Qatar University
Research
Magazine

SPECIAL EDITION

QU Research Magazine Exclusive Issue on Undergraduate Research – April 2015

UNDERGRADUATE RESEARCH EXPERIENCE PROGRAM

Investments in undergraduate research yield dividends

جامعة قطر
QATAR UNIVERSITY

Engaging students to enrich research culture

Prof. Sheikha Al-Misnad
President, Qatar University

“Qatar University’s experience with student research at the undergraduate level has been very positive; even exemplary. Supported by generous funding from the Qatar National Research Fund and the Undergraduate Research Experience Program, our students benefited from USD 68 million worth of grants during 2013-2014 alone while 1,215 students participated in research projects beyond their curriculum requirements that same year.

Developing a research culture across society, which is an important component for the knowledge economy agenda, depends on our ability to engage students in research as early as possible. Not only do we integrate research into the undergraduate learning experience but we also have a number of outreach programs that target school students. The aim is to instill in students the principles of scientific inquiry, develop their inquisitive abilities and their overall personalities. And while our curriculums are designed to equip all student with such skills, students who participate in undergraduate research opportunities beyond what is required in their study plan have the added benefit of strengthening knowledge in their subject area, building more advanced research skills that better prepare them for graduate studies, and developing the aptitude to examine data analytically and critically which is a valuable skill in any profession whether within our outside a research career.”

QU Vice President for Research Dr. Hassan Al-Derham outlines the efforts of the Research Office in achieving the objectives for its establishment. He also speaks on the relationship between QU and QNRF. Excerpts:

> **“Most of our undergraduate programs have embedded research methodologies in their curricula, especially with the senior graduation projects or capstone courses.”**
>
> **Dr. Hassan Al-Derham**
> **VP for Research**

Is the vision for the establishment of the Research Office being fulfilled?

Qatar University has improved significantly during the last six years in terms of administering research funds. We have been blessed with considerable and steady funding from the Qatar National Research Fund (QNRF) of Qatar Foundation. As a result, we have been serving the University community through best practices in administering research grants. During the last five years, we have established unique and practical policies that help us in managing and administering internal and external grants.

Gradually, our faculty and students are satisfied with the services we offer them. So, I think we are on the right track to fulfilling our vision.

Do we have the right environment for undergraduate research in QU?

Most of our undergraduate programs have embedded research methodologies in their curricula, especially with the senior graduation projects or capstone courses. They are all benefitting from the Undergraduate Research Experience Program of QNRF. I think these initiatives are providing our students with the right skills for critical thinking, understanding research methodologies, dealing with problems and problem solving techniques. All of these could be achieved through engaging students in research at undergraduate level.

Are we on the path towards creating a research culture in the university?

I believe so. Six or seven years ago, the aim of our strategy was to establish such a culture; to create this environment, and to understand the roles, responsibilities and expectations between the researchers, the different

administrators in the university and the students. Qatar University has grown steadily in the last three years in terms of undergraduate programs. We are expanding horizontally by offering new programs and also vertically in the number of students and nature of these programs. This culture has laid the foundation for the needed research eco system. To build such a system will need more time to have the right infrastructure in terms of research facilities and policies and procedures and to establish synergies between our researchers, faculty members as well as local, regional and international institutes of research.

When did QU start participating in UREP?

We have proactively and progressively been participating since the Qatar National Research Fund introduced the Undergraduate Research Experience Program (UREP) in 2007. From the beginning of the program our students were involved with enthusiasm and we can see the results of this engagement in the quality of the university's graduates.

Is QU deriving maximum benefit from participation in UREP?

There is always room for improvement. Seeking more funds and having more students participate in the program with the unique opportunities it offers would sharpen the students' skills for the future. So I would really encourage our students and faculty to benefit from the program. It would reflect very positively on the students' careers after graduation. So far, 1,215 undergraduate students have benefitted from student research grants. More than 450 plus active research projects were undertaken in the last academic year with 276 research collaborations around the globe.

Who initiates the projects? How do students get involved?

Ideas can come from both – students or faculty. The Qatar National Research Fund has a very clear mandate to build research culture in Qatar. This is achieved through different programs and procedures. One of them is this program for undergraduate students. Since Qatar University is the premier national university, the biggest share of funding since the beginning has gone for our students.

How does QU rate among the other universities in the country in terms of UREP awards?

History will show that Qatar University students have been coming out tops most of the time. Our students have been achieving good recognition compared to students from other universities in Qatar.

What are the requirements for projects to be shortlisted for award?

We always need to look at the impact of the project. How does the project benefit the students in terms of understanding research methodologies, new research techniques as well as communications skills? Also we have to look at its positive impact on the local community. We have to assess if it will contribute new knowledge to humanity through publications in research journals or conferences. In any case, we do not expect students to be so advanced at this level. If it happens it will add a great value to the project.

Have there been outstanding achievements in Qatar University in respect of undergraduate research?

Yes of course. Every year our students always receive awards locally, in the region and at international level. We have a long list of achievements.

Can successful undergraduate projects be patented?

If they are genuine research with original ideas they could be patented. We do not expect such from students at this level. However, it is possible. It could happen.

Can you give an insight into the relationship between Qatar University and QNRF?

I think the Qatar National Research Fund is one of the best initiatives that Qatar has initiated during the last decade. It has reflected very positively on higher education in general, and specifically on Qatar University such that our research profile is now very high and unique compared to other regional universities.

With support from the QNRF, we have become one of the fastest growing institutions in research in the region at a compound annual growth rate of 38.8%. In terms of research funding, we were awarded $68 million in 2013-2014. All of these are because of the availability of such national fund. Our relationship with QNRF is strategic. We work closely during the pre-award of any funding scheme or at post-award for feedback that enhances the program for the benefit of Qatar and its people.

Dr. Abdul Sattar Al-Taie
Executive Director, Qatar National Research Fund (QNRF)

Qatar is on course towards evolving a sustainable research culture, says Dr. Al-Taie

In this interview, Dr. Al-Taie talks about the efforts being made to enable undergraduate students embrace research and thereby foster a sustainable research culture in the country.

Could you please talk about the concept of UREP? When did it start? What purpose is it supposed to achieve?

The Undergraduate Research Experience Program (UREP) started in 2006, it was Qatar National Research Fund's (QNRF) first ever program and is currently in its 18th cycle. It aims to engage undergraduates in scientific research under the mentorship of faculty and staff from approved academic, and research institutions, in Qatar. UREP aims to promote 'Learning by Doing' and 'Hands-On' research activities as an effective method for undergraduate education. Through UREP students gain experience with faculty members, research staff, postdoctoral fellows, graduate students, and other students in Qatar.

