

# Danielle A. BADRO

(she/her/hers)

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Lebanese-Canadian

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## PROFILE

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Scientist with over 15 years of experience (Post-Doc level) in the characterization of malignancies. Expert knowledge in human embryology. Associate member at National Institute of Public Health, Clinical Epidemiology, and Toxicology - Lebanon (INSPECT-LB) and founding member of its Research Ethics Committee. Long-standing research experience in biology and public health, with a strong focus on the epidemiology of chronic diseases, genotype-phenotype associations, and KAP studies in the general population. Over 10 years of experience serving and leading as a humanitarian with a strong focus towards improving the quality of life of children suffering from life-threatening illnesses. Aspiring to educate and mentor students in conflict areas and among vulnerable populations. Fluent in French, Arabic, and English.

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## PROFESSIONAL EXPERIENCE

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### Associate Professor of Molecular Oncology (full-time)

Sep 2022-Present

American University of Iraq-Baghdad (AUIB), College of Healthcare Technology

- Teach 18 course credits per academic year;
- Design and create new curricula for science majors including Medical Laboratory Technology, Anesthesia Technology, Dentistry Technology, Nutrition and Food Science, Optics and Visual Sciences, and Radiologic Imaging;
- Design new course and laboratory course contents;
- Serve on hiring committees and mentor new faculty members;
- Serve on college and university committees;
- Advise on the designing of laboratory plans, equipment needs, setup, and maintenance;
- Advise on the College of Healthcare Technology strategic planning;
- Prepare and submit applications for international accreditations.

### Director of Graduate Studies (full-time)

Oct 2015-Aug 2022

American University of Science and Technology, Faculty of Health Sciences, Lebanon

- Teach 24 undergraduate and graduate course credits per academic year, using face-to-face and online modalities;
- Lead the interviewing and short-listing of MS candidates;
- Remodel and update course curricula, and create new graduate majors, training programs as well as Continuing Medical Education (CME) and professional development programs;
- Write grant funding applications, both local and international;
- Forecast graduate research budgets, approve finalized budgets and supervise the purchasing of laboratory products;
- Create financial aid opportunities for students on a recurrent basis - I have implemented a graduate assistantship (GAs) program at the faculty and committed myself to supervising GAs work to achieve the goals of the program (improve the overall work performance at the faculty, facilitate the work of faculty members, and develop GAs' soft skills);
- Oversee and validate students' writing material including research proposals, theses, Institutional Review Board (IRB) applications, questionnaires, and participant/patient informed consents and assents;
- Edit and create Standard Operating Procedures (SOPs) related to laboratory work and research;
- Prepare application files for the licensing, accreditation, and equivalence of educational programs/majors by the Ministry of Education and Higher Education;
- Act and find adequate solutions for students struggling during their studies due to financial stress, personal/family issues or conflicts in their schedule;
- Publish scientific papers;
- Upgrade the quality of publications authored by the faculty by launching inter-disciplinary research projects;
- Expand AUST's international network of collaborators - I have initiated and secured Memoranda of Understanding with European universities and institutions including Erasmus+, Agence Universitaire de la

Francophonie, Université Catholique de Lille, University of Verona, and University of Santiago de Compostela, thus offering teaching, research and exchange opportunities for faculty members, staff, and students;

- Counsel and mentor senior graduate students during their thesis research work and monitor their work progress;
- Support graduate instructors who received poor evaluations and work towards improving their teaching performances;
- Organize seminars, workshops, and conferences;
- Create job opportunities for students by reaching out to hospitals, laboratories, and corporates groups.

