

**Allison B. Coffin**

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**Current Positions**

2012-present Assistant Professor, Washington State University, Vancouver  
2012-present Affiliate Assistant Professor, Oregon Health & Science University,  
Portland, OR

**Research Interests and Goals**

I am interested in how sensory hair cells respond to toxic insults. My goals are to determine the magnitude and types of insults that damage these cells, the mechanisms by which damage occurs, and to develop novel therapeutics to prevent sensory hair cell loss and preserve hearing.

**Education**

May 2005 Ph.D., Biology, University of Maryland, College Park, MD  
Dec. 1999 M.S., Fisheries, University of Minnesota, St. Paul, MN  
May 1996 B.S., Marine Biology and Aquaculture, Florida Tech,  
Melbourne, FL

**Professional Experience**

2007-2011 Senior fellow, University of Washington, Seattle, WA  
2006-2007 Postdoctoral fellow, Queen's University, Kingston, Ontario, Canada  
2005 Postdoctoral fellow, National Institute on Deafness and Other  
Communication Disorders (NIDCD), NIH, Bethesda, MD  
2005 Lecturer, University of Maryland, College Park, MD  
2000-05 Doctoral student, University of Maryland College Park, MD  
1998-99 Master's student, University of Minnesota, St. Paul, MN

**Professional Affiliations**

American Association for the Advancement of Science  
Association for Research in Otolaryngology  
Graduate Women in Science  
Science Talk  
Society for Neuroscience  
Toastmasters International

**Honors and Awards**

2014 Audience Choice Winner, U.S. FameLab Finals, National Geographic  
Headquarters, Washington D.C.  
2011 Association for Research in Otolaryngology Travel Award  
2009 Teaching Apprenticeship, HHMI Future Faculty Fellows Program  
University of Washington  
2008 Future Faculty Fellows workshop participant (competitive selection process),  
University of Washington  
2007 Distinguished Toastmaster Award, Toastmasters International  
2005 Undergraduate Teaching and Learning Certification, University of Maryland

- 2005 Michael J. Pelczar Excellence in Graduate Research Award, University of Maryland  
 1992-96 Presidential Merit Scholarship, Florida Tech

## TEACHING AND MENTORING

### Teaching at WSU – Course Director

- 2016 Biol 492/593, Science Communication, 1 credit, 15 contact hours as a workshop-style class on effective communication in STEM fields. Course director for 10 students, co-taught by Dr. Leslie New (statistics).
- 2014-2017 Neuro 490, Neuroscience Capstone, 3 credits, 45 contact hours on the interplay between neuroscience and society, science communication. Sole course director for 10-18 students. Taught 3 times.
- 2014-2016 Biol 492/593, Seminar on Cell Signaling, 1 credit, 15 contact hours as a journal-club style class discussing current research papers on cell signaling. Sole course director for 5-11 students (undergraduate/graduate mix). Taught twice
- 2013-2016 Neuro 403, Cellular Neuroscience, 3 credits, 30 contact hours on cellular properties of the nervous system, neurodevelopment, degeneration, sensory structure and function. Responsible for 70% of the course with 13-19 students; Barbara Sorg or Dale Fortin teaches the other 30%. Taught 3 times.
- 2012-2015 MBioS 401, Cell Biology, 3 credits, 45 contact hours on structure and function of eukaryotic cells. Sole instructor for upper division majors course of 35-70 students. Taught 5 times.

### Teaching at WSU – Course Contributor

- 2016 Neuro 540C, Sensory Neuroscience microcourse. 4 contact hours on the auditory periphery, for IPN graduate students, 6 students. Director: Michael Varnum.
- 2014-2017 Neuro 138, Neuroscience Seminar for Freshman. 1 contact hour per year on the auditory system, for undergraduates, 20-25 students. Director: Barbara Sorg. Contributed 3 times.
- 2014 Mech 417, Mechanical Systems Design II. 2 contact hours on public speaking for scientists and engineers, for undergraduates, ~60 students. Director: Jie Xue
- 2014 Neuro 542, Special Topics. 1 contact hour on the auditory system, for graduate students, ~8 students. Director: Ilia Karatsoreos
- 2014 Neuro 520, Fundamentals of Neuroscience. 3 contact hours on the auditory system, for graduate students, 6 students. Director: Steve Simasko
- 2013 Biol 403, Evolutionary Biology. 1 contact hour on evolutionary adaptation and constraint, for undergraduates, ~10 students. Director: Matt Lambert
- 2013-2016 Neuro 592, Research Writing and Seminar. 6 contact hours on science communication and critique of individual presentations, for graduate students, 4-8 students. Director: Barbara Sorg, Ryan McLaughlin. Contributed 4 times.
- 2012-2016 Envr Sci 501, Graduate Skills seminar. 1.5 contact hours introducing my research to our incoming graduate students. Director: Cheryl Shultz. Contributed 4 times.
- 2012-2016 Biol 210, Your Career in Life Sciences. 2 contact hours on biomedical career options, communication skills, for undergraduates. Director: Cynthia Cooper. Contributed twice.
- 2012-2016 Honors 301, University Scholars Lecture Series. 1 contact hour about my