The program is intended to recognise undergraduate students with potential, provide them with support for supervised research training and hands-on experience, while building their interest in R&D, and potentially guiding them towards a career path in scientific research that will see them contribute to Qatar's development.

Is it in line with the objectives of Qatar National Vision 2030? Are the objectives being met?

I believe that UREP is fully in line with the Qatar National Vision 2030 of building a knowledge-based economy. UREP is designed to increase Qatar's research capacity, diversify research content, and support the creation of a knowledge culture, while promoting research at the undergraduate level.

Since the outcome of these efforts continues to be knowledge generation, and new knowledge can create new applications, UREP directly supports Qatar's journey towards a knowledge-based economy.

Can we say Qatar is on course towards evolving sustainable research culture among its undergraduate students?

Yes, Qatar is on course towards evolving a sustainable research culture at the undergraduate level. As a result of UREP, all academic institutions offering undergraduate studies in Qatar have been engaged in research. The program has also had a significant impact on developing the research capacity of these institutions. I also believe that the students at these institutions have now gained adequate training and experience for a research culture to continue to prosper, even without QNRF's support.

How much money has been awarded for UREP projects since inception?

At QNRF we believe that our impact is not measured in monetary terms, but more by the unique content, or should I say, output, generated as a result of our support, and the effect we have on the development of Qatar's research ecosystem, through programs like UREP. Since its inception 2,482 students have been engaged in undergraduate research as a result of the program, which is more valuable than any price tag. Additionally, the fact that 34 per cent of these students are Qatari illustrates even further just how priceless the impact of this program truly is.

Is it possible to have successful UREP projects patented?

As the name of the program signifies, UREP is meant to be a research experience for students at the undergraduate level but that does not preclude patents as output from UREP projects. However in order to secure a patent, the project's level of innovation needs to be carefully evaluated.

That being said, UREP projects have resulted in an appreciable number of publications which is testimony to the quality of some of the research projects supported through the program.

What is the relationship between QU and QNRF like? Can you say that Qatar University, as the national university, is really playing the role expected of it as regards fostering research experience among students?

Being the national university, Qatar University (QU) is the largest beneficiary of all QNRF funding programs, and UREP is one of them. As a result of QNRF's significant support, QU has a sustainable research eco system which has helped it recruit, and retain, the best faculty and talent over the past few years.

To this end, QU has worked diligently to set up policies and procedures that have contributed to the establishment of its successful research management system and infrastructure. Also as a result of the generous funding offered by QNRF to key investigators outside Qatar, QU has also managed to build wide research partnerships both inside and outside the country.

What are QNRF's future plans for UREP?

We would like to reach out to more students, and especially see them work in interdisciplinary teams. We want research mentors from different institutions to be involved, while also expanding professional industry involvement by way of mentorship.

When UREP started, we only had student teams from a single institution working with a mentor from the same university. However, over time we have seen that change as we continue to encourage increased collaboration because, in the emerging research and development environment, collaboration is critical. As research now transcends a particular discipline, in future we would like to involve as many students as possible in research, through QNRF, university and industry support.

We would also like to see UREP become a nucleus of research sustainability by encouraging undergraduate students conducting research through UREP to expand their careers through our graduate and doctoral programs.

Undergraduate research getting deeply rooted in QU

Since the introduction of the Undergraduate Research Experience program (UREP) by the Qatar National Research Fund (QNRF) in 2007, Qatar University has successively and progressively been awarded high number of projects yearly. QU students have also consistently been performing excellently in the annual UREP competition of the QNRF. It is a clear indication of efforts being made by the university to evolve a research culture among its students.

This year, College of Pharmacy students won first place in the Health and Medical Sciences category for their poster on "Effectiveness of a Research Training Program on Improving Research Capacity of Pharmacists at Two Specialized Tertiary Care Hospitals in Qatar". The students – Hanen Alrowashdeh, Soumaya Allouch, and Tesnime Jebara – also won second place among three best poster categories – Social Science & Humanities, Medical & Health Sciences, and Engineering & Technology.

College of Arts & Sciences (CAS) students from the Biological and Environmental Sciences – Sana Khan, Maymoona Ayesh and Fatemeh Fahraei – topped the oral presentation competition with their project "Effective Remediation method in removing bromide from desalinated water using modified date pits" while Tamader Gohar, Tabea Al-Sheferi, Ikhlass Shamieh, Mezna Al Merri, Modhi Al Anzi, Zenab Ali from the college's History Program won first place for their poster "Qatar through Travelers and Explorers (Facts & Fictions)" in the Social Science and Humanities research poster category.

College of Engineering (CENG) students Nada Aldahdooh, Sara Iyad Ahmed, Reem Fuad Younis, Deina Tarek Ali, Sahar Towfeeq Al Zouqri, and Waad Nabil Alshorbaji came third for their poster "Optimization of a Single Column Continuous Chromatographic Separation Process for the Separation of Optical Isomers" in the Engineering & Technology category.

QU Research Magazine interviewed the Associate Deans for Research in the colleges within the university to provide insight into what they are doing to promote research among the students and the successes so far achieved.