### **University Lecturer, Lebanon**

**2010-2022**

#### **American University of Science and Technology, Faculty of Health Sciences**

**2013-2022**

Introduction to biology (BIO 101/200)  
Cells and molecules course (BIO 210) and lab course (BIO210L) Laboratory biosafety (CLS 210)  
Introduction to microbiology (BIO 310) Molecular genetics Lab (CLS320L) Biotechnology (CLS 485)  
Web-based molecular biology (CLS 498/560)  
Cell and molecular biology (CLS 522) course and lab course (CLS532L) Current genetic analysis (CLS 524) course and lab course (CLS534L) Recombinant DNA (CLS 526) course and lab course (CLS539L)

#### **Lebanese American University, Gilbert and Rose-Marie Chagoury School of Medicine**

**2017-2020**

Embryology discipline to Med I and Med II students

#### **Lebanese American University, School of Arts and Sciences**

**2013-2015**

Developmental biology (BIO 401)

#### **Lebanese University, Faculty of Sciences, Graduate program**

**2013-2015**

Genetics and epigenetics of gonads differentiation  
Recombinant DNA and animal transgenesis  
Cell therapy, gene therapy, and tools in animal transgenesis

#### **Université Saint Joseph, Faculty of Sciences, Graduate Program**

**2010-2015**

Research methods in recombinant DNA and animal transgenesis

## **EDUCATIONAL BACKGROUND**

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### **Post-Doc in Cancer Biology**

**Nov 2011-Oct 2012**

#### **American University of Beirut, Faculty of Medicine, Beirut, Lebanon.**

Scope of Study: Characterization of p53 and pRb functions in oncogene-induced senescence in a mouse model of pinealoblastoma.

Research Work: Grew pineal gland cells in culture and transfected them with lentiviruses, used tamoxifen-inducible *p53*

mouse models, carried out DNA recombineering, and gene expression analyses. Supervisor: Dr. Raya Saab, MD.

### **Post-Doc in Human Genetics (sponsored by National Geographic; Collab. With IBM) Dec 2009-Jul 2011**

#### **Lebanese American University, Gilbert and Rose-Marie School of Medicine, Byblos, Lebanon.**

Scope of Study: Mitochondrial lineage analysis to assess the Out-of-Africa hypothesis.

Research Work: Sequenced mitochondrial DNA and conducted haplogroup predictions on DNA with ancestry from the Levantine and Horn of Africa regions. Did a community outreach expedition in Ethiopia.

Supervisor: Dr. Pierre Zalloua, PhD.

### **PhD in Molecular and Cell Biology**

**Sep 2004-Dec 2009**

#### **National Institute of Health and Medical Research (INSERM) Université Côte d'Azur, Nice, France.**

Uncovered the role of the *Wilms' tumor 1* gene in the mouse embryonic kidney and its association with developmental defects. Generated genetically modified mice using pronuclear microinjection, performed surgeries on animals, carried

out histology analyses, molecular studies, and quantitative assays.

Supervisor: Dr Andreas Schedl, PhD.

### **Master's Degree**

**Sep 2002-Jul 2004**

#### **2<sup>nd</sup> year of MS in Biology of Eukaryotes (Developmental Biology/Embryology)**

**Aix-Marseille Université, Marseille, France.**

Studied developmental processes in various eukaryotic organisms including the sea urchin. During my thesis work, I genetically modified the *Polycystic Kidney Disease 1* gene sequence using recombineering in bacteria.

Supervisor: Prof Michel Fontes, PhD.

#### **1<sup>st</sup> year of MS in Molecular Biology, Cell Biology, and Genetics**

**Université Saint-Joseph, Beirut, Lebanon.**

Bioprospected for and found new strains of *Bacillus thuringiensis* bacteria to be used in biopesticides. Supervisor: Dr. Mireille Kallassy-Awad, PhD.

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## **ADMINISTRATIVE APPOINTMENTS and ACADEMIC CONTRIBUTIONS**

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### **AUST Appointments**

**2015-2022**

- Erasmus+ representative for the university
- Agence Universitaire de la Francophonie (AUF) representative for the university

### **AUIB Appointments**

**Sept 2022-Present**

- Member of Search Committees for the Healthcare Technology, Dentistry, Arts and Sciences, and Pharmacy Colleges
- Founder and Chair of the institutional Syllabus Template Committee
- Member of the institutional Curriculum Review Committee
- Member of the institutional Faculty Senate
- Member of the College of Pharmacy Internal Promotion Review Committee
- Member of the institutional Quality-of-Life Committee

### **Extramural Appointments**

External referee for internal promotion at the Gilbert and Anne-Marie School of Medicine, Lebanese American University.