research program, for undergraduates. Director: Leonard Orr, Nick Strigul. Contributed twice.

- 2011 MBioS 301, General Genetics. 1 contact hour on cell signaling in cancer, for undergraduates. Director: Cynthia Cooper.
- 2009 MBioS 405/505, Cell Biology of Human Disease. 1 contact hour on cell death signaling. Director: Cynthia Cooper.

### Teaching outside WSU – Course Director or Co-Director

- 2010 Sense and Sensibility: Sensory Disorders and Treatment, University of Washington (co-director). Developed and taught 33% of this journal club-style course for 20 upper-level undergraduates.
- 2005 Principles of Evolution, University of Maryland (course director). Sole course instructor for undergraduate course on evolutionary biology, ~12 students.
- 2004-05 Biology of Fishes, University of Maryland (co-director). Developed and taught 50% of this undergraduate course during successive winter terms. Topics included fish taxonomy and evolution, fisheries conservation.

### Teaching outside WSU – Course Contributor or Teaching Assistant

- 2010-11 Guest lecturer, Engage Science, University of Washington. Led 1-2 sessions per year on science communication for this graduate-level course.
- 2009 Guest lecturer, Advanced Hearing Science, University of Washington. Delivered 1 lecture on mechanisms of hearing loss to graduate-level audiology students.
- 2008 Guest lecturer, Honors Freshman Biology, Western Kentucky University. Delivered 1 lecture on zebrafish studies of hearing loss.
- 2004 Guest Lecturer, Introduction to Laboratory Techniques, Foundation for Advanced Education in the Sciences. Delivered portions of 2 lectures on cell biology techniques.
- 2000 Guest Lecturer, World of Biology, University of Maryland. Delivered 1 lecture on animal communication for non-majors biology class of ~300 students.
- 2000-2001 Teaching Assistant, Principles of Biology, University of Maryland
- 2000 Teaching Assistant, World of Biology, University of Maryland
- 1999 Teaching Assistant, Fish Population Dynamics, University of Minnesota
- 1999 Teaching Assistant, Introductory Biology I, University of Minnesota

### Teaching - Communication Workshops

- 2016-2017 Ready, Set, Speak: Communicate Your Science with Confidence. Taught once at the Murdock Partners in Science national conference (8 participants) and twice at the Murdock Partners in Science regional conference (~60 participants)
- 2015-2017 Communicate your Science, Association for Research in Otolaryngology mid-winter meeting. Taught twice, with 65 participants in 2017.
- 2015 Confident Communication, AP Connect, Washington State University Vancouver
- 2015 Science Communication, SWAGS graduate student writing group, Washington State University Vancouver
- 2015 Ready, Set, Speak: Communicate Your Science, Washington State University Spokane
- 2015-2016 Science Communication Workshops, Washington State University Vancouver (7 workshops)

- 2014-2017 Confident Technical Communication, Camas High School (9 workshops)  
 2008-2010 Science Communication Workshops, Office of Postdoctoral Affairs,  
 University of Washington  
 2007 Speechcraft Communication Program, Queen's University  
 2005 Presentation workshop, University of Maryland Honors Program  
 2001-2005 Presentation seminars, Community Associations Institute and Property  
 Management Association (annual event)

### **Mentoring at WSU**

#### ***Graduate Students – committee chair***

- 2013-present Phillip Uribe, IPN Doctoral Candidate. Received a Poncin Fellowship in 2016,  
 won WSU 3-minute thesis contest in 2016. Expected defense November 2017.  
 2013-2015 Matthew Kruger, SBS Master's student. Defended thesis July 2015, started PhD  
 program at the University of Maine fall 2015.  
 2015-present Tamasen Hayward, SBS Master's student. Expected defense November 2017.  
 2015-present Alexandria Camino, IPN PhD student. Recipient of NIH Diversity supplement for  
 \$52,026 direct costs.