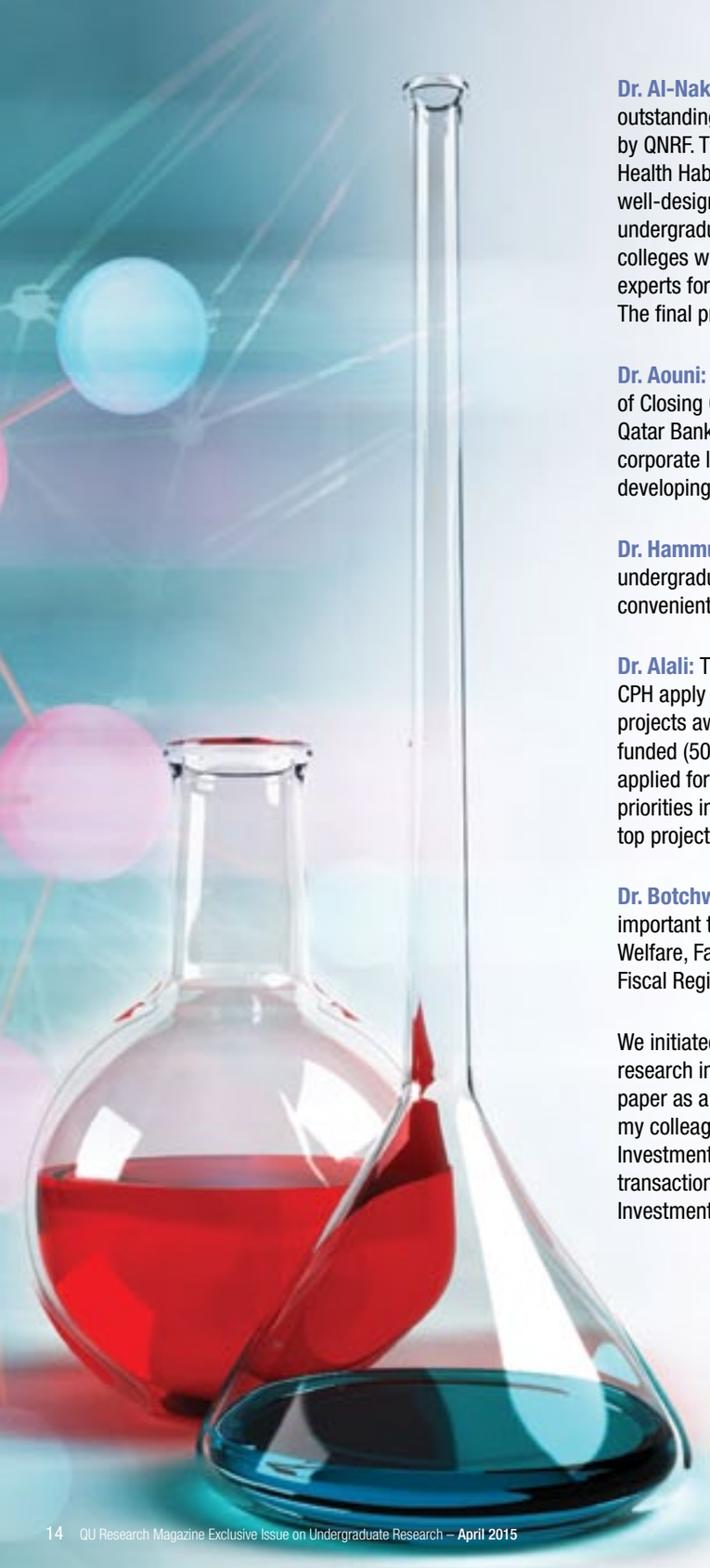
The deans are Dr. Mohamed Ahmedna, College of Arts & Sciences; Dr. Yahya Al-Nakeeb, College of Education; Dr. Belaid Aouni, College of Business & Economics; Dr. Abdelmagid Hammuda, College of Engineering; Dr. Feras Alali, College of Pharmacy; and Dr. Francis Botchway, College of Law.

Following are excerpts from the interviews:

Top Undergraduate Research Projects

Dr. Mohamed Ahmedna
Associate Dean for Research, College of Arts and Sciences

Dr. Ahmedna: In our eyes all funded UREP rojects are top as they go through competitive peer-review against hundreds of applications. We have several UREP success stories spanning the Arts and Sciences. Some of them are on 'Detection and Phylogenetic Genotyping of TT Virus among Blood Donors in Qatar', 'Investigation of Legionella Pneumophila in Qatar Cooling Systems', 'Developing Legal Reforms to Reduce Domestic Violence in Qatar', 'Villaggio and Culture Change: An Ethnographic Analysis', 'Social Integration Between Qataris and Expatriates', 'Developing an Illustrated Glossary of Traditional Qatari Architecture', 'Effective Remediation Method in Removing Bromide from Desalinated Water Using Modified Date Pits'.



Dr. Al-Nakeeb: The College of Education has had several outstanding undergraduate research projects funded by QNRF. The current one on 'Risk Factors, Lifestyle & Health Habits of Young Adults in Qatar' is one of the well-designed and executed projects. It involved eight undergraduate students representing the different colleges within QU. It was selected by QNRF panel of experts for the final stage of selecting the best projects. The final presentation was made on March 18.

Dr. Aouni: Our top projects are the ones on 'The Impact of Closing Conventional Banks' Islamic windows on Qatar Banking Sector Performance' and 'Qatari female corporate leadership - looking at current perspective and developing future strategies'.

Dr. Hammuda: We have several outstanding undergraduate research projects and each of them could conveniently be classified as top.

Dr. Alali: There are two cycles of UREP per year. We at CPH apply for each cycle. Since 2011 we have had 39 projects awarded. In Cycle 15th we had four projects funded (50% success rate). For the 17th Cycle, we applied for 9 projects. All of them address national priorities in health and could be considered as top projects.

Dr. Botchway: Our UREP grantees have worked on important topics such as Human Trafficking, Animal Welfare, Family Dispute Resolution, Environment, and Fiscal Regime for Oil and Gas, etc.

We initiated a program about three years ago to integrate research into our curriculum and require research paper as a significant part of the assessment. Last year, my colleague Dr. Talal Emadi guided students in the Investment Law class to do work relating to some of the transactions undertaken by the Qatar Investment Authority.

How projects are initiated

Dr. Ahmedna: For internal grants, we have two cycles in October and April. Students and faculty work together on developing a proposal which will then be reviewed. If it is more than $10,000 it goes to external review. For the external one, the students work with a faculty member and submit a research proposal that goes to a very competitive external review. When it is funded it comes back as an award from Qatar Foundation.

Dr. Yahya Al-Nakeeb
Associate Dean for Academic Affairs, College of Education

Dr. Al-Nakeeb: The project was initiated during a research methods course that I delivered to students from all the colleges in QU. The idea of this project came about as a result of a discussion that took place within the course on what are the current issues in Qatar that deserve to be investigated. The issue of sedentary lifestyle, lack of physical activity, high-caloric food intake, diabetes, and high levels of overweight/obesity among young adults appeared to be a top priority for research. The students themselves were behind initiating the whole idea of this research and the discussions that followed. Consequently, they were encouraged to put an application for UREP funding. Faculty members contributed towards refining the research proposal according to the guidelines set by the QNRF.

Dr. Aouni: The projects are mostly initiated by faculty members who look for suitable researchers among the students who can add value to the project. The selected students are trained to conduct research activities under the supervision of the faculty members.

Dr. Hammuda: We have two ways of initiating projects, either by faculty or by students. Sometimes students have an idea which they bring to the faculty and they both develop it and seek funding from UREP or university funding or industrial funding. In the college, training students in research is one of our key strategic objectives. We monitor it to make sure that a large portion of our students get exposed to research before graduation.

