there is cell individuality, delimited by the cytoplasmic membrane, which rules the exchange between cells and their environment. This theory seems now to be simplistic when we think that the cells are connected by many thin plasma membrane structures allowing intercellular transfers of organelles, various plasma membrane components and cytoplasmic molecules.”

Applauding the work, Dr. Khaled Machaca, associate dean for research, said: “This study conducted by Dr. Pasquier and Dr. Rafii beautifully illustrates an area of translational medicine that is likely to have significant implications for our understanding of cancer progression and recurrence. Such studies that bridge basic cell biological processes and knowhow to cancer recurrence will go a long way toward translating basic findings from the lab to the clinic.”

The project was made possible by research grants from Qatar Foundation’s (QF) National Priorities Research Program (NPRP), award numbers NPRP 09-1174-3-291 and NPRP 4-640-1-096. In addition, the study was cited by researchers at the University of Leuven, Belgium and published in the prestigious journal Cell Metabolism.
The thwack of willow on leather was heard as students and support staff at WCMC-Q took each other on at cricket.

The game was organized by the members of WCMC-Q’s Reach Out to Asia (ROTA) Club who challenged WCMC-Q’s cleaners, electricians and postal assistants to a match at the QF cricket pitch.

For those who have yet to discover the delights of cricket, there was also kite-flying and ceramics.

Dr. Rodney Sharkey, associate professor of English at WCMC-Q, and faculty advisor to the college’s ROTA club, said: “The ROTA Club teach English to the support staff twice a week but this was the first time that they had gathered for an extra-curricular event off campus.

“It was a great day and allowed the students and staff to get to know each other in a more relaxed environment – apart from the rivalry on the cricket pitch, of course. Students Ayesha Khalid and Ridin Balakrishnan should take all the credit for organising the event.”

The traditional cricket tea was replaced with chicken and fries, after which the winners were presented with mementoes. The eventual winners were WCMC-Q’s students with a score of 145 compared to the staff members’ 133. However, the students inadvertently benefitted by having to include some staff members on their team in order to ensure everyone could play. One such player lining out for the students was technician Mohammad Shahid who was unanimously voted Man of the Match for his outstanding performance in both bowling and batting throughout the day.

Muhammad Panhwar bowls them over.
Experts from the United States visited WCMC-Q to speak at the country’s first cultural competence in healthcare symposium.

The one-day event, entitled Culturally Competent Patient-Centered Healthcare: A Special Focus on Qatar, was hosted by the college’s Department of Global and Public Health.

Delegates discussed topics relating to the practice of medicine in international settings, the challenges posed by language barriers and cultural sensitivities, and strategies to mitigate these issues in order to provide the best possible healthcare to patients from a diverse range of backgrounds.

The symposium opened with a keynote address by Dr. Jamal Rashid Al-Khanji, director of healthcare quality and patient safety, and acting CEO of the Supreme Council of Health’s Qatar Council for Healthcare Practitioners.

Dr. Ravinder Mamtani, associate dean for global and public health at WCMC-Q, also addressed the symposium, explaining that published reports have revealed that approximately 190 languages are spoken in Qatar. The Center for Cultural Competence in Healthcare was established at WCMC-Q in 2008 with a view to providing training in cultural competence to students and healthcare practitioners, said Dr. Mamtani.

Dr. Robert C. Like, professor and director of the center for healthy families and cultural diversity at Rutgers Robert Wood Johnson Medical School New Jersey, USA, gave a talk on cultural competence and patient-centered care.

Dr. Like said: “Differences in language, cultural background and ethnicity can all be barriers to care, but with training healthcare providers can transcend those barriers and help patients access the care they need.

“The fact that cultural competency training is being introduced with a countrywide approach in Qatar means there is an opportunity for it to be truly transformative and to have a really positive effect on healthcare outcomes.”

Dr. Jeffrey Ring, director of behavioral sciences and cultural medicine at the White Memorial Medical Center, and clinical professor of family medicine at the Keck School of Medicine at the University of Southern California, USA, spoke about education and research in the field of cultural competence. His address was followed by a speech entitled The Role of Health Education in Patient Safety Competencies by Dr. Khalid A. Alyafei, program director of the pediatric emergency medicine fellowship at Hamad Medical Corporation (HMC).

The symposium, held on March 17, was attended by WCMC-Q researchers, faculty and students, as well as by nurses and physicians from HMC.

The aim of the symposium was to show how cultural competence in healthcare can enhance patient-provider communication, eliminate disparities in access to healthcare and ultimately improve healthcare outcomes.
Maha Elnashar, director of the Center for Cultural Competence in Healthcare, said: “Our aim with the symposium was to support the ongoing process of building understanding between healthcare practitioners and patients, no matter where in the world they come from or what language they speak. It was very encouraging to see so many healthcare providers here at the event to share their experiences and knowledge with each other.”

A panel discussion and Q&A session chaired by Dr. Marcellina Mian, WCMC-Q’s associate dean for medical education, was held near the end of the event to reflect on the topics raised by the healthcare professionals at the symposium. The event concluded with remarks by Dr. Sohaila Cheema, director of WCMC-Q’s Department of Global and Public Health.

Reflecting on the importance of cultural competence training, Dr. Mamtani said: “As the world becomes increasingly globalized it is incumbent upon healthcare providers and educational institutions to acknowledge the diverse cultural sensibilities, languages and customs of the patients that we serve. We all have a duty to ensure that we show compassion, understanding and patience so that everyone can receive the care that they need, which is why events like this one are so important.”

“We all have a duty to ensure that we show compassion, understanding and patience so that everyone can receive the care they need.”

Dr. Ravinder Mamtani addresses the conference.
A huge leap forward has been made by researchers at Weill Cornell Medical College in Qatar (WCMC-Q) who have produced a comprehensive atlas identifying the genes that influence how the body keeps our blood levels of sugars, fats and amino acids in balance.

Dr. Karsten Suhre, professor of physiology and biophysics at WCMC-Q, worked with partners at institutions in Europe to create the map, which has recently been featured in the prestigious Nature Genetics magazine.

A total of 7,824 people took part in the study with the scientists determining 2.1 million genetic variants in each one of those study participants. The researchers then measured the levels of over 400 different small molecules, called metabolites, that are found in the blood of every person. The relation between metabolite levels and differences between every individual's genes was recorded and, through statistical analysis, it was found that there are 145 genes that have a significant effect on the body's metabolic capacities.

Dr. Suhre said: “Many of the 145 genes we identified are enzymes. Enzymes are there to produce the different metabolites – the sugars, fats and amino acids that are the building blocks the body needs. They also eliminate toxic substances and excess metabolites from our system. Genetically, everyone has these enzymes but no-one is identical in what concerns their genetic make-up, so we’re looking for differences in what an individual's enzymes can do by generating a comprehensive picture of over 400 metabolites for every blood sample we measure.”

ESSENTIALLY, A SINGLE GENETIC DIFFERENCE IN THE WAY THAT AN ENZYME BEHAVES MAY HAVE POSITIVE OR NEGATIVE BENEFITS FOR THAT INDIVIDUAL. IT MAY MAKE THEM MORE PRONE TO CERTAIN DISEASES OR PROTECT THEM FROM SOME ILLNESSES BY, FOR EXAMPLE, EFFICIENTLY PROCESSING A CERTAIN VITAMIN OR BEING UNABLE TO PROCESS IT.
“This is an atlas of how everybody is metabolically different,” said Dr. Suhre. “We can now really understand the genetic part of human metabolism as a whole; that is a first. It has never been achieved to this level before.”

The research has been going on for several years at WCMC-Q with international collaborators, and Dr. Suhre said, the map is the culmination of that, providing an extremely valuable tool for scientists. The map shows the different pathways between genes, enzymes and metabolites, demonstrating that a drug used to target one gene may have several different effects and consequences on other pathways. Perhaps most importantly, it shows how human metabolism works as a system and how it can potentially be modified in order to counteract what a disease has done.

Dr. Suhre said: “To treat a disease, such as diabetes or cancer, if you want to change the levels of a certain metabolite, the map would tell you which enzyme to target, but it would also tell you which other metabolites and enzymes surrounding the target would be affected, so that you can select the right combination of drugs in order to reach a desired effect.”