#### ***Graduate Students – committee member***

- 2013-2014 Jesse Adams, MS Environmental Science (Chair: Steve Bollens)  
 2013-2016 Megan Slaker, PhD Neuroscience (Chair: Barbara Sorg)  
 2013-2016 Kersten Peterson, MS Zoology (Chair: Cynthia Cooper)  
 2015-2016 Chad Hoxeng, MS Zoology (Chair: Christine Portfors)  
 2016-present Samantha Neuffer, PhD SMB (Chair: Cynthia Cooper)  
 2016-present Matthew Lambert, PhD Biology (Chair: Christine Portfors)

#### ***Postdoctoral Fellows***

- 2012 Elizabeth Whitchurch. Now a visiting assistant professor at Humboldt State  
 University.  
 2017-present Kristy Lawton. Started at WSU July 1, 2017.

#### ***Technicians***

- 2014-2017 Heather Wiedenhoft, lab manager. Manuscript in preparation. Now working the  
 Washington State Department of Natural Resources.  
 2013-2014 Lauren Hayashi, lab manager. Co-first author on one publication. Now a project  
 manager at the Knight Cancer Research Center, OHSU.  
 2013-2014 Dustin Manning, technician. Co-author on two publications. Now a researcher at  
 OHSU.  
 2012-2013 Joshua Faber-Hammond, research associate. First author on one publication.  
 Now a researcher at WSU Vancouver.  
 2011-2013 Kay Williamson, technician. Co-author on one publication. Now a clinical  
 researcher at the Legacy Research Institute.

#### ***Undergraduates***

- 2017-present Maria Sokolova, senior biology major.  
 2016-present Sterling Gray, senior neuroscience major.  
 2016-present Valentin Kochenkov, B.S. Biology 2016. Now a technician in the lab.  
 2016-present Matthew Carlisle, sophomore biology major.  
 2016-2017 Erin Cooper, senior neuroscience major. Now conducting research on Veterans  
 with PTSD.  
 2015-present Beija Robbins, B.S. Neuroscience 2016. Received a Carson Fellowship in 2016.

- Now the Coffin lab manager.
- 2015-2016 Travis Long, B.S. Biology 2016.
- 2014-present Robby Boney, junior computer science major, winner of WSU Vancouver 2017 Research Showcase award for best undergraduate oral presentation, received an Auvil Fellowship.
- 2013-2015 Nicole Smith, B.S. Neuroscience 2015. Winner of an undergraduate poster presentation award at the 2014 Northwest Developmental Biology meeting. Now an Emergency Department Scribe.
- 2013-2015 Sarah Neveux, B.S. Neuroscience with Honors 2015. Now in the Doctor of Physical Therapy program at Eastern Washington University
- 2012-2016 Alex Young, B.S. Biology with Honors 2014. Received a 2013 WSU College of Arts and Sciences undergraduate research grant for \$1,350. Now in medical school at the Arizona College of Osteopathic Medicine.
- 2012-2014 Cathrine Black, B.S. Biology 2013. Received a 2013 WSU College of Arts and Sciences undergraduate research grant for \$1,440. Now working at the Knight Cancer Center at OHSU.
- 2012-2013 Chau Nyugen, B.S. Biology. Won a best poster presentation award at the 2013 WSUV Research Showcase. Now in medical school at the University of Washington.
- 2012-2013 Sydney Heath, B.S. Biology.

### **High School Interns**

- 2017-present Rahul Ram, junior, Camas High School Science Magnet Program.
- 2016-present Abigail Jiang, junior, Camas High School Science Magnet Program.
- 2013-2016 Anna Roche, Camas High School Science Magnet Program class of 2016. Overall winner of the 2016 Southwest Washington Science and Engineering Fair. Co-author on Neveux et al. 2016. Currently a sophomore at the University of Washington.
- 2012-2015 Meghal Sheth, Camas High School Science Magnet Program class of 2015. Overall winner of the 2014 Southwest Washington Science and Engineering Fair, 3<sup>rd</sup> in Cell and Molecular Biology at the 2014 International Science and Engineering Fair. Overall winner, 2014 Washington Junior Sciences and Humanities Symposium. Finalist, 2013 International Science and Engineering Fair. Co-first author on Hayashi et al. 2015. Currently a junior at Washington University St. Louis.

### **Mentoring outside of WSU**

- 2010-2011 Hiroka (Anna) Mamiya, Aud. D., University of Washington. Co-author on Coffin et al. 2013 Apoptosis.
- 2009-2010 Albert Hsu, B.S., University of Washington, co-mentored with Dr. Tomikazu Sasaki.
- 2007 Clement Yang, B.Sc. with honors, Queen's University.
- 2002-2003 Payal Razdan, B.S. with high honors, University of Maryland.