Dr. Alali: Usually when QNRF announces a new UREP cycle, I contact the faculty to know who will be applying. Since there are two cycles a year, some of our faculty members prefer the Fall cycle while others submit in Spring. They send me the abstracts and titles of their projects and how many students they think they can supervise or mentor for the project. We review those abstracts, list out the projects and invite students to indicate their interest and choose professors they would want to work with. The Faculty Research Committee reviews all applications; taking into consideration factors like GPA and study level, and subsequently takes a decision. In the 17th Cycle, we approved 27 students for the 9 projects we submitted to QNRF.

Dr. Botchway: Student research projects are initiated in one of two ways: curriculum requirement and student or faculty initiative. Our work on Animal Welfare in Qatar was purely the initiative of Dabia Maslamani, a student. It was she who came up with the idea.

Preparations/steps for UREP award

Dr. Ahmedna: Students and faculty will work closely and do their best in terms of the quality of their project and adherence to QNRF guidelines. For the first submission, it is basically a matter of matching the RFA and then doing your best in terms of submitting a very well written research proposal that addresses some of the national priorities of the country and also in line with the research priorities of Qatar University.

Dr. Al-Nakeeb: The first step is to select a research topic that is current, important and interesting to both students and faculty. It is always worthwhile to consider the research topics identified as important in Qatar National Vision 2030. The students need to be keen in getting involved and demonstrate willingness and commitment. They need to be genuinely motivated and not merely persuaded by their tutors.

Dr. Aouni: Good research question, good writing in accordance with the template, clear methodology, clearly defined roles for students and supervisors. The research topic should be relevant to Qatar. QNRF guidelines must be followed when preparing the research proposal. Topic should be original with academic and practical implications.

Dr. Hammuda: Most of the things we do may be informal but we talk about best practice in submitting proposals. Majority of our faculty are already research active and are not new to research and that gives us a head over other colleges as about 50% of UREP proposals from the University are from the college.

It is a built in culture in the college to work with students, develop proposals and submit.

Dr. Belaid Aouni
Associate Dean for Research & Graduate Studies,
College of Business & Economics

Dr. Alali: One important step is to align projects with QNRF priorities and those of Qatar University. The second is to have an internal review of the projects for scientific and technicality issues after which a feedback is given to the faculty to make the necessary changes. The project should be clear on engaging the students, the timeline, and the types of activities. We have to ensure each student that is involved has specific activities outlined since it is about enriching student research experience.

Dr. Botchway: The first is to start early; start thinking about it early and start preparing early. The second is to have an interesting project; a project which integrates theory with practice. Then both the faculty and students should be enthusiastic about the project.

Outstanding projects

Dr. Feras Alali
Associate Dean for Research & Graduate Studies,
College of Pharmacy

Dr. Ahmedna: We have some that have won awards. Some of these are mentioned under the list of top UREP projects mentioned earlier.

Dr. Al-Nakeeb: The findings of this project were presented by one of the participating students at an international conference in Amsterdam in July 2014.

Dr. Hammuda: We have a number of projects that have won awards. Our students have won international awards in many countries such as USA, UK, China, Malaysia, Philippines, Saudi Arabia, Oman, Jordon, the UAE, and Bahrain, among others. We have won the Shell-Eco-Marathon race, Microsoft's Qatar Imagine Cup and the International Ariel Robotics Competition.

Dr. Alali: Usually we select our best students for international conferences. Some of them travel for DUPHAT, an international conference in Dubai yearly; to conferences in Oman, Kuwait and several others. At the ICDDT conference on drug discovery in Dubai our student won the best poster award. On a yearly basis one or two or three of our students win prizes and awards. This year, four of them covered by UREP won all the four poster prizes at a meet in Oman. At the UREP final competition this year, three won the best poster prize in the Medical and Health Sciences category and ranked 2nd overall.

Dr. Botchway: Our animal rights project got international recognition. We got a visit by a team from Spain, (a German and Italian belonging to a group called Animal Angels). They invited us to Spain to speak on some of the issues. The second one which won national recognition was done by two of our students in labor law and investment law. They won an award from Oxford University Press for outstanding performance.

High performing students

Dr. Ahmedna: It is difficult to group our students because they are all potential high performers. We have a diversity of grants in the humanities, social sciences and the sciences. Invariably there are projects which do better than others in terms of presenting their findings at meetings, publishing and earning awards. Overall, UREP is about undergraduate research experience. So it is the experience that matters as it equips our students with hands-on research skills that make them more competitive in the job market or graduate education.

Dr. Al-Nakeeb: All the eight students who were involved in this project made some significant contributions towards realizing its outcomes. Some of them who are still to complete their degrees at QU are considering further involvement in future UREP projects. Moreover, a couple of them are currently considering following this line of research in the future for a master degree or PhD. Considering that this was an undergraduate project conducted by students with no previous research experience, the outcome is quite remarkable.

Dr. Aouni: In the College of Business & Economics, our high performing students in research include Abdul Ahad Abdul Basith, Omar Muhammad Al-Musfir, Riduanur Rahman Qureshi and Ismail Abdulhameed Al-Ansari.

Dr. Hammuda: A good percentage of our students have been participating in major events like Shell Eco-Marathon and QNRF annual conference, Microsoft's World Imagine Cup; International Ariel Robotics Competition in China. Some of our students represented the Arab world at the Imagine Cup World Wide Finals in Seattle, USA last summer with their project "Humanoid Robotic Platform for Autistic Children" . Very recently one of our students from Architecture & Urban Planning Department won the 1st prize of Prince Sultan bin Salman Architectural Heritage Award.

Dr. Francis Botchway
Associate Dean for Research,
College of Law

Dr. Alali: We have about 12 students working on four projects.

Dr. Botchway: Some of our high performing students include Khalid Shamari, currently graduate student at Indiana Law School who won OUP prize for outstanding performance; Sara Sultan al Nuaimi, won OUP prize for outstanding performance; and Dabia Maslamani who won Dean's Prize for Research for her UREP work on animal welfare. UREP grants have also been won by Noor Mohammed Al Mulla, Haneen Yousef, Sajeda Abufara, Fatma Magded, and Aisha Abdullah Emadi who worked on human trafficking.

Involvement in UREP

Dr. Ahmedna: We were among the first to get involved in UREP along with College of Engineering since the first cycle. We have been recording good rate of success over the years in terms of receiving funds and the success of our students at competitions and in terms of publications.

Dr. Hammuda: In the first Cycle, we were the highest in the university with submitted projects. We won the first UREP award in the country in the first cycle. UREP started in 2007 and we had the highest in all aspects – submissions and awarded projects. The College of Engineering had 14 out of 25 submitted by QU in the first UREP Cycle. In the recent UREP 17th cycle awards, the College of Engineering got 50% of all projects awarded to Qatar University. The college's strategy is to ensure active engagement between faculty and students in research and development.