Dr. Khaled Machaca, associate dean for research at WCMC-Q, said: “This study highlights current efforts and the long term vision of the WCMC-Q research program to focus on personalized medicine approaches that will allow physicians in Doha in the long term to devise treatment strategies targeted to the individual. This approach is well aligned with Qatar’s 2030 vision to improve the healthcare of the Qatari population.”
SAHTAK AWALAN HELPS IMPROVE HEALTH OF NATION AT NATIONAL SPORTS DAY

WCMC-Q partnered with Qatar Olympic Committee (QOC) to help inspire people to take control of their lives and improve their health during National Sports Day.
The initiative was run through the college’s groundbreaking community health program Sahtak Awalan – Your Health First, in which QOC is a strategic partner.

From February 6 through to February 11 Sahtak Awalan hosted a stand in the QOC’s Sport Zone that was created near to the central post office on the Corniche. The stand had a host of information and products that could help people make small changes in their lives that would have a big impact in the future. There was also the chance for people to have their health evaluated.

Dr. Javaid Sheikh, dean of WCMC-Q, said: “Our health is one of the most important gifts we have and we have a duty to ourselves, our families and our friends to look after it. Just making small changes in your life – exercising for 30 minutes a day for example – can have major health benefits.

“National Sports Day gave the Sahtak Awalan team the opportunity to spread this message and I hope everyone made the most of the information available.”

The Sahtak Awalan stand featured cutting edge technology in the form of the AGE reader which is able to provide a prediction of the risk of major chronic diseases like cardiovascular disease, and a body analyzer machine that calculates muscle mass, metabolic age and bone mineral mass among many other measurements. In addition, there were metabolic assessments, cognitive tests and sleep questionnaires that relate to obesity and diabetes.

“Dr. Shahrad Taheri, professor of medicine at WCMC-Q, said the technology on the stand was able to provide significant information for improving future health.

Dr. Taheri said: “The equipment that was available at the Sahtak Awalan stand was able to pick up on the body’s early warning signals. That information could be the impetus that someone needed to change their life for the better, whether that means improving their diet, exercising more or losing weight.

“This was a wonderful opportunity for people to have their health checked using the latest equipment.”

The Sahtak Awalan stand also featured a host of information and health and fitness products including healthy recipes, information about calculating your body mass index (BMI), and practical fitness aids like pedometers that encourage people to walk further and skipping ropes with integrated calorie-counters.

The aim was that people will be inspired by the physical activity happening around them and make 2014 the year when they change their lives for the better. There was also a huge canvas for visitors to paint as part of the Paint Your Healthy Future initiative.
DAY OF HEALTH AND FITNESS FOR SCHOOLS

Children, teachers, friends and families united under a banner of health, fitness and education for the annual staging of The Challenge.

The Challenge is part of WCMC-Q’s flagship health campaign, Sahtak Awalan – Your Health First, and saw hundreds of middle school children from 20 schools across Qatar compete in a series of physical tasks in the main arena of the Aspire Zone. Each team of ten was vying to be crowned champions and secure the coveted Challenge Trophy.

Now in its second year, The Challenge promotes the importance of exercise and fitness and aims to encourage young people to take up sport or a physical activity. It also endeavors to engage with young people and their families to inspire them to adopt healthy lifestyle habits, which will help build a strong and healthy future generation. This is in line with the broader aim of the Sahtak Awalan campaign, which is to help create a healthy nation, able to contribute to the knowledge-based economy in line with the objectives of Qatar National Vision 2030 and the National Health Strategy 2011–2016.

The five-year initiative — that was launched in 2012 — has won high-profile support and is organized by WCMC-Q in conjunction with the Supreme Council of Health and in partnership with Qatar Foundation, the Supreme Education Council, Qatar Petroleum, Occidental Petroleum of Qatar, ExxonMobil Qatar Inc., Qatar Olympic Committee and Vodafone Qatar.

The Challenge, held on March 8, was attended by a host of VIP guests who turned out to lend their support to the students. The competitors were also supported by hundreds of family and friends who cheered them on from the stands.

His Excellency Abdullah Bin Khalid Al-Qahtani, minister of public health, praised WCMC-Q’s Sahtak Awalan: Your Health First campaign for its critical role in raising public health awareness among both the Qatari and expatriate communities through its many initiatives that promote healthy lifestyles.

HE the Minister said that Your Health First initiatives had caught the attention of the nation’s youth and attracted wide participation from Qatari schools. These initiatives include The Challenge 2014, which aims to demonstrate determination and persistence through sports and physical fitness.

HE also praised the Poster Competition, which encouraged students to conduct their own research into the region’s most pressing health problems.

“It is extremely exciting to see our students prepare research posters for the Poster Competition on a wide range of health issues including obesity, the benefits of a healthy diet, and the health risks of smoking,” HE said. “By doing so, they have a voice in building a healthy future for all in Qatar.

“To attain the goals of Qatar National Vision 2030 and Qatar’s National Health Strategy 2011-2016 we not only need to build new hospitals and launch medical institutions. It is just as important that we increase health awareness in the community and this requires the efforts of us all,” HE added.

HE reiterated the Supreme Council of Health’s (SCH) commitment to supporting all initiatives that contribute to raising health awareness in Qatar and praised the cooperation between SCH, WCMC-Q and all partners involved in the Your Health First campaign.
His Excellency Dr. Mohammed Abdul Wahed Al-Hammadi, minister of education and higher education and secretary general of the Supreme Education Council (SEC), praised the wide participation of independent and private Qatari schools in the public health awareness campaign Your Health First (YHF), and hailed the partnership with WCMC-Q and the SCH.

HE said: “YHF aims to spread knowledge about current health issues and promote healthy lifestyles among school communities in Qatar. This will eventually contribute to building a healthy society.”

“By instilling the ideas of healthy lifestyles and nutritious food choices into the minds of school children today we ensure healthier generations in the future,” added HE the Minister

HE Dr. Al-Hammadi also stressed the importance of education and health as two central pillars in human development — the main focus of Qatar National Vision 2030 — noting that education and health complement each other.

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HE Abdullah Bin Khalid Al-Qahtani, Minister of Public Health

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“There is no proper education without health and a well-rounded education should address the needs of both the body and mind. Needless to say that schools can be the starting point where healthy habits can be developed,” HE concluded.

HE Dr. Al-Hammadi thanked all of YHF’s stakeholders and reiterated the SEC’s willingness to support YHF in the coming years as it contributes to achieving its education and training goals, particularly in the fields of physical education and research.

His Excellency Sheikh Saoud Bin Abdulrahman Al-Thani, secretary general and CEO of Qatar Olympic Committee (QOC) said: “From the very beginning, Qatar Olympic Committee has supported The Challenge fitness contest that is organized by Weill Cornell Medical College in Qatar under its Your Health First initiative.

“The Challenge and Your Health First reflect the mutual goals of QOC and the other partners to increase awareness of the benefits of adopting an active and healthy lifestyle. The Challenge perfectly demonstrates the importance of education and exercise, which are two essential pillars in achieving that goal. At QOC, we are proud to be supporting such an inspiring initiative in line with our Sport Strategy, aimed at achieving the objectives of the Qatar National Vision 2030.”

In addition to the interschool contest, The Challenge also offered the audience the chance to have their health and fitness professionally assessed through the use of a body analyzing machine and the AGE (advanced glycation end products) reader. The latter measures the amount of sugar-containing proteins in the body and can provide an indication of the likelihood of cardiovascular disease in later life. The former provides participants with a full breakdown of the components of their body – the amount of muscle, fat and bone that they are carrying. It also gives an indication of a person’s metabolic age as opposed to their chronological age.

The international school of Choueifat won the girls’ competition for the second year running.
On top of this there were a host of games designed to challenge and promote physical fitness and competition. These included the distance kick, where participants were able to see how far they could kick a football; the bungee run, where contestants could race a friend before being catapulted backwards; and the sprint challenge to discover who was the fastest over 10 meters. For those who had worked up an appetite cheering on the students, fresh fruit was distributed and healthy snacks were available from several food stalls.

Engineer Saad Al Muhannadi, president of Qatar Foundation said: “Qatar Foundation is keen to engage in various activities, which have been designed to raise awareness among community members about the importance of health and fitness. These efforts are in keeping with our ongoing community development initiatives, which play a crucial role in helping us fulfill the mission and goals of the organisation as it works towards achieving Qatar National Vision 2030, as well as Qatar’s National Health Strategy.”

