NOSAYBA Z. AL-AZZAM

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PROFESSIONAL SUMMARY:

Dedicated Assistant Professor with four years of graduate biochemistry teaching experience and nine years of undergraduate teaching experience. Excellent at developing and implementing class curriculum, preparing daily lectures, and grading assignments. Having nine years of research experience. Researching and publishing academic papers, as well as representing the university at conferences and giving presentations as needed. Excellent communication and comprehension abilities. Associate Editor of the BMC Bioinformatics journal and a reviewer for many reputable journals. With exceptional teamwork and leadership abilities, as well as a strong commitment to volunteer work and committee participation.

EDUCATION RECORD:

Doctor of Philosophy in Biochemistry, The University of Akron, Akron, OH, U.S.A. (August 2012 – August 2017). Dissertation: "Regulation of Eicosanoid Signaling in Airway Inflammation and Remodeling during Asthma".

Master of Science in Biochemistry, The University of Akron, Akron, OH, U.S.A (August 2012- May 2015).

Bachelor of Dental Surgery, Jordan University of Science and Technology, Irbid, Jordan (September 2004 – June 2009).

EMPLOYMENT RECORD:

1. **Assistant Professor (January 2018 – Present):** The Department of Physiology and Biochemistry at the Faculty of Medicine at Jordan University of Science and Technology, Irbid, Jordan.

2. **Assistant Dean for Basic Medical Sciences (September 2020 – September 2021)**: The Faculty of Medicine at Jordan University of Science and Technology, Irbid, Jordan.

3. **Postdoctoral Researcher (September 2017-January 2018)**: The Department of Inflammation & Immunity, Lerner Research Institute-Cleveland Clinic, Cleveland, OH, USA.

4. **Teaching Assistant (August 2012-August 2017)**: The Department of Chemistry at The University of Akron, OH, USA.

5. **Dental Internship (July 2009-January 2010)**: Dental clinics at Howara Comprehensive Medical Centre/ Ministry of Health, Irbid, Jordan.

EDUCATIONAL ACTIVITIES

January 2018-present: Teaching graduate and undergraduate courses in biochemistry and molecular biology, Department of Physiology and Biochemistry, Faculty of Medicine, Jordan University of Science and Technology, Irbid, Jordan.

Undergraduate courses:

1. Biochemistry (MED122)
2. Molecular Genetics (MED211A)
3. Genetics (MED202)
4. Molecular genetics practical (MED211B)

Teaching the biochemistry part of several undergraduate module courses for medical students (2nd and 3rd year level). Those are systemic-based module courses with a sub focus on biochemistry and integrated medicine, and problem and research-based learning. Aside from teaching in those modules, I have also supervised many mini-research projects related to the module. Module courses include:

1. The Hematopoietic and lymphatic system (MED272)
2. Respiratory system (MED252, MED353)
3. Neuroscience system (MED282)
4. Neuroscience I (MED322)
5. Musculoskeletal & integumentary system (MED292, MED331)
6. Urinary and reproductive system (MED352)

Graduate level Courses:

1. Advanced molecular biology (MED722)
2. Advanced biochemistry (MED721)
3. Membrane and signal transduction (MED726)
4. Special topics in biochemistry (MED729)

August 2012-August 2017: Teaching undergraduate laboratories, The Department of Chemistry at The University of Akron, OH, USA.

Laboratories:

1. General organic and biochemistry
2. Principles of chemistry
3. Qualitative analysis

RESEARCH ACTIVITIES:

Research interests:

1. Eicosanoids' role in asthmatic airway inflammation and remodeling.
2. Covid-19 pandemic and educational impact.
3. Dielectrophoresis's applications and effects on cells.
4. Using graphene oxide in patterning cells.
5. Genetic polymorphism of drug metabolizing enzymes and genes related to uric acid synthesis or secretion in type II diabetes and bladder cancer patients.
6. Metabolic reprogramming of cancer cells.
7. Epidemiology of type II diabetes in Jordanian population.
8. Using machine learning in cancer diagnosis.

