CONTENTS

3 Diabetes and metabolism
7 New York approves exemption for students
9 The Clinical Skills Center: A decade of innovation

20 Teaching children to cook healthy food through TV
26 New hope in fighting fat
29 Making Qatar smoke-free

30 Researcher sheds light on ‘obesity paradox’
36 Genetic research project investigates smoking
42 Inspiring scientists of the future
Researchers at WCM-Q have made new discoveries about the effects of type-2 diabetes on human metabolism and developed a holistic understanding of biochemical changes that are associated with the disease.

The researchers cross-referenced observations of blood, urine and saliva samples from diabetes patients with those of healthy individuals, allowing them to characterize episodes of abnormal blood sugar levels across a wide range of different time scales, varying from 6-12 hours up to 2-3 months.

Previous studies have examined the three different sample types separately, but the WCM-Q team found that they could learn more about diabetes by interpreting them together to give what they call a “systems view” of the disease.

The research is based on the analysis of metabolites, which are substances produced by biochemical processes in the body and that can be found in bio-fluids such as blood, urine and saliva. For many years, medical science has known that several metabolites are associated with diabetes. By extending the scope of the study to multiple bodily fluids the researchers at WCM-Q were able to identify many new diabetes-associated metabolites, enhancing the body of knowledge that exists about the disease.

Dr. Karsten Suhre, professor of physiology and biophysics at WCM-Q, led the research. He said: “The metabolites in each type of sample tell us different stories about biological processes happening in various parts of the body and over different time scales. By analyzing the three different sample types together we were able to improve our understanding of the interactions between different organs and tissues in the development and progression of diabetes.”

“Diabetes and metabolism”

Students honored for academic achievements

Twenty-four students have been honored for their academic success by being inducted onto the Dean’s Honors List.

The 24 are all pre-medical students at WCM-Q and were honored at a ceremony at Hamad Bin Khalifa Student Center at Education City. In addition, six students from the college’s Foundation Program were also recognized for their academic work, having also achieved GPAs of 3.75 or higher.

Congratulations all the students on your academic achievement,” Dr. Sheikh said. “I am delighted to be here once again to applaud the hard work and dedication shown by all of you. Achieving an academic score of this caliber is no mean achievement and is testament to the quality of students enrolled at Weill Cornell Medicine – Qatar.

“Students honored for academic achievements”

Two Dean’s Honors Lists are published in each academic year to record the achievements of students in the Fall and Spring semesters, an initiative that began with the Fall 2011 semester and has since become a WCM-Q tradition.

The students inducted to the Dean’s Honors List for the Spring 2015 semester were: Chandrakumar Anbaraj, Huda Alali, Sajid Alnajjar, Fatema Al-Wahebi, Tiona Bharani, Wei-Lan Tan, Farah Bishesh, Nada Darwish, Syeda Raiza Haider, Menna Husien, Gi Eun Kim, Monetaa Mehaimar, Suresh Mathuk Maram, Priyamvada Pillai, Haneen Qadourah, Ahmed Danyssal Raihood, Cilea Zaria Reyes, Sherin Sallam, Zaid Shahrori, Mohamed Soliman, Aya Tabbalat, Tarek Taha, Sharan Yadav and Aya Youssef.

The Foundation Program students recognized for their work were: Salah Al-Mohannadi, Moza Almohannadi, Fatima Al-Khayat, Ra’eesa Abdur, Hissa Al-Haj and Fatima Al-Bindi.

Diabetes and metabolism

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In addition, the WCM-Q scientists used the research data to create a comprehensive “map” of the complex network of metabolic reactions underlying type-2 diabetes. This will serve as a reference tool for researchers as they try to develop new biomarkers for early detection of diabetes and more effective therapies to treat the disease.

Dr. Karsten Suhre, professor of physiology and biophysics at WCM-Q, led the research. He said: “The metabolites in each type of sample tell us different stories about biological processes happening in various parts of the body and over different time scales. By analyzing the three different sample types together we were able to improve our understanding of the interactions between different organs and tissues in the development and progression of diabetes.”

“This means we are getting a comprehensive and interactive view of the way diabetes impacts the health state of our body. You could say...”
it is as if we are looking at the activity of an entire house, rather than just looking at what is happening in each room separately.”

The study, which was carried out by WCM-Q scientists in collabora-
tion with physicians at Hamad Medical Corporation (HMC), analyzed samples from 188 diabetes patients and 181 control patients of Arabic and Asian descent. The paper describing the research, entitled ‘A systems view of type-2 diabetes-associated metabolic perturbations in saliva, blood and urine and different timescales of glycemic control’, has now been published in Diabetesologia, a leading medical journal in the diabetes field.

The paper was co-authored by HMC physicians Dr. Mohammed M. El-Din Selim, Dr. Ahmed H. Takiddin, Dr. Hala Al-Homsi and Dr. Khaled Machaca, associate dean for research at WCM-Q.

Dr. Noha AbdelRahman Yousri, postdoctoral associate in physiology and biophysics at WCM-Q, led the analysis of the project. She said:

“Mapping the metabolites specific to type-2 diabetes onto the complex network of biochemical reactions, while considering different timescales of glycemic control, enables us to better understand the effect of the disease on the different organs.

“Future research will benefit from this advance because scientists will be able to use the map we have created to target networks of metabolites when attempting to design new diabetes drugs. The research might also enable clinicians to identify patients at earlier stages in the development of type-2 diabetes in order to prevent further complications.”

The study was aided by funding from the Biomedical Research Program (BMRP) program of Qatar Foundation, which supports the research effort at WCM-Q.

Dr. Khaled Machaca, associate dean for research at WCM-Q, said:

“This research is a great example of the fruitful collaboration between researchers at Weill Cornell Medicine - Qatar and our partners at Hamad Medical Corporation. Working together we have been able to broaden our knowledge of type-2 diabetes and the way in which the disease progresses, which could eventually prove to be extremely valuable to diabetes patients in our region and beyond.”

Healthcare students unite for IPE Research Day

Healthcare students from universities across Doha convened at WCM-Q to share the results of their research at the inaugural Inter-Professional Education (IPE) Research Day.

Students from four universities met to discuss their research projects and compete to win awards for the best poster and oral presenta-
tion of their research project at the event, which was organized by the students themselves through the newly formed Inter-Professional Education Student Society – Qatar (IPE-SS).

The study was aided by funding from the Biomedical Research Program

The IPE-SS was established one year ago and has students from various professions, including medical students from WCM-Q, pharmacy and health science students from Qatar University, nursing students from the University of Calgary in Qatar and various health science students from the College of the North Atlantic Qatar. The research day marked the very first IPE activity that the society has organized and participated in together.

IPE is a concept and a movement that aims to bring students of different disciplines together to learn about each other’s roles and foster collabo-
racion and cooperation. IPE is particularly relevant in the medical context because it brings together students of medicine, pharmacy, nursing and other disciplines that frequently work together in care teams.

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Speaking in her capacity as president of the IPE-SS, Myriam Jihad Jamm of Qatar University, College of Pharmacy, said: “With events such as this we hope to develop further the good communications between our colleagues, to learn about each other’s values and to understand our own roles more clearly. Advances in medicine and technology are occurring so quickly that it is crucial for us to share the latest developments in our respective fields with each other so that we can provide the very best care to patients.”

Students gave oral presentations of projects that explored research areas such as Alzheimer’s disease, respiratory problems related to Qatar’s dusty environment, adverse drug reactions and the inherited blood disorder thalassemia. They then presented a total of 19 posters and competed to win awards for the best poster and oral presenta-
tion of their research project at the event, which was organized by the students themselves through the newly formed Inter-Professional Education Student Society – Qatar (IPE-SS).

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The research day concluded with an awards ceremony at which the winners in each category were presented with certificates of achievement by Dr Ayman El-Kadi, dean of Qatar University, College of Pharmacy, and Dr Kim Critchley, dean of the University of Calgary in Qatar. All students who entered posters or gave oral presentations were awarded certificates of participation to mark their contributions to the event.

Second-year WCM-Q student Nahel Tunio won the award for Best Oral Presentation. She said: “I was thrilled to present my work on Alzheimer’s disease in the IPE research forum, which I think of as an opportunity to introduce the latest ongoing AD research to fellow students who will possibly be the leaders of our future healthcare system.

“Alzheimer’s is a multidimensional disease that requires professionals from all fields of healthcare to cooperate to ensure that patients receive the best possible care at all levels. I am pleased that my work was appreciated by the judges.”

New York approves exemption for students

The standard of healthcare in Qatar will be raised over the coming years through improved training opportunities at Weill Cornell Medicine-Qatar.

Following a decision in the US, students at the college will now be able to take additional training courses at hospitals in other countries, supplementing the vital clinical teaching carried out at its Qatar-based affiliated institutions, Hamad Medical Corporation, Sidra, the Primary Healthcare Centers (PHCC) and Aspetar.

As part of their training, undergraduate doctors at WCM-Q spend a minimum of 16 weeks undertaking electives in a clinical environment and they also take seven clinical clerkships, which each vary in length between three and 12 weeks. These are usually taken in their third and fourth years.

But rules set down by the State of New York said that any undergraduate doctor studying in a foreign country could not spend more than 12 weeks of their education away from the country in which the medical school resides if they subsequently want to take a residency or apply for a medical license in that state. This meant that student doctors at WCM-Q could only spend 12 weeks at New York-Presbyterian Hospital, which is Weill Cornell Medicine’s teaching hospital in New York City, or anywhere else in the world. The rules stipulated that the remainder of the time should be spent in Qatar at its affiliated institutions. If students did spend more than 12 weeks on electives outside of Qatar, they would have to repeat courses at WCM-Q.

The exemption will allow students to spend more time training at WCM in New York.
they would limit their options for residencies upon graduation in that they could not qualify for a residency in New York State, which has a large number of residency positions to offer.

But following an extensive application process, including a visit to Qatar by a team of four people from the New York State Department of Education, WCM-Q has been given an exemption from the rule due to the quality of its education and strong links with its parent campus and teaching hospital in New York City.

Dr. Javaid Sheikh, dean of WCM-Q, said it was an important milestone in WCM-Q’s 13-year history of bringing academic excellence in medicine to Qatar and the Middle East.