Engineer Al Muhannadi added, “The most significant aspect of this event is that it is targeted towards the younger generation, since they will be leading the country’s future development. Our youth are the leaders of tomorrow and it is vital that they are equipped with sufficient knowledge about the value of choosing a healthy lifestyle, in order to create a healthier and more productive community. Qatar Foundation is delighted to be a part of this challenge and we are confident that all participants will emerge as winners and achieve success, regardless of whether they come in first place.”

Dr. Javaid Sheikh, dean of WCMC-Q, said: “The Challenge is a wonderful way to bring students from all over Qatar together to enjoy the fun and excitement of taking part in a physical contest. It was so encouraging to see the level of energy that the students brought to the event - they all competed with great enthusiasm and in a spirit of friendly competition that was a pleasure to watch.

“After the success of last year’s competition, it is very pleasing to see The Challenge return for another successful installment, made possible by the generous support of the Supreme Council of Health and the rest of our partners. This will help us ensure that the event continues as an annual celebration of health and fitness for the entire community of Qatar to enjoy. The Challenge is a great way to inspire young people and their families to take up regular physical activity and to learn about the positive lifestyle habits they need to adopt to keep themselves in good health.”

The day culminated with the award of The Challenge Trophy by Dr. Saleh Al Marri, assistant secretary for medical affairs at the SCH, to the winning teams in both the boys’ and girls’ categories. In the boys’ competition, first place was clinched by German School, while the girls’ contest was won by the team from International School of Choueifat. All of the members of the two winning teams were presented with iPads as prizes.

The event, which is now in its second year after a successful launch in 2013, also saw the announcement of the winners of the educational Poster Competition, judged by a panel of experts from WCMC-Q and the Supreme Council of Health. Students were challenged to research the most serious health issues facing Qatar and make posters to present the information. The posters were displayed in public at The Challenge and the creators of the ten best posters were awarded iPads as prizes.

In total, The Challenge and the Poster Competition brought together more than 300 students, and 27 teams took part in the physical competition.
Mr. Abdulrahman Abdulla Al-Obaidly, manager for public relations and communications at Qatar Petroleum, said: “Making students realize at an early age the value of regular exercise and proper nutrition is key in helping ensure that they stick to healthy lifestyle choices as they grow older. Qatar Petroleum is proud to support the second edition of The Challenge as part of the Your Health First campaign, and we are confident that all the participants will apply in their day-to-day lives the lessons they have learned during the event.”

Stephen A. Kelly, president and general manager of Oxy Qatar, said: “Advancing healthy lifestyles is a priority that we are particularly proud to support through the Sahtak Awalan campaign. The Challenge exemplified our commitment by providing a unique opportunity for students to learn about healthy lifestyle practices and actively participate in promoting positive nutrition and fitness choices. Education-enhancing engagement and direct participation among the younger generation are critical to maintaining a healthy future for Qatar. Oxy is very pleased to be a partner in this important initiative, and we look forward to The Challenge becoming an annual success in Qatar.”

Bart Cahir, president and general manager of ExxonMobil Qatar Inc., said: “ExxonMobil Qatar is proud to join its partners the Supreme Council of Health and Weill Cornell Medical College in Qatar to support Your Health First and The Challenge for the second year in a row. We believe that it is our responsibility as an active member of Qatar’s local community to better inform young people on the benefits of healthy behaviors and habits, and The Challenge presents the ideal platform to do so. The various educational and physical activities help encourage participating students to make decisions that will positively affect them as capable, healthy and active participants in their communities.”

Kyle Whitehill, chief executive officer of Vodafone Qatar, said: “It was great to see the inspiring energy of all these young people coming together to celebrate and promote a healthy lifestyle and be true role models for their peers under the flag of Your Health First campaign. At Vodafone Qatar, we are determined to be admired for our approach and our performance on health and safety and therefore we are proud and happy to join hands with the Supreme Education Council and Weill Cornell Medical College in Qatar to support the growth and development of a healthy young generation.”

The schools that took part in both The Challenge and the Poster Competition were Al Hekma International School, Hammad School International, English Modern School, International School of Choueifat, Cambridge School, AbuBakr Assedeeq Boys Preparatory, Hamza Bin Abdul Muttalib School, Abu Obaida School, Canadian School, German School, Iranian School for Boys and Girls, English Modern School (Al Khor), Ali Bin Abi Taleb for Boys, Osama Bin Zaid, Al Ahnaf Bin Qais Independent for Boys, Dukhan School for Boys and Amna Bint Wahab.

Luca Dohlus, aged 15, was a member of the winning boys’ team from German School. He said: “We were really surprised and happy that we won. It was hard work and the other teams were very good but I think we managed to win because everyone on my team worked together very well and gave their best performance. It was great fun to take part and so good to win.”

Lina Al Haj, aged 12, was on the winning girls’ team from International School of Choueifat, which also fielded the winning girls’ team last year. Lina said: “I enjoyed it a lot. Although we lost a few of the games we eventually won and the races were so much fun; I liked that they were games rather than sport. It was all really good fun and very challenging as all the other schools were really good.”

The schools that took part in the Poster Competition only were Fatma Bint Waleed, Al Ghwayriya, and Um Saiid.

WINNERS OF THE CHALLENGE 2014

Boys Competition:
1st: German School
2nd: English Modern School
3rd: Canadian School

Girls Competition:
1st: International School of Choueifat
2nd: Hammad School International
3rd: German School

The winners of the poster competition came from Al Ahnaf bin Qais Independent School for Boys, Amna bint Wahab Independent School for Girls, Hamza Bin Abdul Muttalib School, Al Hammad International School, English Modern School Al Khor, Canadian School and German School.
WCMC-Q faculty join conference to improve children’s healthcare

WCMC-Q faculty helped deliver educational workshops to medical professionals visiting from all over the world at the Excellence in Pediatrics (EiP) Conference.

Dr. Amal Khidir, WCMC-Q’s assistant professor of pediatrics, and Dr. Marcellina Mian, associate dean for medical education, teamed up with colleagues from Hamad Medical Corporation (HMC) to present two workshops to faculty, residents and nursing professionals at the conference, held at Qatar National Convention Center in December.

THE EIP CONFERENCE IS A GLOBAL FORUM WHERE LEADING PEDIATRIC ACADEMICS AND HEALTHCARE PROFESSIONALS MEET TO SHARE THEIR KNOWLEDGE AND SKILLS, AND TO DISCUSS THE LATEST CLINICAL DEVELOPMENTS RELATING TO THE CARE OF CHILDREN AND ADOLESCENTS.

The 2013 event was the fifth in EiP’s history and marked the first time it has been staged outside of Europe.

Explaining the first of the two workshops, Dr. Khidir said: “The professionalism workshop is a collaborative work presented by Dr. Khalid Alyafei, Dr. Ahmad Al Hammadi, Dr. Magda Wagdy, Dr. Abdul Nasser Elzouki, and me. In this workshop our aim was to demonstrate how to interpret and implement the theoretical principles of professional responsibility in a real-world setting. Values like professional competence, being respectful to juniors, communicating with other health providers and patients, and managing conflicts of interest seem straightforward in theory, but in practice medical professionals are often presented with difficult situations and dilemmas.”

Dr. Khidir added: “The key is to equip the participants with the tools they need to analyze the types of situations they are likely to encounter, and to give them the knowledge and confidence they need to conduct themselves professionally while simultaneously delivering the best quality of healthcare to their patients.”

In the Sharing the Light workshop, Dr. Khidir, Dr. Mian and their colleagues Dr. Magda Wagdy and Dr. Ahmad Al Hammadi explained the challenges posed by teaching groups that comprise learners of different levels of education, ability and interest in common scenarios such as clinical rounds, general clinic and small group discussions.

Dr. Khidir said: “Teaching a group with a diverse range of ability levels presents a number of challenges. For example, as teaching faculty run a clinical session they face the knowledgeable, indifferent, distracted, and dominant learner, while discussing patient care. The workshop demonstrates how to deal with problems like this as they arise so that all of the learners stay on track and benefit from the session.”
The workshop taught participants how to foster a stable and stimulating learning environment, techniques for dealing with disruptive or dominant learners, and supporting residents as teachers. A tool that can be used is the SNAPPS, which consists of a number of steps that learners can follow to help them quickly and effectively analyze a patient's case, recommend a management plan and select issues for further self-directed learning.

