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Department of Physiology and Biochemistry  
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**Education:**

- Dec 2012      Ph.D. in Neuroscience, Mississippi Medical Center, Jackson, MS USA.
- Dec 2009      MA in Biomedical Sciences, University of Mississippi Medical Center,  
Jackson, MS USA
- 1999 -2004    B.D.S in Dentistry,      University of Jordan, Amman, Jordan

**Professional Experience:**

- Dec 2012—Present    Assistance Professor (Department of Physiology and Biochemistry),  
University of Jordan. Amman, Jordan
- 2008–2012      Graduate assistant      Department of Psychiatry, University of Mississippi  
Medical Center, Jackson, MS.
- 2006–2008      Research and teaching assistant      Department of Physiology and  
Biochemistry / Faculty of Medicine, University of Jordan, Amman, Jordan
- 2005–2008      Dentist              My own private dental clinic, Amman, Jordan
- 2004–2005      Dentist              Ministry of Health, Amman, Jordan

**Special Courses:**

**Molecular biology training course:** the basic molecular biology techniques that include extracting the genetic material RNA & DNA, DNA amplification by PCR and analyzing the product out of the PCR by Gel Electrophoresis. University of Jordan, Amman, 2006

**Stereology:** a method to estimate the total number of cells and volume in a given brain structure. University of Mississippi medical center, Jackson, 2011

## **Teaching Experience:**

- Medical and Dental Physiology course: University Of Jordan 2012-present  
Subjects: Introduction to Physiology, Nerve and Muscle physiology, central nervous system physiology, and Physiology of special senses.
- Pharmacy, Nursing, and Rehabilitation Physiology course: University Of Jordan 2012-present  
Subjects: Introduction to Physiology, Nerve and Muscle physiology, neurophysiology, and Physiology of special senses.
- Medical Neurobiology, spring 2011, University of Mississippi Medical Center "Teaching Assistant"
- Practical physiology lab for medical, dental, pharmacy, and nursing undergraduate students, spring 2007, University of Jordan "Teaching Assistant"
- Practical physiology lab for medical, dental, pharmacy, and nursing undergraduate students, fall 2006, University of Jordan "Teaching Assistant"

## **Affiliation:**

- Member Of Society For Neuroscience. 2010 – Present
- Member Of Society For Arab Neuroscientists. 2010 – Present

## **Research Experience:**

### **1. Environmental and genetic etiology of Autism**

Study the role of environmental and genetic factor in the pathophysiology of autism spectrum disorder

### **2. Animal models for autism;**

Development and validation for animal models for autism spectrum disorder

### **3. Single-neuron and multiple-neuron recording;**

Recording and analyzing single-neuron activity of anesthetized rats.

### **4. Local field potential recording;**

Recording and analyzing the local field potential of one or more areas of the brain in anesthetized rats.

### **5. Immunohistochemistry;**

Single, double or triple staining brain tissue sections with fluorescent targeted to specific antigens.

### **6. Stereology;**

Applying the design-based stereological approaches to produce unbiased and accurate quantitative of histology.

### Peer Reviewed Publications:

- Zhang J, Dennis KA, Darling RD, **Alzghoul L**, Paul IA, Simpson KL, et al. Neonatal citalopram exposure decreases serotonergic fiber density in the olfactory bulb of male but not female adult rats. *Frontiers in cellular neuroscience*. 2013;7:67. PubMed PMID: 23675318. Pubmed Central PMCID: 3650517.
- Malik Sa, Shafagoj Y, Abdeen D, Khatib F, **Zghoul L**, Coles C. Youth Attitudes Towards Water Pipe Smoking in Amman – Jordan. . *Jordan Medical Journal*. 2013;47(1):35 - 43.
- Bortolato M, Godar SC, **Alzghoul L**, Zhang J, Darling RD, Simpson KL, et al. Monoamine oxidase A and A/B knockout mice display autistic-like features. *Int J Neuropsychopharmacol*. 2013 May;16(4):869-88. PubMed PMID: 22850464. Pubmed Central PMCID: 3517692.
- **Alzghoul L**, Bortolato M, Delis F, Thanos PK, Darling RD, Godar SC, et al. Altered cerebellar organization and function in monoamine oxidase A hypomorphic mice. *Neuropharmacology*. 2012 Dec;63(7):1208-17. PubMed PMID: 22971542. Pubmed Central PMCID: 3442946.
- Darling RD, **Alzghoul L**, Zhang J, Khatri N, Paul IA, Simpson KL, et al. Perinatal citalopram exposure selectively increases locus ceruleus circuit function in male rats. *The Journal of neuroscience : the official journal of the Society for Neuroscience*. 2011 Nov 16;31(46):16709-15. PubMed PMID: 22090498. Pubmed Central PMCID: 3312583.
- de Villers-Sidani E, **Alzghoul L**, Zhou X, Simpson KL, Lin RC, Merzenich MM. Recovery of functional and structural age-related changes in the rat primary auditory cortex with operant training. *Proceedings of the National Academy of Sciences of the United States of America*. 2010 Aug 3;107(31):13900-5. PubMed PMID: 20643928. Pubmed Central PMCID: 2922281.