He added: “Our students now have the flexibility to seek additional elective clinical rotations beyond those 12 weeks at other prestigious academic institutions in the US and elsewhere. The opportunity to take these electives at Hamad Medical Corporation, PHCCs, Sidra and Aspetar is, of course, vitally important and academically and clinically rigorous. But for some students wanting to specialize in certain disciplines, the option to take electives at alternative institutions away from Qatar is very important and provides the chance to study under some of the finest minds in global medicine.

“I would like to congratulate and thank all the faculty and staff members who worked so hard to ensure that Weill Cornell Medicine - Qatar received this exemption. The review conducted by the NY State Department of Education site visitors was a rigorous process that required extensive preparation and engagement by the WCM-Q faculty and staff to whom I am personally indebted.”

The Clinical Skills Center: A decade of innovation

WCM-Q’s Clinical Skills Center turned 10 in 2015. We look back over 10 years of the center’s work to help students develop the core competencies they need to excel as physicians.

“There are some things you just can’t learn from a book,” says fourth-year student Dana Diab she carefully slides an airway tube into place in a lifelike manikin during a class in the Clinical Skills Center (CSC). “We are so lucky that we get to practice procedures like this on a model before we have to work with a real patient.

“It really helps to prepare you for the real thing. Which is just wonderful,” she laughs.

While the faculty and staff who work and teach in it have grown accustomed to this sort of effusive appreciation from students, it is still something they relish.

“They really love to see how happy our students become after their first few visits to the Clinical Skills Center because it’s a clear sign that they are developing confidence,” says CSC director Dr. Stella Major.

“There is just something extraordinarily powerful about simulation-based learning. You can almost see a light bulb go off in the student’s mind as they successfully perform a procedure or get feedback on their success with a challenging patient encounter and they realize, ‘aha, I can really do this’. We never get tired of seeing that.”

It is this power to teach not only essential interpersonal communication and bedside practical skills, but also to inspire confidence in students that has propelled simulation-based learning to the forefront of education.
pedagogical innovation in the past two decades, helped along by advances in technology that have made teaching aids ever more realistic. Since it opened at the beginning of the 2005-6 academic year, the CSC has embraced the latest hi-tech equipment, giving WCM-Q students the chance to learn and get feedback on their skill mastery, thanks to a very advanced audiovisual learning support system.

This system permits the learner to work independently in any given setting, while the observer/evaluator sits in an adjacent room where they can discreetly watch and critique the learners’ mastery of a task and provide timely feedback in an objective and unobtrusive manner.

Using sophisticated part-task trainers, the students can learn and practice practical procedures and skills such as lumbar punctures, CPR, intra-articular injections, venipuncture (blood-taking), in addition to conducting a medical interview and performing a complete physical examination. She is actively involved in the Objective Structured Clinical Examinations (OSCEs) which are conducted both as formative and summative assessments in the CSC for students in the first two years; this ensures the students have mastered a standardized and effective method of assessing patients before they rotate in the clinical clerkships at various teaching hospitals and health centers in Doha. Dr. Major and her colleagues also utilize simulation to ensure that the third-year students are prepared to sit and succeed in their US licensing clinical examination (USMLE Step II CS licensing examination).

Perhaps the most technologically advanced piece of equipment is Harvey, a mechanized cardiopulmonary manikin capable of simulating scores of heart and respiratory conditions that students can learn to recognize and diagnose. Dr. Mohammad Verjee, associate professor of family medicine, consultant family physician, and director of the Primary Care Clerkship is also the former director of the (CSC) at WCM-Q. He holds clinical teaching sessions in the third and fourth-year MD Primary Care Clerkship in the CSC. Dr. Verjee also instructs high school students at the center when they visit as part of the college’s Summer Explorer Program and the Qatar Medical Explorer Program.

Dr. Verjee said: “The beauty of simulation-based learning with equipment like Harvey is that we can demonstrate multiple heart and lung conditions in one afternoon to students. At clinics or hospital-based care, they would have to wait a long time to see patients with most of those abnormalities, possibly months or even years. Furthermore, Harvey encourages students to consider some common medical conditions by reproducing the signs of disease. The use of clinical reasoning skills and critical thinking helps them to shorten a differential of disorders. It enables a swifter consideration of the most likely problem and directs the student towards a more accurate and faster diagnosis.”

While technology has played a crucial role in the CSC over its ten-year history, human interaction between students and ‘standardized patients’ - members of public trained to portray a patient with a specific condition - is also an extremely important part of center’s work.

The CSC was conceived as a purpose-built facility with large and small group teaching and debriefing spaces, and six clinical examination rooms where students practice interacting with standardized patients (known as ‘SPs’) under the watchful eye of faculty observing discreetly from outside the room via audiovisual systems. These encounters, with SPs, are a key way in which students learn the essential skills needed to take accurate patient histories, perform examinations and put patients at ease.

CSC manager Lan Sawan has been with the CSC almost since the first day that it opened, joining first as an SP in 2005 before becoming the full-time SP coordinator in 2007. Drawing on her experience in operations and human resources management, Lan worked with faculty and staff to develop the CSC program and in 2013 the CSC staff expanded with the creation of the SP Program Coordinator position, at which time Lan assumed the position of CSC manager.

She said: “The history of the CSC really could not be written without acknowledging the fantastic contributions that our standardized patients have made over the past ten years to the education of our students. They come from a variety of backgrounds and as they have chosen to not pursue full-time work in Qatar within their given fields we are fortunate to have such a dedicated and committed and professional group of people in our program. While they participate on an ad hoc basis, our SPs conduct themselves with commitment and diligence. Their involvement allows our students learn how to interact with patients in a low-pressure, safe environment to prepare them for the real thing.”

Having begun in 2005 with a pool of just 12 SPs, the CSC now has more than 100 signed up to the program, with approximately half of those participating on a regular basis. Many of the SPs are expatriates who live in Qatar for a few years while their spouse...
Standardized patients allow the trainee doctors to develop their examination skills. Harvey, the medical manikin, surrounded by some of the staff and users of the Clinical Skills Center.
Thousands of people visited the Yalla Natural roadshow at the Qatar National Day celebrations at Darb Al Saai.

Yalla Natural is part of the Sahtak Awalan: Your Health First campaign that is being run by Weill Cornell Medicine – Qatar (WCM-Q) in a bid to educate everyone in Qatar about the best ways to stay healthy. As part of the National Day celebrations, the Yalla Natural roadshow was invited for the second year running to be part of the fun at Darb Al Saai and remained at the site until 19 December, offering a host of attractions and information about health for everyone from the youngest to the oldest. Guests who learned more about the Your Health First campaign included HE Dr. Mohammed Saleh Abdulla Al Sada, minister of energy and industry; HE Dr. Mohammed Abdul Wahed Al Hamidi, minister of education and higher education of Qatar; His Excellency Salah bin Ghanem bin Nasser Al Ali, minister of youth and sport; and Qatar Foundation president Eng. Saad Al Muhannadi.

Nesreen Al-Rifai, chief communications officer at WCM-Q, said being part of the celebrations was a great honor for WCM-Q and Sahtak Awalan and that the Yalla Natural roadshow was a wonderful way for the campaign to get out into the community and help people look after their health.

Mrs Al-Rifai said: “We are here to show visitors that good health is not necessarily about giving up the things that you enjoy and that exercise is not just about spending two hours at the gym. By carefully choosing ingredients and using the right recipes people can eat tasty and healthy food every day. And everyone should remember that playing football in the park can be just as good, or even better, for the body than going to the gym.”

Attractions that Yalla Natural has brought to Darb Al Saai include the ever-popular smoothie-making bicycles — allowing children to make their own delicious, healthy smoothies using a bicycle-powered blender.

Chef Eric Cousin from QF subsidiary AMLAK gave cookery demonstrations using fresh, organic ingredients, and children had the chance to plant vegetable seeds and take them home to grow with their families. There were also recipes to take home, exercise classes and tours of the Yalla Natural truck.

Sahtak Awalan: Your Health First was set up in 2012 to try to encourage people to change unhealthy habits into healthy behaviors. It has a particular focus on the youth and aims to help create a strong, healthy population in line with Qatar National Vision 2030.
Student outreach program doubles in size in one year

An innovative program that has seen faculty and staff work together to support student outreach has seen 37 potential doctors join its ranks.

The Qatar Aspiring Doctors Program (QADP) was launched by the Office of Student Recruitment and Outreach at WCM-Q last year as a pilot program, its aim being to academically support potential students and prepare them for life as WCM-Q undergraduates.

In all, 18 students were selected to take part in QADP, 12 of whom were offered admission to WCM-Q, and seven are now current WCM-Q students.

So successful was the scheme that it has been expanded this year to take on 37 potential students – 35 of whom are Qatari. These 37 will now complete online modules and laboratory-based work over a six-month period. Modules include physical sciences taught by Dr. James Roach, biology taught by Dr. Ghizlane Bendriss, ESL taught by Dr. Rachid Bendriss, and research skills taught by Ms. Reya Saliba. They will also receive advice on how to tailor their application to WCM-Q to be in with the most chance of success.

An enhanced version of the QADP this year includes a standardized testing module to help prepare the students early enough to meet college requirements.

Dr. Rachid Bendriss, assistant dean for student recruitment, outreach and foundation programs at WCM-Q, said last year’s QADP had helped the selected students reach the academic level required of them to join WCM-Q and he had high hopes for this year’s cohort. He also said the program was a shining example of departmental collaboration.

Dr. Bendriss said: "We have had faculty members, IT and the Office of Student Recruitment and Outreach all working together to create an interesting, academically rigorous, online curriculum that the students can complete remotely in their own time. In addition, faculty deliver certain classes and modules face-to-face at WCM-Q."

"The QADP program has been very successful; out of last year’s program, 60 per cent are now at WCM-Q and the figure would have been higher, but some of the students were too young to apply."

The QADP students are selected by WCM-Q from those who participate in the summer and winter enrichment programs. The participants are between the ages of 15 and 17, hence why some of those who complete the QADP may be unable to apply to WCM-Q immediately.

Dr. Ghizlane Bendriss, a teaching specialist in biological sciences, said the participants are very motivated and the biggest challenge for teachers is to engage with them without having regular face-to-face contact.