Both workshops used interactive discussions and short films, which were produced collaboratively by WCWC-Q and HMC faculty, as tools to get the information across and as triggers for enriched discussions on each topic.

Dr. Mian also gave a lecture at the event, entitled Intersectoral Approach to Child Maltreatment Prevention.

Dr. Mian said: “Child maltreatment is a complex problem that can have lifelong negative health and behavioral consequences in those individuals who experience it. Addressing the problem requires a coordinated intersectoral response. This session aimed at providing participants with information to help them identify the role of the health, social and legal sectors, including the judicial system and law enforcement. These professionals are key stakeholders in the process, which includes provisions to make growing up safe for all children, systems for identifying children and families at risk for maltreatment and services to address the needs of children who have suffered some form of maltreatment.

“The EiP Conference provided a stimulating forum for professionals from diverse backgrounds to dialogue on issues critical to the well-being of children, such as healthy living, vaccinations, rare diseases, baby skin care and meningitis. Common problems in child health and child development were discussed with an emphasis on evidence-based approaches to their identification and management. The rich exchange of knowledge and ideas took place both during formal sessions and in informal meetings and gave visiting participants some insight into the Arab context.”

Our aim was to demonstrate how to interpret and implement the theoretical principles of professional responsibility in a real-world setting.

Dr. Amal Khidir

Dr. Marcellina Mian addresses the conference.
MAPPING THE QATARI GENOME TO PREVENT INHERITED DISEASES

A study that analyzed the DNA of Qatar’s native population has discovered genetic variations that could help doctors target interventions to reduce the prevalence of a variety of debilitating hereditary disorders.

Researchers at WCMC-Q and Weill Cornell Medical College New York (WCMC-NY), working with colleagues from Cornell University in Ithaca and Hamad Medical Corporation, identified 37 genetic variants in 33 genes known to play causal roles in a total of 36 diseases, including such devastating conditions as cystic fibrosis, sickle cell anemia and muscular dystrophy. The study points the way to more comprehensive screening for a host of inherited diseases, which could significantly reduce their incidence.

The project, entitled Exome Sequencing Identifies Potential Risks Variants for Mendelian Disorders at High Prevalence in Qatar, sequenced the DNA of 100 Qatari nationals representing the three major ethnic subgroups of the country – the Bedouin (termed Q1 for the purposes of the study), those of Persian-South Asian descent (Q2), and those of African descent (Q3). By analyzing the individuals’ exomes – important sections of the DNA containing the code that is translated into proteins – and comparing them to the genetic data of the participants in the worldwide 1000 Genomes Project (1000G), the researchers were able to identify the variations that cause disease among the Qatari population.

Dr. Khalid Fakhro, postdoctoral associate in genetic medicine at WCMC-Q, and Dr. Juan L. Rodriguez-Flores of WCMC-NY, were co-lead principal investigators on the study, which is part of a group of research projects investigating the Qatari genome led by Dr. Ronald Crystal, chairman of genetic medicine at WCMC-NY. The study was accepted for publication in the journal Human Mutation, appearing online in December 2013 and in print in January 2014.

Dr. Crystal explained the study: “There are about 3.2 billion letters that comprise the human genome and about two percent of those letters code for the actual proteins. This two percent is found in regions called exomes,” he said. “A Mendelian or monogenic disease is caused by a change in a single letter out of the 3.2 billion.

“The reason this is relevant for Qatar is that the structure of the society encourages a high degree of consanguineous marriage, so the frequency of these monogenic diseases is quite high.”

Pre-marital counseling and screening is one method of decreasing the likelihood of children being born with monogenic diseases. Parents undergo screening to see if either or both carry genetic variations that cause disease before having children. The individuals that carry the disorder do not necessarily have the conditions themselves, but may carry them on recessive genes.

Dr. Crystal explained the study: “Disorders are present in all populations around the world, so it’s not the case that Qatar is different. Qatar is only different in that its variations and the frequency with which they occur are unique to its population. By finding out what these variations are and taking appropriate action we can save people from the trauma of some very unpleasant disorders. We’re talking here about things like brain malformation, diabetes, blindness, deafness, cardiovascular disorders, inflammatory disorders and many other conditions. While these conditions are not common, they do occur, some are untreatable and many are very difficult to live with, for both the sufferer and their families.”

Currently, pre-marital counseling in Qatar screens for four genetic variations out of the 37 identified by the study, so incorporating the newly discovered variations into the screening process could have a significant impact.

“A Mendelian or monogenic disease is caused by a change in a single letter out of the 3.2 billion.

Dr. Ronald Crystal

Dr. Crystal explained the possible practical applications of the study.

“With more comprehensive screening, people will be able to make more informed choices about whether they feel it’s safe to have children together.

“Alternatively, it is possible to screen the fertilized eggs for variations that cause disorders before they are implanted.

“The improved screening can also be useful for adults who can change their lifestyle to prevent themselves from developing diseases. For example, if I analyze your DNA and tell you you’re susceptible to having elevated accumulation of lipids – cholesterol and triglycerides that can cause cardiovascular disease – then you could alter your diet and take care to take plenty of exercise to mitigate the risk.”

The scale and scope of the group of studies has been made possible by the new generation of advanced technologies that allow researchers to analyze vast amounts of genetic data. WCMC-Q has a well-established state-of-the-art genomics research laboratory under the stewardship of Dr. Joel Malek, assistant professor of genetic medicine and director of genomics, which affiliated researchers can draw upon.

Dr. Crystal said: “Qatar is ahead of the game in this regard as all of the cutting-edge genomics technology is in Dr. Joel Malek’s state-of-the-art laboratory. It really is a quantum leap in technology as previously we could only look at one abnormality at a time and it was very time-consuming. Now we can look at all of the abnormalities at once and the process is vastly quicker and more efficient.”

Dr. Fakhro explained how research at WCMC-Q is paving the way for a new era of genetics research in the region. He said: “The 1,000 Genome Project is the biggest open-source resource in the world and, despite the name, the project has actually sequenced the genomes of more than 3,000 individuals. However, the representation from people from the Arab world in the project is
virtually zero, which of course inhibits researchers in the field of genetics when they focus on the Gulf region.

“At WCMC-Q we are working to develop our own database of genomes relevant to the region. We have already sequenced 100 full genomes and we have a project running to sequence the exomes of 1,000 individuals. Both of these databases will give genetic research in our region a huge boost.”

IN A FORTUITOUS TWIST, THE MAPPING AND ANALYSIS OF QATARI GENOMES HAS PROVIDED UNEXPECTED INSIGHT INTO A GENETIC VARIATION THAT AFFECTS AFRICAN-DERIVED POPULATIONS ALL OVER THE WORLD.

In a separate study, led by Dr. Crystal, researchers focused on a variation of a gene called ApoE that makes carriers disproportionately susceptible to having increased levels of unhealthy fats called triglycerides in their blood, which is associated with disorders such as heart disease, type 2 diabetes and stroke. The ApoE variant, termed R145C, was previously considered extremely rare, but Dr. Crystal’s study found that the mutation is far more common than was realized and that it disproportionally affects people of sub-Saharan African extraction.

The study, reported in the American Journal of Cardiology, compared the genomes of Qatar’s sub-Saharan African subgroup with the Persian-South Asian group and the Bedouin by analyzing 228 individuals. The investigators found that 17 percent of the African-derived subgroup had the R145C variant, while none of the Bedouin or Persian participants had the mutation. The research team then examined the 1000G data and found that the R145C variant is virtually non-existent among populations of non-African descent but is found in between five and 12 percent of African-derived populations. A study of 1,266 African-Americans in the New York area found that four percent carried the R145C variant.

Dr. Crystal said: “These findings have important implications for African and African-derived populations all over the world, including in the United States.

“From a Weill Cornell point of view, it was extremely gratifying for us to make a discovery in Qatar that provided insight into the health of people in New York, where our home campus is.”
At WCMC-Q we are working to develop our own database of genomes relevant to the region. We have already sequenced 100 full genomes and we have a project running to sequence the exomes of 1,000 individuals.