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## **HUMANITARIAN WORK**

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### **Myschoolpulse NGO, Lebanon**

**2014-2022**

Myschoolpulse is a Lebanon-based NGO that operates the only hospital school program in the country and offers creativearts therapy for children suffering from life-threatening illnesses:

- Since 2020 I have been training teachers on the use of E-learning tools and managing the NGO's communication.
- Since 2018 I have been coordinating the NGO's emergency action: immediately after the August 4, 2020 Beirut blast, Ms. Mireille Nassif, co-founder at Myschoolpulse and I launched a Chemotherapy Emergency Fund and raised over 200,000USD. I have ordered over 2,000 vials of chemotherapy via 12 local suppliers, coordinated their dispatching over three hospitals, and followed-up on the regulatory affairs related to the procurement of these medications (medications registered/not registered at the Ministry of Public Health, subsidized/not subsidized etc...). I also organized emergency airlifts from Jordan with the support of the King Hussein Cancer Foundation via HRH Princess Ghida Talal and the US-based NGO Lebanon Needs.
- Since 2017 I have worked on a variety of missions and fundraisers for the NGO, including the Pulse 5K/1K race that brings together more than 2,000 runners yearly since 2010.
- From 2014-2017 I volunteered as a tutor for cancer children <https://youtube.be/LNDwYC92Axs>

### **Toufoula NGO, Lebanon**

**2010-2013**

Toufoula is an NGO in Lebanon whose mission is to refurbish rooms in pediatric cancer wards across Lebanese hospitals. During my time at Toufoula I served as board member and carried out the following:

- Recruited sponsors and achieved stakeholder coordination;
- Acted as the NGO's spokesperson;
- Coordinated with interior architects the various designs of the rooms according to healthcare facility design standards and helped them abide by deadlines;
- Monitored rooms construction as per international health facility guidelines;

- Visited pediatric cancer wards with construction auditors during the contracting works.

## **Avaaz and LEBANUS NGO**

**2003-Present**

- Member at Avaaz (2007-Present), a global campaigning web-based movement.
- Former Secretary General at LEBANUS (2003), Lebanese cultural and humanitarian organization that financially supports school children in their final school years

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## **MEETINGS and CONFERENCES**

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### **Guest speaker at the Institute of Electrical and Electronics Engineers (IEEE) 2019 conference, Beirut (Oct 12, 2019)**

Delivered a presentation about scientific writing and research design methodologies strategies.

### **Erasmus+ meeting in Lille, France (1-7, Jul 2019)**

Attended the meeting as AUST representative. Discussed with local and European fellow academic attendees about teaching, research, and education exchange opportunities for AUST faculty members, staff and students.

### **Invited panelist at Angels Lebanon 3<sup>rd</sup> conference, Beirut (Feb 27, 2019)**

The guest speaker was Prof Eric Verdin and panel's discussion revolved around the science of human ageing.

### **Guest speaker at Al Karim conference about molecular diagnostic tools, Saida, Lebanon (Jun 23, 2015)**

Invited by Al Karim laboratories to deliver a technical talk about the use of quantitative assays in molecular diagnostics to an audience of Medical Doctors practicing in South Lebanon.

### **Guest speaker at NINAR's series of cultural conferences in Beirut, Lebanon (Jan 8, 2013)**

Delivered a presentation about cancer to a lay audience: "Cancer: a story of anarchy".

### **WT1 first international meeting, University of Manchester in Manchester, UK (Sep 8-9, 2008)**

Delivered a presentation about "Wt1 in early nephrogenesis: identification of novel target genes" <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3076747/>

### **University of Oulu, Pr Seppo Vainio's laboratory, Oulu, Finland (Aug-Sep 2007)**

Apprenticeship supported by a grant from the European Renal Genome consortium in *in vitro* recombination techniques of mouse embryonic organs with cells.

### **European Renal Genome Project summer school, Oxford, UK (Sep 21-22, 2006)**

Delivered two presentations about my PhD work.

### **EMBO YIP PhD summer school, EMBL Center, Heidelberg, Germany (4-11 Sep, 2005).**

### **University of Edinburgh, MRC, Dr. Jamie Davies' laboratory, Edinburgh, Scotland (14-17 Jun, 2005)**

Apprenticeship in culture techniques of murine embryonic renal tissues.