She said: "As students are in their 11th or 12th grade during the academic year, the main challenge was to establish a smooth communication and regular meetings with the students, without overwhelming them. Thanks to the coordinated work with our IT department, students were allowed to have access to the Canvas learning management system, which allowed us to establish a secure space to communicate with the students all material needed and to arrange our meetings on site."

"The Office of Student Recruitment and Outreach conscientiously managed the program and organized our meetings to avoid bringing students several times in a small period of time, and by dividing courses into short modules and adding deadlines we managed to keep the students several times in a small period of time, and by dividing courses into short modules and adding deadlines we managed to keep the students engaged throughout the year. The lab activities were a great opportunity for the students to work in a biology laboratory using material that they may not have in their own schools, which increased students’ interest in this program."

Sharon Hollinsworth, director of education computing for Information Technology Services, said the QADP was a chance for the college to make even greater use of its software for the benefit of potential students alongside existing undergraduates.

She said: "It was a great opportunity for us to utilize existing technology with our learning management system to engage prospective Qatari students in learning and developing skills to be successful candidates. One of the added benefits for them was that it actually assisted them with their high school course work as well."

"Young people embrace technology so easily, and because the program materials were within the learning management system, the course was self-driven, meaning they could learn at their own speed."

"The QADP program has been very successful; out of last year’s program, 60 per cent are now at WCM-Q and the figure would have been higher, but some of the students were too young to apply."
Healthcare professionals from across the globe convened in Doha to explore the latest strategies for managing patients with obesity at a training symposium hosted by WCM-Q and Hamad Medical Corporation (HMC).

The two-day Specialist Certification in Obesity Professional Education (SCOPE) event featured expert speakers from leading medical institutions around the world who explained the most up-to-date clinical practices for identifying, managing and treating obesity and associated conditions, such as diabetes.

Delegates who attended the 'SCOPE School', held at Qatar National Convention Centre, heard lectures about the relationship between obesity and cardiovascular disease, impaired lung and kidney function, fertility problems, sleep apnea, diabetes and mental health issues, among other subjects.

Collaboration brings world obesity experts to Doha

Dr. Shahrad Taheri, professor of medicine at WCM-Q, said: “The aim of the event was to equip healthcare professionals in the region with the most up-to-date and effective skills and knowledge for managing patients with obesity. By working to put in place the best possible strategies we can make real improvements to the health of people with obesity, helping to protect them from developing other debilitating conditions and maximizing their quality of life.”

Obesity is one of the world’s most pressing health concerns, with the World Health Organization reporting that 13 per cent of people worldwide are obese, while in Qatar 33 per cent of the population are obese.

Introductory remarks were given at the opening of the event by Dr. Taheri and senior HMC figures Dr. Abdul-Badi Abou-Samra, chairman of medicine, Dr. Saad Al Kaabi, chair of gastroenterology, and Dr. Edward Hillhouse, chief policy advisor on academic health systems.

The first day of the SCOPE School featured interactive workshops on prescribing physical activity for obese patients, psychological approaches to managing obesity and how to choose diets for obesity management. On day two, workshops addressed sleep apnea, post-bariatric surgery patient care and endoscopic procedures, while a panel discussion explored the management of obesity in Qatar and the wider Gulf region.

Delegates to the SCOPE School included senior physicians and scientists of WCM-Q, HMC, Aspetar Orthopaedic and Sports Medicine Hospital, Qatar Diabetes Association, the University of Sydney and the Woolcock Institute in Australia, in addition to UK-based institutions that included Imperial College London, the University of Birmingham, University College London, the University of Bristol, King’s College London, Guy’s and St Thomas’ Hospital NHS Foundation Trust, and the Heart of England NHS Foundation Trust.

Delegates at the event earned credits towards SCOPE certification, which is the world’s only internationally recognized obesity management certification scheme. SCOPE is endorsed by the UK National Health Service and more than 50 national health associations worldwide.

Dr. Taheri added: “With obesity and associated conditions, particularly diabetes, becoming so prevalent in the Gulf region, it is imperative that we ensure healthcare professionals are able to provide the very best advice and care. SCOPE School is a very effective way of doing that.

‘With the correct advice and care, patients with obesity can be helped to control and improve their conditions, allowing them and their families to live full and happy lives.’
Teaching children to cook healthy food through TV

A new television show taught and inspired children to cook and eat healthy food.

WCM-Q and JeemTV (formerly Al Jazeera Children’s Channel), teamed up to produce a healthy cooking competition for children entitled The Healthy Eating Show.

Children’s chef Ann Cooper from the United States, who supervises the school meals for almost 10,000 students, flew over to Qatar to act as host, chef and judge for the program. Chef Ann demonstrated the recipes for a number of healthy meals that are suitable for children to cook at home. The contestants on the show had to reproduce the meals in the studio before having their creations judged. The aim was to teach children about good nutrition and encourage them to eat healthy food, thereby preventing lifestyle-related diseases when older.

Nesreen Al-Rifai, chief communications officer at WCM-Q, said the collaboration with JeemTV allowed the Your Health First: Sahtak Awalan campaign to reach tens of thousands of children.

She said: “Sahtak Awalan is very much a community health campaign and is very visible in Qatar. We are always out and about meeting people both young and old and encouraging them to adopt healthy lifestyles. But teaming up with JeemTV has allowed us to spread the healthy eating message even further. Tens of thousands of children have had the chance to learn simple, tasty and healthy recipes and gain greater understanding about the importance of diet. We look forward to further collaboration with JeemTV in the near future.”

Saad Saleh Al-Hudaifi, acting executive general manager at JeemTV, said: “JeemTV initializes a healthy eating campaign every year to encourage children and their families to adopt healthy nutritional habits. We want to help educate children about the best ways to stay healthy so the opportunity to collaborate with Sahtak Awalan was very welcome. Together we have created a show that is entertaining, fun but also educational and I hope it will make a real difference to the children and young people of the Arab world.”

Chef Ann said it had been a great experience to film the series and that teaching children the basics of cookery was the first step to introducing them to healthy eating.

She said: “The kids have been great, they all worked really hard. I think the thing that they really got out of this was the teamwork and the experience of cooking – which is the first stage of learning about health. We need to encourage our kids to cook and the interest in health and healthy food will then follow.”

Recipes that the children cooked included healthy versions of pizzas, muffins and smoothies. The recipes made use of ingredients like whole wheat flour, rather than refined white flour, and lots of fruit, vegetables and lean meats.

Eleven-year-old Rawda Mustafa, who attends Doha Academy, was one of the children to take part.

She said: “I make salads at home and also cook fish and chicken. It’s important to eat healthy food as it is not good for us to be fat and healthy food gives us the vitamins and minerals our bodies need. I learned today how to make easy and healthy meals that taste nice.”

Zaid Rayyan, 12, of Park House English School, added: “We’ve been making healthy snacks for kids our age. I’ve learned that eating healthily is important and that you can eat some sweets as part of a balanced diet but you also need to eat fruit and vegetables.”

The television show was broadcast throughout November 2015.
Mid-life health in the Arab world

In Arabic, “menopause” translates to “the hopeless age”. But even in the face of such linguistic negativity, women in Qatar often see menopause as a period of maturity and wisdom that has positive aspects.

That’s one of many things that Dr. Linda Gerber, professor of healthcare policy and research and of epidemiology in medicine, learned from an extensive study, one of the first focused exclusively on Arab women. The New York-based Dr. Gerber was the principal investigator of a project exploring the health of middle-aged women in Qatar, a country that has seen its life expectancy increase five years in the last decade due to improved healthcare quality and access.

Dr. Gerber, an epidemiologist and human biologist with training in medical anthropology, modeled the work - sponsored by the Qatar National Research Fund - after the Study of Women’s Health Across the Nation (SWAN), which began in the United States in 1994 and is ongoing. Supported by several funders including the NIH, the multi-site, longitudinal, epidemiological SWAN study has looked at five racial or ethnic groups and the various changes women go through in midlife.

The second phase of the study consisted of face-to-face interviews with more than 800 women drawn from nine primary care centers. Researchers queried the women on a wide range of health practices and personal assumptions, including their attitudes toward menopause, use of complementary and alternative medical therapies, menopausal status and symptom experiences, levels of physical activity, the support they receive from family and friends, their sources of health information or advice, and more.

“The women were very receptive to the study and we had an excellent participation rate,” Dr. Gerber said. As the researchers have compiled the results, they’ve published findings on a range of topics.

In exploring the women’s knowledge of menopause and the physical, emotional, and social experiences related to it, Dr. Gerber and her colleagues learned that while many of them did not like the term “menopause”, they did enjoy the positive effects it had on their lives, as the researchers noted in a 2013 paper published in Climacteric. These included greater participation in religious activities and the enhanced support of their families. In an Islamic culture where menstruating women are not allowed to pray, read the Koran, or go on pilgrimages, menopause allows for greater freedom, explained Darine Dimassi, the clinical research coordinator at WCM-Q who moderated the focus group discussions among the women.

“They said it’s good to reach this stage,” Dimassi said. “They receive the support of their husbands and they think more about praying, about being close to God.”

The researchers also learned that a lack of physical activity was a common concern for the women. Well aware of its importance for their health, participants noted the challenges they faced in getting exercise: they’re not socialized to be active and the region’s weather makes it difficult to be outdoors. Even gardening - which women in other climates often do for exercise, the investigators noted - is impossible in Qatar’s extreme heat.

The researchers have published five papers so far, with more expected as the data is analyzed.

As expected in a part of the world where people tend to stay indoors and where many women cover their bodies in public for religious reasons, researchers found that some 53 per cent of study participants had vitamin D insufficiency - but that number was much less than the 85 per cent who believed they had a deficit. Dr. Gerber was surprised to learn that among the half with insufficient levels, their bone mineral density was not low - and in fact, the Qatari women had relatively little osteoporosis and its precursor, osteopenia. That lack of a strong relationship between vitamin D and bone density demands further study, Dr. Gerber said, with potential implications for women worldwide.

“There is new data coming out that the vitamin D that we’re measuring - the circulating vitamin D levels - may not be the ones that are most closely related to bone mineral density,” she noted.

The study, one of numerous collaborative efforts between investigators on the New York and Qatar campuses, continues to produce results. The researchers have published five papers so far, with more expected as the data is analyzed.