### **SERVICE**

#### **Service to the Scientific Community**

- 2015-present President/Board Chairman, Science Talk. Non-profit corporation aimed at helping scientists improve their communication skills. The first annual conference in January, 2017, occurred in Portland, OR and had over 250 attendees.

- 2016-present Member, External Relations Committee, Association for Research in Otolaryngology
- 2015-present Advisory board member, T32 on Comparative and Evolutionary Biology of Hearing for the University of Maryland
- 2015-present Board member, Oregon Chapter of the Society for Neuroscience
- 2014-2015 Organizer, Auditory Development: From Cochlear to Cognition conference
- 2014-2015 Associate Editor, Frontiers in Cellular Neuroscience, Research Topic on Hair cell death, protection, and regeneration
- 2014 Panelist, Job search and lab start-up session, Association for Research in Otolaryngology mid-winter meeting
- 2014 Session chair, Northwest Developmental Biology meeting
- 2013 Assistant workshop presenter for "Speaking of Science", Northwest River Restoration meeting
- 2012-present Associate Editor, Springer Handbook of Auditory Research series
- 2012-2013 Co-Chair, 50 Years of Underwater Bioacoustics Research Symposium
- 2012 Promotion committee member, Legacy Research Institute
- 2011- 2014 Omega Committee, Graduate Women in Science
- 2010-2012 Chair, 2012 Auditory System Gordon Research Symposium
- 2010-2011 AAAS Community Blogger, AAAS MemberCentral
- 2003 Organizer, First International Conference on Acoustic Communication by Animals

***Ad-hoc journal reviewer for***

Apoptosis  
 Aquatic Biology  
 Behavior  
 BMC Neuroscience  
 Comparative Biochemistry and Physiology  
 Developmental Dynamics  
 Food and Chemical Toxicology  
 Frontiers in Cellular Neuroscience  
 Frontiers in Molecular Neuroscience  
 Frontiers in Zoology  
 Hearing Research  
 Journal of Comparative Neurology  
 Journal of Environmental Studies and Sciences  
 Journal of Great Lakes Research  
 Journal of Fish Biology  
 Journal of Neurochemistry  
 Journal of Neuroscience  
 Journal of Physiology  
 Journal of the Association for Research in Otolaryngology  
 PLoS One  
 Scientific Reports  
 Toxicological Sciences  
 Zebrafish

***Ad-hoc grant reviewer for***

AUD study section, NIH  
 AREA study section, NIH

F31/F32 study section, NIDCD, NIH  
 ADARP grants, WSU  
 Action on Hearing Loss  
 Defense Medical Research and Development Program  
 Graduate Women in Science  
 US Army  
 Wayne State University CURES Program

## RESEARCH/SCHOLARSHIP

### Invited presentations/seminars

1. Mechanics of Hearing conference\*, "Zebrafish hair cell mechanics and physiology through the lens of noise-induced hair cell death" (St. Catharines, Ontario, Canada June 2017)
2. Acoustical Society of America conference, "Effect of environmental toxins on the fish lateral line" (Boston, MA June 2017)
3. Association for Research in Otolaryngology mid-winter meeting, "Understanding hair cell death and protection in the zebrafish lateral line" (San Diego, WA February 2016)
4. NIDCD, NIH, "Hair cell death and protection in the zebrafish lateral line" (Bethesda, MD May 2016)
5. PeaceHealth Southwest Neurology/Washington State University Vancouver joint conference, "Saving your patients' hearing, one fish at a time" (Vancouver, WA November 2015)
6. School of Medicine, University of Colorado, "A fishing expedition for better hearing: hair cell death and protection in a zebrafish model" (Denver, CO April 2015)
7. Center for Environmental Research, Education, and Outreach, Washington State University "Environmental effects on the fish lateral line" (Pullman, OR March 2015)
8. Oregon Chapter, Society for Neuroscience, "A fishing expedition for better hearing: hair cell death and protection in a zebrafish model" (Portland, OR March 2015)
9. Knowles Hearing Research Center, Northwestern University "Protecting our hearing, one fish at a time: hair cell death and protection in a zebrafish model system" (Chicago, IL February 2015)
10. Northwest Washington Auditory and Vestibular Research Meeting "Friend or Foe? The effect of natural products on hair cells in the zebrafish lateral line" (University of Washington, Seattle, WA 2014)
11. Third International Conference on the Effects of Noise on Aquatic Life "Effects of hatchery rearing on salmonid mechanosensory systems" (Budapest, Hungary 2013)
12. Baylor College of Medicine "Hair cell death and protection in a zebrafish model system" (Houston, TX 2013)
13. Legacy Research Institute "Preventing hearing loss: hair cell death and protection in the zebrafish lateral line" (Portland, OR 2012)
14. Hamline University "Can you hear me now? Translating hair cell life and death in the zebrafish lateral line" (St. Paul, MN 2012)
15. University of Minnesota Duluth "Can you hear me now? Translating hair cell life and death in the zebrafish lateral line" (Duluth, MN 2012)
16. Northwest Washington Auditory and Vestibular Research Meeting "Cell death signaling following aminoglycoside exposure" (OHSU, Portland, OR 2012)
17. Acoustical Society of America meeting "Saccular-specific, seasonal differences in hair cell density in a fish with seasonal auditory plasticity" (Seattle, WA 2011)
18. Northwest Auditory and Vestibular Research Meeting "Screening for Hair Cell Death