Graduate Students Supervision

1. Bayan Abu Rob, **M.Sc.** in Physiology at Jordan University of Science and Technology, **Role:** Co-advisor, **Project:** Blood level of alpha-1 antitrypsin during acute myocardial infarction.

2. Rawan Alrishq. **M.Sc**. in Biochemistry at Jordan University of Science and Technology, **Role**: Main advisor, **Project**: The association between N-acetyltransferase-2 (NAT2) polymorphism and diabetes in Jordanian population.

3. Abrar Al-Ekish, **M.Sc**. in Pharmacology at Jordan University of Science and Technology, **Role**: Co-advisor, **Project**: The association between Xanthine oxidoreductase and single nucleotide polymorphisms with the risk of bladder cancer in Jordan.

4. Farah Alshobaki, **M.Sc**. in Pharmacology at Jordan University of Science and Technology, **Role**: Co-advisor, **Project**: The role of vitamin D on reactive oxygen species in bladder cancer cell line.

Undergraduate Students Supervision

1. Raghad Ali, Noura Alkaldy, Boshra Hlalat, **Doctor of Medicine** at Jordan University of Science and Technology, **Role**: Main advisor, **Project**: Awareness about lung cancer risk factors, symptoms, and screening among Jordanian population.

Research Grants

1. "The association between uric acid levels and xanthine dehydrogenase polymorphism with the risk of diabetes", **Source:** Research deanship - Jordan University of Science and Technology, Primary Investigator, **Total Funding: 13,000 JD (18,300 USD)** over 3 years, July 2020.
2. "The association between N-acetyltransferase-2 (NAT2) polymorphism and diabetes in Jordanian population.", **Source:** Research deanship - Jordan University of Science and Technology, Primary Investigator, **Total funding**: **5600 JD (7,900 USD)**, over 2 years, August 2021.

3. "Blood level of alpha-1 antitrypsin in the course of acute myocardial infarction", **Source:** Research deanship - Jordan University of Science and Technology, Co-Investigator, **Total funding**: **5600 JD (7,900 USD)**, over 2 years, **August 2021**.

4. The association between Xanthine oxidoreductase and single nucleotide polymorphisms with the risk of bladder cancer in Jordanian population, **Source:** Research deanship - Jordan University of Science and Technology, Co-Investigator, **Total funding**: **5600 JD (7,900 USD)**, over 2 years, August 2021.

5. The role of vitamin D on reactive oxygen species in bladder cancer cell line. **Source:** Research deanship - Jordan University of Science and Technology, Co-Investigator, **Total funding**: **5600 JD (7,900 USD)**, over 2 years, December 2021.

Research skills:

1. Cell culture
2. Cell proliferation assays (XTT, MTT, BrdU)
3. Conventional, quantitative, and ARMS PCR
4. Gene sequencing
5. Western blotting and ELISA for protein expression analysis.
6. Gene silencing using siRNA
7. H&E histopathological staining
8. Data analysis using SPSS, Minitab, and JMP software.

Publications:

Articles in refereed journals: Published and accepted

1. Al-Azzam, N. and Alazzam, A. (2022). Micropatterning of cells via adjusting surface wettability using plasma treatment and graphene oxide deposition. PLOS ONE (Accepted).

2. Elsalem, L., Al-Azzam, N., Jum'ah, A. A., & Obeidat, N. (2021). Remote E-exams during Covid-19 pandemic: A cross-sectional study of students' preferences and academic dishonesty in faculties of medical sciences. Annals of Medicine and Surgery, 62, 326-333.

3. Al-Azzam, N., & Shatnawi, I. (2021). Comparing supervised and semi-supervised Machine Learning Models on Diagnosing Breast Cancer. Annals of Medicine and Surgery, 62, 53-64

4. Al-Azzam, N., Al-Azzam, S., Elsalem, L., & Karasneh, R. (2021). Hypertension prevalence and associated factors among patients with diabetes: A retrospective cross-sectional study from Jordan. Annals of Medicine and Surgery, 61, 126-131

5. Al-Azzam, N., Elsalem, L., & Gombedza, F. (2020). A cross-sectional study to determine factors affecting dental and medical students' preference for virtual learning during the COVID-19 outbreak. Heliyon, 6(12), e05704.