“We know a lot about women going through midlife in the United States because of the SWAN study going on for the last twenty years,” Dr. Gerber said. “Now this is a chance to see how different cultures, lifestyles, and behaviors may influence health outcomes around the world.”

In Arabic, “menopause” translates to “the hopeless age”. But even in the face of such linguistic negativity, women in Qatar often see menopause as a period of maturity and wisdom that has positive aspects.

That’s one of many things that Dr. Linda Gerber, professor of healthcare policy and research and of epidemiology in medicine, learned from an extensive study, one of the first focused exclusively on Arab women. The New York-based Dr. Gerber was the principal investigator of a project exploring the health of middle-aged women in Qatar, a country that has seen its life expectancy increase five years in the last decade due to improved healthcare quality and access.

Dr. Gerber, an epidemiologist and human biologist with training in medical anthropology, modeled the work - sponsored by the Qatar National Research Fund - after the Study of Women’s Health Across the Nation (SWAN), which began in the United States in 1994 and is ongoing. Supported by several funders including the NIH, the multi-site, longitudinal, epidemiological SWAN study has looked at five racial or ethnic groups and the various changes women go through in midlife.

The second phase of the study consisted of face-to-face interviews with more than 800 women drawn from nine primary care centers. Researchers queried the women on a wide range of health practices and personal assumptions, including their attitudes toward menopause, use of complementary and alternative medical therapies, menopausal status and symptom experiences, levels of physical activity, the support they receive from family and friends, their sources of health information or advice, and more.

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Three out of 10 drivers in Qatar do not use a seat belt and one in 12 use a mobile phone while driving, according to a study published by researchers at WCM-Q.

The research, which was conducted with support from Qatar’s Department of Public Health, Supreme Council of Health (SCH) and the Traffic Department, showed that a significant minority of drivers continue to break the law on seat belt and mobile phone use, despite a clampdown by authorities and several high-profile awareness campaigns in recent years.

WCM-Q researchers observed a total of 2,011 vehicles at ten different sites over a two-week period in Doha and found that 1,463 (72.7 per cent) drivers were wearing a seat belt, and 150 (7.5 per cent) drivers were using a hand-held mobile phone behind the wheel. Since 2010, Qatar’s traffic laws require all drivers and front seat passengers to wear seat belts and prohibit the use of mobile phones while driving.

These findings are concerning because road traffic crashes are one of the leading causes of death in Qatar, despite the number of fatalities dropping from 26 per 100,000 people in 2006 to 13.4 per 100,000 in 2010—a success hailed as a remarkable achievement.

The study was authored by WCM-Q researchers Dr. Ravinder Mamtani, associate dean for global and public health; Dr. Ziyad Mahfoud, associate professor of healthcare policy and research; and Dr. Hekmat Alrouh, global and public health projects specialist, in partnership with Dr. Al Anoud Al-Thani, manager non-communicable diseases at the Supreme Council of Health, and Dr. Mohamed Hamad Al-Thani, director of public health at the Supreme Council of Health.

Dr. Mamtani said: “What is clear is that the authorities in Qatar have made huge strides towards improving road safety in recent years through new legislation, increased enforcement and better public awareness, so this issue is certainly moving in the right direction. However, there is always room for improvement and Qatar, like many other places around the world, has a minority of drivers who do not comply with the law and endanger their own lives and the lives of other road users. There is scope for more awareness campaigns and increased law enforcement to ensure that the good work to ensure compliance with the traffic laws continues to improve road safety for everyone.”

The researchers also found that mobile phone use was significantly associated with not wearing a seat belt and driving a sport utility vehicle. Men and women were found to be equally likely to break the traffic law on seat belt and mobile phone use.

The study, which is entitled ‘Seat belt and mobile phone use among vehicle drivers in the city of Doha, Qatar: an observational study’, has been published in the prestigious international journal BioMed Central Public Health.

Dr. Mohammed Al-Thani of the Supreme Council of Health said: “While we are very pleased that great progress has been made in reducing the number of precious lives lost on the roads, there is great potential for us to bring this number even lower. We ask all road users to respect the safety of themselves and others by not using their mobile phone while driving and by always wearing a seat belt. These simple measures are very important because they really can save lives.”

Dr. Ziyad Mahfoud said: “Reducing fatalities and injuries resulting from road traffic crashes is one of the most pressing public health issues in Qatar and the region. Simple steps like ensuring everyone in the car wears a seat belt and refraining from using your mobile phone can make a real difference and save lives.”

Dr. Sohaila Cheema of WCM-Q said: “We must all take responsibility for driving safely and respectfully to protect the health of all road users. It is not difficult or uncomfortable to wear your seat belt and it can save your life, so buckle up no matter how short the journey is. I urge all drivers to make a personal commitment to not use mobile phones while driving - if you urgently need to make a call or send a message, find a safe place to pull over and stop. This way you will not endanger your own life or anyone else’s.”

“‘We are very grateful for the support we received for this study from both the Traffic Department and the Supreme Council of Health.”

The study can be read in full at http://www.biomedcentral.com/1471-2458/15/937.
Future doctors welcomed to WCMC-Q

A new intake of students aiming to become the physicians of the future was welcomed to WCMC-Q in August.

The college held a week-long orientation program for the students, some who have joined the Foundation Program and others who have joined the six-year integrated Medical Program, beginning with the pre-medical curriculum.

The orientation program featured daily icebreaker sessions to help the new students get to know one another, demonstrations of how to use WCMC-Q’s digital library, and advice about key study techniques and time-management skills. The students also learned about the college’s computer services and were advised about academic integrity.

Dr. Javaid Sheikh, dean of WCMC-Q, said the intake of new students was one of the highlights of the academic year and that they would be the first to experience the college’s new, six-year medical program. He said: “All of our students are driven by intellectual curiosity but a new cohort really brings a breath of fresh air to the college. Their excitement and enthusiasm is palpable and their thirst for knowledge is truly inspiring. They have a state-of-the-art facility at their disposal and an experienced world-class faculty to teach them.”

“The orientation week was fun and it included some important information about college life. I am looking forward to having a very successful six years here and passing all my courses and exams. I’m also looking forward to getting a high score in the Medical College Admission Test, which will be a year from now.”

New hope in fighting fat

Dr. Hani Najafi, assistant professor of cell & developmental biology at the college, has been studying micro-RNA (miRNA) in collaboration with other research centers including Massachusetts General Hospital, Harvard Medical School and Weill Cornell Medicine in New York. He has had previous success with the discovery that miRNA 33 played a major role in homeostatic regulation of cholesterol levels in the human body.

Since then he has continued to try to identify new miRNAs that could potentially be utilized as novel therapeutics for the treatment of cardiometabolic diseases.

Dr. Najafi decided to examine the enormous amount of data that has been generated from genomics studies, including the genome-wide association studies (GWAS) that seek to identify and link specific genes with certain diseases. These studies identify genes that potentially contribute to the phenotype (observable characteristics) of conditions like diabetes, high cholesterol levels, and other metabolic diseases, but also to cancer. The studies take the gene sequence and look for SNPs (single-nucleotide polymorphisms). These are variations that happen within the gene sequence and some of these variations can affect the function of the gene. If there is a strong association between an SNP and a particular characteristic (phenotype) or disease, that SNP will stand out as being significant. The researcher would then identify genes that include or are close to that SNP.

But Dr. Najafi saw that alongside the genes that were listed, there were also miRNAs embedded within the vicinity of the SNPs. Dr. Najafi and his colleagues asked if the miRNAs could be playing a role and contributing to the reported lipid abnormality, especially in cases where there was a lack of evidence for the function of the neighboring listed protein-coding gene in lipid metabolism.

Dr. Najafi said: “We found that overall 69 miRNAs were in close proximity to the signature SNPs associated with abnormal lipid levels. We computed the correlation between the SNPs and the levels of the miRNAs that were located in the vicinity of the SNPs and found a strong correlation.”

More surprisingly, we saw that more than 30 different genes that have a role in lipid metabolism are potential targets of the identified miRNAs.

The research team selected four microRNA candidates and conducted a functional analysis and found that they all regulated two key players in lipid metabolism – LDLR (low-density lipoprotein receptor) and ABCA1. LDL receptors are known to be one of the most important transmembrane proteins required to clear excess LDL, which is more commonly known as bad cholesterol. Defects in the functioning of this gene are known to cause familial hyper-cholesterol, which can lead to death. Conversely, ABCA1 (also a transmembrane protein) increases the level of HDL (high-density lipoprotein), otherwise known as ‘good’ cholesterol. miRNAs that inhibit both of them will increase blood LDL and decrease blood HDL levels.

The SNPs cause abnormal lipid levels and increase the miRNA that negatively affects LDL and ABCA1. It turned out that those miRNAs could be used as therapeutic targets by using antisense oligonucleotide. This would then render the miRNAs useless, essentially correcting the level of miRNAs to what they should be.

Dr. Najafi said: “We tested this in vitro in mice and we saw an increase in HDL and a lowering of LDL. So this could potentially be used to alter the lipid levels in humans back into the normal range. We have also tested this on human liver cells and saw a very similar effect as we observed in mice. To our knowledge, our studies represent the first systematic population-wide GWAS analysis focused on noncoding RNAs/miRNAs in any disease context.”

“Our work has shown that many of the miRNAs uncovered by these unbiased studies deep into functional validation in vitro and in vivo in relevant mouse models for cardiometabolic disease. We also provide the first data showing miRNA regulation of LDLR and LDL-C.”

“A potential functional role of miRNAs (and other non-coding RNAs) in lipid abnormalities, or any other phenotype for that matter, has been overlooked in most GWAS to date. Indeed, while hundreds of genes have been noted as associated with SNPs, essentially no study has pointed out the fact that numerous miRNAs are also located in the vicinity of signature SNPs. The findings are extremely valuable. They could potentially lead to new therapies for high cholesterol, helping people to avoid cardiovascular disease.”

The work of Dr. Najafi and his colleagues is so significant that it has been published in the highly respected Nature Medicine journal.
College welcomes trainee doctors

Dr. Javaid Sheikh, dean of WCM-Q, said the White Coat Ceremony was an event of great significance. He said: “The white coat is a universal symbol of the sacred art of healing. The coat is a public sign that the wearer has dedicated their life to medicine and is committed to the world of medicine and healing.

