CURRICULUM VITAE

Elias Baydoun

PRESENT ADDRESS

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EDUCATIONAL BACKGROUND

1980	PhD*	Biochemistry, University of Cambridge, Cambridge, United Kingdom
1978	MPhil*	Biochemistry, University of Cambridge, Cambridge, United Kingdom
1977	MS	Biology, American University of Beirut, Beirut, Lebanon
1971	BS	Biology, University of Jordan, Amman, Jordan (with distinction)

* Under the supervision of the late Professor Donald Northcote, FRS

EMPLOYMENT HISTORY

1991 – Present	Professor	Department of Biology, American University of Beirut, Beirut, Lebanon
2003 – Present	Secretary General	Arab Academy of Sciences, Beirut, Lebanon
2015 – Present	Adjunct Professor	University of Petra, Amman, Jordan
2001 – 2002	Sabbatical leave	Institute of Biomedical & Life Sciences, University of Glasgow, United Kingdom
1987 – 1993	Chairman	Department of Biology, American University of Beirut, Beirut, Lebanon
1986 – 1991	Associate Professor	Department of Biology, American University of Beirut, Beirut, Lebanon
1986 – 1988	Part-time Lecturer	Department of Natural Sciences, The Lebanese University, Beirut, Lebanon
1985 – 1986	Associate Professor	Department of Biological Sciences, Yarmouk University, Irbid, Jordan
1985 – 1986	Director	Department of Human Resources, Yarmouk University, Irbid, Jordan
1983 – 1986	Assistant to the President	Yarmouk University, Irbid, Jordan
1984 – 1985	Director	Department of Planning and Development, Yarmouk University, Irbid, Jordan
1980 – 1985	Assistant Professor	Department of Biological Sciences, Yarmouk University, Irbid, Jordan
1980 – 1981	Part-time Lecturer	Department of Biology, American University of Beirut, Beirut, Lebanon

1978 – 1980	Demonstrator	Supervision of Laboratory Courses in Biochemistry to final-year honours students at the University of Cambridge, Cambridge, United Kingdom
1976 – 1977	Lecturer	Department of Biological Sciences, Yarmouk University, Irbid, Jordan
1971 – 1974	Instructor	Department of Biological Sciences, University of Jordan, Amman, Jordan

AWARDS

2010	TWAS-ARO Regional Prize for Public Understanding and Popularization of Science
2002	Developing World Study Visit Award, The Royal Society, United Kingdom
2001	Distinguished Scholar Award of the Arab Fund Fellowship Program, The Arab Fund for Economic and Social Development
1989	The American University of Beirut Research Award in Natural Sciences
1987	Abdul Hameed Shoman Prize for Young Arab Scientists in Biology
1987	The American University of Beirut Research Award in Natural Sciences
1986	The Award of the Federation of Arab Scientific Research Councils for translating into Arabic the book entitled "Biochemistry and Physiology of the Cell", by Edwards and Hassall. McGraw Hill, London"

HONORS

Fellow, Institute of Biology, London, United Kingdom

Fellow, The World Academy of Sciences (TWAS), Trieste, Italy

Fellow, Islamic World Academy of Sciences, Amman, Jordan

Founding Fellow and Secretary General, Arab Academy of Sciences, Beirut, Lebanon

Honorary Research Fellow, Institute of Biomedical and Life Sciences, University of Glasgow, United Kingdom

MEMBERSHIP OF SOCIETIES

- Cambridge Philosophical Society, United Kingdom
- The Biochemical Society, United Kingdom
- The Darwin Society, Darwin College, Cambridge, United Kingdom
- The Lebanese Association for the Advancement of Sciences, Lebanon

RESEARCH INTERESTS

- Membrane fusion *in vitro*
- Plant cell wall biosynthesis and assembly
- Biologically active oligosaccharides
- Applications of nanoparticles in biological systems
- Biological activities of medicinal plants
- Biotransformation of drugs
- Higher education in the Arab world

RESEARCH EXPERIENCE

Summer 1990	Collaboration with Dr SC Fry at the Institute of Cell and Molecular Biology, University of Edinburgh, to study the chemical differences between epidermal and mesophyll cell walls in expanding leaves of Kalanchoe diagremontiana
Summer 1987-1998	Collaboration with Dr CT Brett at the Institute of Biomedical and Life Sciences, University of Glasgow, to study the synthesis of cell wall polysaccharides
Summer 1986	Collaboration with Dr SC Fry at the Institute of Cell and Molecular Biology, University of Edinburgh, to study the in vivo fate of biologically active xyloglucan-nonasaccharide
Summer 1985	Collaboration with Dr SC Fry at the Institute of Cell and Molecular Biology, University of Edinburgh, to study the chemistry of the polymers containing L-galactose and D-mannose in primary cell walls
Summer 1984	Collaboration with Dr SC Fry at the Institute of Cell and Molecular Biology, University of Edinburgh, to study pectic oligosaccharides as new plant hormones
Summer 1982-1985	Collaboration with Dr CT Brett at the Institute of Biomedical and Life Sciences, University of Glasgow, to study the role of calcium and hydrogen ions in the control of growth in plants
Summer 1981	Collaboration with Dr Bircheimer at the Swiss Federal Institute of Technology (ETH) to study the role of coated vesicles in the secretion of glycoproteins in chicken embryo fibroblasts

GRANTS

A. Grant within AUB

Agency	Title & details	Duration
URB[1]	Investigation into the role of Origanum syriacum ethanolic extract against breast cancer: Pharmaco-molecular mechanism of action, bioactive constituents, and green nanotechnology *Role*: PI	2022-2024

[1] URB: University Research Board

	Other investigators: Digambra Patra, Chemistry Department *Total Budget*: USD 15,000 (2022-2023) *Note*: Renewal for 2023-2024 is under consideration with a budget of USD 18,000	
Mamdouha El-Sayed Bobst Deanship Fund	Green nanotechnology and its potential application in the treatment of breast cancer *Role*: PI *Other investigators*: Digambra Patra, Chemistry Department *Total Budget*: USD 8,000	2021-2022
URB	Anticancer potential of Origanum syriacum: Pharmaco-molecular mechanism of action in breast cancer *Role*: PI *Other investigators*: Ali Eid, Department of Pharmacology and Toxicology *Total Budget*: USD 30,000	2020-2022
URB	Synthesis of new analogues of an orally active contraceptive drug desogestrel via biotransformation and evaluation of anti-MDR-Staphylococcus aureus activity of its metabolites *Role*: PI *Other investigators*: Iqbal Choudhary, ICCBS, University of Karachi, Pakistan *Total Budget*: USD 25,000	2018-2020
CRSL[2]	Synthesis of Libraries of Contraceptive Drugs through Biotransformation (2018) *Role*: PI *Total Budget*: USD 4,500	2018-2019
CRSL	Effect of 7-O-methyl-3,9-dihydropunctatin on estrogen-induced alpha-2C adrenoceptors in human arteriolar smooth muscle cells (SMCs) *Role*: PI *Total Budget*: USD 4,600	2017-2018
URB	Synthesis of new compounds for breast cancer treatment by targeting aromatase *Role*: PI *Other investigators*: Colin Smith and Iqbal Choudhary (ICCBS, University of Karachi, Pakistan) *Total Budget*: USD 10,000	2017-2018
CRSL	Discovery of new progestins using biotransformation *Role*: PI *Total Budget*: USD 4,700	2016-2017
CRSL	Large-scale synthesis of novel metabolites of anabolic steroids by biocatalysis and study of their mechanism of action *Role*: PI *Total Budget*: USD 7,000	2015-2016
CRSL	Synthesis of new anabolic compounds through biotransformation with safe and non-toxic properties *Role*: PI *Total Budget*: USD 7,000	2014-2015

[2] CSRL: Kamal A. Shair Central Research Science Laboratory

URB	Synthesis of novel anti-inflammatory agents by biotransformation *Role*: PI *Other investigators*: Iqbal Choudhary (ICCBS, University of Karachi, Pakistan) *Total Budget*: USD 20,000	2013-2016
URB	Investigating the role of NFATC1 and HAND2 and their interaction in heart morphogenesis using Drosophila melanogaster as a model *Role*: Co-investigator *Other investigators*: Zakaria Kambris	2011-2012
URB	New aspects of the proto-oncoprotein c-Cbl in cancer: molecular analysis of cCbl in contributing to the generation of reactive oxygen species and protecting malignant cells *Role*: PI *Other investigators*: Daniel Regnier (CNRS, France) and Colin Smith (Biology Department) *Total Budget*: USD 10,000	2010-2011
URB	Histochemical analysis of the cell walls during the somatic embryogenesis of date palm calli *Role*: PI *Total Budget*: USD 7,245	2009-2010
URB	Control of pectin biosynthesis and assembly in plants *Role*: PI *Total Budget*: USD 32,300	2005-2009
URB	Purification and significance of assemblins, proteins controlling plant-cell-wall assembly *Role*: PI *Total Budget*: USD 36,420	2000-2005
URB	Localization of enzymes involved in the synthesis of cell-wall matrix polysaccharides within the Golgi apparatus in plants *Role*: PI *Total Budget*: USD 39,087	1994-2000
URB	Control of primary structure during the biosynthesis of the plant cell-wall polysaccharide, glucuronoxylan *Role*: PI *Total budget*: USD 10,500	1992-1994
URB	Enzyme localization and priming mechanism in the biosynthesis of the plant cell wall polysaccharide, glucuronoxylan *Role*: PI *Total budget*: USD 5,500	1990-1992
URB	Mobilization of reserve materials during germination of cabbage seeds *Role*: PI *Total Budget:* LBP 374,898	1987-1988

B. External Grants

Agency	Title & role	Duration
Petra University	Anticancer potential of bioactive components of Origanum syriacum: Pharmaco-molecular mechanisms of action in breast cancer. Co-investigator	2023-2024
Petra University	A book on "Higher Education in the Arab World: Digital Transformation". Co-investigator *Note*: Under consideration	2023-2024
Petra University	A book on "Higher Education in the Arab World: E-Learning and Distance Education". Co-investigator	2022-2023
Petra University	A book on "Higher Education in the Arab World: New Priorities Post the Covid-19 Era". Co-investigator	2022-2023
Petra University	Green Nanotechnology: A promising therapeutic potential against breast cancer. Co-investigator	2022-2023
Petra University	Development of smart nano-hybrid particles for the drug delivery and treatment of breast cancer. Co-investigator	2021-2022
Petra University	A book on "Higher Education in the Arab World: Research and Development". Co-investigator	2021-2022
Petra University	Inflammation-potentiated malignant phenotype of breast cancer: elucidation of molecular mechanisms and attenuation by (E) 7-O-methylpunctatin, a novel homoisoflavonoid. Co-investigator	2020-2021
Petra University	A book on "Higher Education in the Arab World: Government and Governance". Co-investigator	2020-2021
Petra University	Anti-hypersensitive potential of Marjoram: Pharmaco-molecular mechanism of action. Co-investigator	2019-2020
Petra University	A book on "Higher Education in the Arab World: Building a Culture of Entrepreneurship and Innovation". Co-investigator	2019-2020
Petra University	A book on "Major Challenges Facing Higher Education in the Arab World: Quality Assurance and Relevance". Co-investigator	2018-2019
Petra University	A book on "Arab Universities: an Urgent Need for Change". Co-investigator	2017-2018
Petra University	Synthesis of new compounds for breast cancer treatment by targeting aromatase. Co-investigator	2016-2018
Petra University	A book on "Water, Energy and Food Sustainability in the Middle East – The Sustainability Triangle". Co-investigator	2016-2017
LNCSR[3]	Effect of silver nanoparticles on membrane permeability and anti-fouling for wastewater treatment. Co-investigator	2015-2016
CEDRE[4]	Search for new entomopathogenic fungi of Lebanon and biotechnological improvement of the fungus Beauveria bassiana. Co-investigator	2014-2015
LNCSR	Synthesis of libraries of anti-cancer agents by biotransformation - a novel approach towards anti-cancer agents	2013-2014
LNCSR	Host-microbe interactions: Effect of Wolbachia endosymbionts on their insect hosts. Co-investigator	2012-2013

[3] LNCSR: Lebanese National Council for Scientific Research

[4] CEDRE: Conférence économique pour le développement, par les réformes et avec les entreprises

CEDRE	New aspects of the proto-oncoprotein c-Cbl in cancer: molecular analysis of cCbl in contributing to the generation of reactive oxygen species and protecting malignant cells	2011-2012
LNCSR	Microbial biodiversity of Lebanese mineralized aquatic habitats. Co-investigator	2010-2011
LNCSR	The effect of Ruscus aculeatus and Pleurotus ostreatus extracts on proliferation and apoptosis in human cancer cell lines	2010-2011
LNCSR	An ecological and physiological study of the montane viper Montevipera bornmuelleri including venom composition and effects. Co-investigator	2009-2010
LNCSR	The effect of nanoparticles on the anti-proliferative and pro-apoptotic potential of a specific nutrient synergy	2007-2008
UNESCO	UNESCO Short-Term Fellowship in Biotechnology	1998-2001
LNCSR	Control of phenolic cross-linking in cell walls of food plants	2000
TWAS[5]	Purification and significance of assemblins, proteins controlling plant-cell-wall assembly (2000)	2000
LNCSR	Incorporation of newly-synthesized matrix polysaccharide into the plant cell wall	1998-1999
TWAS	Distribution and characterization of cell-wall synthesizing enzymes in the Golgi apparatus of flax and pea	1998
LNCSR	The effects of stress conditions on physiological aspects in the shrimp Peneaus semisulcatus. Co-investigator	1989-1990
Yarmouk University	Chemistry of cell wall polymers	1986-1987
Yarmouk University	Pectic wound hormones	1985-1986
Ministry of Planning	Health education in Jordan	1985-1986
National Planning Council	Health education in Jordan	1984-1985
Yarmouk University	The role of calcium ions in the control of growth	1983-1984
Yarmouk University	Secretion of glycoproteins	1981-1982

C. Grants Submitted and Currently under Review

Agency	Title & details	Duration
URB	Investigation into the role of Origanum syriacum ethanolic extract against breast cancer: Pharmaco-molecular mechanism of action, bioactive constituents, and green nanotechnology *Role*: PI *Other investigators*: Digambra Patra *Note*: Renewal for 2023-2024 is under consideration	2023-2024
URB	Grape extract and its potential anti-cancer properties (2023) - Submitted Role: Co-investigator *Other investigators*: Walid Kayal	2023-2024
URB	Curcuminin aluminium and magnesium MOFs for estimating polarizability inside the MOFs pockets and biomedical applications (2023) - Submitted	2023-2024

[5] TWAS: The Academy of Sciences for the Developing World

Role: Co-investigator.
Other investigators: Digambra Patra

PATENTS

- Baydoun E, Choudhary M, Wahab A, Smith C, Karam M, Farran D, Khan M, Ahmad M. 2015. Treatment and inhibition of protozoal diseases with nandrolone and its derivatives. US Patent Office, US Patent 9,173,888

PUBLICATIONS

A. Refereed Journal Publications

1. Darwiche L, Mesmar J, Baydoun E, Kayyal W. Antiproliferative and apoptotic effects of grape extracts on a triple negative breast cancer cell line. In preparation.
2. Darwiche L, Abdallah R, Mesmar J, Baydoun E. Investigation into the composition of Origanum syriacum ethanolic extract and its effect against the malignant phenotype of human pancreatic cancer cells. In preparation.
3. Ziad Chebaro, Rola Abdallah, Adnan Mohammed Badran, Kamar Hamade, Akram Hijazi, Marc Maresca, Joelle Edward Mesmar, Elias Baydoun. Study of the anticancer potential of Anchusa strigosa using two extraction methods. Submitted.
4. Habchi C, Badran A, Srour M, Daou A, Baydoun E, *Hamade K*, Hijazi A, 2023. Determination of the antioxidant and antiproliferative properties of pomegranate obtained by ultrasound on HTC-116 colorectal cancer cell line. Processes 2023, 11(4):1111. Doi: 10.3390/pr11041111.
5. Albahri G, Badran A, Hijazi A, Daou A, Baydoun E, Nasser M, Merah O, 2023. The therapeutic wound healing bioactivities of various medicinal plants. Life 13(2):317. Doi: 10.3390/life13020317.
6. Alkhatib M, Fayad C, Badran A, Hamade K, Daou A, Baydoun E, Hijazi A, 2022. Preventive and therapeutic effects of Punica granatum (pomegranate) in respiratory and digestive diseases. Applied Sciences 12 (23):12326. Doi: 10.3390/app122312326.
7. Mesmar J, *Abdallah R*, *Hamade K*, Baydoun S, Al-Thani N, Shaito A, Maresca M, Badran A, Baydoun E*, 2022. Ethanolic extract of Origanum syriacum leaves exhibits potent anti-breast cancer potential and robust antioxidant properties. Frontiers in Pharmacology 13:994025. Doi: 10.3389/fphar.2022.994025.
8. El Kurdi R, Mesmar J, *Estephan M*, Badran A, Baydoun E, Patra D, 2022. Anticancer Activity of Diarachidonyl Phosphatidyl Choline Liposomal Curcumin Coated with Chitosan Against Breast and Pancreatic Cancer Cells. BioNanoScience 12(4). Doi: 10.1007/s12668-022-01019-4.
9. Mesmar J, *Abdallah R*, Badran A, Maresca M, Shaito A, Baydoun E*, 2022. Ziziphus nummularia: A Comprehensive Review of Its Phytochemical Constituents and Pharmacological Properties. Molecules 27:(13), 4240. Doi: 10.3390/molecules27134240.
10. Mesmar J, *Abdallah R*, Badran A, Maresca M, Baydoun E*, 2022. Origanum syriacum phytochemistry and pharmacological properties: A Comprehensive review. Molecules 27: 4272. Doi: 10.3390/molecules27134272.
11. Al Kahlout A, *Fardoun M*, Mesmar J, *Abdallah R*, Badran A, Nasser S, Baydoun S, Kobeissy F, Shaito A, Iratni R, Mohamed K, Baydoun E*, Eid A, 2022. Origanum syriacum attenuates the malignant phenotype of MDA-MB231 breast cancer cells. Frontiers in Oncology, 12:922196. Doi: 10.3389/fonc.2022.922196.

12. Othman A, El Kurdi R, Mesmar J, Badran A, Baydoun E, Patra D, 2022. Preparation of liposomes based nanoparticles for control release of curcumin: PDDA and silica nanoparticles coated DMPC liposomes enhances fluorescence efficiency and anticancer activity of curcumin. RSC Advances, 12:11282–11292. Doi: 0.1039/d2ra00071g.
13. *Estephan M*, El Kurdi R, Badran A, Baydoun E, Patra D, 2022. Curcumin Modulates 1, 2-dibehenoyl-sn-glycero-3-phosphocholine (DBPC) Liposomes: Chitosan oligosaccharide lactate influences membrane fluidity but does not alter phase transition temperature of DBPC liposomes. Journal of Fluorescence 32: 155-163. Doi: 10.1007/s10895-021-02828-8.
14. Badran A, Mesmar J, *Wehbe N*, El Kurdi R, Patra D, Baydoun E*, 2021. Curcumin-based nanoformulations to target breast cancer: current trends and challenges. Current Nanomaterials 6. Doi: 10.2174/24054615.6666210831145230.
15. Mesmar J, *Fardoun M*, *Abdallah R*, Al Dhaheri Y, Yassine H, Iratni R, Badran A, Eid A, Baydoun E*, 2021. Ziziphus nummularia attenuates the malignant phenotype of human pancreatic cancer cells: Role of ROS. Molecules 26**:** 4295. Doi: 10.3390/molecules26144295
16. Siddiqui M, Wahab A, Shaikh N, Baydoun E, Rahman A, Choudhary I, 2021. Biocatalytic transformation of steroidal drugs oxandrolone and ganaxolone, and aromatase inhibitory activity of transformed products. Phytochemistry Letters 44:137–141. Doi: 10.1016/j.phytol.2021.06.001.
17. El-Hachem N, *Fardoun M*, Slika H, Baydoun E, Eid A, 2021. Repurposing cilostazol for Raynaud's phenomenon. Current Medicinal Chemistry 27:1-9. Doi: 10.2174/0929867327666200903114154.
18. Badran A, Nasser S, Mesmar J, El-Yazbi A, Bitto A, *Fardoun M*, Baydoun E*, Eid A, 2020. Reactive Oxygen Species: Modulators of Phenotypic Switch of Vascular Smooth Muscle Cells. International Journal of Molecular Sciences 21:8764. Doi: 10.3390/ijms21228764
19. Markert B, Abdallah N, Aksoy A, Ammari T, Arias A, Azaizeh H, Badran A, Baltrėnaitė E, Baydoun E , Bernstein N, Canha N, Chudzinska E, Delakowitz B, Diatta J, Djingova R, El-Sheik O, Fargasova A, Figueiredo1 A, Fränzle S, Frontesyeva M, Ghafari Z, Golan A, Gorelova S, Greger M, Harmens H, Hillman J, Hooda P, Jayasekera R, Kidd P, Kim E, Loppi S, Lahiri S, Liu S, Lux A, Ma L , Marcovecchio J, Meers E, Mench M, Michalke B, Mowafaq M, Namiesnik J, Nriagu J, Öztürk M, Pacyna J, Pehkonen S, Renella G, Rinklebe J, Robinson B, Saiki M, Szefer P, Tabors G, Tack F, Suchara I, Vangronsveld J, Vasconcellos M, Wang M, Waclawek M, Wolterbeek B , Wünschmann S, Zechmeister H, 2020. Information gain in environmental monitoring through bioindication and biomonitoring methods ("B & B technologies") and phytoremediation processes–with special reference to the Biological System of Chemical Elements (BSCE) under specific consideration of Lithium. Bioactive Compounds in Health and Disease 3(11): 214-250. Doi: 10.31989/bchd.v3i11.760.
20. *Fardoun M*, Issa K, Maaliki D, Nasser S, Baydoun E, Eid A, 2020. Estrogen potentiates cold-induced vasoconstriction by increasing alpha 2C Adrenoceptor expression through the cAMP/Epac/JNK/AP-1 Pathway. Vascular Pharmacology 131:106690. Doi: 10.1016/j.vph.2020.106690.
21. Badran A, Wahabb A, Zafarb H, Mohammad N, Imad R, Khanb M, Baydoun E, Choudhary I, 2020. Antipsychotics drug aripiprazole as a lead against breast cancer cell 2 line (MCF-7) in vitro. PLOS One 15: e0235676. Doi: 10.1371/journal.pone.0235676.
22. *Wehbe N*, Slika H, Mesmar J, Nasser S, Pintus G, Baydoun S, Badran A, Eid A, Baydoun E*, 2020. The role of Epac in cancer progression. International Journal of Molecular Sciences 21: 6489. Doi: 10.3390/ijms21186489.
23. *Wehbe N*, Nasser S, AlDhaheri Y, Iratni R, Bitto A, El-Yazbi A, Badran A, Kobeissy F, Baydoun E*, Eid A, 2020. Epac in vascular smooth muscle cells. International Journal of Molecular Sciences 21: 5160. Doi: 10.3390/ijms21145160.
24. *Olleik H*, Yacoub T, Gnansounou S, Benhaiem-Henry K, Nicoletti C, Mekhalfi M, Pique V, Perrier J, Hijazi A, Baydoun E, Raymond J, Hoffe L, Piccerelle P, Maresca M, Robin M, 2020. Synthesis and evaluation of the antibacterial activities of 13-substituted berberines derivatives. Antibiotics 9:381. Doi: 10.3390/antibiotics9070381.

25. *Ibrahim I*, Wahab A, Khan N, Siddiqui M, Ajandouz H, Jabeen A, Mesmar J, Baydoun E*, Choudhary I, 2020. Biotransformation of contraceptive drug desogestrel with Cunninghamella elegans, and anti-inflammatory activity of its metabolites. Steroids 162:108694. Doi: 10.1016/j.steroids.2020.108694.
26. *Fardoun M*, Maaliki D, Halabi N, Iratni R, Bitto A, Baydoun E, Eid A, 2020. Flavonoids in adipose tissue inflammation and atherosclerosis: One arrow, two pages. Clinical Science 134: 1403–1432. Doi: 10.1042/CS20200356.
27. *Silka L*, Moubarak A, Borjac J, Baydoun E, Patra D, 2020. Preparation of curcumin-poly (allyl amine) hydrochloride based nanocapsules: Piperine in nanocapsules accelerates encapsulation and release of curcumin and effectiveness against colon cancer cells. Materials Science and Engineering C 109:110550. Doi: 10.1016/j.msec.2019.110550.
28. *Fardoun M*, Dehaini H, Shaito A, Mesmar J, El-Yazbib A, Badran A, Baydoun E*, Eid A, 2019. The hypertensive potential of estrogen: an untold story. Vascular Pharmacology 124:106600. Doi: 10.1016/j.vph.2019.106600.
29. *Fardoun M*, Iratni R, Dehaini H, Eid A, Ghaddar T, El-Elimat T, Oberlies N, Alali F, Badran A, Eid A, Baydoun E*, 2019. 7-O-Methyl-3,9-dihydropunctatin, a novel homoisoflavonoid, inhibits phenotypic switch of human arteriolar smooth muscle cells. Biomolecules 9:716. Doi:10.3390/biom9110716.
30. *Olleik H*, Baydoun E, Perrier J, Hijazi A, Raymond J, Manzoni M, Lucas Dupuis[1], Pauleau G, Goudard Y, De La Villeon B, Goin G, Sockeel P, Choudhary I, Pasquale E, Nadeem-ul-Haque M, Ali H, Khan A, Shaheen F, Maresca M. 2019. Temporin-SHa and its analogs as potential candidates for the treatment of Helicobacter pylori. Biomolecules 9:598. Doi: 10.3390/biom9100598.
31. *Olleik H*, Nicoletti C, Lafond M, Courvoisier-Dezord E, Xue P, Hijazi A, Baydoun E, Perrier J, Maresca M, 2019. Comparative structure-activity analysis of the antimicrobial activity, cytotoxicity and mechanism of action of the fungal cyclohexadepsipeptides Enniatins and Beauvericin. Toxins 11:514. Doi:10.339/toxins11090514.
32. *Wehbe N*, Nasser S, Pintus G, Badran A, Eid A, Baydoun E*, 2019. MicroRNAs in cardiac hypertrophy. International Journal of Molecular Sciences 20:4714. Doi: 10.3390/ijms20194714.
33. Badran A, Baydoun E, Samaha A, Pintus G, Mesmar J, Iratni R, Issa k, Eid A, 2019. Marjoram relaxes rat thoracic aorta via a PI3-K /Akt/eNOS/cGMP pathway. Biomolecules 9:227. Doi:10.3390/biom9060227.
34. Dehaini H, Awada H, El-Yazbi A, Zouein F, Issa K, Eid A, Ibrahim M, Badran A, Baydoun E, Pintus G, Eid A, 2019. MicroRNAs as Pharmaco-targets in Ischemia-Reperfusion Injury compounded by diabetes. Cells 8:1-19. Doi:10.3390/cells8020152.
35. *Olleik H*, Yahiaoui S, Roulier B, Courvoisier-Dezord E, Perrier J, Peres B, Hijazi A, Baydoun E, Raymoond J, Boumendjel A, Maresca M, Haudecoeur R, 2019. Aurone derivatives as promising antibacterial agents against resistant Gram-positive pathogens. European Journal of Medicinal Chemistry 165:133-141.
36. *Wehbe N*, Patra D, Abdel-Massih R, Baydoun E*, 2019. Modulation of membrane properties by silver nanoparticles probed by curcumin embedded in 1,2-dimyristoyl-sn-glycero-3-phosphocoline liposomes. Colloids and Surfaces B: Biointerfaces 173:94-100. Doi: 10.1016/j.colsurfb.2018.09.053.
37. Badran A, Wahab A, Fayyaz S, Baydoun E, Choudhary I, 2018. Small molecular leads differentially active against HER2 positive and triple negative breast cancer cell lines. Medicinal Chemistry 15(7):738-742. Doi: 10.2174/1573406414666181106143912.
38. Wahab A, Siddiqui M, *Ibrahim I*, Hussain A, Ajandouz E, Hijazi A, Baydoun E*, Choudhary I, 2018. Cunninghamella blakesleeana-mediated biotransformation of a contraceptive drug, desogestrel, and anti-MDR-Staphylococcus aureus activity of its metabolites. Bioorganic Chemistry 77:152-158. Doi: 10.1016/j.bioorg.2017.12.027.

39. Harakeh S, *Khalife J*, Baydoun E, Azar R, Al Hejin A, Barbour E, Azhar E, Niedzwiecki A, Al Jaouni S, Diab-Assaf M, Kamal M, Rath M, 2018. Effects of ascorbic acid on Tax, NF-κB and MMP-9 in human T-cell lymphotropic virus type 1 positive malignant T-lymphocytes. Anti-Cancer Agents in Medicinal Chemistry 18:237-244. Doi: 10.2174/1871520617666170725160628.
40. *Kamar A*, Fahed A, Shibbani K, BouSleiman S, Arabi M, Kurban M, Seidman J, Seidman C, Haidar R, Arabi M, Baydoun E*, Nemer G, Bitar F, 2017. A novel role for CSRP1 in a Lebanese family with congenital cardiac defects. Frontiers in Genetics 8:217 (Article 217). Doi: 10.3389/fgene.2017.00217.
41. Baydoun E*, Wahab A, Iqbal S, Smith C, Choudhary I, 2017. Biotransformation of drospirenone, a contraceptive drug, with Cunninghamella elegans. Steroids 126: 30 – 34. Doi: 10.1016/j.steroids.2017.07.010.
42. *Dahdouh E*, El-Khatib S, Baydoun E, Abdel-Massih R, 2017. Additive Effect of MCP in combination with Cefotaxime against Staphylococcus aureus. Medicinal Chemistry 13:682-688. Doi: 10.2174/1573406413666170306112444.
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B. Published Books, Book Chapters, and Edited Volumes

B1. Edited volumes

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2. Baydoun E* (General Coordinator), 2007. Arabic Encyclopaedia on Knowledge for Sustainable Development, Volume 3 (Social Dimension). 342pp. UNESCO publishing
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4. Baydoun E* (General Coordinator), 2006. Arabic Encyclopaedia on Knowledge for Sustainable Development, Volume 1 (General Introduction). 538pp. UNESCO publishing
5. Badran A, Baydoun E*, 1986. Biology guide- A Practical Guide to Accompany "The Cell" and "The Biology of Living Organisms". For Community Colleges, Ministry of Education, Muscat, Oman (in Arabic)
6. Badran A, Baydoun E*, Suleiman SA, Ismail N, 1985. The Biology of the Living Organisms. For Community Colleges, Ministry of Education, Muscat, Oman (in Arabic)
7. Badran A, Baydoun E*, 1985. The Cell. For Community Colleges, Ministry of Education, Muscat, Oman (in Arabic)
8. Badran A, Baydoun E*, 1984. Teacher's Guide for the Biology Books of the Secondary Level. Ministry of Education, Muscat, Oman (in Arabic)
9. Badran A, Baydoun E*, 1983. General Biology for the Third Secondary Class (12th Grade). Ministry of Education, Muscat, Oman (in Arabic)
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B2. Edited Books

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3. Badran A, Baydoun E, Mesmar J (editors), 2022. Higher Education in the Arab World: New Priorities in the Post Covid 19 Era. 361 pp. Springer Nature Switzerland AG. Doi: 10.1007/978-3-031-07539-1
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B3. Refereed Book Chapters

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5. Badran A, Baydoun E*, Mesmar J, 2022. Introduction. In: Badran A, Baydoun E, Mesmar J (editors), Higher Education in the Arab World: New Priorities in the Post COVID-19 Era. pp 1 – 10. Springer Nature Switzerland AG. Doi:10.1007/978-3-031-07539-1
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13. Badran A, Hillman J, Baydoun E*, 2019. Introduction In: Badran A, Baydoun E, Hillman J (editors), Major Challenges Facing Higher Education in the Arab World: Quality Assurance and Relevance. pp 1-11 Springer Nature Switzerland AG. Doi: 10.1007/978-3-030-03774-1
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16. Hillman J, Baydoun E*, 2017. Food security in an insecure future. In: Badran A, Murad S, Baydoun E, Daghir N (editors), Water, Energy and Food Sustainability in the Middle East – The Sustainability Triangle. pp 261-282. Springer Nature Switzerland AG. Doi 10.1007/978-3-319-48920-9
17. DaSilva E, Badran B, Baydoun E*, 2004. Biotechnology in the Developing World. In: Majali A, Ergin M, Zou'bi M (eds.), Biotechnology and Genetic Engineering for Development in the Islamic World. Islamic Academy of Sciences, Amman, Jordan, 39-86
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B4. Translated Books

1. Edwards NA, Hassall KA. Biochemistry and Physiology of the Cell. McGraw Hill, London. Translated into Arabic by Baydoun E, 1986. The Jordan Academy of Arabic, Amman, Jordan

C. Refereed Conference Papers with Proceedings

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117. Baydoun E, 1981. The extraction from maize root cells of membrane bound-protein with calcium-ATPase activity and its possible role in membrane fusion in vitro. Proceedings of the 7th Meeting of the Lebanese Association for the Advancement of Sciences, 86

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TEACHING

A. Courses Taught

Title	Level
Introductory biochemistry	Undergraduate
Plant physiology	Undergraduate
Advanced biochemistry	Graduate
Cell biology	Undergraduate
General biology I	Undergraduate
General biology II	Undergraduate
General science	Undergraduate
Special topics in membrane biology	Undergraduate
Plant anatomy	Undergraduate
Histology and microtechniques	Undergraduate
Research methods in biology	Graduate
Seminar	Undergraduate
Seminar	Graduate
Tutorial	Undergraduate
Tutorial	Graduate

B. Student Supervision and Advising

B1. PhD Students

Date	Student	Title	Position
TBD	Rola Abdallah	Ziziphus Nummularia extract reveals potent anticancer activity against breast cancer: an in vitro study	PhD student, AUB
TBD	Nadine Wehbe	Development of nanoparticles for the drug delivery and treatment of breast cancer	PhD student, AUB
2020	Manal Fardon	The effect of estrogen on microvascular smooth muscle cells: implications for peripheral vascular disease	
2017	Amina Kamar	A novel role of CSPR1 in a Lebanese family with both cardiac defects and polydactyly	Academic visitor, Imperial College, UK. Post-doc, University of Limoges, France
2008	Lolita Qouta	The biochemistry and molecular biology of intercellular adhesion in plant tissue culture **Co-supervised with Dr. Brett at the University of Glasgow**	Professor at Philadelphia University, Jordan

2005	Hind Rizallah	The characteristics of nascent pectin complexes in pea plants **Co-supervised with Dr. Brett at the University of Glasgow**	Lecturer at AUB
2001	Roula Adel-Massih	In vitro biosynthesis of 1,4-β-galactan attached to a pectin-xyloglucan complex in peas **Co-supervised with Dr. Brett at the University of Glasgow**	Professor at the University of Balamand
2000	Sandra Rizk	Biosynthesis and assembly of pectin and glucuroarabinoxylan in plants **Co-supervised with Dr. Brett at the University of Glasgow**	Professor at LAU

B2. Master's Students

Date	Student	Title	Position
2022	Linda Darwich	Investigation into the Role of *Origanum syriacum* Ethanolic Extract in Pancreatic Cancer	MS student at FAFS, AUB
2020	Zena Wehbe	The effect of bovine milk exosomes on the sodium potassium ATPase of human Caco-2 cells	PhD student at St George's University, UK
2018	Nadine Wehbe	Modulation of phospholipid membranes by curcumin-conjugated silver nanoparticles and their application	PhD student at AUB
2014	Dina Farran	Microbial transformation of anti-cancer steroid and cytotoxicity of its metabolites against cancer cell lines	PhD student at King's College, UK
2012	Elsy Rechdane	The role of proto-oncoprotein c-Cbl in contributing to the generation of reactive oxygen species and protecting malignant cell	IB PD teacher at LWIS-AiS, Lebanon
2010	Maya Khezam	Putative effectors of the Type VI secretion system in Pseudomonas aeruginosa : Promising targets for anti-virulence agents	
2009	Maya Yassine	The apoptotic and anti-proliferative effects of the crude extract of Ruscus aculeatus in HTLV-1 positive and negative leukemic cells	
2006	Jihane Khalifeh	Induction of apoptosis by ascorbic acid in HTLV-I- positive and -negative malignant T-cells	Professor, University of Texas, USA
2005	Taha Deeb	Medicinal plants of Lebanon: survey and physiological effects of some plant extracts	
2004	Rabih Sayf Al Din	*In vitro* biosynthesis of nascent pectin complex in pea epicotyls	
2004	Caroline Agha	Ascorbic acid (vitamin C) metabolism in radish (Raphanus sativus) roots	Clinical Neurophysiologist in Anaheim, CA

2003	Oula Mansour	Identification of EDTA-soluble polymers of pea epicotyl cell walls and their interaction with xyloglucan	
2002	Roy-Pascal Naja	Factors that may trigger the development of type 1 diabetes in Lebanon	Laboratory Director at Eurofins, UK
2002	Dima El-Khechen	Endothelin-1 binding and receptor subtype localization and alteration in a normal and diabetic rat heart model	
2001	Wissam Abou Alaiwi	Beta-globin gene cluster haplotype effect on the clinical manifestation of sickle cell disease in Lebanon	Professor at the University of Toledo, USA
1998	Danielle Dani	Localization of galactosyltransferases within the Golgi apparatus in pea (Pisum sativum L.) epicotyls	Professor at Ohio University, USA
1998	Roula Abdel-Massih	Subcellular localisation of fucosyltransferases in the Golgi apparatus of pea (Pisum sativum L.) epicotyls	Professor at Balamand University
1997	Rima Tawk	Isoenzyme characterization of Leishmania isolates from Lebanon	Research Fellow at the University of Illinois, Chicago
1997	Sandra Rizk	Localisation of methyltransferases involved in glucuronoxylan and pectin methylation in the Golgi apparatus in etiolated pea (Pisum sativum L.) epicotyls	Professor at LAU

B3. Service as Member on Thesis or Dissertation Committees

Served as a PhD thesis committee member for the following students:

Date	Student	Title	University
2023 (expected)	Reem Rida	The Signaling Pathway Involved in Lipid accumulation in HepG2 Cells	AUB
2022	Hussein Bassal	Study of the antioxidant and anti-inflammatory properties of the biological extracts of Psophocarpus tetragonolobus	Lebanese University
2021	Kamar Hamade	Metabolic study of the stress response to lignin-deficient flax	University of Picardie Jules Verne
2019	Hamza Olleik	Identification and characterization of new anti-bacterial molecules that are efficient against multi-resistance bacteria including Heliobacter pylori	Institute of Molecular Sciences, Aix-Marseille University
2018	Bushra Sayed Ahmad	Study of the agrorefining of Apiaceae Lamiaceae and Chenopodiaceae seeds in the production of biosourced molecules for the application in the cosmetics industry	Lebanese University and National Polytechnique Institute of Toulouse

Served as an MS thesis committee member for the following students at AUB:

Date	Student	Title
2023 (expected)	Zeinab Kalout	The effect of TGF-β on the sodium/potassium pump in Caco-2 cells
2021	Celine Arab	Preparation of Curcumin Conjugated Zinc Oxide Nanoparticles and Applications
2021	Maria Estefan	Investigation on DAPC and DBPC Liposome Properties and Their Biomedical Applications
2019	Layal Silka	Curcumin based Hybrid Nanocapsules: Self-assembly, Characterization and Biomedical Application
2018	Reem Rida	Effect and Mechanism of Action of FTY720P on Lipid Accumulation in HepG2 Cells
2016	Rawan Merhi	Investigation of the role of candidate genes in Drosophila melanogaster immunity by an in vivo RNAi screen
2016	Zeinab Moussa	Interaction of Curcumin with Rhamnolipids, DSPC Liposomes and Cyclodetran MOF: Curcumin as a Molecular Probe to Investigate Heterogeneous Systems
2014	Emane Abdallah	Three substitutions are sufficient to alter the specificity of RRE IIB toward wild-type REV or REV-R35G:N40V
2010	Myriam Khawand	Microbial biodiversity of unique Lebanese habitats
2010	Zeinab Rizk	Insecticide resistance in house mosquito population, Culex pipiens, of Lebanon
2009	Zeina Dakroub	Effect of ceramide, sphingosine and sphingosine 1-phosphate on the Na+/ K+ ATPase in HepG2 cells
2009	Hwaida Jaber	Antihyperglycemic effect of Musa sapientum (banana) pseudo-stems in streptozotocin-induced diabetic rats
2008	Rida Fares	The antioxidant and antiproliferative activity of the Lebanese Origanum marjorana and Olea europea extracts
2005	Khalil Abou-El-Ardat	Induction of apoptosis by epigallocatechin-3-gallate (EGCG) in HTLV-I-positive and - negative malignant T-cells
2005	Nisreen Alwan	Isolation, molecular characterization and antimicrobial resistance of brucella and listeria species in representative Lebanese foods
2005	Imane Saleh	Antimicrobial resistance of E. coli and Y. enterocolitica isolated from dairy based foods in Lebanon
2003	Sarine Markossian	Effect of TNF-[alpha] on electrolyte transport across epithelia: possible mechanism of action
2001	Amal Malek	The formulation of high fiber Arabic bread
2001	Pascal Saikal	The impact of step feeding on rotating biological contactor performance
1998	Dima Abi-Said	Fluoride intake of infants through herbal teas in relation to the need for water fluoridation
1998	Yester Skayian	The effect and mechanisms of action of TNF-[alpha] on the NA+/K+ ATPase in cardiac myocytes
1998	Khaled Zreik	Isoenzyme variation among populations of Lacerta lizards in Lebanon
1997	Samar Khatib	Inhibitory effects on plant tannins on the biochemical markers of the skin tumor promotion induced by ultraviolet B radiation
1992	Mona Sayyed Hallak	Genotypic variation in common bean in response to cold temperature stress

1991	Zepure Churukian	Membrane lipid composition in the Brine shrimp in relation to the NA+/ K+ ATPase activity
1990	Rana Al-Khatib	Isolation and characterization of Leishmania parasites from patients with cutaneous leishmaniasis in Lebanon
1988	Edward Awad	Characteristics and displaceability of neurotensin binding sites in the rat cerebral cortex and corpus striatum

Served as an MS thesis committee member for the following students at other universities:

Date	Student	Title	University
2019	Sabah El-Sawahli	Antibacterial activity of Ilex Paraguariensis (Yerba Mate) after sub-fractionation with different solvents	University of Balamand
2017	Rihab Al Merheb	Immunomodulatory effect of citrus pectin and modified citrus pectin on cytokine production by spleen in Balb/c mice	University of Balamand
2015	Marie-Ann Abou Joude	Microbial transformation of cefotaxime and medrysone and the biological activity of their metabolites	University of Balamand
2015	Venicia Hawach	Citrus pectin and MCP antioxidant, cytotoxic, and anti-proliferative activity on HaCat cell line	University of Balamand
2013	Elias Dahdouh	Mutation prevention parameters of carbapenems against clinical isolates of Pseudomonas and Acinetobacter	University of Balamand
2012	Amanah Abraham	Antimicrobial activity of three Lebanese plant extracts on clinical isolates of Staphylococcus aureus with different profiles of resistance	University of Balamand
2012	Ziad Chebel	Sulfonamide/Quinoline and Imine/Piperazine against Staphyloccus aureus	University of Balamand
2010	Nancy Mansour	Profiling of the different cell wall polysaccharides in orange (Citrus reticulata) and bomali (Citrus grandis) fruit	University of Balamand
2009	Elias Abdou	Antibacterial activity of the extracts obtained from selected Lebanese plants on multi-drug-resistant clinical isolates of Escherichia coli and Klebsiella pneumoniae	University of Balamand
2008	Rida Fares	The antioxidant and antiproliferative activity of the Lebanese origanum majorana and olea europea extracts	University of Balamand
2008	Katia Maalouf	The antiproliferative and pro-apoptotic effect of kefir on human leukemic cell lines	LAU
1985	Lolita Qouta	The utilization of reserve materials of cabbage seeds during germination	Yarmouk University

Supervised the work in my lab of the following students:

- Ziad Chebaro, Lebanese University (MS)
- Mirna Saliba, Lebanese University (MS)
- Jana Ayyash, University of Rennes and Lebanese University (PhD in progress)
- Iman Ibrahim, Aix-Marseille University (PhD)

SERVICE

A. University committees

A1. American University of Beirut

- Member of the following Committees of the Faculty of Arts and Sciences:
    - Admissions Committee (1988-1990, 1991-1993 & 1996-1998)
    - Advisory Committee (1992-1994, 1995-1997, 1998-2002 & 2003- 2005 and the Fall Semester 2012-2013)
    - Curriculum Committee (1987-1989)
    - Library Committee (1990-1992)
    - Research Committee (1989-1991)
    - Student Affairs Committee (1988-1990)
- Chairman of an ad-hoc committee to review the PhD program in the Biology Department
- FAS-SRC Advisor for the Academic Year 2008-2009
- Interim Secretary for the Biology Department during the First Semester of the Academic Year 2008-2009
- Member of an *ad hoc* committee to discuss the offering of a summer undergraduate research course in the Department of Biology
- Member of an *ad-hoc* Committee to prepare the PhD proposal for the Department of Biology
- Member of FAFS Departmental Committee for Faculty Promotion (2009)
- Member of the Faculty of Medicine Expanded Advisory Committee to study promotion files (2012)
- Member of the PRC committee of a faculty member at FAS (2021)
- Member of the PRC committee of a faculty member at FAFS (2021)
- Member of the PRC committee of 2 faculty members at FHS applying for promotion to Tenured Professor (2022)
- Member of the expanded department committee for the promotion of a faculty member at FHS to Tenured Professor (2022)
- Chair of an *ad-hoc* Committee to review the common courses between FAFS and the Biology Department
- Member of the Accreditation Working Group TWO on Planning, Resources and Institutional Renewal (2007-2008)
- Secretary of the University Research Board (1993-1994)
- Member of the University Research Board (1993-1996)
- Member of the University Publications Committee (1990-1993)
- Member of the Senate Steering Committee (1990-1991)
- Member of the University Senate (1990-2002, 2003-2006, 2012-2014)
- Member of the Admissions Committee of the Faculty of Medicine (1987-1990)

A2. Yarmouk University, Jordan

- Member of the University Council
- Member of the University Academic Advisory Committee
- Member of the Budget Committee
- Member and Convenor of the Planning and Development Committee

- Member of the Recruitment Committee
- Member of Contributions Fund
- Member of the Scholarships Committee
- Member of the Housing Committee
- Member of the Marine Sciences Station Committee
- Member of the University Catalogue Committee
- Convenor of the Agreements Follow-up Committee
- Chairman of the Savings Fund Committee
- Chairman of the Health Insurance Committee
- Chairman of the Landscape Committee
- Chairman of the Projects Follow-up Committee
- Chairman of the Selection of Outstanding Arts Students Committee
- Chairman of the Selection of Outstanding Sport Students Committee

A3. The Future University, Sudan

- Member of the Board of Trustees (2011- present)

B. Professional Service

B1. Consultancies

- Served as a consultant for UNESCO
- Served as a consultant for UNEP
- Served as a consultant for UNDP
- Served as a consultant for ISESCO
- Served as a consultant for ALECSO
- Served as a consultant for the Higher Council for Science and Technology, Jordan
- Served as a consultant for the University of Sharjah
- Served as a consultant amongst an international team to prepare a strategy for solar energy in Libya

B2. Service on International Scientific Committees and Projects

- Active participant in the International Union of Biological Sciences-Commission on Biological Education (IUBS-CBE), attending all its meetings during 1980-1986 and assisting in editing its Newsletter
- Member of the Middle East Science Fund (MESF) Regional Executive Committee
- Member of the Regional Advisory Committee of Ethics founded at the Egyptian Academy for Scientific Research and Technology in collaboration with UNESCO
- Member of the Arab Health Water Association (Affiliate-member of HWA)
- Founding Member of the Arab Network of Networks for Science and Technology
- Coordinated the ALECSO project on "Surveying and Identification of Date Palm Varieties in the Arab World"
- Prepared a project document on "Mitigating Water-Related Risks and Facing Social Challenges" for UNESCO
- Member of the TWAS Biology Committee
- Member of COSTED-AraBN
- Member of the Steering Committee for the project "Science and Technology Indicators in the Arab States" (UNESCO, ALECSO and AAS project)

- Coordinator for the production of the four volumes of the "Arabic Encyclopaedia on Knowledge for Sustainable Development" (UNESCO project)
- Expert consultant for the Arabic version of the Encyclopedia of Life (AEOL)
- Member of TWAS Advisory Committee (MAC) in Structural, Cell and Molecular Biology (2016-2020)

B3. Service on National Scientific Committees and Projects

- Member of the Jordanian National Committee of Man and Biosphere (Jordan)
- Member of the Five-Year Plan (1986-1990) Committee on Science and Technology (Jordan)
- Led a project on health education in the schools of Jordan, the results of which were published in reputable international journals and books, in addition to contributing in writing books on health education
- Member of the Advisory Committee for the Establishment of the Faculty of Arts and Sciences at Al-Manar University (Lebanon)
- Evaluated the programs of the Faculty of Sciences at the University of Balamand
- Interim Coordinator of the Lebanese TWAS Chapter
- Member of the Biology Group of the Lebanese Association for the Advancement of Science (LAAS)
- Evaluated the Bachelor of Science in Biology Program at Al Ain University of Science and Technology, Abou Dhabi, United Arab Emirates

B4. Service on National Scientific Committees and Projects

- Cambridge Philosophical Society, United Kingdom
- The Biochemical Society, United Kingdom
- The Darwin Society, Darwin College, Cambridge, United Kingdom
- The Lebanese Association for the Advancement of Sciences, Lebanon

B5. Referee for Science Prizes

- Referee for "Abdul Hameed Shoman Prizes for Young Arab Scientists and Researchers" during the years 1991, 1994, 1997, 1999, 2002, 2004 & 2009
- Referee for "Abdul Hameed Shoman Prizes for Teachers of Science in Jordanian Schools" during the years 1982-1986
- Referee for the TWAS-ARO Young Arab Scientist (YAS) 2010 Prize on "Biodiversity Conservation and Informatics"
- Referee for the TWAS-ARO Young Arab Scientist (YAS) 2011 Prize
- on "Chemistry for Sustainable Development in the Arab World"
- Referee for the ALECSO Technological, Innovation and Creativity Prize for Young Researchers in the Arab States, 2011
- Referee for the poster session of the TWAS-ARO 8th Annual Meeting, 2012
- Referee for the presentation proposals of the TWAS Young Affiliates that were presented in the TWAS-ARO 8th Annual Meeting, 2012
- Referee for the selection of the best poster winning the first prize in the "Drug Discovery and Therapy World Congress" (August 22-25, 2016 Boston, USA)

B6. Textbooks

- Preparation of the biology curricula and textbooks for secondary schools and community colleges in Oman and writing seven Biology textbooks for these levels
- Helped in the writing of biology textbooks for secondary schools in Jordan

- Helped in the writing of the ALECSO biology textbooks for secondary schools

B7. Translations

- Translated into Arabic a university-level textbook in biochemistry
- Reviewed the translation of various biological articles that appeared in Aloloom, the Arabic version of Scientific American
- Translated into Arabic some entries for the Arabic version of the Encyclopedia of Life (AEOL)

B8. Editorial Boards

- Serving as an Editorial Board Member for Scientific Reports, a journal from Nature Publishing Group, the publishers of Nature (2014-)
- Editor of the book entitled "Water, Energy and Food Sustainability in the Middle East – The Sustainability Triangle" published by Springer Nature, 2017
- Editor of the book entitled "Universities in Arab Countries: An Urgent Need for Change". Published by Springer Nature, 2018
- Editor of the book entitled "Major Challenges facing Higher Education in the Arab world: Quality Assurance and Relevance" published by Springer Nature, 2019
- Editor of the book entitled "Higher Education in the Arab world: Building a Culture of Innovation and Entrepreneurship" Springer Nature, 2020
- Editor of the book entitled "Higher Education in the Arab world: Government and Governance" Springer Nature, 2020
- Editor of the book entitled "Higher Education in the Arab world: Research and Development" Springer Nature, 2022
- Editor of the book entitled "Higher Education in the Arab World: New Priorities in the Post Covid-19 Era" Springer Nature, 2022.
- Editor of the book entitled "Higher Education in the Arab World: E-learning and Distance Education" Springer Nature, In press.
- Member of the International Advisory Board of the "Jordan Journal of Biological Sciences (JJBS)

B9. General

- Attracted eminent scientists from prestigious overseas universities to deliver seminars
- Delivered public lectures and television presentations on cloning and the Human Genome Project
- Member of the Advisory Scientific Council of the Genetics Research Laboratory of the Chronic Care Centre
- Reviewer for international and regional scientific journals, research proposals, and reviewer of books intended for publication
- Evaluated faculty promotion documentation for regional universities
- Invited to join the E-reviews Database at King Fahd University of Petroleum and Minerals
- Reviewed the BA/CSSP Research Grants 2011 program of the Bibliotheca Alexandrina
- Evaluated the presentation proposals of TWAS young affiliates
- Served as a founding member of the Lebanese-Jordanian Friendship Association
- Served as a member of the International Advisory Committee of the AASSA-PAS Regional Workshop 2019 on "Complementary medicine as an answer to challenges faced in achieving sustainable goals in health"

C. Meetings, workshops, and conferences

- I have travelled extensively in the region and beyond to participate actively in conferences, workshops and other types of meetings, thereby supplementing my knowledge and experience for the benefit of colleagues, students, and the University. For example, I was sponsored by the United States Information Agency (USIA) and the Bureau of Educational and Cultural Affairs to spend one month on the International Visitors Program inspecting several American educational institutions to analyze their arrangements and educational systems. Moreover, my participation in an International Seminar on Management in Universities, which was organized by the British Council and attended by university heads from all over the world, provided profound insights into institutional leadership and development. It also reinforced my commitment to education in all its aspects, most notably science; technology; engineering; medicine; the humanities and cultural interfaces; fostering innovation and entrepreneurialism; deploying the range of teaching and learning methodologies such as lecturing , project supervision, seminars, discussion meetings, workshops, databases, the internet, etc.; connections with end-users, gender issues; the role of education in addressing environmental, social and economic sustainability including the Millennium Development Goals.

- I have presented the findings of my research in national, regional, and international conferences (see section on papers in international meetings) in USA, Canada, United Kingdom, Switzerland, Germany, Belgium, France, Italy, The Netherlands, Spain, Cyprus, China, The Philippines, Pakistan, India, Egypt, Tunisia, Morocco Sudan, Senegal, Kuwait, Saudi Arabia, Bahrain, Oman, United Arab Emirates, Lebanon, and Jordan.

- Furthermore, I have initiated, organized, and chaired several international conferences, bringing together decision-makers, including university presidents from a wide range of countries in the Region and from Europe, the USA, and Far East. These Conferences were sponsored by international and regional agencies including UNESCO, ALECSO, ISESCO and TWAS, among others, and involved the production of summaries and recommendations that were widely circulated. The conferences include:
    - Cellular and Molecular Aspects of Plant Cell Differentiation. Beirut, Lebanon, 23-29 September, 1996
    - Technology Transfer in Biotechnologies as a Catalyst for National development. Beirut, Lebanon, 4-6 October, 1999
    - Scientific and Technological Entrepreneurship in Universities and Research Institutes. Beirut, Lebanon, 11 November, 2000
    - Economic Growth: the Involvement of Biotechnology and the Modern Bioindustries. Beirut, Lebanon, 10 – 11 November, 2001
    - Bioethics: How to Adapt Biotechnology to Culture and Values. Beirut, Lebanon, 1-2 March, 2003
    - Drug Biotechnology and Medicinal Plants. Amman, Jordan, 9-11 October, 2004
    - Nanoscience and its Impact on Renewable Energy and Medicine. Beirut, Lebanon, 5-6 December, 2005
    - Integrated Water Resources Management in the Arab Region. Beirut, Lebanon, 14-16 December, 2006
    - Science Parks for the Developing World: Engines of Economic and Social Growth. Amman, Jordan 14-17 December, 2007
    - Bridging the Digital Divide in Developing Countries. Beirut, Lebanon, 14-15 November, 2008
    - Training Managers of Science Parks. Beirut, Lebanon, 17-18 November, 2008
    - Alternative & Renewable Sources of Energy. Beirut, Lebanon, 25-26 November, 2010
    - Water and Energy in Sustainable Food Security. Beirut, Lebanon, 2-3 December, 2011
    - Energy and Water Sustainability. Beirut, Lebanon, 7-8 December, 2012

- Water-Energy Nexus and Waste Management for a Sustainable Arab World. Beirut, Lebanon, 6-7 December, 2013
- Sustainable Energy and Water Resource Management for Food Security in the Arab Middle East. Beirut, Lebanon, 12-13 December, 2014
- Climate Change and Water-Energy-Food Nexus in the Arab Middle East. Amman, Jordan, 5-6 December, 2015
- Arab Universities: an Urgent Need for Change. Beirut, Lebanon, 4 – 5 November, 2016
- Major Challenges facing Higher Education in the Arab World: Quality Assurance and Relevance. Beirut, Lebanon, 10-11November, 2017
- Higher Education in the Arab World: Building a Culture of Innovation and Entrepreneurship. Beirut, Lebanon, 16-17 November, 2018
- Higher Education in the Arab World: Government and Governance. Beirut, Lebanon. December 6-7, 2019
- Higher Education in the Arab World: Research and Development. Beirut, Lebanon. November 18-19, 2020
- Higher Education in the Arab World: New Priorities in the Post COVID-19 Era. Beirut, Lebanon. November 26-27, 2021
- Higher Education in the Arab World: E-Learning and Distance Education. Beirut, Lebanon. November 16-17, 2022
- Currently organizing a conference entitled: Higher Education in the Arab World: Digital Transformation. To be held in Beirut, Lebanon. November 10-11, 2023

- Co-organized an international conference and workshop on "Herbal Drug Development for Socio-Economic Uplift in Developing Countries". Amman, Jordan, 5-8 September, 2015
- Member of the Organizing Committee of the "World Congress on Science and Molecular Biology", Dubai, United Arab Emirates, 6 – 8 April, 2017