- Inhibitors in the Zebrafish Lateral Line” (Seattle, WA 2010)
19. Washington State University Vancouver “Hair Cell Death and Protection in the Zebrafish Lateral Line” (Vancouver, WA 2010)
  20. University of Oregon “Protecting Our Hearing, One Fish at a Time: Screening for Hair Cell Protection in the Zebrafish Lateral Line” (Eugene, OR 2010)
  21. Acoustical Society of America meeting "Otolith Crystallization in Salmonid Fishes: Possible Causes and Consequences for the Fish" (Portland, OR 2009)
  22. Seattle University "How Fish Help Protect Our Hearing: Hair Cell Death in the Zebrafish Lateral Line" (Seattle, WA 2009)
  23. Lateral Line" (Seattle, WA 2009)
  24. Association for Women in Science "Preventing Hearing Loss: Fish Tales" (Seattle, WA 2009)
  25. University of Minnesota "Modulation of mechanosensory hair cell death in the zebrafish lateral line" (Minneapolis, MN 2008)
  26. Western Kentucky University "The Zebrafish Lateral Line: a Model System for Studies of Inner Ear Hair Cell Death" (Bowling Green, KY 2008)
  27. Northwestern University Medical School “Fish Can Hear? Basic and Applied Approaches to Hearing”, (Chicago, IL 2005)
  28. University of Washington “Unconventional Myosins in Fish Ears” (Seattle, WA 2005)
- \*Keynote/plenary speaker

#### **Contributed symposium presentations**

1. Association for Research in Otolaryngology mid-winter meeting “Are there multiple roles for p53 in aminoglycoside-induced hair cell death?” (Baltimore, MD 2011)
2. Gordon Research Symposium “Profiling Hair Cell Death Pathways in the Zebrafish Lateral Line” (New London, NH 2010)
3. Association for Research in Otolaryngology mid-winter meeting "Bax Inhibition and Aminoglycoside-Induced Hair Cell Death in the Zebrafish Lateral Line" (Baltimore, MD 2009)

#### **Grant Support**

##### ***Active Grants (Total direct costs as PI/Co-PI: \$858,568)***

NIH R21 DC015636, 4/1/17-3/31/19, “Development of a novel high throughput zebrafish model for the study of noise-induced hearing loss, \$275,000 total direct costs.  
Role: PI

Washington State University Vancouver faculty mini-grant, 5/1/17-5/15/18, “Is hearing regeneration linked to evolutionary changes in protein sequences?”, \$5,000 direct costs  
Role: PI

American Hearing Research Foundation, 12/15/16-12/31/17, “High-throughput drug discovery for prevention of noise-induced hair cell loss” \$30,000 total direct costs  
Role: PI

NIH R15 DC013900, 2/01/14-1/31/18, “Characterizing the protective effects of caffeine and other natural products in a zebrafish model of hearing loss” \$296,542 total direct costs + Diversity supplement for Ms. Alexandria Camino, \$52,026 direct costs. Currently in a no-cost extension.  
Role: PI

Action on Hearing Loss International Project Grant, 3/1/15-2/28/18, “Development of a

novel lead compound for otoprotection: targeting HGF signaling with Dihexa”  
\$200,000 total direct costs.  
Role: Lead PI. (Co-PIs: P. Steyger, J. Harding, L. Kawas)

**Research Support – completed since arriving at WSU (Total direct costs as PI/Co-PI: \$380,150)**

WSU College of Veterinary Medicine, 7/1/16-6/30/17, “Stress modulation of hearing loss in a small animal model” \$19,998 total direct costs.  
Role: PI

