



**Annual Report  
Faculty of Science  
(Debbieh and Tripoli Branches)  
2017-2018**

## **I. REFLECTION**

In the academic year 2017-2018, the Faculty of Science has been active in teaching, research, establishing new laboratories, and extra-curricular activities. The teaching has been performed according to the guidelines set by BAU Quality Assurance unit. Research also has been quite active in the faculty where over 100 peer-reviewed articles have been published. The faculty has also contributed to the university extra-curricular and community service activities.

## **II. TEACHING AND LEARNING**

Following the international benchmarks and surveying the local and global job markets and society needs, the Faculty of Science is continuously improving its programs and introducing new programs.

- A new graduate program leading to a Master degree in Applied Statistics has been launched. It will start in Fall 2018/2019 at BAU - Beirut campus.
- The faculty also launched the Applied Statistics Center that serves BAU and Non BAU communities in terms of data and statistical analysis.

## **III. HIGHLIGHTS**

### **Academic events:**

- On October 6<sup>th</sup>, 2017: a seminar about “Awakening the Sleeping Giant Within” was organized by the Faculty in Debbieh and was given by Mr. Malih Al-Yaman.
- On October 2017: The Department of Physics represented by the dean Prof. Dr. Ramadan Awad and Dr. Mohamed Salem participated in the fourth International Conference on Advances in Biomedical Engineering (ICABME) at the Lebanese University.
- On October 2017: Series of seminar organized by the department of Biological Sciences were given by Master and Ph.D. students.



- On October 25<sup>th</sup>, 2017: Dr. Borjac organized a conference pertaining to her PEER grant entitled: "Hand in Hand Towards a Better Environment". Previous Kaemakam of Tyr, Mr. Kabalan; Head of Klayleh municipality, Mr. Hassan; NGO, Mr. Khalifeh, PI of project Dr. Borjac and Dr. Baydoun presented talks pertaining the pollution problem in Lebanon. Representative from ministry of Environment, representative from USAID, NGOs, faculty members and students from AUB and BAU attended the conference.
- On October 27<sup>th</sup>, 2017: The Faculty organized in collaboration with the Embassy of Japan in Lebanon a lecture that was given by the famous Japanese robotics professor Hiroshi Ishiguro from Osaka University-Japan entitled "Android Philosophy" at BAU.
- On November 8<sup>th</sup>, 2017: A seminar entitled "Antibiotic restriction & policy" was given by Dr. Marwan Othman from the Lebanese University
- On November 8<sup>th</sup>, 2017: A seminar entitled "Silicone –The backbone of technology" was given by Dr. Naim Obeid from Saarlandes University-Germany.
- On November 8<sup>th</sup>, 2017: A seminar entitled "Steps in Scientific Research" was given by Dr. Saer Alwan from Al-Jinan University.
- On November 11<sup>th</sup>, 2017: A seminar entitled "Communication skills: a closer look into the basics" was given by Dr. Mohamed Issa, Faculty of Pharmacy, Beirut Arab University.
- On November 15<sup>th</sup>, 2017: A seminar entitled "Breast Cancer in Lebanese Population" was given by Dr. Samer Hamwi, Head of Biology Department Lebanese University -Tripoli.
- On December 7<sup>th</sup>, 2017: The Mathematics and Computer Science Department organized a workshop entitled "Smart cities and Urban Planning". The workshop was an opportunity to hear about the latest advances in this field and to connect with potential collaborators. Dr. Carl Adams from the University of Portsmouth, Dr. Ayman El Hajjar from the University of Westminster in London, Dr. Haidar Safa from the American University of Beirut and Dr. Osama Omar from Beirut Arab University were the four main speakers in this workshop.
- On December 21<sup>st</sup>, 2017: Dr. Mohamed Salem from the Department of Physics was interviewed by Hariri-II high school teachers and students about the peaceful use of nuclear energy.
- On February 2<sup>nd</sup>, 2018: A workshop on Biomedical Research was organized by the Faculty of Science Tripoli campus, in collaboration with the Doctoral School for Science and Technology (DSST), Faculty of Engineering, Lebanese University & IEEE Engineering in Medicine & Biology Society (EMBS). The workshop featured talks from distinguished speakers: Pr. Catherine Marque from University of Technology Compiegne, France, Pr. Guy Carrault from University of Rennes, France, Dr. Aya Kabbara from the Lebanese University, Doaa Ghareeb and Dr. Bilal Osta from BAU.



