BIOGRAPHICAL SKETCH

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NAME: Abitbol, Julia

eRA COMMONS USER NAME (credential, e.g., agency login):

POSITION TITLE: Postdoctoral Fellow, Department of Otolaryngology- Head and Neck Surgery, School of Medicine

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE (if applicable)	END DATE MM/YYYY	FIELD OF STUDY
The University of Western Ontario, London, Ontario	BS	04/2014	Biology and Medical Cell Biology
The University of Western Ontario, London, Ontario	PHD	11/2019	Anatomy and Cell Biology
Stanford University, Palo Alto, California	Postdoctoral Fellow	present	Otolaryngology

A. Personal Statement

I am currently starting my postdoctoral training as an early career researcher. During the past five years of my graduate studies I have learned a variety of techniques and skills in the anatomy and cell biology field as well as in the auditory field. I have had the privilege of being able to collaborate with an auditory laboratory and became very intrigued in the field of Otolaryngology. I have extensive experience in cell culture, cochlear dissections and culture, rodent hearing assessment, performing noise-exposures, and molecular biology techniques including CRISPR-Cas9. These skills, along with the many techniques that I hope to achieve in Dr. Cheng's laboratory as a postdoctoral fellow will give me the capacity to understand the biological mechanisms of hearing loss and how we can intervene in therapeutic strategies.

B. Positions and Honors

Positions and Employment

2013 - 2013 Laboratory Assistant, Department of Anatomy and Cell Biology, The University of Western Ontario, London

2014 - 2015 Teaching Assistant, third year Undergraduate Integrative Neuroscience Course, The University of Western Ontario, London

2014 - 2019 PhD Candidate, Department of Anatomy and Cell Biology, The University of Western Ontario, London

2015 - 2016 Teaching Assistant, third year Undergraduate Systemic Human Anatomy Course, The University of Western Ontario, London

2016 - 2017 Teaching Assistant, first year Graduate Neuroscience Course, The University of Western Ontario, London

2016 - 2018 Co-chair of Graduate Student Council for Department of Anatomy and Cell Biology, elected position, The University of Western Ontario, London

2016 - 2018 Graduate Student Representative on the Graduate Affairs Committee in the Department of Anatomy and Cell Biology and Schulich Graduate Student Council, elected position, The University of Western Ontario, London

2020 - Postdoctoral Fellow, Department of Otolaryngology- Head and Neck Surgery, School of Medicine, Stanford University, Palo Alto, CA

Other Experience and Professional Memberships

Honors

2014 - 2019	Western Graduate Research Scholarship , The University of Western Ontario
2014	Best Undergraduate Thesis Award, The University of Western Ontario
2016	JAX Lab Mouse Research Travel Scholarship , The Mouse as an instrument for ear research course, JAX Lab
2016 - 2017	Ontario Graduate Scholarship, The University of Western Ontario
2016	Travel Award for Association for Cell Biology Conference, The University of Western Ontario
2017	Best Poster Presentation Award, Anatomy and Cell Biology Research Day, The University of Western Ontario
2017	Best Poster Presentation Award, International Gap Junction Meeting, Conference of Internal Gap Junction Meeting
2017	Travel Award for International Gap Junction Meeting, Conference of International Gap Junction Meeting
2017 - 2019	Natural Sciences and Engineering Research Council (NSERC) CGS Doctoral Scholarship, NSERC
2017 - 2018	Ontario Graduate Scholarship (Declined), The University of Western Ontario
2018	Selected Cover Image for Journal of Cell Science, Journal of Cell Science
2018	First Author Interview Feature in the Journal of Cell Science, Journal of Cell Science
2019	Suzanne M. Bernier Publication Award 2019, The University of Western Ontario
2019	Marine Biology Travel Scholarship to attend "Biology of Inner Ear" Course, Marine Biology Laboratory
2019	Selected Cover Image for Journal of Molecular Medicine, May Cover, Journal of Molecular Medicine
2019	Feature Platform Presentation Winner, London Health Research Day Selection Committee