Washington State University Vancouver faculty mini-grant, 5/1/16-5/31/17, “Determining the early signs of hair cell damage in a novel zebrafish model of acoustic trauma” \$4,970 total direct costs  
Role: PI

NIH R03 DC011344, 12/01/10-3/31/15, “p53 and aminoglycoside-induced hair cell death in the zebrafish lateral line” \$300,000 total direct costs  
Role: PI

Washington State University Vancouver faculty mini-grant 6/1/12-5/30/13, “Profiling seasonal gene expression in the ears of midshipman fish using RNA-Seq” \$4,000 direct costs  
Role: PI

Washington State University College of Arts and Sciences 5/1/13-8/31/13, “Using zebrafish as a model for drug discovery: screening a natural products library” \$4,350 direct costs  
Role: Co-PI (with C. Cooper)

Capita Foundation grant 1/1/13-12/31/13, “The effects of estrogen on hair cell survival and efficient hearing: a next-generation sequencing approach” \$4,246 direct costs  
Role: PI

Washington State University New Faculty Seed Grant, 5/16/13-8/15/14, “Developing a zebrafish model of noise-induced hearing loss”, \$28,000 direct costs  
Role: PI (collaborator J. Xu)

CEREO Seed Grant (WSU), 12/1/14-11/30/15, “Characterizing the effects of stormwater runoff on fish mechanosensory systems” \$14,586 total direct costs  
Role: Lead PI. (Co-PI: J. Stark)

**Non-research grant support – completed within the past 3 years**

Burroughs Wellcome Fund conference funds, \$2,500 direct costs

The Company of Biologists conference grant, “50 years of underwater bioacoustics”, \$4,700 direct costs

WSU ADVANCE Pro-net grant, distinguished speaker program, \$3,349 direct costs

WSU ADVANCE External Mentor Grant, \$2,780 direct costs

**Previous Grants**

NIH F32 DC009931, 2008-2010 "Differences in neomycin and gentamicin toxicity in the zebrafish lateral line"

NIH T32 DC000018, 2007, Otolaryngology Training Grant, University of Washington

NIH F31 DC005724, 2003-2005, "Unconventional myosin distribution in inner ear hair cells"

NIH T32 DC00046, 2001-2002 Comparative and Evolutionary Biology of Hearing Training Grant, University of Maryland

**Patents**

US20150337024 A1. Novel lead compound for otoprotection: targeting HGF signaling with Dihexa. US Patent and Trademark Office. Inventors: **A. Coffin**, J. Harding, L. Kawas, P. Uribe.

**Publications****Original peer-reviewed articles**

1. Wiedenhof H, Hayashi L, **Coffin AB** (2017) PI3K and Inhibitor of Apoptosis proteins modulate gentamicin-induced hair cell death in the zebrafish lateral line. *Front Cell Neurosci.* 11:326. doi: 10.3389/fncel.2017.00326
2. Neveux S, Smith NK, Roche A, Blough BE, Pathmasiri W, **Coffin AB** (2017) Natural Compounds as occult ototoxins? Ginkgo biloba flavonoids moderately damage lateral line hair cells. *J Assoc Res Otolaryngol* DOI:10.1007/s10162-016-0604-6
3. Kruger M, Boney R, Ordoobadi AJ, Sommer TF, Trapani JG, **Coffin AB** (2016) Natural Bizbenzoquinoline derivatives protect zebrafish lateral line sensory hair cells from aminoglycoside toxicity. *Front Cell Neurosci.* DOI:10.3389/fncel.2016.00083.
4. Monroe JD, Manning DP, Uribe PM, Bhandiwad A, Sisneros JA, Smith ME, **Coffin AB** (2016) Hearing sensitivity differs between zebrafish lines used in auditory research. *Hear Res.* 341:220-231
5. Mulvaney JF, Thompkins C, Noda T, Nishimura K, Sun WW, Lin S-Y, **Coffin A**, Dabdoub A (2016) Kremen1 regulates mechanosensory hair cell development in the mammalian cochlea and the zebrafish lateral line. *Scientific Reports.* 6:31668. doi: 10.1038/srep31668.
6. Wagner TL, Cooper CD, Gross JA, **Coffin AB** (2015) The effect of seismic waterguns on the inner ears of round goby. *J Great Lakes Res* doi:10.1016/j.jglr.2015.08.012
7. Faber-Hammond J, Samanta M, Whitchurch EA, Manning D, Sisneros JA, **Coffin AB** (2015) Saccular transcriptome profiles of the seasonal breeding plainfin midshipman fish (*Porichthys notatus*), a teleost with divergent sexual phenotypes. *PLoS One.* DOI: 10.1371/journal.pone.0142814