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## **RESEARCH GRANTS**

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Two-year (2018-2020) grant awarded by the Lebanese National Research Council

(CNRS). Role: co-PI

Amount: 60,000,000LBP (40,000USD).

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## **PUBLICATIONS**

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**ORCID ID:** <https://orcid.org/0000-0003-4487-9144>

### **Book Chapter**

Chronic Kidney Disease management in developing countries, **Badro DA** in: Handbook of Medical and Health Sciences in Developing Countries: Education, Practice, and Research. *Springer Nature*.

[https://link.springer.com/referenceworkentry/10.1007/978-3-030-74786-2\\_27-1](https://link.springer.com/referenceworkentry/10.1007/978-3-030-74786-2_27-1)

### **Peer-reviewed publications (17 out of 17)**

1. Sacre, H., Hajj, A., **Badro, D. A.**, Abou Selwan, C., Haddad, C., Aoun, R., & Salameh, P. (2022). The Combined Outcomes of the COVID-19 Pandemic and a Collapsing Economy on Mental Well-Being: A Cross-Sectional Study. *Psychological Reports*. <https://doi.org/10.1177/00332941221110545>

2. Mallah N, Rodríguez-Cano R, **Badro DA**, Figueiras A, Gonzalez-Barcala FJ, Takkouche B. Development and Validation of a Knowledge, Attitude and Practice Questionnaire on Antibiotic Use in Arabic and French Languages in Lebanon. *Int J Environ Res Public Health*. 2022 Jan 8;19(2):687. doi: [10.3390/ijerph19020687](https://doi.org/10.3390/ijerph19020687). PMID: 35055509; PMCID: [PMC8776152](https://pubmed.ncbi.nlm.nih.gov/PMC8776152/).
3. Mallah N, Rodríguez-Cano R, **Badro DA**, Figueiras A, Caamaño-Isorna F, Takkouche B. Validation of the Arabic and French Versions of a Knowledge, Attitudes and Practices (KAP) Questionnaire on Tranquilizer Misuse. *Int J Environ Res Public Health*. 2021 Oct 23;18(21):11144. doi: [10.3390/ijerph182111144](https://doi.org/10.3390/ijerph182111144). PMID: 34769663; [PMCID: PMC8582760](https://pubmed.ncbi.nlm.nih.gov/PMC8582760/).
4. Mallah N, **Badro DA**, Figueiras A, Takkouche B. Association of knowledge and attitudes with the misuse of tranquilizers in parents: a study in Beirut (Lebanon). *Psychol Health*. 2021 May 12:1-14. <https://doi.org/10.1080/08870446.2021.1912341>. Epub ahead of print. PMID: [33979239](https://pubmed.ncbi.nlm.nih.gov/33979239/).
5. Daou F, Abou-Sleymane G, **Badro DA** et al., The history, efficacy, and safety of potential therapeutics: A narrative overview of the complex life of COVID-19. *Int. J. Environ. Res. Public Health* **2021**, *18*(3), 955; <https://doi.org/10.3390/ijerph18030955>. PMID: [33499310](https://pubmed.ncbi.nlm.nih.gov/33499310/); PMCID: [PMC7908443](https://pubmed.ncbi.nlm.nih.gov/PMC7908443/).
6. Salameh P, Hajj A, **Badro DA** et al., Mental health outcomes of the COVID-19 pandemic and a collapsing economy: Perspectives from a developing country. *Psychiatry Research*. *Psychiatry Res*. 2020 Oct 22;294:113520. doi: [10.1016/j.psychres.2020.113520](https://doi.org/10.1016/j.psychres.2020.113520). PMID: [33142145](https://pubmed.ncbi.nlm.nih.gov/33142145/).
7. Mallah N, **Badro DA** et al., Association of knowledge and beliefs with the misuse of antibiotics in parents: A study in Beirut (Lebanon). *PLoS One*. 2020 Jul 22;15(7):e0232464. doi: [10.1371/journal.pone.0232464](https://doi.org/10.1371/journal.pone.0232464). eCollection 2020. PMID: [32697808](https://pubmed.ncbi.nlm.nih.gov/32697808/).