The hopes and ambitions of 47 young people were summed up as WCM-Q held its annual White Coat Ceremony.

The event marks the moment when the 47 students who have been accepted onto this year’s medical program don the white coat of the physician for the first time – marking the induction of the students into the world of medicine and healing.

The future doctors – 28 per cent of whom are Qatari – accepted the white coat in front of their proud parents and family members in a ceremony at Hamad Bin Khalifa University’s Student Center. If successful in their studies they will graduate in 2019.

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The ceremony marked the completion of WCM-Q’s four-day orientation program in which the students met their classmates and faculty, learned about the standards of professional conduct expected of them and received training on standard medical safety procedures. WCM-Q alumnus Dr. Mashaal Abdulrahman Al-Khelaifi, who now works as a pediatric anesthesiologist at Hamad Medical Corporation, delivered the keynote speech.

She stressed the importance of listening to patients, of taking the time to conduct a thorough examination and the patient’s need to be able to trust their doctor. She also told the students of the strong bonds of friendship they would make while at WCM-Q.

Dr. Al-Khelaifi said: “You will develop such camaraderie with the people who are sitting around you, and this bond will help you through many difficult times to come during the course of the next few years. “You will spend more time with them than your own families. You will laugh together, you will cry together, and you will celebrate your successes together. I speak from experience, and I can tell you that I have not only gained an excellent medical education from this school, but I have also gained brothers and sisters who will always have a special place in my heart.”

One of those donning the white coat for the first time was Yasser Janahi, who completed two years of the pre-medical curriculum at WCM-Q. He said it was a proud moment for him.

Yasser said: “I feel like I’ve finally made it and, insha’Allah, I will succeed. I feel that this is something that Qatar has given me, that they brought me to this college and sponsored me and I feel it’s time for me to return that favor.”

Making Qatar smoke-free

Two WCM-Q faculty were invited to present their research projects at a seminar on the effects of smoking convened by Qatar National Research Fund (QNRF).

Dr. Mai Mahmoud, assistant professor of medicine, and Dr. Ziyad Mahfoud, associate professor of health policy and research, presented the findings of their research to an audience of fellow academics, officials from the Supreme Council of Health, and health professionals at the QNRF Research Outcome Seminar.

The event, which had the theme ‘For a Smoke-free Qatar’, was held at QNRF’s headquarters in Tommy Tower, West Bay. The research projects of both Dr. Mahmoud and Dr. Mahfoud received competitively selected funding support from QNRF, which is a member of Qatar Foundation.

Dr. Mahmoud spoke about Pulmonary Abnormalities in Young, Light-use Shisha Smokers. The project found that young people who smoked shisha less than four times per week over a period of less than five years had clinical abnormalities such as reduced lung function and an increased incidence of coughing and sputum production.

The study also found that shisha smoking significantly altered the biology of the epithelial cells in the small airways of the lung.

Dr. Mahmoud told the seminar: ‘Although shisha has become very popular in recent years, the research into its effects is limited and not well defined, which is why we undertook this project. We concluded that even light-use shisha smoking in young individuals significantly affects lung biology and health. The study therefore accords with others by affirming the adverse effect of shisha and dispelling the misconception that shisha smoking is safe because the water filters out toxic substances.

“This study can therefore provide the basis for future studies into the harmful effects of light shisha smoking.”

Dr. Mahmoud and Dr. Mahfoud both gave thanks to QNRF and Qatar Foundation for supporting their research and the drive towards a smoke-free Qatar. Dr. Mahfoud also thanked his colleague Faten Al Taher and WCM-Q students Alreem Al Nabti, Sally Elgazar, and Ayah Ogil for their contributions to his project.

The event also featured presentations from researchers at Qatar University College of Pharmacy, Hamad Medical Corporation and American University of Beirut.
Researcher sheds light on the ‘obesity paradox’

WCM-Q researcher Dr. Stephen Atkin has conducted a study that discovered overweight type-2 diabetes patients live longer than those of normal weight.

The study, entitled The Obesity Paradox in Type-2 Diabetes Mellitus: Relationship of Body Mass Index to Prognosis: A Cohort Study, has been published in the prestigious academic journal Annals of Internal Medicine. The research found that although overweight patients had a higher chance of having a cardiovascular event, such as a heart attack or a stroke, they were three times less likely to die of a cardiovascular event than patients of normal weight, while patients with low body weight had the highest mortality risk.

This phenomenon, known to researchers as the “obesity paradox”, had been investigated by earlier studies, but none that were based on such comprehensive, long-term data as Dr. Atkin’s research, which involved intensive analysis of the medical records of 10,568 type-2 diabetes patients who were tracked for an average of approximately 11 years. Overweight is defined as a body mass index (BMI) of 25 to 29.9, while normal weight is defined as a BMI of between 18.5 and 24.9. Obese people have a BMI of 30 or above.

Despite the findings, the advice for diabetes patients to maintain a healthy weight has not changed, explained Dr. Atkin.

“The fact remains that overweight patients are more likely to suffer a heart attack or a stroke, so doctors still recommend that patients should try to maintain a weight that is within the normal range,” he said. “Prevention is still better than a cure.”

Dr. Atkin, who joined WCM-Q as professor of medicine in 2014, led the research in partnership with Dr. Pierluigi Costanzo, one of his former colleagues at the University of Hull in the United Kingdom. Dr. Atkin has now established a laboratory at WCM-Q researching insulin resistance and cardiovascular disease risk that characterize polycystic ovary syndrome, pre-diabetes, obesity and type-2 diabetes.

WCM-Q is committed to focusing its research efforts on diseases that are particularly relevant to Qatar and the Gulf region, including diabetes, obesity and cardiovascular disease, among others.

Your Health First wins top award

The groundbreaking Sahtak Awalan – Your Health First health campaign of WCM-Q has scooped a major award for its work to improve the health of people in Qatar.

Sahtak Awalan - Your Health First won the ‘Best Community Development Award’ at the prestigious Corporate Social Responsibility Summit, held at the Doha Hilton under the patronage of the Ministry of Economy and Commerce.

The Corporate Social Responsibility (CSR) Summit is Qatar’s premier CSR sustainability event and is one of a series of international forums designed to promote dialogue among leading corporations, support sustainability and drive social and economic development throughout the Middle East and Africa.

The award was received by WCM-Q’s Chief Communications Officer, Nasser Al-Rifai, whose Communications Division is responsible for the conception and delivery of all Your Health First initiatives.

Ms. Al-Rifai said: “We are extremely happy and proud to receive this wonderful award because community development and corporate social responsibility are values that are absolutely integral to the identity of both the Your Health First campaign and Weill Cornell Medicine – Qatar as an institution.

“Through Sahtak Awalan – Your Health First we strive to engage with everyone in the community to empower them to protect their own health and the health of their family. I want to give special thanks to all our strategic partners, whose support has been instrumental in making Your Health First so successful.”

Your Health First was launched in 2012 in association with the Supreme Council of Health and the campaign’s strategic partners, Qatar Foundation, the Supreme Education Council, Occidental Petroleum Qatar, ExxonMobil and Qatar Olympic Committee.

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WCM-Q helped highlight Qatar’s commitment to environmental sustainability and healthy, safe and plentiful food for all on the international stage.

The college was one of those that contributed to the Qatar Pavilion at Expo Milano 2015. WCM-Q was invited to take part because of its groundbreaking Sahtak Awalan health campaign, which has been promoting health issues, organic food and sustainability to young people and the wider Qatar community for the last three years, as well as explaining how to prevent disorders like obesity and diabetes.

Those same issues are now being highlighted to a global audience. Expo Milano is one of the biggest events of its kind in the world, with more than 140 participating countries and 20 million visitors over its six-month period.

Dr. Javaid Sheikh, dean of WCM-Q, said Expo Milano was a wonderful opportunity to show the world Qatar’s commitment to food sustainability coupled with improving health in the region, and the contribution that WCM-Q is making toward this vision.

Dr. Sheikh said: “Qatar is a desert country and so has huge interest in food sustainability. Work conducted by WCM-Q’s Genomics Core will add to this by ensuring the future viability of the date palm. Qatar is also leading the way regionally in research into lifestyle disorders like diabetes, obesity and heart disease.

“I am proud to say that WCM-Q is also playing a major role in both these areas through our Research Division and our Sahtak Awalan campaign. Our researchers are searching for new treatments while our health campaign is helping to educate children and their families about exercise and the importance of diets high in fruit and vegetables. This knowledge will help prevent them from developing a range of lifestyle diseases.

“We are helping to create a generation who understand about health issues and are able to make a commitment to a knowledge-based economy and the goals of Qatar National Vision 2030.”

As part of WCM-Q’s contribution to the Qatar Pavilion, two researchers gave presentations at the expo. Dr. Joel Malek, assistant professor of genetic medicine and director of WCM-Q’s genomics core, led the team that was the first in the world to map the genome of the date palm – an important agricultural crop in the Middle East.

Dr. Malek outlined how his research could help farmers to selectively breed the date palm, making it more resilient to future changes in the environment, health and agricultural needs of the future.

In addition, Dr. Shahrad Taheri, professor of medicine and director of the CRS core at WCM-Q, spoke about the Sahtak Awalan campaign and its many facets, including the Yalla Natural roadshow, which encourages people to eat organic, healthy food; and the Greenhouse Project, which provides greenhouses to schools to educate children about the benefits of eating and growing fruit and vegetables.

Dr. Taheri also talked about obesity, its implications, and the benefits that even a small amount of weight loss brings to the individual.

WCM-Q’s Sahtak Awalan campaign also introduced Chef Eric Cousin, corporate executive chef at AMLAK Hospitality, to the expo delegates, who gave cookery demonstrations using fresh, organic ingredients. There were also the famous smoothie bikes, showing that exercise can be fun and that fruit and vegetables can be tasty.

“Tens of thousands of people from across the world visited the Qatar Pavilion.”
"Maybe it’s a crazy dream, but if you don’t dream it then you can never achieve it," says Salvador Alvarado, a final-year medical student at the National Autonomous University of Mexico.

For Salvador, who spent four weeks at WCM-Q in September and October through the Global Education in Medicine Exchange (GEMx) program, the “crazy dream” is to one day serve as his country’s health minister in order to help extend quality healthcare to all sectors of Mexican society. His time at WCM-Q, which he has spent taking the Population Health and Primary Care Perspectives elective, has strengthened his resolve and given him new ideas about how healthcare in Mexico might one day be reformed.