8. Hayashi L\*, Sheth M\*, Young A, Kruger M, Wayman GA, **Coffin AB** (2015) The effect of the aquatic contaminants bisphenol-A and PCB-95 on the zebrafish lateral line. *Neurotoxicology* 46:125-136.
9. Uribe P, Kawas L, Harding J, **Coffin AB** (2015) Hepatocyte growth factor mimetic protects lateral line hair cells from aminoglycoside exposure. *Frontiers in Cellular Neuroscience*, 9:3. Doi: 10.3389/fncel.2015.00003
10. **Coffin AB\***, Zeddies DG\*, Fay RR, Brown AD, Alderks PW, Bhandiwad AA, Mohr RA, Gray MD, Rogers PH, Sisneros JA (2014) Use of the swim bladder and lateral line in near-field sound source localization by fish. *J Exp Biol.* 217(12):2078-2088. DOI:10.1242/jeb.093831
11. Kwon H-J, Xu Y, Solovitz S, Xue W, Dimitrov A, **Coffin A**, Xu J (2014) Design of a microfluidic device with a non-traditional flow profile for on-chip damage to zebrafish sensory cells. *Journal of Micromechanics and Microengineering* 24:017001.
12. Brown AD, Sisneros JA, Jurasin T, Nyugen C, **Coffin AB** (2013) Differences in lateral line morphology between hatchery- and wild-origin steelhead. *PLoS ONE* 8(3):e59162. doi:10.1371/journal.pone.0059162.
13. **Coffin AB**, Rubel EW, Raible DW (2013) Bax, Bcl2, and p53 differentially regulate neomycin- and gentamicin-induced hair cell death in the zebrafish lateral line. *J Assoc Res Otolaryngol* DOI 10.1007/s10162-013-0404-1.
14. **Coffin AB**, Williamson KL, Mamiya A, Raible DW, Rubel EW (2013) Profiling drug-induced cell death pathways in the zebrafish lateral line. *Apoptosis* DOI 10.1007/s10495-013-0816-8
15. Esterberg R, Hailey DW, **Coffin AB**, Raible DW, Rubel EW (2013) Disruption of intracellular calcium regulation is integral to aminoglycoside-induced hair cell death. *J Neurosci* 33(17):7513-7525.
16. Thomas AJ, Hailey DW, Stawicki TM, Wu P, **Coffin AB**, Rubel EW, Raible DW, Simon JA, Ou H (2013) Functional mechanotransduction is required for cisplatin-induced hair cell death in the zebrafish lateral line. *J. Neurosci.*33(10):4405-4414.
17. **Coffin AB**, Mohr RA, Sisneros JA (2012) Saccular-specific hair cell addition correlates with reproductive state-dependent changes in the auditory saccular sensitivity of a vocal fish. *J. Neurosci.* 32:1366-1376.
18. **Coffin AB**, Raine JC, Hawryshyn CW (2012) Exposure to thyroid hormone *in ovo* affects otolith crystallization in rainbow trout *Oncorhynchus mykiss*. *Env Biol Fish.* DOI 10.1007/s10641-012-0007-4.
19. Brown AD, Mussen TD, Sisneros JA, **Coffin AB** (2011) Reevaluating the use of aminoglycoside antibiotics in behavioral studies of the lateral line. *Hear. Res.* 272:1-4.
20. Raine JC, **Coffin AB**, Hawryshyn CW (2011) *In ovo* thyroxine exposure alters later