- On February 23<sup>rd</sup>, 2018: A seminar entitled “From Development to Deployment: The Future of Web Apps” was organized by the Department of Mathematics and Computer Science and was given by Dr. Frederic Abdo from USJ.
- On March 16<sup>th</sup>, 2018: A seminar entitled “Technological Innovations and the Changing Face of Education Welcome to the iWorld” was given by Dr. Ferial Khaddage from Deakin University, Australia.
- On March 27<sup>th</sup> and 28<sup>th</sup>, 2018: The Faculty of Science organised the "1<sup>st</sup> Student Innovation and Research Conference for Arab Universities and Schools". It included different workshops on environment, materials science and education. More than 500 students from more than 5 countries representing around 12 universities and 23 schools participated in this conference. More than 20 awards including cash money and scholarships were given to winning projects.
- On April 20<sup>th</sup>, 2018: A seminar entitled “Cryptocurrency is it money 2.0 ?” was organized by the Department of Mathematics and Computer Science and was given by Eng. Ali Askar co-founder of Raqmiya.
- On April 24<sup>th</sup>, 2018: the Department of Mathematics and Computer Science organized a workshop entitled “Applied Statistics Day”. The aim of the workshop was to provide a platform for exchanging new ideas and results in Applied Statistics. Six speakers, three from AUB, one from USJ, director of LebanoStat, and Dr. Seifedine Kadry from BAU gave different talks in the workshop.
- On June 7<sup>th</sup>, 2018: A presentation entitled “Huawei ICT Competition” was organized by the Department of Mathematics and Computer Science and was given by Mr. Taj Hsing Managing Director, Enterprise Business Group & PR Dept., Huawei Technologies Co., Ltd. Levant Region.
- On June 27<sup>th</sup>, 2018: A presentation entitled: “What you don’t know about climate change” was given by Prof. Hisham ElAskaray from Schmid College of Science and Technology, Chapman University, USA.
- On August 13<sup>th</sup>, 2018: A seminar entitled “Predictive Analytics and the Internet of Things (IoT)” was organized by the Department of Mathematics and Computer Science and was given by Dr. Raed Al Kontar from University of Michigan, USA.
- Several astronomical observation events were organized at the observatory located in BAU - Debbieh campus targeting students from different Lebanese high schools.
- Several visits to the Physics, Chemistry and Biological Laboratories were arranged for different Lebanese high schools from different regions of Lebanon including Houssam Eldine Hariri High School-Saida, Makassed High School-Saida, Iman High School-Barja,



### Extra-curricular events:

- On September 28<sup>th</sup>, 2017: A welcome party was organized at Debbieh campus for new students joining the Faculty of Science.
- On October 14<sup>th</sup>, 2017: A Sport Day was organized for students at Debbieh campus.
- On November 2<sup>nd</sup>, 9<sup>th</sup> and 16<sup>th</sup> 2017: All departments of the Faculty participated in the open doors to introduce high school students to the university where several educative experiments were presented to the students.
- On March 17<sup>th</sup>, 2018: A scientific visit was made to the laboratory of Chamber of Commerce, Industry and Agriculture Tripoli and North Lebanon.
- On April 28<sup>th</sup>, 2018: The Department of Biological Sciences organized an Environmental and Entertainment trip to Arsoun Village.
- On May 3<sup>rd</sup>, 2018: The Faculty of Science and Faculty of Engineering organized a workshop entitled “Earth Day”.
- On Jun 1<sup>st</sup>, 2018: An Iftar was organised for the Faculty of Science Alumni at BAU Beirut campus. One hundred twenty alumni attended the Iftar along with the Faculty members and the Faculty of Science advisory board.