### Poster Presentations:

**Alzghoul L**, Abu Tarboush N, Eldahabi M, Alb दौर S, Abu Hantash O, Abu-Irmaileh B. Brief Dysregulation in metal homeostasis in autistic children compared to controls in Jordan. Program No. 585.08/E32. 2015 Neuroscience Meeting Planner. Chicago, IL: Society for Neuroscience, 2015. Online

**Alzghoul L**, Darling RD, Khatri N, Simpson KL, Paul IA, & Lin RCS. Early life serotonin levels dysregulation effect on the interhemispheric connectivity in rats 2012 *Neuroscience Meeting*

Lu Y, Zhou X, **Alzghoul L**, Darling RD, Simpson KL, Merzenich MM & Lin RCS  
Auditory training restores serotonergic and cortical inhibitory circuitry after neonatal antidepressant exposure in rats. *2012 Neuroscience Meeting* .

Darling RD, **Alzghoul L**, Khatri N, Lu Y, Simpson KL, Paul IA, & Lin RCS.  
Altered node of Ranvier organization in interhemispheric axons after brief postnatal citalopram exposure in adult rats. *2012 Neuroscience Meeting*

Clark RL, **Alzghoul L**, Darling RD, Khatri N, Lea MA, Simpson KL, Paul IA, & Lin RCS.  
Brief postnatal citalopram exposure alters anterior commissure integrity in adult rats. *2012 Neuroscience Meeting*

**Alzghoul L**, Zhang J, Darling RD, Paul IA, Simpson KL, Chen K, Shih JC & Lin RCS.  
Altered cerebellum organization in monoamine oxidase A deficient mice. *2011 Neuroscience Meeting*

Zhang J, Dennis K, Darling RD, **Alzghoul L**, Simpson KL, Paul IA & Lin RCS . Neonatal exposure of citalopram decreases serotonergic fiber density in the olfactory bulb of adult male but not female rats. *2011 Neuroscience Meeting*

**Alzghoul L**, Zhang J, Darling RD, Paul IA, Simpson KL, Chen K, Shih JC & Lin RCS  
Dysregulation of serotonin during early development altered callosal connectivity in the rodent. Program No. 463.12/U14. 2010 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience, 2010. Online.

Darling RD, **Alzghoul L**, Zhang J, Duncan JW, Khatri N, Paul IA, Simpson KL & Lin RCS.  
Neonatal exposure to citalopram functionally alters the norepinephrine system in male rats. Program No. 463.17/V1. 2010 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience, 2010. Online.

Zhang J, Darling RD, **Alzghoul L**, Simpson KL, Chen K, Shih JC & Lin RCS (2010) Altered expression of noradrenergic tyrosine hydroxylase immunoreactivity of locus coeruleus circuitry following perinatal manipulations in the rodent. Program No. 463.11/U13. 2010 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience, 2010. Online.

Lu Y, Zhang J, Darling RD, **Alzghoul L**, Simpson KL, Chen K, Shih JC & Lin RCS (2010) Altered cortical connectivity in monoamine oxidase A knockout mice. Program No. 463.3/U5. 2010 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience, 2010. Online.

***Grants & Ongoing projects:***

- The Role of Sulfur-containing Amino Acids Metabolic Cycle and Vitamin B12 Levels in the Pathophysiology of Autism. Hamdi Mango Center for Scientific Research, Amman, Jordan. (5,000 JD) – PI
- Cytogenetic Aberration in Jordanian Autistics. Deanship of academic research, The University of Jordan, Amman, Jordan. (10,000 JD) – PI
- The Role of Zinc blood concentration in autism spectrum disorder. Deanship of academic research, The University of Jordan, Amman, Jordan. (5,000 JD) –PI
- Measuring metallothionein levels in autism spectrum disorder patients in Jordan. Deanship of academic research, The University of Jordan, Amman, Jordan. (45000 JD) – PI
- Analysis of the Ultrastructure differences of the corpus callosum between male and female rats. Deanship of academic research, The University of Jordan, Amman, Jordan. (45000 JD) – Co PI