



Annual Report

FACULTY of SCIENCE

I. REFLECTION

During the academic year 2018-2019, the Faculty of Science continued to forge ahead with quality education and research centered on fundamental and applied sciences. The Faculty expanded its research facilities by establishing new laboratories, worked on redesigning and enhancing its academic programs to provide students with scientific knowledge as well as transferrable skills to meet with market needs and reinforced the internship programs in Schools, Pharmaceutical companies, Healthcare centers and Industries. The Faculty's research achievements were well-recognized; over 100 peer-reviewed articles have been published during 2019 in various research fields: Physics and Astronomy, Chemistry, Materials Science, Software and Computing, Applied Mathematics and Computational Sciences, Environmental Studies and Life Sciences. The Faculty also pursues interdisciplinary and multidisciplinary research to work on problems that bring science from bench to table, thereby creating impact to society and industry.

II. TEACHING & LEARNING

- Following the international benchmarks and surveying the local and global job market needs, the Faculty of Science is redesigning and enhancing all undergraduate and postgraduate academic programs.
- A **Tissue Culture Laboratory** housed in the A3 Laboratories Building at Debbieh Campus, was initiated in September 2018 to support the teaching and research activities of the Department of Biological Sciences. Currently, six postgraduate students along with three faculty members have ongoing research projects in the Tissue Culture Lab focusing on cancer cell biology and therapeutics.
- A **Radiation Physics Research Laboratory** housed in the A2 Building at Debbieh Campus, is currently under preparation. It will serve the Faculty's teaching and research activities in the radiation protection field.
- The Faculty has incorporated more **applied learning**. Students were strongly encouraged to pursue summer internships through various collaborations with companies and industries.
- Senior Physics and Chemistry students undertook their **senior projects in applied fields** and published their research work in peer-reviewed journals.
- The Faculty has incorporated **Moodle**



III. HIGHLIGHTS

- The Faculty of Science has published more than 100 peer-reviewed articles in international journal. Based on Scopus data analysis, the Faculty's research output constitute 38% of BAU's research output.

Publications in Scopus Indexed Journals: 86 Publications

Publications not indexed in Scopus: 17 Publications

Conferences: 8 Conferences

Book: 3 Books

- The Faculty of Science hosted Professor Atsushi Fujimori from the Department of Physics, University of Tokyo whereby he delivered a lecture entitled "Synchrotron Radiation Spectroscopy of Advanced Materials". Prof. Fujimori presented his latest research results followed by a discussion session. The Dean and other faculty staff discussed with Prof. Fujimori the different possibilities of collaboration between BAU and University of Tokyo (September 14th, 2018/Debbieh Campus).
- On the occasion of launching the new syndicate of computer sciences in Lebanon, the Faculty organized a talk with the President of Syndicate, Mr. Rami Santina, about the syndicate rules and regulations (October 19th, 2019/ Tripoli Campus).
- The Faculty of Science organized a **series of Internship and Career Talks** to connect science students, postgraduates and alumni with potential employers and help them explore diverse career options and internship opportunities in the market which could be a stepping stone finding an ideal job.
Internship and Career Talk with:
 - **ICC Group** (October 19th, 2018/ Beirut Campus)
 - **SABIS network schools** (October 19th, 2018/ Beirut Campus)
 - **BENTA PHARMA industries** (October 26th, 2018/ Debbieh Campus).
 - **Action Against Hunger**, an internationally accredited humanitarian charity and qualified as a "top-rated hunger organization", to explore the NGO's field as a new opportunity for university students and how students with scientific background could join the NGO's working in WASH sector and, in particular, in Solid Waste Management Projects (May 2nd, 2019/ Debbieh Campus).
- The Faculty organized a **Professional Career Development Workshop** in collaboration with BAU Alumni and career office, to shed the light on the needed skills in the Labor Market in Lebanon and the Gulf and to help students be more prepared for their career paths by learning more about curriculum vitae preparation, job interviews, Networking and social media, Internship preparation and professionalism (workshop presented by Mr. Mohamed Saadeddine, General Manager of Citricom Training Center and by the Businessmen's Federation for Support & Development (IRADA) (March 5th, 2019/ Debbieh Campus).