Dr. Khalid Fakhro
The dream of becoming a doctor moved a step closer for 55 students who completed the foundation and pre-medical programs.

Ceremonies were held for students of both programs, who were watched by faculty members, family and friends as they received certificates marking their achievements.

For the 20 foundation program students – the majority of whom were Qatari - the ceremony marked the end of nine months of intensive science and English language lessons.

Dr. Rachid Bendriss, assistant dean for student recruitment, outreach and foundation programs, addressed the audience at the ceremony and said the students deserved to be proud of themselves.

He said: “Despite an infinite amount of homework, an increasing number of tests, math and reading projects you were patient and persistent and highly motivated to march on to success.

“You all have admirable personal attributes and talents that will contribute to your success in whatever you do in the future.

“I want to thank you all for your hard work and your families for their consistent support. I also want to acknowledge the efforts of WCMC-Q’s faculty and teaching assistants who have given freely of their time and experience to get you to this point in your educational careers.”

For the 35 students of the pre-medical program, they too can look forward to a summer of relaxation after spending two years completing a rigorous course in English, mathematics and science.

Dr. Alan Weber, associate professor of English, gave the keynote address.

He said: “As I look into the future of each and every one of you that I have taught or mentored, I see great potential for more wonderful accomplishments. You have not only shown great dedication to your studies, but you have also donated your time and energy to many good causes and developed as ethical, compassionate human beings.”

Student speaker Eman Mosleh rallied her classmates with a humorous speech about the highs and lows of student life, and the challenge posed by trying to read the handwriting of some of their professors.

She said: “We have passed through moments of doubt and triumph, moments of wondering whether we were able to meet the challenges we faced. We learned about our weaknesses but more importantly, we learned just how strong we could be, and we found strength in the new friendships we formed.

“I could not be more proud to complete the pre-medical program alongside 34 of the best people I have ever met.”
High schools students learned what life would be like as a medical student and doctor in the latest WCMC-Q Qatar Medical Explorer Program.

Twenty nine students, aged between 15 and 18, spent two weeks in the college as part of the program, which is aimed at raising their awareness and interest in a career in medicine.

Program participants spent their time in the college's laboratories, at lectures given by WCMC-Q faculty members, and talking to current medical students.

Noha Saleh, director of student recruitment and outreach at WCMC-Q, said the Qatar Medical Explorer Program is a valuable initiative, both for potential students and WCMC-Q itself.

She said: “The program allows students who are beginning to consider different careers to get a taste of what life at WCMC-Q would be like. They learn about the expectations the college has but also the opportunities that it offers for gaining a world-class education. Interacting with current undergraduates, graduates and faculty members also helps the potential students learn more about what a career in medicine would actually entail, rather than what they may imagine it would be like.

“From the college’s point of view, the program allows us to raise the profile of WCMC-Q and reach out to high-performing students who have the capability but may never have seriously considered a career in medicine.”

The students came from a variety of schools across Doha - Omar Bin Khattab Secondary School for Boys, Al Bayan Secondary School for Girls, Al Wakra Independent Secondary School for Girls, Al Iman Secondary School for Girls, DeBakey High School for Health Professionals, Al Maha Academy, Al-Arqam Academy, and Qatar Academy - and were selected based on criteria set down by the college.

These included being academically competitive, along with having an interest in science. While at WCMC-Q, the students spent time in the laboratories experiencing parts of the pre-medical curriculum, and prepared a group presentation on a health-related topic. They were also given careers advice, interview techniques, medical lectures from faculty, and enjoyed a field trip to investigate robotic surgery at Qatar Science and Technology Park.

Raghad Burjaq, 16, who attends DeBakey High School for Health Professionals at Qatar, said the program had been of huge benefit.

She said: “People always say that studying medicine is very difficult and that as a student you will be under a lot of pressure, so I found it really useful to come here and see what it is like in reality. The experience has made me more certain that I want to study medicine. Some people contribute to society by being architects or engineers, but I want to contribute by making people feel better and healthier through medicine.”

Naima Al-Abaidly, 16, also of DeBakey High School for Health Professionals at Qatar, added: “Coming here has been extremely encouraging. I have wanted to be a doctor since I was a little child and coming here has convinced me even further. I find medicine fascinating and I really want to become a student here.”

Finally, 15-year-old Hassan Iyad, from Omar Bin Khattab School, said he was hoping to follow in his father's footsteps.

“I’m interested in medicine because I like to help people, to make them healthy and happy,” he said. “My father is a doctor and he inspired me to learn about the world of medicine.”
School counselors and English teachers from local high schools attended a workshop at WCMC-Q to learn how to help their students write better personal statements for their university applications.

The workshop in February, hosted by WCMC-Q’s Student Recruitment and Outreach Office in partnership with members of the English department of the Pre-Medical Education Department, also offered advice directly to the teachers and counselors about writing effective reference letters for their students.

Ten school counselors and ten English teachers attended the workshop, which was opened by Dr. Rachid Bendriss, assistant dean for student recruitment, outreach and foundation programs, and featured sessions conducted by pre-medical education faculty members Dr. Krystyna Golkowska, associate professor of English; Mr. Adam Larson, ESL lecturer; Dr. Alan Weber, associate professor of English; Mr. Ian Miller, lecturer of English writing; and Dr. Rodney Sharkey, associate professor of English.

Knowing how to write a personal statement is a crucial skill students need to have when applying to university, explained Dr. Golkowska.

“The personal statement is a very important element of the application process and it needs to be taken seriously,” she said.

“Students need to be advised to start working on them early enough that they have time to produce a statement that explains why they are good candidates. The statement should not just focus on their grades because that information is included elsewhere in the application.

Instead, the statement should explain who the student is as a person and as an individual, so it is very important for the students to include details of their extracurricular activities and their motivations for studying medicine.

“Of course, personal statements also need to be well written, coherently structured and interesting to read.”

Each of the faculty members hosted a session, beginning with an instructional lecture before conducting interactive workshops with the visiting teachers and school counselors.

Dr. Golkowska said that reference letters written by teachers in support of college applications should also give an impression of the character and personality of the student.

She added: “It is important to back up with specific examples any assertions that are made about the positive attributes of the student.”

Dr. Bendriss commented: “At WCMC-Q we are very happy to offer counselors and teachers advice and guidance to enable them to represent the skills and achievements of their students in the most effective way. Students need to know how to
present themselves in a professional way so that they have the best possible chance of securing a place at their university of choice. Similarly, teachers and counselors need to be able to write effective reference letters for their students.

“We hope they will now be able to use the knowledge they have gained from the workshops to help their students realize their full academic potential.”

Selman Mawad, academic quality controller at the International School of Choueifat-Doha, said:

“I have to thank WCMC-Q for the professional workshop offered to us. It was very well organized, extremely useful and beneficial for both our teachers and school counselors.”

The workshop, organized as part of the Adopt A School program launched by WCMC-Q two years ago, was attended by representatives of: Al Ieman Secondary Independent School, The International School of Choueifat-Doha, Al Arqam Academy, Al Bayan School, Qatar Secondary School for Girls, Al Maha Academy, Debakey High School, Sherborne Qatar, Amna Bint Wahab Girls Secondary School.

“At WCMC-Q we are very happy to offer counselors and teachers advice and guidance to enable them to represent the skills and achievements of their students in the most effective way.

Dr. Rachid Bendriss”
CREATING THE NEXT GENERATION OF SCIENTISTS AT WCMC-Q

SIX Qatari interns are to learn more about biomedical research after enrolling in one of WCMC-Q’s flagship training programs.

The Biomedical Research Training Program for Nationals is now in its fourth year and offers candidates the opportunity to immerse themselves in biomedical research, learning everything from administration to bench research in world-class laboratories. The aim is to build human capacity in scientific research in line with Qatar National Vision 2030.

THIS YEAR SIX INTERNS HAVE BEEN ACCEPTED ONTO THE PROGRAM, THE HIGHEST NUMBER SO FAR.

The interns are Amera Al Saadoun, Ghada Saeed Mubarak, Sara Nasser Al-Thani, Ayeda Ahmed, Noor Saad Al-Hajri, and Alya Saleh Al-Sulaiti.

Dr. Khaled Machaca, associate dean for research at WCMC-Q, said the program has been highly successful and demonstrates the college’s commitment to the development of the knowledge-based economy.