Dr. Alali: We had our first UREP projects in 2011. The College of Pharmacy was established in 2006. We waited until the students reached 3rd or 4th year before we started participating. Beyond this, per capita, per faculty or per student we are among the most engaged in research. In the 17th cycle, we have 27 students engaged in UREP projects out of a total of 120 students in the college. That gives us 25% of our students in only one cycle. Between the two cycles each year, almost 50% of our students would apply.

Dr. Botchway: My colleague Dr. Hassan Elbarrawy won a UREP award before I joined the college. That would have been before 2010. Since then, my colleague Jon Truby has won two grants, Dr Imad Kattan, myself and Melissa Deehring Moutouche also won different grants.

Challenges in managing students

Dr. Ahmedna: The main issue has been with students managing their time in terms of getting the deliverables done while they are doing other things such as completing their curriculum requirements. At times, we have had a turnover when a student graduates or leaves and we have to find substitutes to replace them.

Dr. Al-Nakeeb: Having eight students from different colleges working on an empirical research involving over 800 students across the 8 colleges in QU was a major challenge. This project could not have been done without having that number of students because the participating sample had to be representative of all the colleges. Also, the project required researches to carry out several tests and measurements on a significant number of participants using a range of equipment. Additionally, taking some personal measurements such as height, weight and body mass index required a very thoughtful and sensitive approach on the part of the researchers.

Dr. Aouni: Time is the greatest challenge. One year is clearly not enough as the students have other commitments including exams. The students encounter difficulty in conducting surveys. Also, it is difficult for the student to manage UREP research load and course work at the same time.

Dr. Hammuda: We create awareness and encourage students to participate. The biggest challenge is to ensure that research experience is transferred to the students. The more students get involved, the more they

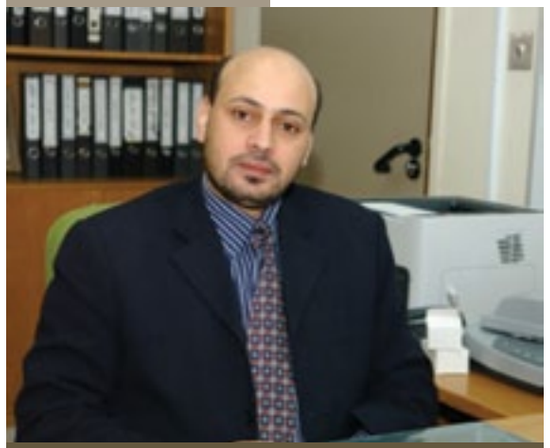
learn. Sometimes students are in their last year and they get busy because of their high academic load and may withdraw after sometime. Also, we make sure our faculty transfer their research excellence into class rooms and integrate it with teaching.

Dr. Alali: The first challenge is in the time needed to conduct research and supervise students. Our faculty members are engaged in other activities, mainly in teaching and their own projects. As a result the time left for the supervision of undergraduate research is a bit limited.

It takes a lot of time and efforts to apply for UREP projects and align students' desires when sometimes fewer projects attract the interest of a large number of students. Sometimes travel consumes a big percentage of the budget. Students may be fairly treated while faculty might find some shortage in their budget for travel.

Dr. Botchway: It is important to keep the students' focused as they are busy with other academic engagements. That is the main challenge. Sometimes faculty members also tend to be very busy with teaching, research, administrative or service engagements and might not devote as much time to the UREP work as they should.

How many projects this year?



Dr. Abdelmagid Hammuda
Associate Dean for Research and Graduate Studies, College of Engineering

Dr. Ahmedna: In the first cycle of this year (UREP 17), the College submitted 18 projects of which 9 were funded or 50% success rate, the highest at Qatar University. The application process for the second cycle of this year has not started yet."

Dr. Al-Nakeeb: Currently, the College of Education has three ongoing projects with a few others waiting approval by QF.

Dr. Aouni: We are having only one project this year.

Dr. Hammuda: For UREP Cycle 16 we had six projects awarded. In Cycle 15 we had 14. So this year we have 20 UREP projects.

Dr. Alali: This year we already have four awarded projects. Last semester we applied for 9 projects. We are hopeful that 50% of them would be at least awarded.

Dr. Botchway: We have one ongoing UREP project on oil & gas resource finance. We applied for two – on citizenship status of children born to Qatari women, and on anti-corruption. Some of my colleagues have also applied for student grants with students.

Evaluation of students

Dr. Ahmedna: There are periodical reports that spell out students' accomplishments and plans for the next period. Their evaluation is typically done via the reporting process through the Qatar Foundation system. It allows us and the funding agency to see if they are progressing satisfactorily on their timeline and work plan.

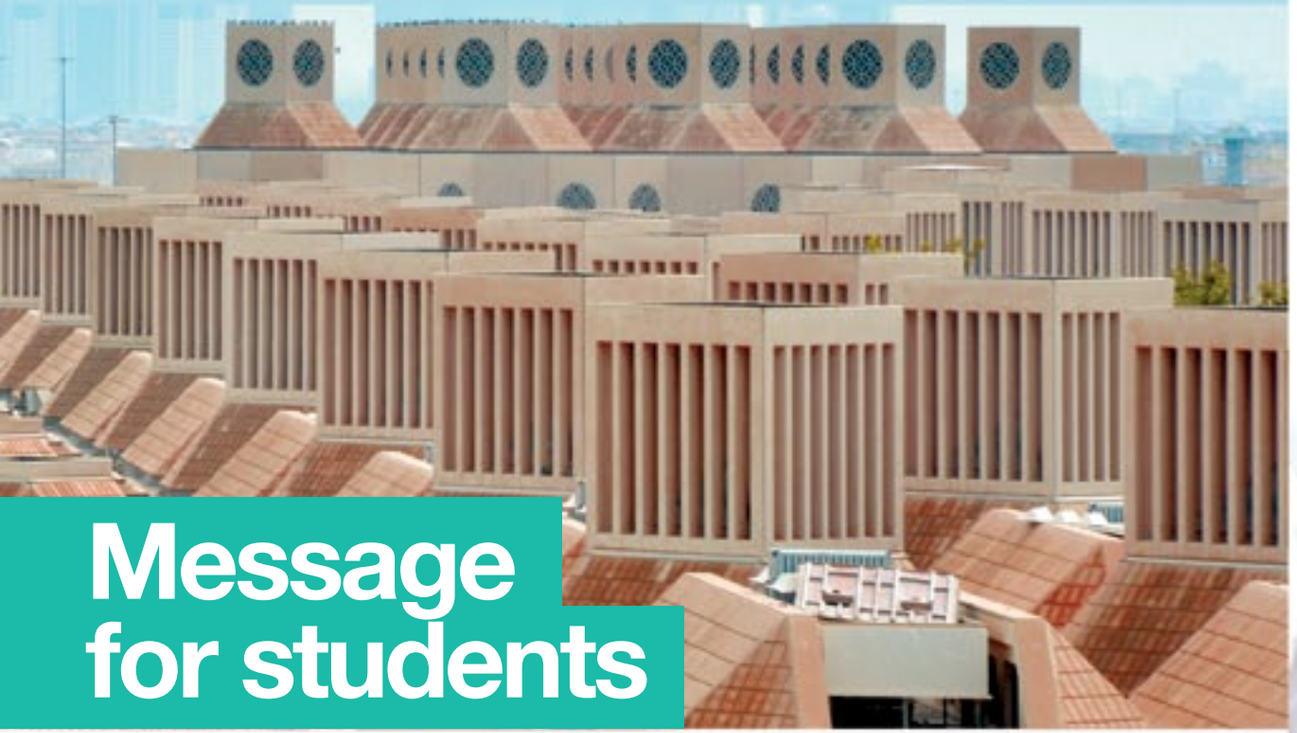
Dr. Al-Nakeeb: Through their actions, they demonstrated their knowledge and understanding of the research procedures and exhibited commitment and future research potential. They evidenced the quality of their research skills, the integrity of their approach in data collection and their ability to take initiatives when needed. Members of faculty involved in the research provided feedback to the students and demonstrated to them the procedures used in ensuring validity of the collected data.