### Participation of the Faculty of Science (academic and extra-curricular activities)

- The dean Prof. Dr. Ramadan Awad was selected as a member of the scientific committee of the international conference entitled “Advanced Materials Science and Nanotechnology” which was held in Dubai between 17<sup>th</sup> and 19<sup>th</sup> June 2019.
- On October 18<sup>th</sup>, 2017: The Medical Physics Students visited El Hariri Hospital.
- On November 3<sup>rd</sup>, 2017: The department of Chemistry organized a visit to the department of Scientific Investigation of the Lebanese Internal Security Forces.
- On November 24<sup>th</sup>, 2017: The department of Chemistry organized a visit to BMA Paint Company.
- From November 27<sup>th</sup> to December 1<sup>st</sup>, 2017: Dr. Mohamed Salem participated in the intensive international training program” JINR Expertise for Member States and Partner Countries” in Dubna, Russia.
- On March 7<sup>th</sup>, 2018: The Computer Science students participated in the VEX robotics competition.
- On March 20<sup>th</sup>, 2018: Dr. Jamilah Borjac visited three schools in Southern Lebanon, gave lecture about pollution and environment, and distributed gift to students who participated in an announced competition about pollution pertaining to her PEER cycle 5 Grant.
- On April 25<sup>th</sup>, 2018: The Computer Science students in Tripoli branch participated in the Theemar startup competition.



- On April 27<sup>th</sup>, 2018: The Mathematics and Computer Science Department organized in collaboration with the Alumni office the BAU Mobile Application Fair.
- From April 29<sup>th</sup> to May 4<sup>th</sup>, 2018: The Departments of Physics and Chemistry participated in the 6<sup>th</sup> International conference on superconductivity and magnetism (ICSM2018), Antalya-Turkey. The dean Prof. Dr. Ramadan Awad made an oral presentation entitled: “Excess Conductivity and Magneto conductivity Analysis of (Bi,Pb)-2223 phase superconductor added with NiO nanoparticles” and 14 poster presentations were done by other participants.
- On May 4<sup>th</sup> and 5<sup>th</sup>, 2018: Several students from The Department of Physics participated in a workshop at the American University of Beirut entitled “1st National Workshop on Innovative Materials and Applications (NWIMA)” and Dr. Walid Malaeb presented a talk entitled: “Investigating the properties of high-temperature superconductors added with nano-sized particles”.
- On May 13<sup>th</sup>, 2018: The Computer Science students participated in the ‘Tripoli’s Coding and Robotics’ competition.
- On May 12<sup>th</sup>, 2018: Students from the Mathematics program participated in the LAU Math Competition.
- From May 14<sup>th</sup> to May 21<sup>st</sup>, 2018: Several scientific talks were given by Dr. Wassim El Hajj at the University of Primorska, Slovenia. The visit was through the Erasmus+ exchange program.
- On July 13<sup>th</sup>, 2018: Dr. Walid Malaeb from the Department of Physics gave a talk entitled: “Overview of Advanced Photoemission Spectroscopy Studies on Novel Superconductors” for graduate students at Keio University-Japan.
- On July 5<sup>th</sup> 2018: Dr. Walid Malaeb from the Department of Physics was appointed by the Embassy of Japan in Lebanon as a member of the jury that selects students who receive the Japanese government scholarship.