Salvador, aged 24, said: "Coming to Qatar and pursuing an elective here at Weill Cornell has shown me many things about public health that are both inspiring and useful in a practical sense. Seeing how Qatar has successfully applied the US model of healthcare while adapting it to meet local needs is very encouraging and I am sure there are many lessons that we in Mexico can learn from this."

Salvador’s interest in public health and his desire to travel overseas through the GEMx program was prompted by his experience working as an intern in a small provincial hospital in Ensenada in the Mexican state of Baja California.

“Our medical program is six years and in our fifth year we have to perform an internship and we are told to leave Mexico City to see what healthcare is like in other parts of the country,” he said. “Working in a small hospital is a very good experience because you get to perform as a physician but also you discover what a challenge it is to care for patients in a place with low resources.

“These experiences made me decide to follow the public health route because I saw how much economic and social factors influence the quality of care that is provided. Coming to Qatar has given me an international experience that has allowed me to know how healthcare systems work around the world, and I can see many positive things that can be applied to my country’s healthcare system." 

GEMx, a program of the Educational Commission for Foreign Medical Graduates (ECFMG), is a global partnership of medical schools that facilitates student exchanges among institutions based in various countries around the world. The program aims to provide experiences to students that help them to gain a global perspective on healthcare, just as Salvador has during his time at WCM-Q, while simultaneously fostering cooperation between medical schools around the world.

Dr. Ravinder Mamtani, associate dean for global and public health at WCM-Q, is chair of the GEMx Advisory Committee.

He said: "We are delighted that Salvador chose Weill Cornell Medicine – Qatar and we have been impressed by his dedication and commitment to his studies.

“The success of his visit shows the strength of the GEMx program, which makes it relatively easy for students to take electives at colleges many thousands of miles away from their home campus. We feel that GEMx is going to continue to grow and facilitate the improvement of healthcare worldwide.”

The GEMx program provides an effective, web-based, comprehensive system through which partner 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.

Dr. Sohaila Cheema, director of global and public health at WCM-Q, said: "We are so pleased that we had this opportunity to welcome Salvador here from one of our GEMx partner schools, the National Autonomous University of Mexico.

"GEMx is a wonderful way for students to broaden their horizons and for medical knowledge and skills to be shared on a worldwide basis. It is a fantastic vehicle for exploring global health, to create global dialogue amongst students and educators worldwide and we look forward to receiving more students to partake in this enriching experience in the future."

For Salvador, the future beckons. "My immediate goal is to study for a master’s in public health at a very good college in the United States. Eventually I would like to work in research in a public institution in my country. My ultimate ambition is to serve as health minister to apply the knowledge I will have learned to help improve healthcare in my country. I know it is a big ambition, but I think it is good to aim high."
Genetic research project investigates smoking

Researchers at WCM-Q have successfully conducted the first fully Qatar-based study on the effects of smoking and aging on our genetic material.

The study, undertaken at the college by Qatari PhD students Mashael Al-Shafai and Wadha Al Muftah, confirmed that aging causes modifications to DNA and that smoking tobacco causes similar changes to our genes. Crucially, the project is the first study of its kind to be based on samples drawn entirely from an Arab population, as previous research in this area has generally focused on Caucasians.

Al-Shafai and Al Muftah are both working at WCM-Q through the Qatar Foundation Science Leadership Program (QSLP), a Qatar Foundation initiative that supports talented Qatari graduates to help them build careers in science and research. They carried out their groundbreaking research project with support from a team of graduate and senior scientists at WCM-Q and Imperial College London.

Entitled ‘Association of DNA methylation with age, gender and smoking in an Arab population’, the paper has been published in the highly regarded medical journal Clinical Epigenetics and marks a significant success for both QSLP and WCM-Q. Epigenetics is the study of the epigenome, which consists of chemical compounds that influence the production of proteins by switching genes in the DNA on and off. Al-Shafai, who graduated from the University of Leeds in the United Kingdom with a BSc degree in Human Genetics, joined QSLP in 2009 and has been working in the labs at WCM-Q since 2012 as a PhD student. She previously worked at WCM-Q as an intern during 2010. Al-Shafai said: “I’m so happy that our study has been published in a well-regarded journal like Clinical Epigenetics. I believe that this achievement would not be possible without the support from our research team at WCM-Q and Imperial College London. I’m proud to be part of such a motivating and productive team especially at this early stage of my carrier. We applied state-of-the-art techniques in many areas, from sample collection to data generation and analysis, and we managed to successfully replicate findings from studies on Caucasians. Our study encourages further research efforts to accommodate underexplored populations, including Arab populations.”

The study involved taking blood samples from 123 Qatari adults, 13 of whom were smokers. The DNA strands contained in the blood samples were then analyzed to discover their level of DNA methylation, a natural process of gene modification that makes growth and development of cells possible. While methylation occurs naturally as part of the aging process, it can also be caused by environmental factors, such as exposure to tobacco smoke. DNA methylation is also known to be associated with the growth of most forms of cancer.

The researchers were able to conclude that studying DNA methylation is a powerful tool for conducting genetic studies in non-Caucasian populations, opening the door for further important research focusing on a diverse range of ethnic populations.

Al Muftah graduated from the Arabian Gulf University in Bahrain where she studied Basic Medical Sciences and was awarded a medical degree. She joined QSLP in 2008 and has been working in WCM-Q labs since 2012 as a PhD student.

She said: “Most existing epigenetic studies are based on European populations while the Arab region has not been explored yet. I believe that the differences in genetic and environmental backgrounds between Europeans and Arabs mean that epigenetic research in this unexplored region is highly valuable.

“Working on this paper has enhanced my knowledge of the subject and allowed me to learn new analytical skills that I can apply in future studies. Also, collaborating with such knowledgeable investigators helped me to benefit from their experiences and the scientific knowledge that they shared with the other members of the research team.”

Support was provided to Al-Shafai and Al Muftah by WCM-Q researchers Dr. Shaza Zaghloul, senior bioinformatics data specialist, and Dr. Pankaj Kumar, research associate in physiology & biophysics. The team was supervised by senior researchers Dr. Karsten Suhre, director of the bioinformatics core at WCM-Q, and Dr. Mario Falchì of the Department of Genomics of Common Disease at Imperial College, London.

Based on data collected in the study and using state-of-the-art technology, the team was able to accurately predict the age of a person to within seven years, based on analysis of just a single drop of their blood.

Applauding the efforts of the research team, Dr. Suhre said: “The findings of the research project are very exciting and I am very happy to congratulate Mashael and Wadhia for the level of professionalism they have shown at this early stage in their careers. I am also very pleased with the way the researchers at WCM-Q supported the QSLP candidates and helped them to produce an excellent piece of research. Similarly, the support we received for this project from QSLP and Qatar Foundation was absolutely crucial to enable this project to go ahead and be so successful.

“To be published in a very well-regarded journal like Clinical Epigenetics will give the careers of Mashael and Wadhia a great boost, and also demonstrates that they have contributed to a piece of research that is of great value to the scientific community, both in Qatar and in the wider world.”

Dr. Khalied Mashaka, associate dean for research at WCM-Q, said: “This paper is a fantastic achievement by two of our Qatari PhD students, Mashael Al-Shafai and Wadhia Al Muftah, supported by our own dedicated team of researchers.

“We are very proud to be able to contribute to the realization of the human potential of these two young scientists and we look forward to assisting them further as they develop their careers for the benefit of Qatar’s rapidly growing research and development sector. We are honored to receive support from Qatar Foundation and the Qatar Science Leadership Program, without which this research would not have been possible.”

The full text of the publication can be found online by visiting www.clinicalepigeneticsjournal.com/content/7/1/6.
Second-year medical student Sahar Mahadik has shared her experiences of an “inspirational” summer spent helping and learning about healthcare in Tanzania on WCM-Q’s Global Health and Research Experience Program (GHERP).

Sahar spent eight weeks at Weill Bugando Medical Center in Mwanza, a port city on the southern shore of Lake Victoria, where she had the chance to see how local health workers care for a large population in an under-resourced environment.

During her time in Mwanza, Sahar took patient histories, shadowed local physicians on their ward rounds and traveled into the surrounding countryside to visit dispensaries that are often the first place local people go to when they have a health complaint.

Sahar also had the opportunity to contribute to ongoing research projects as part of the program, which is run by WCM-Q’s Global and Public Health Division and is now in its fifth year.

Giving a presentation about her trip to an audience of faculty members and fellow students, Sahar said: “The resourcefulness and dedication of the doctors and other health workers at Weill Bugando was truly inspiring. The hospital serves a huge number of people in the city and across the wider region and they work incredibly hard to make sure everybody gets the best care possible.”

In Tanzania there is a high prevalence of diseases that students do not usually see while working in high-income countries, such as malaria, tetanus and tuberculosis. There are also many motorcycle-related injuries and there is a high prevalence of schistosomiasis, a condition caused by a parasitic worm carried by freshwater snails that is spread by contact with contaminated water.

The GHER program allows students to conduct physical examinations of patients under the supervision of qualified physicians, helping them to develop essential diagnostic and communication skills.

Dr. Sohaila Cheema, director of global and public health, said: “In Mwanza, physicians cannot always rely on highly sophisticated equipment when they are attempting diagnosis, which is very different from the situation here in Doha where the hospitals are very well equipped. Our students who visit Weill Bugando therefore develop the time-honored, traditional skills of physicians of looking, listening and speaking with patients to make a correct diagnosis. I feel this is one of the key strengths of the program and it is highly beneficial for students to have this experience at an early stage in their training.”

Dr. Ravinder Mamtani, associate dean for global and public health, said: “The Global Health and Research Experience Program is a wonderful way for students to gain an understanding of the challenges faced by healthcare workers and patients in many parts of the world. At the same time, the students are able to develop essential skills related to patient care at an early stage in their training. We are extremely happy that Sahar grasped this opportunity with both hands and very pleased that she has served as a great ambassador for Weill Cornell Medicine – Qatar.”

She added: “Tanzania is a beautiful country with wonderful people and I am sure this experience will stay with me for life. I am so happy that I embraced this opportunity.”