8. **Badro DA** et al., Good Pharmacy Practice assessment among Community Pharmacies in Lebanon. *Pharm Pract (Granada)*. Jan-Mar 2020;18(1):1745. doi: [10.18549/PharmPract.2020.1.1745](https://doi.org/10.18549/PharmPract.2020.1.1745). Epub 2020 Mar 16. PMID: [32256898](https://pubmed.ncbi.nlm.nih.gov/32256898/).
9. Harajly M et al., p53 Restoration in Induction and Maintenance of Senescence: Differential Effects in Premalignant and Malignant Tumor Cells. *Mol Cell Biol*. 2015 Nov 23;36(3):438-51. doi: [10.1128/MCB.00747-15](https://doi.org/10.1128/MCB.00747-15). PMID: [26598601](https://pubmed.ncbi.nlm.nih.gov/26598601/).
10. Motamedi FJ, **Badro DA** et al., [WT1 controls antagonistic FGF and BMP-pSMAD pathways in early renal progenitors](https://doi.org/10.1038/ncomms5444). *NatCommun*. 2014 Jul 17;5:4444. doi: [10.1038/ncomms5444](https://doi.org/10.1038/ncomms5444). PMID: [25031030](https://pubmed.ncbi.nlm.nih.gov/25031030/). **Co-First author paper.**
11. Kiani J, **Badro DA** and Grandjean V. RNA: a possible contributor to the 'missing heritability'. *Basic Clin Androl*. 2013 Nov 1;23:9. doi: [10.1186/2051-4190-23-9](https://doi.org/10.1186/2051-4190-23-9). eCollection 2013. PMID: [25780571](https://pubmed.ncbi.nlm.nih.gov/25780571/).
12. **Badro DA** et al., and The Genographic Consortium. [Y-Chromosome and mtDNA Genetics Reveal Significant Contrasts in Affinities of Modern Middle Eastern Populations with European and African Populations](https://doi.org/10.1371/journal.pone.0054616). *PLoS One*. 2013;8(1):e54616. Epub 2013 Jan 30. doi: [10.1371/journal.pone.0054616](https://doi.org/10.1371/journal.pone.0054616). PMID: [23382925](https://pubmed.ncbi.nlm.nih.gov/23382925/).
13. Hager J et al., and the FGENTCARD Consortium. [Genome-wide association study in a Lebanese cohort confirms PHACTR1 as a major determinant of coronary artery stenosis](https://doi.org/10.1371/journal.pone.0038663). *PLoS One*. 2012;7(6):e38663. doi: [10.1371/journal.pone.0038663](https://doi.org/10.1371/journal.pone.0038663). Epub 2012 Jun 20. PMID: [22745674](https://pubmed.ncbi.nlm.nih.gov/22745674/).
14. Ghassibe-Sabbagh M et al., and the FGENTCARD Consortium. [Genetic and environmental influences on total plasma homocysteine and its role in coronary artery disease risk](https://doi.org/10.1016/j.atherosclerosis.2012.02.035). *Atherosclerosis*. 2012 May;222(1):180-6. doi: [10.1016/j.atherosclerosis.2012.02.035](https://doi.org/10.1016/j.atherosclerosis.2012.02.035). Epub 2012 Feb 28. PMID: [22425167](https://pubmed.ncbi.nlm.nih.gov/22425167/).
15. Saade S et al., and the FGENTCARD consortium. Large scale association analysis identifies three susceptibility loci for coronary artery disease. *PLoS ONE*. 2011;6(12):e29427. Epub 2011 Dec 27. doi: [10.1371/journal.pone.0029427](https://doi.org/10.1371/journal.pone.0029427). PMID: [22216278](https://pubmed.ncbi.nlm.nih.gov/22216278/).
16. Haber M, Platt DE, **Badro DA** et al., and the Genographic Consortium. [Influences of history, geography, and religion on genetic structure: the Maronites in Lebanon](https://doi.org/10.1038/ejhg.2010.177). *Eur J Hum Genet*. 2011 Mar;19(3):334-40. Epub 2010 Dec 1. doi: [10.1038/ejhg.2010.177](https://doi.org/10.1038/ejhg.2010.177). PMID: [20981037](https://pubmed.ncbi.nlm.nih.gov/20981037/).
17. Haber M, Platt DE, Khoury S, **Badro DA** et al., [Y-chromosome R-M343 African lineages and sickle cell disease reveal structured assimilation in Lebanon](https://doi.org/10.1038/jhg.2010.131). *J Hum Genet*. 2011 Jan;56(1):29-33. doi: [10.1038/jhg.2010.131](https://doi.org/10.1038/jhg.2010.131). Epub 2010 Oct 28. PMID: [20981037](https://pubmed.ncbi.nlm.nih.gov/20981037/); PMCID: [PMC3312574](https://pubmed.ncbi.nlm.nih.gov/PMC3312574/).