#### Publications:

- Department of Physics: **45**
- Department of Mathematics and Computer Science: **43** publications.
- Department of Chemistry: **21** publications.
- Department of Biological Sciences: **4** publications

#### Community Service:

- On November 2<sup>nd</sup>, 2017: A seminar was organised by the Faculty of Science with the participation of the **Association of Lebanese Industrialists** represented by Dr. Fadi El Jemayel, the Iklim finance and investment Fund, and the Federation of Municipalities and Merchants Association of Iklim El Kharoub to discuss ways of cooperation between the concerned bodies and the Faculty.



- From November 4<sup>th</sup> to November 12<sup>th</sup>, 2017: Two workshops were organized in collaboration with the Youth Leadership Development Program (YLDP) for students from different high schools in Saida to prepare them for the 2018 summer training camp at Debbieh Campus.
- From August 1<sup>st</sup> to August 12<sup>th</sup>, 2018: The Faculty of Science participated in the organization of the first International Youth Leadership Camps at Debbieh campus. These camps included about 200 young participants and were dedicated to the development of capabilities and creativity among the youth through development activities and training courses with elite entrepreneurs, namely Arshia Tayyab Computer Consultants International Chief Executive Officer, Claude Comair Founder of DigiPen Institute of Technology and co-founder of the Nintendo Software Technology Corporation as well as American astronaut Donald Thomas, who holds the world record for the longest stay on board a space station, to help them integrate their goals and experiences into the real world and achieve utmost benefit in their professional lives.

#### IV. COLLABORATION

During the academic year 2017-2018, the Faculty of Science kept the old collaborations and has established several new collaborations. The new collaborations are:

- A new collaboration with the Medical Physics department at CancerCare Manitoba in Canada. Ms. Yara Kady, a graduate student enrolled in the Master of Science program in Medical Physics at our Faculty undertook from July, 3<sup>rd</sup> to August 31, 2018 an eight-week research training program at the division of Medical Physics in CancerCare Manitoba (CCMB)-Canada.
- Renewal of the memorandum of technical and academic cooperation with the Lebanese Atomic Energy Commission (CNRS-L).





## V. ASSESSMENT UPDATES:

Assessment work aligned with the University Strategy:		
Strategic Area	Objective	Accomplishment
Achieving Excellence in Research	To deliver high quality research. To deliver research that aims to solve society problems and concerns.	Maintenance of TGA and GC-MS machines in the Chemistry laboratory and training students to use them  Acquiring new AAS machine, FTIR, NaI(Tl) detector, Mechanical Tensile Machine.  The Department of Biological Sciences launched the Tissue Culture laboratory.  Moreover, the Faculty updated existing laboratories with new instruments and computers where two new workstations were added to the computational research laboratory.
Achieving Excellence in Teaching	To deliver high quality teaching and distinctive curricula in the different programs. To preserve all the data concerning courses and exams.	The Computer Science program has assessed its courses based on the ABET guidelines. Based on the results of the assessments, improvements were suggested to achieve better results in student performance. Other programs have assessed their courses as well, and course folders for all offered courses are prepared following the guidelines of the BAU Quality Assurance Unit.
Responding to market needs	To graduate students in new skills and expertise that are highly needed in the market nowadays.	The Faculty of Science has launched a new graduate program in Applied Statistics.



Faculty Assessment Work		
Area	Objective	Accomplishment
Improving Teaching	To continuously improve the curricula in the Faculty.	The Faculty of Science updates the Curricula of Physics, Mathematics, Chemistry, Biology, and Biochemistry to take into consideration the results of the exit survey on a yearly basis. Course evaluations were conducted in all programs.

## VI. APPENDICES

A selection of pictures of previously mentioned events are attached.

- Workshop on **Smart cities & Urban**







- SIRCAUS Conference





- Astronomy observations



- School Visits



- Lecture by professor **Hiroshi Ishiguro**







- Workshop entitled **Health and Environment**



- Some of the pictures taken during the visits to schools showing few of the winners and students answering questions about pollution and their role in society



- Kids from one of the visited camps:



- BMA Paint Company visit:





- Earth Day 2018:

