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### **Academic and Technical Experience:**

**2014- present: Assistant Professor of Biochemistry and Molecular Biology**, Department of Physiology and Biochemistry, School of Medicine, University of Jordan, Amman, Jordan.

Teaching the following courses:

Introduction to Biochemistry for medical students.

Biochemistry I for dental students.

Biochemistry II for medical students.

Biochemistry II for dental students.

Biochemistry for nursing students.

Cell biology, molecular biology and genetics for medical students

Main research interests:

Vision research including both glaucoma and diabetic retinopathy.

Stem cell research.

Medical education research.

**2008-2014: Graduate Student at Oregon Health and Science University (OHSU)**

**- Graduate Student in the lab of Drs. Ted Acott and Mary Kelley (Co-Mentors)**

**- Research Rotations at OHSU:**

Dr. Peter Rotwein laboratory. Studying the effect of post-translational modifications on Hemojuvelin functionality by site-directed mutagenesis and investigating the role of IGF signaling pathway in both skeletal muscle and bone development.

Dr. Michael Chapman laboratory. Computational studies and modeling of AAV-2 structure.

Dr. Larry David laboratory. Studying the methylation of crystallins by mass spectrometry.

**- Technical Experience at OHSU:**

Cell culture of both cell lines and primary cultures.

Stem cell culture of mesenchymal stem cells and induced pluripotent stem cells.

Organ culture of human and porcine eyes.

Fluorescent microscopy.

Confocal microscopy.

Molecular biology techniques including, PCR, immunoblotting, immunocytochemistry, immunohistochemistry, cloning lentiviral and adenoviral techniques.

Applying and differentiating induced pluripotent stem (iPS) cells for treating glaucoma and studying the mechanisms of regulating intraocular pressure.

**2006-2008: Teaching and research assistant, Department of Physiology and Biochemistry, School of Medicine, University of Jordan, Amman, Jordan.**

Teaching Assistant for Biochemistry and Physiology related courses; this includes preparation of exams and evaluations for multidisciplinary students (medical, dental, nursing, and pharmacy majors) and teaching part of the biochemistry course for nursing students.

Molecular Biology Research Lab: Biostatistical analysis of data and hand-on experience related to diagnostic techniques such as PCR, RNA extraction and reverse transcription.

**2006: General dental practitioner - private sector, Amman, Jordan.**

Performed general dentistry work on patients.

## **Publications:**

### **Manuscripts and Book Chapters**

Acott TS, Kelley MJ, Keller KE, Vranka JA, **Abu-Hassan DW**, Li X, Aga M, Bradley JM (2015). "IOP Homeostasis – Why Most People Do Not Ever Develop Glaucoma. Glaucoma 2015 to 2017: Towards solving the problem. Simon Bakker, Kugler Publications/SPB Academic Publishing. Amsterdam, The Netherlands.

Kelley MJ, Acott TS, **Abu-Hassan DW**, Li, X, Phan KG, Samples JR. Glaucoma and Stem Cells. Glaucoma 2015 to 2017: Towards solving the problem. Simon Bakker, Kugler Publications/SPB Academic Publishing. Amsterdam, The Netherlands.

**Abu-Hassan DW**, Li X, Ryan EI, Acott TS, Kelley, MJ, Induced pluripotent stem cells restore function in a human cell loss model for open-angle glaucoma. **Stem Cells** 2015;33 (3):751-761. \*, \*\*, \*\*\*

**Abu-Hassan DW**, Acott TS, Kelley MJ. The Trabecular Meshwork: A Basic Review of Form and Function. (2014), **J Ocular Biol.** 2(1).

Acott TS, Kelley MJ, Keller KE, Vranka JA, **Abu-Hassan DW**, Li X, Aga M, Bradley JM. Intraocular Pressure Homeostasis: Maintaining Balance in a High-Pressure Environment. (2014), **J Ocul Pharmacol Ther.**, 30: 94-101.

\*Highlighted in *International Review of Glaucoma*, vol. 16-3, 2015, a journal read by most glaucoma surgeons. In the Glaucoma Dialogues section, a published manuscript of import and potential impact for discussion is selected to provide a forum for manuscripts that some might judge to be controversial or where further discussion of the experimental models or data is warranted.

\*\*Also featured in *Regenerative Medicine Weekly*, highlights of stem cell research from the sister journals, Nov.25, 2014.

\*\*\*Also highlighted in *the Journal of Clinical and Experimental Ophthalmology*, 2016.

### **Abstracts:**

**Abu-Hassan, D.W**, Kelley, M.J, Li, X, Ryan EI and Acott, T.S. "The Use of Induced Pluripotent Stem Cells as a New Therapeutic Strategy for Glaucoma", Al-Zaytoonah University of Jordan and the University of Toledo International Pharmaceutical Conference (ZTIPC 2015), Amman, Jordan, October 21-22, 2015.

Kelley, M.J, Li, X, **Abu-Hassan, D.W**, Bradley, J, Ryan, E, Rose, A, and Acott, T.S. "Restoration of Trabecular Meshwork Functions with iPSC and MSC in a Human Cell Loss Model of Glaucoma", The 5th Annual International Vision Restoration: Regenerative Medicine in Ophthalmology Conference, Pittsburgh, PA, June 25-26, 2015.

**Abu-Hassan, D.W**, Kelley, M.J, Li, X, Ryan EI and Acott, T.S. "Induced Pluripotent Stem Cells Restore Intraocular Pressure Homeostasis in a Human Model of Glaucoma", The 12<sup>th</sup> International Congress of the Jordanian Ophthalmological Society, Amman, Jordan, May 6-9, 2015.