- The Faculty organized a workshop on “**Harmless use of nuclear and radiation energy**” in collaboration with the Lebanese Atomic Energy Commission (LAEC) - National Council for Scientific Research to highlight the remarkable contribution of nuclear and radiation applications in our world, to raise as well public awareness on the health effects of radiation and to shed the light on the importance of the radiation protection and medical physics fields in Lebanon (March 28th, 2019/ Beirut Campus).
- The Faculty branch in Tripoli Campus organized a scientific competition entitled “**BAU Olympic Sciences-BOS**” to stimulate interest in science among the educational institutions in the North. 224 students distributed among 15 schools in Akkar, Tripoli, Koura and Dennieh participated in automation tests, computer programming as well mathematics, physics, chemistry and biology exams. (March 10th, 2019/ Tripoli Campus).
- The Faculty offered senior high schools students coming from several regions of Lebanon including Well Spring School - Beirut, Carmelite Mejdlaya-Zgharta, Hariri High School-Saida, Lebanese American Schools-Aramoun, a **visit to the Faculty’ Laboratories**, providing them with an enriching practical experience, using a hands-on approach for selected experiments that complement their classroom learning while giving them a first-hand look at University life and facilities. High School Students were also offered a unique opportunity for **astronomical observations at BAU Observatory** located at Debbieh Campus.
- The Faculty provided **academic expertise and services** to communities, businesses, Municipalities. The Specialized Water and Soil Analysis Laboratory conducted 780 tests for municipalities, research students and companies during academic year 2018/2019. The Applied Statistics Center, that serves BAU and Non BAU communities, performed 35 data statistical analysis during this year.
- The Faculty organized an “Alumni Day” event to strengthen the relationships with its alumni and other stakeholders (April 14th, 2019/ Debbieh Campus)

IV. ACHIEVERS

- Faculty’s Dean, Prof. Ramadan Awad, has attended the **fourth International Conference on Materials and Applications of Insulation (ISyDMA 4)** at Jordan University, Amman as a member of the Scientific Committee and the Chairman of one sessions along with two MS and BSc. students (May 2nd to May 4th, 2019).
- Dr. Noura Yassine, associate professor of applied mathematics, was selected to act as a Guest Editor for a Special Issue of the **International Journal of Logistics Management (IJLM)**, a highly ranked Journal (Q1 on Scopus; A on the ABDC list)



in the area of Logistics and Operations Research, and published by the prestigious publishing house Emerald Publishing.