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## PROFESSIONAL DEVELOPMENT and CERTIFICATES

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### Courses and workshops:

- Higher Education Capacity Development Program (HECD) Grant Writing training workshop. Funded by The United States Agency for International Development (USAID). Implemented by: Education Development Center (EDC) (6-8 June, 2022).

- Completed a “MEAL (Monitoring, Evaluation, Accountability, and Learning) course for NGOs” hosted by the Global Health Institute at American University of Beirut, Lebanon (date of completion March 4, 2021).
- Completed the Human Research Protection Training of the U.S. Office for Human Research Protections (Sep 2021).
- Completed Blackboard’s certification course in Fundamentals of Digital Teaching and Learning (valid till Sep 2030).

**Computer Skills:** molecular biology databases (NCBI online tools; BLAST; ECR browser; Ensembl); SPSS; Prezi; Cloud-based document repositories.

**Writing skills:** research-related questionnaires; participant/patient informed consents and assents; Institutional Review Board applications; grant applications; research proposals; scientific articles; article reviewing for peers.

## **EXTRACURRICULAR ACTIVITIES**

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- Amateur mountain trekker: summited Mount Kilimanjaro (alt. 5895m) in Tanzania (#UP382150) in 2016 to raise awareness for breast cancer and raise funds for the Lebanese Breast Cancer Foundation.  
Completed the 180Km-long GR20 trek in Corsica in 2018 and raised over 8,000USD in support of Myschoolpulse <http://www.myschoolpulsefundraising.com/event.asp?webaddress=DanielleGR20>
- Long-distance amateur runner: competed in the Lebanese national athletics championships from 1993-2001; Medaled more than 50 times and broke the junior national record in 4x100m.

## **REFERENCES**

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### **Dr. Nabeel F Haidar, Provost, AUST, Beirut, Lebanon**

During my appointment as Director of Graduate Studies at the FHS, I carried out my duties in consultation with Provost Haidar.

Email: [nhaidar@aust.edu.lb](mailto:nhaidar@aust.edu.lb)

Tel: +961 1 218716 Ext 430

### **Dr. Andreas Schedl, Group leader, Université Côte d’Azur, Nice, France**

Dr Schedl was my PhD thesis supervisor.

Email: [andreas.schedl@unice.fr](mailto:andreas.schedl@unice.fr)

### **Prof. Pascale Salameh, founder and director, INSPECT-LB, Lebanon**

Prof. Salameh and I have collaborated on multiple research projects and co-authored multiple papers since the inception of INSPECT in 2018, of which I am an associate member.

Email: [pascalesalameh1@hotmail.com](mailto:pascalesalameh1@hotmail.com)

### **Prof. Sola Aoun Bahous, Dean, Gilbert and Rose-Marie Chagoury School of Medicine, Lebanese American University, Byblos, Lebanon**

Dr. Bahous coordinated my teaching appointment at LAU’s School of Medicine and is one of my research collaborators.

Email: [sola.bahous@lau.edu.lb](mailto:sola.bahous@lau.edu.lb)

### **Ms. Mireille Nassif, co-founder at Myschoolpulse (MSP) NGO, Geneva, Switzerland**

I have volunteered for Myschoolpulse for over 7 years and worked closely with Ms. Nassif on various missions.

Email: [mireille.nassif@myschoolpulse.com](mailto:mireille.nassif@myschoolpulse.com)

*- Supporting documents for education, appointments, teaching, and research experience are all available upon request -*