Kelley, M.J, **Abu-Hassan, D.W**, Li, X, and Acott, T.S. "Restoration of Trabecular Meshwork Functions", The Association For Research In Vision and Ophthalmology, Orlando, FL, May 4-8, 2014.

Kelley, M.J, Li, X, **Abu-Hassan, D.W**, Ryan, E, Rose, A, Bradley, J, and Acott, T.S. "Restoration of Trabecular Meshwork by stem cells", The Annual Trabecular Meshwork & Angle Closure Study Club, San Francisco, CA, December 15, 2012.

**Abu-Hassan, D.W**, Li, X, Ryan, E, Acott, T.S and Kelley, M.J. "A Novel Model for Primary Open Angle Glaucoma", The Annual Biomedical Research Conference for Minority Students, San Jose, CA, November 7-10, 2012.

Li, X, **Abu-Hassan, D.W**, Vranka, J.A, Acott, T.S and Kelley, M.J. "Cell-Matrix and Cell-Cell Interactions And The Aqueous Humor Outflow In Trabecular Meshwork (TM) Cells", The Association For Research In Vision and Ophthalmology, Fort Lauderdale, FL, May 6-10 2012.

Kelley, M.J, Li, X, **Abu-Hassan, D.W**, Vranka, J.A, Hayashi, L., and Acott, T.S. "Relationship between Type VI Collagen, Integrin, and Non-Integrin Receptors in Trabecular Meshwork", The Annual Trabecular Meshwork & Angle Closure Study Club, Denver, AR, 2011.

**Abu-Hassan, D.W** and Rotwein, P, "AKT role in skeletal muscle differentiation", Student Research Forum, Oregon Health and Science University, Portland, OR, May 2011.

### **Education:**

**2008 – 2014: Ph.D, Biochemistry and Molecular Biology**, Oregon Health and Science University (OHSU), Portland, OR.

**2000 – 2005: DDS, Doctor of Dental Surgery**, University of Jordan, Amman, Jordan.

### **Training workshops:**

**2015:** Staff development workshops, Accreditation and Quality Assurance Center, University of Jordan, Amman Jordan.

**2011:** Derivation of Induced Pluripotent Stem Cells and Human Pluripotent Stem Cell Culture Methods course, Theory and Hands-On. WiCell Laboratories, Madison, Wisconsin.

**2008:** Basics of mammalian cell culture course, Consultation center, University of Jordan, Amman, Jordan.

**2008:** Computerized statistics (SPSS) course, Consultation center, University of Jordan, Amman, Jordan.

### **Internships, Scholarships, Honors and Awards:**

**2016: King Abdullah II Design and Development Bureau and King Abdullah II Fund for Development Research Fund Recipient.**

**2008-2013: Oregon Health and Science University PhD scholarship,** 5-year long scholarship to pursue PhD in Biochemistry and Molecular Biology at Oregon Health and Science University, Portland, OR.

**2008-2013: University of Jordan PhD scholarship,** 5-year long scholarship to pursue PhD in Biochemistry and Molecular Biology at Oregon Health and Science University, Portland, OR.

**2005 –2006: Dental intern** - University of Jordan Hospital, Amman, Jordan.

**2002: University of Jordan Academic Excellence Award,** a competitive year-long scholarship for dental students with the best academic accomplishment, University of Jordan, Amman, Jordan.

**2001: University of Jordan Academic Excellence Award,** a competitive year-long scholarship for dental students with the best academic accomplishment, University of Jordan, Amman, Jordan.

### **Memberships:**

**2015:** Editorial Board Member- Journal of Ocular Biology.

**2015:** Section of Biochemistry chair- Department of Physiology and Biochemistry - Faculty of Medicine – University of Jordan, Amman, Jordan.

**2015:** Department Representative at Faculty Committee - Faculty of Medicine – University of Jordan, Amman, Jordan.

**2015:** Member of the Alumni Committee - Faculty of Medicine – University of Jordan, Amman, Jordan.

**2014:** Member of the Conferences Committee - Faculty of Medicine – University of Jordan, Amman, Jordan.

**2012 – 2013:** Graduate Student Member of Association for Research in Vision and Ophthalmology (ARVO).

**2010 – 2013:** Member of the Conjoint Curriculum Committee (CCC). Revising and improving the first year conjoint classes in the Program of Molecular and Cellular Biosciences (PMCB), OHSU, Portland, OR.

**2010:** Member of the Student Retreat Committee. Planning the retreat for the incoming graduate students, fall 2010, OHSU, Portland, OR.

**2009 – 2013:** Member of the American Association for the Advancement of Science (AAAS).

**2005 – present:** Member of Jordan Dental Association (JDA), Amman, Jordan.

**Volunteering, Community Activities:**

Reviewer at the international journal of ophthalmology.

Student Research Forum Organizer, April 2015, School of Medicine, University of Jordan, Amman, Jordan.

Molecular and Cellular Biomedical Sciences Journal Club Organizer and Director, 2015-present, School of Medicine, University of Jordan, Amman, Jordan.

Annual Biomedical Research Conference for Minority Students (ABRCMS), Nov., 2012 San Jose, CA. OHSU Student Exhibitor, Volunteer Poster Judge (biochemistry).

Annual Biomedical Research Conference for Minority Students (ABRCMS), Nov., 2011 St. Louis, MO. OHSU Student Exhibitor, Volunteer Poster Judge (cell biology).

Oregon Food Bank OHSU volunteer.

Dental Volunteer Days Participant – Oct 2005 – Jordan.

Student Dental Volunteer Days Participant – Mar 2004 – Jordan