- Faculty' members: Dr. Ghada Khawaja, Dr. Mohamed Salem, Dr. Noura Yassine, Dr. Ramy Ouaini and Dr. Wassim El Hajj Chehade have participated in the **STEAM Fair event at the Lycee National School** where they took part of the Judging Committee that have assessed 600 students presenting 258 different topics in STEAM fields, Science, Technology, Engineering, Art and Math.
- Dr. Noura Yassine attended an international conference in the United States of America entitled: **3rd International Conference on Manufacturing Technologies (ICMT 2019)** -Ei Compendex, Scopus.
- Dr. Seif El-Dine el Kadry participated in the scientific conference held at Azerbaijan University of ADA and entitled: "**The 5th international forum big data day baku 2019**", (June 6th to June 11th, 2019)
- Four teams of students from the Department of Math and Computer Science participated in the **programming competition LCPC** held at the Lebanese University (September 28th, 2018)
- Faculty' Students from the Department of Math & Computer Science, **Mohamed Itani** and **Fatima Al-Fawal**, won the first place awards among BAU students in Beirut and Tripoli campuses and earned two startup sponsorships of 10,000 \$ each for best creative entrepreneurial ideas presented at **Inas Abou Ayyash Foundation (IAAF) Awards 2018 competitions** (October 30th, 2018/ Beirut Campus - November, 1st, 2018/Tripoli Campus).
- Faculty' MS Biology Graduates, Department of Biological Sciences, Hanan Ismail, Hiba Hasan and Youmna El-Orfali, supervised by Dr. Ghada Khawaja, won the 2nd Best Poster award for their thesis work presented at the **2019 YOUNG BIOLOGIST SYMPOSIUM: Advances in Biological Sciences** at the Lebanese American University.
- Physics' Graduate, Mohamad Awad, has invented an "Intelligent Communication Network "ICN". This invention has been patented from the ministry of economy and Trade. It is a sophisticated communication device that provides prepaid calling card services from telecommunications companies in Lebanon.
- Faculty' **Alumna Rana Khalife**, has been appointed as lecturer in Regenerative Medicine at University of College London, UK. Dr. Khalife earned her bachelor's and master's degrees in Biochemistry from the Faculty of Science at BAU in 2010 and 2013, respectively and her PhD from UCL in 2018.



- Five BAU Computer Science students along with Dr. Riham Abdel Kader were invited by **Huawei** to participate in an international training “**The Seeds for the Future**” over a period of two weeks that took place in Huawei Headquarter, Shenzhen – China (November, 2018).
- Zainab Al-Sayed, postgraduate student enrolled in the PhD program in Radiation Protection attended a **training course in Germany** on radiation protection and its applications “Radiation Protection- Basics and Applications (RaPBA) (March, 11-15th, 2019 / Forschungszentrum Julich Germany). This student has also attended last year the International School for Radiation Protection (IRPS) NEA International Radiological Protection School (IRPS), at Stockholm University in Sweden (August 20-24th, 2018).

V. COLLABORATION

- The Faculty signed an internship program agreement with **ICC (International Computer & Communication Systems – Lebanon)**, a Leading Group that provides Information and Communication Technology (ICT) Solutions, operating in Lebanon and the region, to provide BAU’ Computer Science Students with trainings on software development, networking and IT solution projects, building their capacity and improving their professional skills (October 19th, 2018).
- The Faculty signed a collaboration agreement with **VINCA Institute for Nuclear Sciences, University of Belgrade, Serbia** to provide training placements for Postgraduate Students enrolled in MS Medical Physics’ program (November 28th, 2018).
- The Faculty signed a three-year cooperation agreement with **Alexandria Ayadi Al-Mostakbal Oncology Center** to exchange experiences and consultations in the fields of Medical Physics. This agreement provides training placements at the center for Postgraduate Students enrolled in MS Medical Physics’ program (March 27th, 2019). Based on this cooperation, two medical physics students undertook 3 weeks intensive clinical training program on diagnostic imaging equipment, irradiation equipment and other devices available at the center during July 2019.
- The Faculty is maintaining its international collaboration with the **Medical Physics Department at CancerCare Manitoba (CCMB)-Canada**, to provide training placements, research collaboration and co-supervision of Postgraduate Students enrolled in MS Medical Physics’ program. Two Medical Physics students, Angy Dwaidy and Hala Jaber undertook a 3-months research training at CCMB gaining expertise in advanced diagnostic imaging techniques and radiotherapy during summer 2019.
- The Faculty signed an academic cooperation agreement with **Indian Institute of Science** (July, 2019).



- The Faculty collaborated with **Beesline Apitherapy, Arwan Pharmaceuticals, Serum Product Groups, Tinol Paints** to help the Faculty's fresh Graduates hold training placements during Summer 2019 and gain practical experience in the industrial field.
- Within the framework of cooperation with the Lebanese Atomic Energy Commission (LAEC), six students from the Department of Physics attended a practical training at the LAEC' laboratories during August 2019.