6. Elsalem, L., Al-Azzam, N., Jum'ah, A. A., Obeidat, N., Sindiani, A. M., & Kheirallah, K. A. (2020). Stress and behavioral changes with remote E-exams during the Covid-19 pandemic: A cross-sectional study among undergraduates of medical sciences. Annals of Medicine and Surgery, 60, 271-279.

7. Al-Azzam, N., & Elsalem, L. (2020). Leukotriene D4 role in allergic asthma pathogenesis from cellular and therapeutic perspectives. Life Sciences, 260, 118452.

8. Al-Azzam, N., Teegala, L. R., Pokhrel, S., Ghebreigziabher, S., Chachkovskyy, T., Thodeti, S., ... & Paruchuri, S. (2020). Transient Receptor Potential Vanilloid channel regulates fibroblast differentiation and airway remodeling by modulating redox signals through NADPH Oxidase 4. Scientific reports, 10(1), 1-13.

9. Al-Azzam, N. (2020). Sirtuin 6 and metabolic genes interplay in Warburg effect in cancers. Journal of Clinical Biochemistry and Nutrition, 19-110.

10. Nerguizian, V., Stiharu, I., Al-Azzam, N., Yassine-Diab, B., & Alazzam, A. (2019). The effect of dielectrophoresis on living cells: Crossover frequencies and deregulation in gene expression. Analyst, 144(12), 3853-3860.

11. Al-Azzam, N., Gombedza, F., Kondeti, V., Koppes, S., Duah, E., Patil, P., ... & Paruchuri, S. (2017). Mechanosensitive transient receptor potential vanilloid 4 regulates Dermatophagoides farinae–induced airway remodeling via 2 distinct pathways modulating matrix synthesis and degradation. The FASEB Journal, fj-201601045R.

12. Kondeti, V., Al-Azzam, N., Duah, E., Thodeti, C. K., Boyce, J. A., & Paruchuri, S. (2016). Leukotriene D 4 and prostaglandin E 2 signals synergize and potentiate vascular inflammation in a mast cell–dependent manner through cysteinyl leukotriene receptor 1 and E-prostanoid receptor 3. Journal of Allergy and Clinical Immunology, 137(1), 289-298.

13. Al-Azzam, N., Kondeti, V., Duah, E., Gombedza, F., Thodeti, C. K., & Paruchuri, S. (2015). Modulation of mast cell proliferative and inflammatory responses by leukotriene D4 and stem cell factor signaling interactions. Journal of cellular physiology, 230(3), 595-602.

14. Duah, E., Adapala, R. K., Al-Azzam, N., Kondeti, V., Gombedza, F., Thodeti, C. K., & Paruchuri, S. (2013). Cysteinyl leukotrienes regulate endothelial cell inflammatory and proliferative signals through CysLT2 and CysLT1 receptors. Scientific reports, 3(1), 1-6.

15. Kondeti, V., Duah, E., Al-Azzam, N., Thodeti, C. K., Boyce, J. A., & Paruchuri, S. (2013). Differential regulation of cysteinyl leukotriene receptor signaling by protein kinase C in human mast cells. PloS one, 8(8), e71536.

Articles in Conference: Published

Al-Azzam, N., Mathew, B., & Waheed, W. (2019, March). A microfluidic device with penetrating microelectrode array for focusing of cells using dielectrophoresis. In 2019 Advances in Science and Engineering Technology International Conferences (ASET) (pp. 1-4). IEEE.

Conferences:

- Experimental Biology: April 2022. Poster title "Uric Acid and Genetic Polymorphisms in the *SLC2A9* and *Xanthine Oxidase* Genes in Patients with Type 2 Diabetes Mellitus in Jordan: A Cross-sectional Study."