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Sahar added: “I found it extremely rewarding to be able to apply the knowledge I have learned in the classroom to the real world. For example, listening to and identifying a heart murmur, which was something I had only read about until then, was a truly valuable learning experience for me.”

Visits to an orphanage, local dispensaries and a center providing care to children with albinism gave Sahar a more comprehensive understanding of the healthcare situation in the region, while staying with a host family helped her to engage with the community and adjust to her new environment. Sahar also had the opportunity to discover the diverse wildlife of Tanzania on a safari trip where she saw elephants, lions and zebras.

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Sahar gives her presentation, with Dr. Sohaila Cheema.
The problems of obesity and diabetes are well recognized in Qatar and the wider Gulf region. What is less well understood is a condition called polycystic ovary syndrome (PCOS) that has become increasingly prevalent in recent years.

PCOS is often characterized by a number of benign cysts that develop in the ovaries and is associated with abnormal hormone levels. While these cysts are not life threatening, PCOS may affect women in a number of ways including increased weight gain, excess hair growth and acne that is difficult to treat, all of which can be very distressing and can even lead to depression.

The most distressing factor for young married women, however, is that in PCOS eggs are not released from the ovary, which can lead to infertility. This can cause great difficulty in getting pregnant for the first time and for further pregnancies, too. As a result many women develop the condition because you are overweight, contact your children. If you think you may have PCOS or you are worried about infertility, it is contributing to a new initiative being planned with Hamad Medical Corporation and the Primary Health Care Corporation (PHCC) to find out what the scope of the problem is and to perhaps, as a preventative strategy, make the diagnosis early in young women.

Dr. Atkin added: "What is known in a Western population is that PCOS is becoming increasingly common as the weight of the population increases and it is likely that the same is happening in Qatar. It is feared that PCOS could affect up to 30 per cent of Qatar women, so this is an important public health issue that we all need to be aware of."

"These problems do not just affect the woman herself, as how she feels can have a big impact on family life. In the long-term, patients with PCOS are more likely to develop diabetes and possibly also heart disease."

The problems with PCOS can continue into pregnancy with a greater chance of the mother developing diabetes during it, which can sometimes lead to problems both for the baby and the mother.

Dr. Atkin added: "We hope that any women with PCOS who come across our research program will feel able to take part and help us to help others in the future."

"Women who have PCOS should not despair as there are treatments available that can help control the symptoms and help couples have children. If you think you may have PCOS or you are worried about developing the condition because you are overweight, contact your family doctor for advice."

Dr. Atkin said: "What is known in a Western population is that PCOS is becoming increasingly common as the weight of the population increases and it is likely that the same is happening in Qatar. It is feared that PCOS could affect up to 30 per cent of Qatar women, so this is an important public health issue that we all need to be aware of."

The true impact of PCOS on women in Qatar is not known and WCM-Q is contributing to a new initiative being planned with Hamad Medical Corporation and the Primary Health Care Corporation (PHCC) to find out what the scope of the problem is and to perhaps, as a preventative strategy, make the diagnosis early in young women.

Dr. Stephen Atkin, professor of medicine at WCM-Q, is developing a new research program in collaboration with Hamad Medical Corporation and Sidra Medical and Research Center to look at how PCOS affects women and what can be done to better diagnose the condition and ultimately to give better treatments.

Third-year students were able to practice conducting pediatric examinations as the children of faculty and staff visited the college for the annual Cornell Stars event.

Twent five youngsters aged between four months and seven years were brought to the college by their parents to give the students the chance to carry out clinical examinations as part of their Introductory Clerkship course, with senior faculty members on hand to offer guidance and advice.

The aim of the half-day session, which took place in the Clinical Skills Center of WCM-Q in June, was not only to help the students become technically proficient at performing examinations, but also to let them help others in the future.

Each of the 36 students had the chance to observe senior pediatricians from WCM-Q, Hamad Medical Corporation (HMC) and Sidra Medical and Research Center carry out an examination, before having a go themselves. The students carried out basic health checks such as listening to the child’s heart and breathing, checking the ears and throat, and testing general motor function.

Dr. Amal Khidir, assistant professor of pediatrics, coordinated the event in partnership with WCM-Q’s Office of Curriculum Support and the Clinical Skills Center.

She said: “Cornell Stars gives our students a great opportunity to learn the interpersonal skills that are such important attributes for a physician. Learning these skills by interacting with children is very useful because you have to be able to adjust your approach depending upon the child’s developmental stage, their mood and their personality, which is quite demanding.”

The Introductory Clerkship course, directed by Dr. Mai Mahmoud, assistant professor of medicine, is an important milestone in the life of medical students at WCM-Q as it marks the transition point between learning the basic sciences and putting that knowledge into practice in clinical rotations at HMC. While the third-year students had already worked with adult patients, for most of them this was their first experience of examining children.

The students were guided by WCM-Q’s Dr. Stella Majar, associate professor of clinical medicine; Dr. Marcellina Milan, professor of pediatrics and associate dean for medical education; and Dr. Khidir, as well as HMC academic pediatric fellows Dr. Suhair Elsaidig and Dr. Khaleel Siddiq and HMC attending physicians Dr. Madera Kamal, Dr. Magda Wagdy and Dr. Elhansa Elgali. From Sidra, Dr. Mahmud Mustafa, Dr. Aya Al-Kharusi, and Dr. Sharda Uddasi provided guidance to the students.

Student Ayesha Khalid said: “I found the event really useful as a learning experience, especially as I am interested in specializing in pediatrics. I really wanted to know if I would feel comfortable interacting with the children and how they would respond to me. It was challenging but by the end I was beginning to understand how to find the right balance between keeping the child happy by interacting with them but also staying focused on performing a thorough examination.”

Dr. Raphael Courjaret, research associate in physiology and biophysics at WCM-Q, and his wife Estelle brought their 11-month-old daughter, Marie, to the event.

Dr. Courjaret said: “We were very happy to bring Marie to help the students because it is very important for them to have the experience of examining a real child. The event is a really good way for the students to learn how to behave around children, how to keep them relaxed and what to do if the child starts to cry or something like this. These are really important skills for the students to learn.”

Each of the young stars was presented with a certificate of appreciation and a small gift to thank them for helping with the event.

Dr. Khidir added: “All of the faculty and students are very thankful to our colleagues at HMC and Sidra for helping us to deliver this extremely effective learning experience.”
A new program has been launched to inspire Qatari high school students to become scientists.

WCM-Q’s Research Division launched the Summer Research Internship for National High School Students in a bid to increase the number of Qatari scientists. The ultimate goal is to increase research capacity and help fulfill the goals of Qatar National Vision 2030.

The program targets nationals who have recently completed grades 10 or 11 and are interested in scientific research, like Salah Mahmoud who attends Qatar Academy and was the first to join the program.

Salah spent one month at the college, learning the basics of running a high-level, international biomedical research program. The 17-year-old, who is considering a career in research and medicine, said that it had been a real learning experience, allowing him to understand the mechanisms of how a world-class research division operates.

He said: “It’s been a great experience. I’ve been involved in laboratory management—making sure the researchers have the supplies they need, that the logistics are running smoothly and that all the equipment is fully operational.”

Salah said that he had also been training in clinical research management, grants management, research integrity and had received training in building his professional skills such as time management, presentation skills, team work and work ethics.

Dr. Khaled Machaca, associate dean for research, said: “We have been running training programs for nationals who had completed a university degree for five years now and it’s time to expand; to give younger generations the chance to learn and explore the research field. The program has given interns the opportunity to work as part of the team rather than as a student. Moreover, this will help Qatar in achieving its aim of becoming a knowledge-based economy by having nationals in careers where knowledge is created and biomedical research is undoubtedly one of those.”

Applications for next year’s summer internship will be announced in the Spring and those interested in participating can register to be notified when applications become available on the program’s website, http://qatar-weill.cornell.edu/research/trainingprograms/highschoolinternship.html

Inspiring scientists of the future

Medical students pass milestone

First-year medical students took their first steps towards providing practical treatment to patients as they learned first responder skills in the WCM-Q Clinical Skills Center.

Working with standardized patients and medical training models, the students learned how to dress wounds, put patients in splints and slings, provide artificial ventilation and immobilize and safely remove injured people from danger using a spinal board, among other practical skills.

The series of training workshops was led by Dr. Andrea Li, instructor in medicine at WCM-New York. Students first heard a variety of lectures about the skills demanded of first responders before they took part in six practical workshops that allowed them to get hands-on experience of providing treatment.

In addition to teaching the practical skills required to give treatment, the workshops also demonstrated how to gather information from patients to determine the nature and severity of their injuries, and how to pass information to the emergency services effectively. The students used medical models to practice giving both bag-valve and mouth-to-mouth resuscitation, while one workshop involved a role-play scenario in which the students had to coordinate a response to a large-scale disaster that had left hundreds of people wounded.

Dr. Steve Scott, associate dean for student affairs, said that getting hands-on experience early in their training was invaluable to the students.

He said: “They may be only at the start of their medical training but we want them to get practical experience as soon as possible. Not only is this good for their education, but it begins to develop their professional identities and they start to really think of themselves as doctors. The essential skills the students are learning today provide a great foundation for the rest of their training.”

The day-long first responder course marks an important moment in the training of WCM-Q students as one of their earliest clinical experiences.

First-year med student Sonia Allouch said the scenarios had dealt with medical emergencies including a large-scale disaster, a seizure, an allergic reaction, a potential spinal injury requiring immobilization, a fractured bone and a respiratory emergency requiring the students to perform mouth-to-mouth.

Sonia said: “I think the most enjoyable one was the immobilization of the whole body in case of a fracture in the neck or spinal cord. I had an idea about what to do in the other scenarios but that one was completely new to me. You’ve heard about it before but I found out exactly how and why you do what you have to do. It was really intriguing.”

As with her peers, this was Sonia’s first time practicing what she has been taught.

“I’ve been to the hospital for observerships before but it was never like this. Before we were just shadowing the doctors but this time we were the doctors.”

Mohamed Soliman learns the correct technique for cardiopulmonary resuscitation.

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Mohamed Soliman learns the correct technique for cardiopulmonary resuscitation.
WCM-Q nurtures homegrown Qatari research talent

Certificates were presented to six Qatari research trainees to mark their completion of the Biomedical Research Training Program for Nationals. The annual program gives talented Qatari graduates the opportunity to spend six months working in WCM-Q’s state-of-the-art laboratories learning key scientific research and administrative skills.