Dr. Aouni: The UREP holders have a time plan spelled out according to objectives and missions assigned to different students. They are assessed against this time plan.

Dr. Hammuda: We are doing very well. But I think we can do better. There are a good number of students already participating.

Dr. Alali: We measure this by the outcome. Some students publish papers with their professors while others travel to international conferences and win awards.

Dr. Botchway: Those who are involved in research are very good. They turn out to be the cream of the class. We are encouraging more and more students to be interested in research.



Message for students

Dr. Ahmedna: What makes students stand out is the extra thing they do. UREP is a great cap they can wear because beside their degree they can say 'I completed a research project with this level of accomplishment'. That will make the person stand out as somebody who has done something extra that others did not do. If they won a UREP award, it's another star on their shoulder.

If it happens that they are published it's even a greater star because they are more likely to be accepted in the graduate school. If they presented at a national meeting, that's another star because employers would prefer somebody who was able to present and defend their ideas in terms of communications skills. Even getting involved with faculty in research that is not funded is an extra thing that will help the student.

Dr. Al-Nakeeb: Simply put, research is important in all fields of study. Through research we can extend the boundaries of existing knowledge and ultimately help in improving our understanding of natural phenomena and human behavior as well as enhance the quality of life.

Dr. Aouni: Research is national priority and of high importance to Qatar. When students participate, it enhances their CV and career. Also, the faculty members continue insisting on how this experience is important for knowledge creation.

Dr. Hammuda: This is an opportunity given to you by Qatar University and the Qatar National Research Fund which is not available to many students overseas. It is very much enriching. You should not miss it. Maximize the benefits.

Dr. Alali: Research is an essential component of pharmacy education. It is no more like the traditional way of teaching where research was looked upon as a postgraduate experience only. UREP is an intensive experience. If they get a publication it will distinguish them from graduates of other schools. It will enable them after graduation to initiate research wherever they work. They learn to be good communicators, professionals and leaders.

Dr. Botchway: It is very important for students to be interested in and engaged in research. They learn essential skills and often contribute to societal development. In law we say that the best lawyer is not the one who knows the law, because you can't know all the law, but the best lawyer is the one who knows how to find the relevant law.

My research is in the direction of QNV 2030, says Maryam

Maryam Abdulali Abdulla, a senior Qatari student of Environmental Science (Biotechnology) graduated from the Department of Biological and Environmental Sciences in Fall 2014. Before graduating, she had under the supervision of Dr. Jassim A. Al-Khayat, associate professor in the Biological and Environmental Sciences Department at Qatar University, did a study on 'Biodiversity and Distribution of Benthic Macro-fauna Community from Mangrove Swamps and Saltmarshes in Qatar'.

It dealt with the distribution and biodiversity of the macrobenthos fauna living within the natural mangrove of Avicennia marina, saltmarsh and replanted mangale. Between October 2013 and March 2014, Maryam in her project compared the relevant features of the abiotic and biotic environments of these habitats. Her measurements of total sediment organic matter and grain size indicated that the natural mangrove sites have higher organic matters and lower grain size. There were obvious differences among the community structures in the natural mangrove, saltmarsh and replanted mangrove sites.

Some crab species like Scopimera crabricauda inhabit sandy areas of the upper shore at all areas. Where this substrate contained a higher proportion of mud, Nasima dotilliformis is found present at natural mangrove and saltmarsh areas, but absent from planted mangrove where the habitat is not available.

This result implied that the different ecosystem sites had different effects on the macrofauna communities and shed light on the macrofauna adaptation capability to specific habitats. Maryam believes that her applied research would highly contribute to the realization of the objectives of the Qatar National Vision (QNV) 2030 and the sustainable development of the country. "This type of research will help Qatar University to achieve high level ranking among other competing universities," she adds.

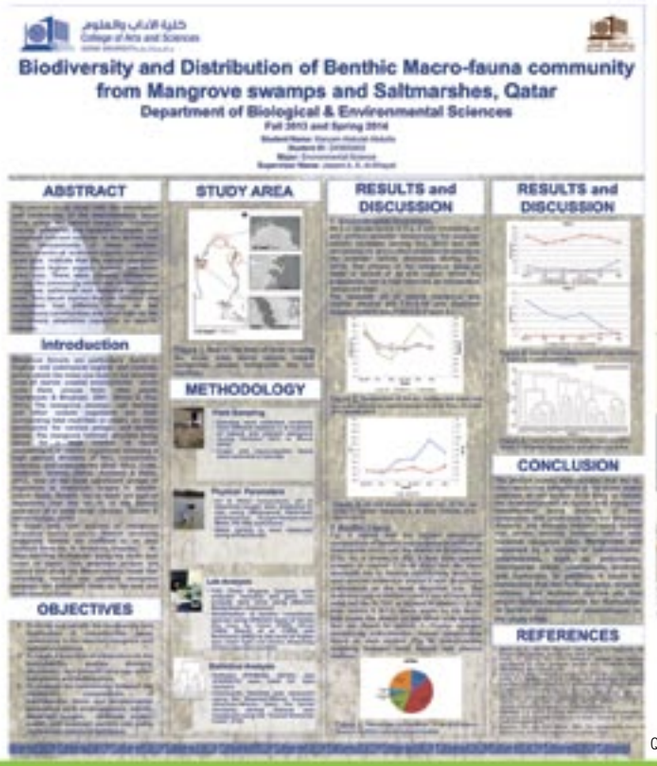
She said Dr. Al-Khayat was not only a supervisor but also acted like a father to her and treated her as a daughter. "I have never felt uncomfortable with him because he is very kind and friendly. I would like to extend my deepest gratitude to him for his encouragement, guidance, advice and suggestions which led to the completion of the work," she said.