Dr. Machaca added: “Trainees that enroll in this demanding program will contribute to science leadership and advancement in Qatar in the future. WCMC-Q regards this training program as a pillar of its mission in Qatar to ensure the human and technical infrastructure for the advancement of biomedical research in Qatar.”
Amera Al Saadoun, who has a degree in biomedical science from Qatar University, applied to the program for exactly that reason. She said: “I joined this program because I think it’s my first step to be a real scientist, a Qatari scientist. I believe at the end of this six-month program I will have the basic skills for doing research, I hope to improve myself and enhance my knowledge in research and science in general. “In the future I want to be a researcher specializing in genetics and making new discoveries about genes.”

"I joined this program because I think it’s my first step to be a real scientist, a Qatari scientist."

Intern Amera Al Saadoun

Fellow intern Ghada Saeed Mubarak has the same background – a degree in biomedical science from Qatar University. She said: “The internship at WCMC-Q is a great opportunity to experience and learn more about bench research and to be trained under experienced scientists.”

The internship at WCMC-Q is a great opportunity to experience and learn more about bench research and to be trained under experienced scientists.

Intern Ghada Saeed Mubarak

For Noor Al-Hajri, WCMC-Q may one day become her alma mater, as she is considering training to be a physician. Initially, though, the graduate of Qatar University wants to gain practical and theoretical experience of research and laboratory work. She will then decide whether to continue in the field of biomedical science or work towards her M.D. degree.

“I joined this program because I think it’s my first step to be a real scientist, a Qatari scientist." 

Intern Amera Al Saadoun

The research training program is a unique opportunity for Qatari college graduates with an interest in biomedical research to gain hands on experience. Although the program is aimed at recent graduates who are interested in pursuing a career as a bench scientist, clinician or biomedical researcher, graduates are also accepted who have non-science degrees that can be used in the field of research administration. Applications for next year’s program will be accepted in Fall 2014, with specific dates to be announced in September.
A team from WCMC-Q took part in Qatar Olympic Committee’s latest Schools Olympic Program (SOP), teaching visitors the best way to look after their health.

The SOP organizes a variety of sports leagues throughout the year for students at Qatari schools aged between five and 18. These culminate in two days of events at the Aspire Dome when the girls’ and boys’ finals are held.

This year, WCMC-Q’s Sahtak Awalan – Your Health First campaign and the college’s clinical services staff took part, hosting a booth at the event and offering advice to visitors.

Among the equipment brought by the WCMC-Q team was the body analyzer machine, which is able to provide an assessment of a person’s physical health. Pedometers were also given away as were recipes featuring healthy pamphlets. The Sahtak Awalan television series – featuring a range of topics and advice – was also played. In addition, experts from Qatar Foundation’s Nutrition Services provided dietary information to visitors.

Dr. Javaid Sheikh, dean of WCMC-Q, said WCMC-Q’s participation at the SOP event was indicative of the importance the college attaches to improving the health of the community.

Dr. Sheikh said: “Our mission is not only to train the next generation of doctors and conduct cutting-edge research. WCMC-Q is also committed to improving the health of the community in which we all live. Through educating people about the best ways to live their lives, we can help prevent serious illnesses like diabetes and heart disease, reduce the economic burden on the healthcare sector and further the aims of Qatar National Vision 2030.”

Sahtak Awalan was launched in 2012 in conjunction with the Supreme Council of Health and with support from high profile organizations and businesses like Qatar Foundation, the Supreme Education Council, Qatar Petroleum, Oxy Qatar, ExxonMobil Inc., Qatar Olympic Committee and Vodafone Qatar.
The Sahtak Awalan booth allowed people to have their physical health analyzed with the latest equipment.
Researchers at WCMC-Q have shed light on the molecular and cellular mechanisms of one of the most widely used diabetes drugs, which has been poorly understood for more than 50 years.

Experiments carried out by researchers in the laboratory of WCMC-Q’s Dr. Chris Triggle demonstrate that metformin, the first-choice hypoglycemic drug prescribed to most type-2 diabetes sufferers, interacts with the so-called ‘longevity gene’ SIRT1 to protect the user’s vascular system against deterioration caused by glucose toxicity.

Postdoctoral fellow and lead author of the project, Dr. Gnanapragasam Arunachalam, worked with Dr. Triggle, professor of pharmacology, and Dr. Hong Ding, assistant research professor of pharmacology, to produce the study, which has been published online in the prestigious British Journal of Pharmacology.

Dr. Triggle, who is the lead principal investigator of a Qatar Foundation-sponsored National Priorities Research Program project exploring the effects of diabetes on the vascular system, said that metformin has long been known to reduce morbidity in patients with diabetes-associated microvascular disease, but that until now the reason for this beneficial effect had not been understood.

Dr. Triggle explained: “Metformin is a very interesting drug that was first introduced in 1958 in the United Kingdom for the treatment of type-2 diabetes. It is comparatively free of significant side effects and unlike most other oral hypoglycaemic drugs lacks a significant risk of producing hypoglycaemia, which itself can also increase cardiovascular risk. Furthermore, the use of metformin is associated with weight loss rather than weight gain – an obvious benefit when many with type-2 diabetes are overweight.

“The most common cause of death for diabetes patients is vascular and microvascular deterioration – it’s like an advanced aging of the vascular system – so metformin is an extremely useful drug.”

Dr. Triggle explained that it has generally been assumed that the beneficial effects of metformin are linked to its ability to inhibit hepatic gluconeogenesis (generation of glucose from non-carbohydrate sources by the liver), which means less glucose in the blood and therefore less vascular deterioration. However, analysis of data from clinical studies of the drug gave Dr. Triggle and his team cause to believe a different mechanism was at work.

He said: “We realized some years ago that the reported and generally accepted mechanisms of metformin did not really fit with the pharmacokinetic profile - the way the drug interacts with the body - of the drug. Our study proves that metformin does indeed have a direct protective action on the vasculature.”
Experiments on cultivated mouse cells in the laboratory confirmed that metformin has a direct effect on the vascular function through interaction with a protein called sirtuin 1, which is encoded by the SIRT1 gene, known to play a role in aging. The study was also unusual in that it assessed the effects of the drug at therapeutic clinical concentrations. Dr. Triggle added: “Quite simply, many published studies used a concentration range of metformin that could never be achieved in cells with therapeutic doses nor reflected the ability of the drug to access intracellular compartments. We thus designed protocols that employed more realistic concentrations of metformin. That the vascular metformin requires sirtuin 1 is particularly noteworthy, as this protein has been linked to a protective role against metabolic disease associated with premature ageing.”

In non-mammalian species such as yeast and nematodes, the homologous gene of SIRT1 is Sir2, which has also been associated with anti-ageing and longevity.

The findings of the recently published study have now been extended by Dr. Ding and were considered significant enough for her to be invited to make a poster presentation to the British Pharmacological Society, and a potential audience of 500 at the organization’s winter meeting in December 2013.

Dr. Triggle concluded: “Our publication not only enhances our knowledge of how treatment with metformin reduces cardiovascular risk in patients with type-2 diabetes, but also provides a potential target for new therapeutic entities that can mimic metformin’s action on sirtin1.”

“Dr. Chris Triggle, Dr. Gnanapragasam Arunachalam and Dr. Hong Ding.“Our study proves that metformin does indeed have a direct protective action on the vasculature.”
Students with an interest in research have received a boost with the announcement of the latest cycle of funding from the Undergraduate Research Experience Program (UREP).

Twelve WCMC-Q students will gain hands-on experience working on research projects in the laboratories of four faculty members, with financial assistance provided by UREP, a Qatar National Research Fund (QNRF) initiative.

First-year medical student Abdullah Elzafarany is one of the students who successfully negotiated the competitive application process. He will now spend eight weeks this summer working on an epidemiological study of epilepsy in Qatar led by Dr. Naim Haddad, associate professor of clinical neurology.

Abdullah said: “This is a great opportunity, not only to learn about how research is conducted but also to contribute to a very exciting and worthwhile project. The project has been running for a while but this funding from UREP will allow for a far more comprehensive study.”

Funding was also awarded to a project led by Dr. Michael Pungente, associate professor of organic chemistry, who will be assisted with his study of peptide-based non-viral vectors for gene delivery by 2nd-year pre-medical students Fatima Al-Maadid, Aljazi Al-Mana and Yoomna Abdelghany.