C. Contribution to Science

1. 1) Pannexins in hearing and noise-induced hearing loss

   The first topic in my series of publications addressed the involvement of Pannexins, a newer family of large-pore channel proteins, both in normal hearing and after noise-induced hearing damage. Together, these publications show that Pannexins are not involved in proper auditory function. In creating and characterizing the first of its' kind Pannexin double knock-out mouse, we also found that Pannexin family members do not compensate for one another in the auditory system. Additionally, we showed that ablating Pannexins led to slightly better hearing recovery after loud noise-exposure damage. Ultimately, these publications have shown that Pannexin large-pore channels are not required for normal hearing but may play some beneficial role, the mechanism of which has yet to be identified, in protecting against loud noise-induced hearing damage.

   a. Abitbol JM, O'Donnell BL, Wakefield CB, Jewlal E, Kelly JJ, Barr K, Willmore KE, Allman BL, Penuela S. Double deletion of Panx1 and Panx3 affects skin and bone but not hearing. J Mol Med (Berl). 2019 May;97(5):723-736. PubMed PMID: 30918989.
   b. Abitbol J. Large-pore channels in hearing and noise-induced hearing loss. Association for research in otolaryngology (ARO); 2017 February 12; Baltimore, Maryland, United States.
   c. Abitbol JM, Kelly JJ, Barr K, Schormans AL, Laird DW, Allman BL. Differential effects of pannexins on noise-induced hearing loss. Biochem J. 2016 Dec 15;473(24):4665-4680. PubMed PMID: 27784763.

2. 2) Connexins and gap junctions in hearing and noise-induced hearing loss

   The next topic in my series of publications was to investigate the involvement of two specific mutations in gap junction proteins. Interestingly, we found that a Connexin30 mutant enabled long-term hearing protection and we identified a novel mutation in Connexin43 that caused severe hearing loss in mice. Overall, these publications add to the list of Connexin mutations involved in hearing function. Importantly, these studies suggest for the first time that it may be useful to screen for Connexin43 mutations in newborn assessment hearing screening, which is routinely done for other gap junctions.

   a. Kelly JJ, Abitbol JM, Hulme S, Press ER, Laird DW, Allman BL. The connexin 30 A88V mutant reduces cochlear gap junction expression and confers long-term protection against hearing loss. J Cell Sci. 2019 Jan 16;132(2)PubMed PMID: 30559251.
   b. Abitbol JM, Kelly JJ, Barr KJ, Allman BL, Laird DW. Mice harbouring an oculodentodigital dysplasia-linked Cx43 G60S mutation have severe hearing loss. J Cell Sci. 2018 May 4;131(9)PubMed PMID: 29618634.
   c. Abitbol J. Utilizing genetically modified mice to investigate large-pore channels in hearing. Anatomy and cell biology research day; 2016 October 21; London, ONT, Canada.

3. 3) Gap junctions in cisplatin-induced ototoxicity

   The third topic of my research contributions to science was to assess the contributions of gap junction intercellular communication in cisplatin-induced ototoxicity. In this publication, we found that gap junctions did not play a role in propagating cisplatin-induced cell death in cochlear cells. However, cisplatin did cause rearrangement of mixed gap junction channels in organotypic cochlear cultures, which may lead to different molecules and/or ions going through the gap junction channel. Taken together, these contributions show novel insight on the role of gap junctions in drug-induced hearing loss.

   a. Abitbol JM, Beach R, Barr K, Allman BL, Laird D. Gap junctional intercellular communication does not influence cisplatin-induced hair cell loss. Cell death and differentiation. Forthcoming;
   b. Abitbol J. The role of gap junctional intercellular communication in cisplatin-induced ototoxicity as revealed in organotypic cochlear cultures. London Health Research Day; 2019 April 30; London, ONT, Canada.

4. 4) GJB2 mutant trafficking in hearing loss

   The fourth topic of my contributions to science involved examining the effects of hearing loss-linked GJB2, encoding for Cx26, mutations in cochlear relevant cells. We used CRISPR-Cas9 to ablate all endogenous connexins from a cochlear-relevant cell line to allow for the controlled re-introduction and over-expression of different GJB2 mutations that cause hearing loss. Here we found that different GJB2 hearing loss-linked mutations have distinct gap junction function and trafficking dynamics, which gives us novel insights as to the biological mechanisms of how Cx26 is involved in hearing loss.

   a. Beach R, Abitbol JM, Allman BL, Esseltine JL, Shao Q, Laird D. GJB2 mutations linked to hearing loss exhibit differential trafficking and functional defects as revealed in cochlear-relevant cells. Frontiers in cell and developmental biology. 2020 April 02; 8(215).

D. Additional Information: Research Support and/or Scholastic Performance