According to her, she learned so many things from Dr. Al-Khayat; first being "how to be modest even if you are in a high position or have the highest degrees". She also imbibed the attribute of being willing to share knowledge with those who need it and not being selfish with it.

She made a first presentation about the project in the beginning of Spring 2014 semester to explain to her department what the research was really about. In the final presentation she explained the results and outcome of the research before the whole Department of Biological and Environmental Sciences.

Maryam believes firmly that the youth can contribute meaningfully to the development of the society through research because most of the research by undergraduate students at Qatar University related directly or indirectly to the environment, health and social issues.

Following on this, she encourages all students of Qatar University to go for any research idea they can undertake in their fields of study because they would get all the support, encouragement and help they need. She said her work which was based on field work would ginger other female Qatari students to venture into such research in the future.



Students assess impact of QCB directive on banks

Ismail Abdulhameed Al-Ansari, senior student of Finance with minor in Accounting, and five other students from the College of Business and Economics are working on an Undergraduate Research Experience Program (UREP) project titled, 'The impact of closing Islamic windows within the conventional banks on Qatar banking system performance'. The project which started in 2014 is expected to be finished in mid-2015. It aims to study the impact of Qatar Central Bank's (QCB) directive on banks' performance.

The other participants are Abdul Ahad Abdul Basith, Fayrose Malik, Omar Muhammad Al-Musfir, Ahmed Haseeb, and Riduanur Rahman Qureshi.

Their supervisors are Dr. Anas Al Bakri of the Department of Management and Marketing, and Dr. Mohammed Elgammal of the Department of Finance and Economics.

The team is using empirical analysis to do performance evaluations for microeconomic, macroeconomic and financial indicators of Islamic and conventional bank to study the impact of the rules and directives issued by the central bank.

The project seeks to define the advantages of having Islamic windows in conventional banks and the associated disadvantages on the economy before the QCB's decree of segregation.

It is also seeking to establish how the decree affects the size of both conventional banks and Islamic banks, and access the impact of closing Islamic windows on banks' profitability, loan growth, asset growth and stock returns

Ismail said the team's research work would be of benefit to researchers with interest in the Qatari economy in the future, as it would enable them to understand it more and get beneficial insight into the differences between Islamic and conventional banks.

It would also, he said, reflect the importance of both types of banks through the effects of the QCB decision. Because it is first-of-a-kind, Ismail and his team members will be working a new paper on the topic.

"Without doubt, working in a team is a good experience as it helps you learn problem solving skills. For instance, some students are able to understand and analyze historical data and also use some sophisticated computer applications and databases such as Bloomberg and SPSS," Ismail says. "I wasn't familiar with the empirical analysis and data collection process. But because of my team, I learnt all the skills and understood how to use them efficiently. Since everyone is sharing knowledge, you find yourself learning even more."

According to Ismail, the team's relationship with the supervisors has been cordial and professional. "They are providing us the guidance that we need. They play an important role by giving ideas and alternatives. They offer clear strategies so my colleagues and I can do the practical work of achieving them. They have had a significant impact on me; I learnt a lot from them to become a team player."

In spite of the tough challenge of collecting quantitative and qualitative data and analyzing them, and using empirical models, there have been many new results, Ismail said. He is confident that the outcomes of the project would benefit all researchers interested in Qatar's economy.

He said a student, Omar Muhammad Al-Musfir and the two supervisors participated in the World Finance & Banking Symposium in Singapore where they discussed some of the early findings of the project.

"We are planning to give a presentation about our current findings in Dubai soon. A student, Abdul Ahad Abdul Basith will be participating in the forum," said Ismail who is optimistic of participating in future events after finalizing the paper.

"The youth represent an important segment of the society and the level of knowledge we get can surely qualify us to achieve good results given the availability of resources. We can do a decent job with the help of the expertise of our professors," Ismail adds.

"With Qatar investing heavily in human development and research funding, the outcomes are outstanding when compared with the numbers from the other GCC countries.

8 students investigate lifestyle attributes with teamwork

A group of eight undergraduate students, representing all the colleges in Qatar University, have investigated the risk factors associated with non-communicable diseases among young adults in Qatar. Their study titled 'Risk Factors, Lifestyle & Health Habits of Young Adults in Qatar' was made possible with UREP grant from Qatar National Research Fund. The project which started about a year ago was nominated by the QNRF panel of experts for the final stage of the UREP competition that was held on March 18.

The students – Wafa Trad, Asma Al Maadeed, Alanood Al Qahtani, Dalal Al Shammari, Hassan Al Ghanim, Moustafa Ali, Lolwa Eisss and Mohammad Mansour are mentored by Prof. Yahya Al-Nakeeb, Associate Dean for Academic Affairs, College of Education. Team leader, Wafa Trad, a student of International Affairs with concentration in Diplomacy and International Security and minor in Translation, believes that "being a part of this research is a lifetime experience, both at the academic and practical levels".