Dr. Pungente said: “The UREP Program offers a great opportunity for those students who have shown an interest in research to gain experience working in a professional lab environment. The key attributes we look for in these students are self-motivation, dedication and a genuine interest in research. In return for their hard work, a potential benefit to the student is that the study may result in a publication a peer-reviewed journal, which would be a great achievement for the students at this early stage in their medical careers.”

Dr. Khaled Machaca, associate dean for research, said: “The continued generous support from the QNRF for research at all levels in Qatar, including for undergraduates under the UREP program, is the primary driving force in Qatar currently to establish and enhance both research and human capacity. This is an exceptional opportunity and an honor for our students.”

QNRF, THE NATIONAL FUNDING BODY IN QATAR, RUNS TWO UREP CYCLES EACH YEAR AND THE PROGRAM IS NOW IN ITS 15TH CYCLE.

The aim of UREP is to enable undergraduate students to gain practical experience of research under the guidance of highly qualified academic mentors by providing funding for research materials and equipment.
STUDENTS:
Faten Aqeel – Pre-Med 2
Aljazi Al-Mana – Pre-Med 2
Fatima Al-Maadid – Pre-Med 2
Youmna Abdelghany – Pre-Med 2
Adham Musthak – Pre-Med 2
Dhabiya Al-Kubaisi – Pre-Med 2
Wadha Al-Marri – Pre-Med 2
Abdullah Elzafarany – Med 1
Ayman Al Jurdi – Med 3
Mujahed Lawsi – Med 3
Nour Abuhadra – Med 3
Yasser Al-Samman – Med 3

FACULTY:
Dr. Naim Haddad, associate professor of clinical neurology
Dr. Ziyad Mahfoud, associate professor of public health
Dr. Michael Pungente, associate professor of organic chemistry
Dr. Kuei-Chiu Chen, senior lecturer, biology

“
The UREP Program offers a great opportunity for those students who have shown an interest in research to gain experience working in a professional lab environment.
Dr. Michael Pungente
”
Faculty members at WCMC-Q were recognized for their exceptional dedication to their students at the annual Excellence in Teaching awards ceremony.

A vote was conducted among the student population to decide the winning faculty members, who were presented with their awards at a ceremony held at the college.

Dr. Marco Ameduri, associate dean for pre-medical education, praised the entire faculty for their efforts over the past academic year.

He said: “The awards are a great way for our students to show their appreciation for the wonderfully talented faculty we are so fortunate to have here at WCMC-Q.

“All of our faculty members show a great level of commitment, both to our students and to the pursuit of academic excellence. I offer my congratulations to the winners in each of the categories, and I also applaud the hard work of our entire faculty, who give their time and expertise so generously to our students.

“I want to thank each and every one of you for your professionalism, your integrity and your unwavering dedication to our teaching mission.”

The awards, which are organized jointly by the Pre-Medical and Medical Education departments, honored a total of 19 winners in 17 categories.

Two faculty members received more than one award: Dr. Thurayya Arayssi, associate professor of medicine, won awards for her teaching in the Basis of Disease course and in the 4th Year Courses and Clinical Clerkships category. Dr. Avelin Malyango, assistant professor of anatomy in cell and developmental biology, won awards in recognition of his teaching in the Molecules, Genes and Cells course and the Human Structure and Function course.

Dr. Lotfi Chouchane, assistant dean for the basic science curriculum, said: “I want to take this opportunity to congratulate the winners of the awards and to thank every one of our faculty members for working so hard to uphold WCMC-Q’s commitment to excellence in education.

“By selflessly passing on their knowledge and expertise, our faculty members are making a direct and lasting contribution to Qatar’s mission to produce a new generation of highly skilled doctors able to improve the health of people throughout the Middle East and in the wider world.”
WINNERS OF THE EXCELLENCE IN TEACHING AWARDS 2014

PRE-MEDICAL PROGRAM AWARDS

Foundation Program: Dr. Renee Richer
1st Year Pre-Medical Program: Dr. Nikolaos Kalogeropoulos
1st Year Pre-Medical Program: Dr. James Roach
English Writing Pre-Medical Program: Dr. Rodney Sharkey
2nd Year Pre-Medical Program: Dr. Syed Naqi
2nd Year Pre-Medical Program: Dr. Kevin Smith
Teaching Assistant: Co-awarded to Mr. Andrew Flye and Ms. Yi Li

MEDICAL PROGRAM AWARDS

Molecules, Genes and Cells: Dr. Avelin Malyango
Human Structure and Function: Dr. Avelin Malyango
Host Defenses for AY 2012-13: Dr. Ali Sultan
Brain and Mind: Dr. Naim Haddad
Basis of Disease: Dr. Thurayya Arayssi
Medicine, Patients and Society I: Dr. Ziyad Mahfoud
Medicine, Patients and Society II: Dr. Stella Major
4th Year Courses and Clinical Clerkships: Dr. Laith Abu-Raddad, Dr. Thurayya Arayssi, Dr. Amal Khidir, and Dr. Bakr Nour
1st Year Visiting Faculty from WCMC: Dr. Estomih Mtui
2nd Year Visiting Faculty from WCMC: Dr. Robert Kim

The awards recognized faculty members’ commitment to their students.
Twenty foundation students gained an insight into the history of chemistry in the Middle East when they visited Sheikh Faisal Bin Qassim Al Thani’s museum.

Accompanied by chemistry teaching faculty and teaching assistants, the students had the chance to see the many interesting pieces in the eclectic collection, which has a vast number of notable examples of Islamic art and culture, ranging from jewelry and clothing to ceramics, metal work and weaponry.

Dr. Sheila Qureshi, senior lecturer in chemistry, organized the trip as part of the chemistry curriculum for the foundation class. Also in attendance on the visit were Dr. Rachid Bendriess, assistant dean for student recruitment, outreach and foundation programs, and pre-medical education chemistry professor Dr. Jo Ann Peters.

THE SHEIKH FAISAL MUSEUM IS HOUSED WITHIN A GRAND QATARI FORT AT AL SAMRIYA. ESTABLISHED IN 1998, THE MUSEUM COMPRISES MORE THAN 15,000 PIECES COLLECTED FROM FOUR CONTINENTS.

DR. PETERS HAS A SPECIAL INTEREST IN ‘CHEMISTRY IN THE MUSEUM’ – THE STUDY OF THE CHEMICAL COMPOSITION OF HISTORICAL ARTIFACTS IN ORDER TO UNDERSTAND THEIR APPEARANCE AND PRESERVE THEM FOR FUTURE GENERATIONS.

Dr. Qureshi said: “We like to bring the foundation students to Sheikh Faisal’s museum because it is an absolute treasure to visit and very few of the students have been to the museum. Indeed, since we are very lucky to have Dr. Jo Ann Peters, who has specialized in chemistry in the museum, I feel we should not miss the opportunity of her giving us her great insights into this subject. Dr. Peters chose the theme of transition metals and their ions, which are responsible for many colors in ceramic glazes and pigments.”
Dr. Peters said: “For me, chemistry comes alive in the materials that artists use to make their work.”

Of course, no visit to the museum would be complete without viewing Sheikh Faisal’s renowned collection of classic cars, which includes a Rolls Royce Silver Wraith II and two 1978 Corvette Stingray Indianapolis 500 pace cars.

The students were impressed by Sheikh Faisal’s collection.

Mohammed Al-Abdulla said: “The collection of cars on show was great. I was most impressed by a miniature pick-up that was specially made to teach the children of the family to drive. The gears are operated by an adult sitting in the back of the pick-up so the child sitting in the front can concentrate on learning to steer.”

Fellow student Aysha Al-Thani, who counts Sheikh Faisal among her family members, said: “We had a great day out at the museum. Sheikh Faisal is a man of many interests and that is reflected in the collection, which is incredibly wide-ranging. It is great that all of these wonderful things are available for the public to see so that we can learn about the history of Qatar and the region.”

To mark the occasion of the visit, museum curator Mr. Walid Al Dulaimi presented WCMC-Q with a commemorative book cataloguing many of the artifacts of Sheikh Faisal’s collection.
WCMC-Q and Australian University Share Teaching Method with Qatari High Schools

WCMC-Q teamed up with Australia’s Curtin University of Technology and hosted a workshop for the Supreme Education Council to introduce local high school teachers to an innovative inquiry-based learning method.