The program concluded with a presentation ceremony at the college where Dr. Khaled Machaca, associate dean for research at WCM-Q, presented certificates of completion to interns Maryam Al-Osafi, Rouda Al-Qahtani, Noof Al-Kuwari, Maha AlDosari, Aisha Al-Qahtani and Sharefa Al-Mannai.

Dr. Machaca said: “I offer my warmest congratulations to these highly talented young researchers for showing the perseverance and dedication needed to complete this challenging course.

“They have demonstrated great intellectual curiosity and enthusiasm for learning a wide range of research and administrative skills that will prove extremely useful to them as they take the next step in their careers in research. We are privileged to have welcomed them to WCM-Q and we wish them the very best of luck in their future endeavors in research. We are also very proud to have been able to make a positive contribution to building human capacity in scientific research in Qatar toward Qatar National Vision 2030.”

This year marked the fifth installment of the highly successful Biomedical Research Training Program for Nationals, which has now provided training to a total of 24 interns since its launch in 2011. Interns who complete the program learn a variety of essential research skills, becoming proficient at practical bench work, project design and research administration, among many other key competencies. The program is designed to give talented Qatari nationals an opportunity to gain key skills and experiences in a challenging and rewarding research environment, helping them to establish careers in a variety of fields related to biomedical research. The program is coordinated closely with the Qatar Science Leadership Program of Qatar Foundation.

Intern Aisha Al-Qahtani, an electrical engineering graduate from Texas A&M University at Qatar, said: “I am interested and passionate about biomedical research and I believe that this program has helped me to fill the gap between my background in engineering and my work in computational biology. I have learned biostatistics, epidemic modeling and how I can apply my engineering degree to biomedical research.”

Aisha hopes to pursue her career in research further and aims to obtain a PhD in biomedical and biological sciences in the future. Sharefa Al-Mannai, who graduated from the University of Colorado-Boulder in 2014 with a bachelor’s degree in integrative physiology, also completed the program.

She said: “Joining the program has been my first step toward developing my career in research. One of the great things about the program is the way it exposes participants to the different research areas, ranging from working in labs to administration. Aside from finding what I’m truly interested in as a research, this program has helped me identify my strengths and weaknesses in a work environment. I truly believe this program is a great bridge connecting recent graduates and biomedical research.”

WCM-Q has been inspiring young people to take care of their health through a local organization that helps address some of the challenges that Qatar’s students face.

Faculty and staff members from the Division of Global and Public Health (GPH) at the college were invited to talk to the students at a camp organized by Teach for Qatar, a local non-governmental organization that helps young people by encouraging talented individuals to become teachers.

The healthcare talks were held at Awajj Academy at Qatar Foundation and involved 100 boys - half of whom were Qatari - aged between 11 and 15 from a variety of independent schools across Qatar.

Each day for four days, a presentation was delivered followed by an interactive session. The health topics covered were nutrition and exercise.

The sessions were designed and delivered by WCM-Q’s Dr. Hekmat Alrouh under the overall direction of Dr. Ravinder Mantani, associate dean of for GPH at WCM-Q, and Dr. Sohaila Cheema, director of GPH at WCM-Q. Dr. Amit Abraham, Ms. Sura Al-Samraye and Ms. Raji Anand also participated in the project.

Commenting on his experience, Dr. Alrouh, project specialist for GPH said: “I was impressed by the level of curiosity the students displayed, the students posed several questions pertaining to how bodies function and how lifestyle factors like nutrition and exercise affect their overall health.”

Dr. Mantani said Teach for Qatar was aligned with the goals of Qatar National Vision 2030 and that WCM-Q was pleased to be able to contribute.

He added: “As a healthcare institution, and particularly within the Division of GPH, we are strong supporters of such programs. One of the key elements of global and public health is to collaborate for the benefit of improved health awareness, education and quality of life for people in Qatar.

“WCM-Q and the Division of GPH are always happy to participate in collaborative programs as to us, improving health should begin during the formative years of childhood and in that respect I believe this was a very successful program.”

Dr. Cheema, said the collaboration with Teach for Qatar fitted into what the division already does.

She said: “We have been partnering with the Academic Health System at Hamad Medical Corporation and we view this as an extension of the work that we are already doing with them. It fits nicely with everything that the division stands for – improving health education, knowledge and benefiting the young.”
New kidney transplant rejection test developed

Researchers at WCM-Q and WCM in New York have discovered a new test to detect whether a patient’s immune system is rejecting a transplanted kidney.

The new test, if fully developed, could one day help doctors determine whether a patient is rejecting their new kidney far earlier than the test currently used in hospitals.

Another advantage is that the newly discovered method uses urine analysis, while the current test involves taking biopsy material directly from the implanted kidney using a syringe, which can cause discomfort and bleeding.

The test is described in a research paper published in the prestigious Journal of the American Society of Nephrology and was conducted by a team of WCM-Q researchers led by Dr. Karsten Suhre, professor of physiology and biophysics, in partnership with colleagues at WCM in New York, led by Dr. Manikkam Suthanthiran, Stanton Griffis Distinguished Professor of Medicine.

Dr. Suhre said: “We are very excited about this discovery because it has the potential to lead to a new test that could be both more effective and less invasive for the patient, though we are at a very early stage at the moment. It is always very exciting to make a discovery that has the potential to lead to a real clinical application that will make healthcare better for patients.”

Organ transplants are perceived as foreign bodies by the organ recipient’s immune system, which will then try to destroy it. This can be controlled with immunosuppressant drugs but they must be administered carefully because they make patients more susceptible to infections and malignancy. Moreover, transplant recipients can experience rejection despite the immunosuppressive drugs.

The test works by analyzing the urine for metabolites, which are substances produced by biochemical processes in the body. Some metabolites are only produced under certain conditions and can thereby be used as markers for disease. Dr. Suhre’s team analyzed a total of 1,516 samples from 241 kidney transplant recipients and found that they could identify a particular set of metabolites that indicated the implanted organ was being rejected.

Dr. Suhre said: “We compared our results against the results of traditional biopsy tests and we found that our test could predict rejection of the kidney very reliably, with a level of accuracy around 80 per cent at this early stage. A great aspect of this research is that here in Qatar we have the state-of-the-art equipment, high-tech computing power and the expertise to carry out very detailed sample analysis, which complements the research of our colleagues in New York and allows us to conduct research together in a synergistic way.”

Importantly, the new test can be carried out in approximately 24 hours, whereas the biopsy results can take longer. A further advantage is that the new test is able to determine the health of the entire kidney, while a biopsy might take material from a healthy part of the kidney and will therefore fail to discover that other parts of the organ are deteriorating. Most importantly, the invasive biopsy procedure can lead to bleeding, graft loss and even death, albeit very infrequently.

Dr. Suthanthiran, a recognized authority on kidney transplantation, said: “We have a long standing interest in developing non-invasive tests to determine the health of a kidney transplant. We previously discovered a gene-based test using urine samples; the new test, developed in collaboration with Dr. Suhre, is a metabolite-based test. Very interestingly, the combination of gene-based test and metabolite-based test predicted acute rejection with a 90 per cent accuracy.”

“When fully developed, this new test has the potential to help us manage transplanted kidneys more effectively and to significantly reduce the number of biopsies performed to diagnose rejection. Moreover, we may be able to anticipate a future episode of rejection and initiate preemptive therapy and avoid damage to the kidney transplant altogether. That would be a great advance for both patients and patients and we are looking forward to conducting more research in this area in order to bring the test from the laboratory to the hospital.”

The study was aided by funding from the Biomedical Research Program of Qatar Foundation, which supports the research effort at WCM-Q.

Dr. Khaled Machaca, associate dean for research at WCM-Q, said: “These findings are very promising and also extremely relevant to Qatar and the surrounding region because of the prevalence of diabetes and the associated risk of kidney failure.

“This is also a great example of the benefits of cooperation between Weill Cornell researchers in Qatar and New York. Working together, they are able to make important discoveries that have the potential to deliver better healthcare outcomes to people in Qatar and all over the world.”

The study, entitled “Urine Metabolite Profiles Predictive of Human Kidney Allograft Status,” can be read in full at http://jasn.asnjournals.org/content/early/2015/06/05/ASN.2015010107.abstract.
With Qatar fast becoming a regional hub for high-level clinical research, the need for building awareness of the regulatory schemes to protect human participants has never been more important.

The regulations surrounding the ethical conduct of human subjects in research in Qatar were discussed at the second in a series of seminars organized by WCM-Q and Qatar University’s College of Law (QU-LAWC).

Speakers included Sunanda Holmes, Juris Doctor of WCM-Q, who discussed the world-wide development of the ethical regulatory framework and standards of conducting human subject research, and the pitfalls experienced in many countries around the world. Dr. Gaber Mahgoub, of QU-LAWC, spoke about ethical principles regarding informed consent and its requirements in clinical research and care; Dr. Shahrad Taheri, professor of medicine and director of the CRS Core at WCM-Q, examined the researcher’s role in meeting the regulatory requirements; and Dr. Jeffrey Cooper of the WIRB-Copernicus Group, outlined the ideal regulatory and review system to protect human subjects in clinical research and outlined the roles of those involved.

The event, an accredited Category-1 CME/CPD as defined by the Qatar Council for Healthcare Practitioners Accreditation Department, concluded with a lively discussion session with an audience that comprised legal scholars as well as healthcare practitioners and researchers from all sectors of the Qatari healthcare system.

Research ethics discussed

The panel comprised Dr. Jeffrey Cooper, Dr. Shahrad Taheri, Sunanda Holmes, and Dr. Gaber Mahgoub.

Happenings

Paul Musselman, information services librarian, talks to Majda Sabah and Melanie Fernandez at the DeLib Open House.

Information services librarian Sally Birch discusses the available resources at the DeLib.
Suresh Arachchi at Clubfest.

Dr. Sheila Qureshi and Dr. Rachid Bendris at a reunion of the foundation class.

Alanood Aljalahma, Maha Ali, and Al Reem Al-Sulaiti at the foundation reunion event.

Students Syeda Haidar, Tina Bharani, Nahel Tunio and Dana Al-Majid at Clubfest.