- Experimental Biology: April 2019. Poster title "Interplay of Soluble, Mechanical and Redox Signaling in Airway Remodeling During Asthma"

- Experimental Biology: April 22-27, 2017. Poster title "NADPH Oxidase 4 Expression Is Increased through TRPV4 Channel in *D. farinae*-Induced Airway Remodeling and TGF-β1-Mediated Fibroblast Differentiation into Myofibroblasts"

- Ohio Physiological Society meeting – November 19,2016. Poster title "NADPH Oxidase 4 Expression is Increased through TRPV4 Channel in *D. farinae*-Induced Airway Remodeling and TGF-β1-Mediated Fibroblast Differentiation into Myofibroblasts"

- ➢ Cleveland State Interdisciplinary Research Conference-November 7, 2015. Poster title "Leukotriene D4 and prostaglandin E2 signals synergize and potentiate vascular inflammation in a mast cell–dependent manner through CysLT1R and EP3 Receptor"

- ➢ Winter Eicosanoid Conference –March 9-12, 2014. Poster title "Modulation of mast cell proliferative and inflammatory responses by leukotriene D4 and stem cell factor interactions"

- ➢ Ohio Physiological Society meeting -October 17-18, 2013 (Attendee)

SERVICE ACTIVITIES

Services at the Faculty of Medicine at Jordan University of Science and Technology

- Organizer of the Scientific Open Day, Department of Physiology and Biochemistry/Faculty of Medicine, 2022.
- Participant in the Scientific Open Day, Department of Physiology and Biochemistry/Faculty of Medicine, 2018.
- Member of Faculty Research and Scientific Committee, Faculty of Medicine/JUST (2021-present).
- Member of Online teaching and assessment committee, Faculty of Medicine/JUST (2020-2021).
- Member of Faculty of Medicine Website Development Committee, Faculty of Medicine/JUST (2020-2021).
- Member of Exams Committee, Faculty of Medicine/JUST (2020-2021).
- Member of Department Research and Scientific Committee, Faculty of Medicine/JUST (2019-2021).

Services to Academic community:

List of editorial board memberships

- Associate editor for the BMC Bioinformatics journal, 2020-present.

Reviewer for:

1. Life Sciences journal (ISSN:0024-3205, ELSEVIER)
2. BMC Bioinformatics journal (ISSN: 1471-2105, Springer Nature)
3. Bioscience Reports journal (Online ISSN 1573-4935, Print ISSN 0144-8463, PORTLAND PRESS)
4. Cancer Letters (ISSN: 0304-3835, ELSEVIER)

5. Journal of International Medical Research (ISSN: 0300-0605, Online ISSN: 1473-2300, SAGE)
6. Exploration of Targeted Anti-tumor Therapy (eISSN: 2692-3114, OPEN EXPLORATION)
7. Jordan Journal of Biological Sciences.

Services to Community

Principal investigator for undergraduate medical students to explore and raise the Jordanian population knowledge and awareness about lung cancer risk factors, preventive measures, and screening methods.

HONORS, AWARDS, AND OUTSTANDING ACHIEVEMENTS:

1. Ohio Physiological Society Peter K. Lauf Travel Award, 2016
2. Outstanding Department of Chemistry Graduate Teaching Assistant Award, Chemistry department, The University of Akron, USA, 2013.
3. Full Graduate Scholarship funded by The University of Akron to obtain M.Sc. and PhD. degrees in Biochemistry, 2012-2017.
4. Honored by the Faculty of Dentistry's Honors Academic Board for academic excellence, Jordan University of Science and Technology, Irbid, Jordan, 2004/2005.

WORKSHOPS:

1. How to design your online course (January 2022)
2. Designing Your Blended Online Course (September 2021)
3. Exams and evaluations (June 2021)
4. Raising Student' Engagement in Remote Learning Environment (January 2021)
5. Statistical analysis using SPSS software (September 2018)

PROFESSIONAL MEMBERSHIPS:

- Member in the American Society of Biochemistry and Molecular Biology, 2013-Present.
- Member at the Jordanian Dental Association (JDA), 2009- Present