WCMC-Q’s Dr. Sheila Qureshi, senior lecturer in chemistry, organized the workshop on the process-orientated guided inquiry learning (POGIL) system, which was delivered in partnership with visiting education experts from Curtin, which is based in Perth. The team from Curtin University included Dr. David Treagust, John Curtin distinguished professor; Dr. Daniel Southam, senior lecturer and director of first year studies; Venkat Vishnumolakala, postdoctoral research associate; and Mauro Mocerino, associate professor in the Department of Chemistry. Dr. Katherine Bradley, who has recently been appointed WCMC-Q postdoctoral associate, completed the WCMC-Q team delivering the workshop.

THE WORKSHOP, HELD AT THE COLLEGE ON FEBRUARY 16, FOCUSED ON THE TEACHING OF CHEMISTRY AND WAS ORGANIZED AS PART OF A NATIONAL PRIORITIES RESEARCH PROGRAM (NPRP) PROJECT, ENTITLED THE UTILITY AND CULTURAL TRANSFERABILITY OF STUDENT INQUIRY LEARNING APPROACHES IN FOUNDATION CHEMISTRY: IMPROVING CONCEPTUAL UNDERSTANDING, ATTITUDE AND SELF-EFFICACY.
Dr. Qureshi said: “In local high schools teaching tends to be based on the traditional method of a teacher standing at the front of the class and leading the students through the curriculum. The aim of the workshop was to introduce teachers in Qatari schools to a method of teaching that engages the students more effectively and encourages them to develop independent learning habits and critical thinking skills.

Dr. Sheila Qureshi”

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Dr. Qureshi said: “In local high schools teaching tends to be based on the traditional method of a teacher standing at the front of the class and leading the students through the curriculum. The aim of the workshop was to introduce teachers in Qatari schools to a method of teaching that engages the students more effectively and encourages them to develop independent learning habits and critical thinking skills.

The one-day workshop featured presentations about POGIL and interactive learning exercises that allowed the teachers, representing 28 Qatari high schools, and science specialists from the Supreme Education Council to experience how the method works. POGIL utilizes group activities and workshops that require students to work in teams with assigned individual roles to complete tasks based on the material presented by the teacher.

Research in Australia has shown that average test results achieved by students increase by 6-15 percent when using the POGIL method, while failure rates decrease by 10-20 percent. In addition, POGIL is designed to develop problem-solving, communication and cooperation skills, and help students become life-long learners.

“These skills are especially vital for students who want to go on to study at elite universities where they will be expected to become independent learners.”
NEW FACULTY

DR. ROBERT K. CRONE

Senior Adviser on Academic Affairs and Professor of Clinical Pediatrics

Dr. Crone is an internationally recognized senior healthcare physician executive with a focus on developing programs that support the globalization and improvement of healthcare and medical education worldwide. Most recently, he comes from Strategy Implemented, Inc., where he has been president and CEO since 2012. Prior to forming Strategy Implemented, Inc., Dr. Crone founded and built Huron Consulting Group’s Global Healthcare Practice, during which time he worked with WCMC/NYPH, WCMC-Q, Sidra Medical and Research Center, and HMC. Earlier, he served as founding president and chief executive officer for Harvard Medical International, Inc., a not-for-profit subsidiary corporation of Harvard Medical School (HMS) focusing on international program development. He has been clinical professor and dean for international programs for HMS; senior vice president for operations at The People to People Health Foundation, Inc. (Project HOPE), and professor and administrative leader at Children’s Hospital Boston (Harvard Medical School) and Seattle Children’s Hospital (University of Washington School of Medicine).

Dr. Crone has led consulting engagements focusing on international strategy development and implementation at many of the top-ranked US and Canadian-based hospitals, academic medical centers, medical schools, and universities leading to new and sustainable programs and revenue streams. He has worked closely with the US and international healthcare regulatory, assessment and accreditation communities to expand their programs and standards beyond their traditional constituencies. Working around the world, particularly in the Caribbean, the Middle East, Asia, and Latin America, he has helped to develop new, sustainable and profitable healthcare and health educational programs and facilities. In addition, he has worked closely with existing hospitals and schools in both the public and private sectors to help them to achieve programmatic and operational excellence and gain global prominence. He currently serves on a number of international advisory boards for hospitals and councils focused on improving health and healthcare. He has lectured and written extensively on issues related to the globalization of healthcare, including the establishment of US-based academic centers abroad, the global workforce shortage, and medical travel.

Dr. Crone holds a Doctor of Medicine from Albany Medical College of Union University, Albany, New York, and is Board Certified by the American Board of Anesthesiology, the American Board of Pediatrics, and the American Board of Pediatrics Sub-board of Pediatric Critical Care Medicine.
Dr. Stephen L. Atkin joined WCMC-Q in January 2014 as Professor of Medicine. He has an established international reputation in diabetes and obesity research, encompassing both polycystic ovary syndrome and the metabolic syndrome, has led pharmaceutical and nutritional clinical trials teams for these studies in the U.K, and is regularly invited to speak at international forums and to participate in research panels for these conditions.

Prior to coming to WCMC-Q, Dr. Atkin was professor of diabetes, endocrinology, and metabolism and head of academic diabetes and endocrinology at Hull York Medical School, University of Hull and honorary consultant in the Department of Diabetes and Endocrinology at Hull and East Yorkshire Hospitals. He has extensive experience teaching medical and graduate students and was the regional coordinator for the diabetes and endocrinology graduate training program for the Royal College of Physicians/Diabetes U.K. Endocrine Society covering a large part of central England. Under his leadership, the department became an internationally respected center for diabetes, endocrinology, obesity, and nutritional research.

During his career, Dr. Atkin has received a number of important research awards, including recent funding from the Biotechnology and Biological Sciences Research Council, the Food Standards Agency, and the Higher Education Funding Council that amount to more than US$9 million. Additionally, he has led the Humber Obesity, Nutrition, Education, and Innovation (HONEI) project (www.honei.co.uk) that focuses on clinical and translational research on functional food in health and disease. He has published more than 140 articles in peer-reviewed journals, including work in Diabetes Care, PLOS ONE, and the Journal of Clinical Endocrinology and Metabolism, and several book chapters and reviews. He is a grant referee for several major funding bodies, such as the Wellcome Foundation and the British Heart Foundation; a journal reviewer for various journals, including the Journal of the American Medical Association, Diabetes Care, and the Journal of Clinical Endocrinology and Metabolism; he is the series advisor on “rational testing” for the British Medical Journal and an academic editor for PLOS ONE and the International Journal of Endocrinology.
HAPPENINGS
SUMMER 2014

Dominick Farinacci from Jazz at the Lincoln Center Doha, impresses the crowds at the Coffee House event.

Josia Schlogl performs on the guitar.

Arunima Bera gives a solo performance.

Yara Fabricante gives it her all.
Sahar Mahadik at the basant festival.

Sonia Allouch.

Khalid Tahal and Mohammed Sheriff.

Imen Becetti and Sahar Mahadik.

Faryal Malick.
Paint Your Own Mug was a popular event.

Rana Abdualsaud with her mug.
Fatima Al-Maadid gives a speech at the Golden Stethoscope Awards.

Mohamad Abdulha, Amr Dokmak and WCMC-Q's basketball coach Omar Abdullah.

Youmna Abdelghany and Shaykah Alqahtani.

Noor Nema and Afnan AlBahri.

Adam Shurpaji, Tala Altaji and Dana Diab.

The Golden Stethoscopes are awarded for extra-curricular activities.
Convocation is an opportunity to award high-achieving students.

Arunima Bera helped present the event. Dr. Stephen Scott and Rufayda Marmar.

Dr. Javaid Sheikh congratulates Nora Biary.

Dr. Javaid Sheikh with Mahmoud Awad.
Graduation is the highlight of the students’ academic lives.

Yazan Mouhamed Abou-Ismail gives the student address.

Aljazy Al Maraghi and Sara Al-Khawaga take the Hippocratic Oath.

Taha Al-Juhaishi and Saad Kubba.

Zahra Naqvi ensures she looks her best.

Memories of graduation will last forever.