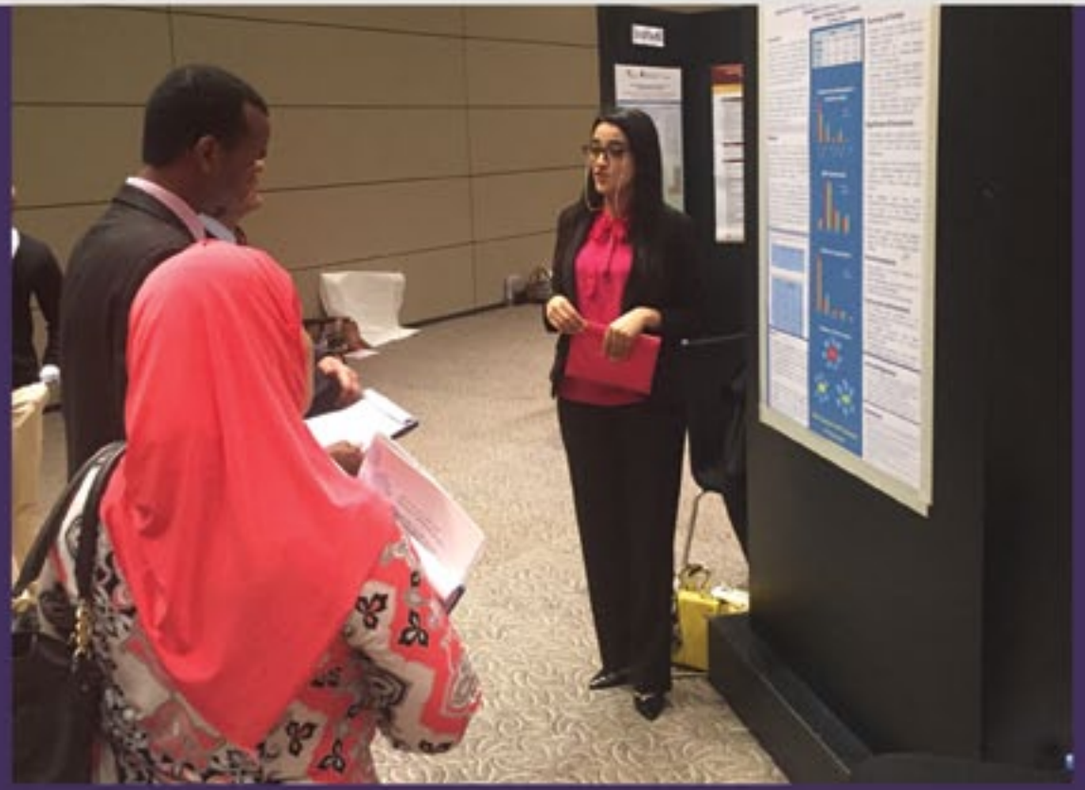
The project has already recorded some worth-mentioning achievements. Wafa made a presentation of it at the European Congress of Sport Sciences in Amsterdam on July 2014. "It was a great pleasure to be represented among the few Arab countries that participated in the international conference," she said.

Also, the research outcomes have been published in the International Journal of Environmental Research and Public Health. According to Wafa, the project aims to explore the risk factors associated with some non-communicable diseases among young adults in Qatar. To this end, dietary habits, body mass index (BMI), waist circumference (WC), smoking and physical activity (PA), were assessed using a cross-sectional, mixed-method, and a random sampling technique. The sample was drawn from Qatar University students (aged between 18 and25), a representative sample of the different colleges in QU with the actual ratio of males and females taken into consideration.

"As a relatively large team, we faced some challenges mainly logistic, especially as it concerned arranging meetings which was never an easy task considering the fact that we are not from the same specialization, and have different, if not contradicting schedules," Wafa said. She said the team encountered issues in respect of getting permissions to install equipment for the measurement of BMI and WC, and moving them from one building to the other. Data uploading was also another significant challenge. "We had to make sure of every piece of information (including the name, weight, student ID number… etc as contained in 734 questionnaires. Hence, we had to disregard few incomplete questionnaires, or those that contained inaccurate or false information,' Wafa added.

She premised the success of the research on two cornerstones; firstly, the great effort of their mentor Prof. Nakeeb in managing a large team and dealing with their different academic backgrounds, capabilities and different schedules, and most importantly, the team's responsibility and commitment (as researchers) to be dedicated and hardworking.

"There is no doubt that this experience has been a valuable opportunity. We were trained on conducting research; including the planning, the process of data collection and uploading, team work, the use of some clinical equipment and of course being introduced to research ethics. So with my experience I really encourage every student to get involved in a research project."



Pharmacy students look at side effects of Letrozole

Three pharmacy students, Nurhan El-Shafey, Dina Abushanab and Fatima Hazi, under the supervision of Dr. Husam Younes, Associate Professor of Pharmacy in the College of Pharmacy, took up the challenge of exploring solutions to the major side effects of Letrozole and the associated problems in cancer treatment. Letrozole (LZ) available in Qatar as Femara, film coated 2.5 mg tablet, is an oral non-steroidal aromatase for the treatment of hormonally-responsive breast cancer after surgery.

The research team in the Pharmaceutics and Polymeric Drug Delivery Research Lab (PPDDRL) is currently developing a new more controlled drug delivery system which uses an alternative route of administration to the oral route and permits constant dosing to eliminate the peaks and valleys in medication level that are associated with the marketed orally-administered form of LZ. Nurhan who spoke on behalf of her colleagues said that the project was mainly to develop a sensitive and specific method for the analysis of LZ in the blood since it is a crucial step in conducting the needed in vivo animal diffusion and pharmacokinetic studies.

With what she and her colleagues had done, Nurhan believes "that our investigational method for LZ analysis will open the door for new clinical trials on human and detect as well the possible metabolites and degradation products in an accelerated stability study."

She said the project would help in accelerating the process for the development of a new method for LZ drug delivery which will eliminate many problems associated with this particular, however, important medication in treating breast cancer.

The students in the course of the project became convinced of the necessity of incorporating learning into actual practical experience, 'thus ensuring that developing skills is an acknowledged and respected learning outcome," Nurhan said.

"I was involved in an intensive training session on the use of the LC-MS-MS system in close collaboration with Dr. Saeed Al Meer, the director of the Central Laboratory Unit at QU. Moreover, I attended more than one session by a specialist to train me and my colleagues on the practical use of the LC-MS-MS machine and the software for the sake of operational and data analysis." The team developed a poster for the project that was presented by Fatima Hazi at the fifth International Conference and Exhibition on Pharmaceutics & Novel Drug Delivery Systems conference held in Dubai on March 15-18, 2015.

On the contribution of the youth to the meaningful development of the society through research, Nurhan said: "I strongly believe that youth's active and meaningful participation in research will be of crucial importance. Meaningful youth participation and leadership require that young people from various social backgrounds and with various needs should have the opportunity and capacity to get involved in all aspects of their own development and that of their communities."

She said the youth must be empowered to contribute to informed decisions about their personal, family, social, economic, environmental and political development. "It further requires that young people have the possibility to work together with adults, as equal partners and on a sustainable basis, in matters related to them. Realizing young people's right to participation will be particularly vital to ensure the achievement of internationally agreed development goals," she added. She expressed gratitude to Dr. Husam for giving her and her colleagues the opportunity to be part of his research team. "It was really a privilege working and learning from him," she said. She also expressed appreciation on behalf of her colleagues to Mr. Fathi Atia and Dr. Rym Skanji for their help and support.

Development and Validation of Stability and Bioavailability Indicating LC-MS/MS Method for the Determination of Letrozole in Biological Fluids