- UVS cone loss in juvenile rainbow trout. *J. Exp. Biol.* 214:2248-2257.
21. Raine JC, **Coffin AB**, Hawryshyn CW (2010) Systemic thyroid hormone is necessary and sufficient to induce UVS cone loss in the juvenile rainbow trout retina. *J. Exp. Biol.* 213:493-501.
  22. **Coffin AB**, Reinhart KE, Owens KN, Raible DW, Rubel EW (2009) Extracellular divalent cations modulate aminoglycoside-induced hair cell death in the zebrafish lateral line. *Hear. Res.* 253(1-2):42-51.
  23. Owens KN, **Coffin AB**, Hong LS, O'Connell Bennett K, Rubel EW, Raible DW (2009) Response of mechanosensory hair cells of the zebrafish lateral line to aminoglycosides reveals distinct cell death pathways. *Hear. Res.* 253 (1-2):32-41.
  24. Owens KN, Santos F, Roberts B, Linbo T, **Coffin AB**, Knisely AJ, Simon JA, Rubel EW, Raible DW (2008) Identification of genetic and chemical modulators of zebrafish mechanosensory hair cell death. *PLoS Genetics* 4(2):1-14.
  25. **Coffin AB**, Dabdoub A, Kelley MW, Popper AN (2007) Myosin VI and VIIa distribution among inner ear epithelia in diverse fishes. *Hear. Res.* 224:15-26.
  26. Oxman DS, Barnett-Johnson R, Smith M, **Coffin A**, Miller D, Josephson R, Popper AN (2007) The effect of vaterite deposition on otolith morphology, sound reception, and inner ear sensory epithelia in hatchery-reared Chinook salmon. *Can. J. Fish. Aquat. Sci.* 64:1469-1478.
  27. Smith ME\*, **Coffin AB\***, Miller DL, Popper AN (2006) Anatomical and functional recovery of the goldfish (*Carassius auratus*) ear following noise exposure. *J. Exp. Biol.* 209:4193-4202.
  28. **Coffin AB**, Pereira DL, Spangler GR (2003) Stock-specific growth rates of lake herring (*Coregonus artedii*) in western Lake Superior. *Env. Biol. Fishes* 68(1):39-48.
  29. **Coffin AB**, Higgs DM, Presson JC, Popper AN (2002) Distribution of unconventional myosins in the zebrafish ear. *Bioacoustics* 12(2/3): 140-142. (

### **Reviews and Book Chapters**

1. Brown AD, Sisneros JA, Jurasin T, **Coffin AB** (2016) Effects of hatchery rearing on the structure and function of mechnosensory systems in salmonids. In: Popper AN, Hawkins AD (eds) *Effects of Noise on Aquatic Life II, Advances in Experimental Medicine and Biology*, Springer Science + Business Media, New York. 875:117-24. doi: 10.1007/978-1-4939-2981-8\_14.
2. **Coffin AB** (2016) Fishy Hearing: A short biography of Arthur N. Popper, PhD. *Adv Exp Med Biol* 877:3-11. Review
3. **Coffin AB**, Ramcharitar J (2016) Chemical Ototoxicity of the fish inner ear and lateral line. *Adv Exp Med Biol* 877:419-437. Review
4. Smith ME, Groves AK, **Coffin AB** (2016) Editorial: Sensory hair cell death and

regeneration. Front Cell Neurosci DOI: 10.3389/fncel.2016.00208. Review

5. **Coffin AB**, Brignull H, Raible DW, Rubel EW (2014) Hearing loss, protection, and regeneration in the larval zebrafish lateral line. In: Coombs et al. (eds). The Lateral Line. Springer: New York.
6. Esterberg R\*, **Coffin AB\***, Ou H, Simon JA, Raible DW, Rubel EW (2012) Fish in a dish: drug discovery for hearing habilitation. Drug Discovery Today: Disease Models. DOI 10.1016/j.ddmod.2012.02.001
7. **Coffin AB\***, Ou H\*, Owens KN\*, Santos F, Simon JA, Rubel EW, Raible DW (2010) Chemical screening for hair cell loss and protection in the zebrafish lateral line. Zebrafish 7(1):3-11.
8. **Coffin AB**, Kelley MW, Manley GA, Popper AN (2004) Evolution of sensory hair cells. In: Manley GA, Fay RR, Popper AN (eds) Evolution of the Auditory System. Springer-Verlag: New York.

*\*joint first authors*

#### **Books Edited**

Cramer KS, **Coffin AB**, Fay RR, Popper AN (2017) Auditory Development and Plasticity. Springer-Verlag: New York.

#### **Other publications**

1. Slee SJ, **Coffin AB** (2013) Cutting-edge science and coffee: auditory system Gordon Research Conference and Seminar 2012 report. JARO 14:1-2.
2. Kwon H-J, Xu Y, Solovitz SA, Xue W, Dimitrov AG, **Coffin AB**, Xu J (2012) Design of a microfluidic device to induce noise damage in hair cells of the zebrafish lateral line. Proceedings of the ASME 2012 International Mechanical Engineering Congress & Exposition.
3. Owens K, **Coffin A**, Raible D, Rubel E (2009). Zebrafish: A serendipitous solution. Hearing Health Magazine Summer 2009 issue.

#### **Science Outreach Presentations**

1. Camas High School TEDx-style symposium on women's careers, "Networking 101" (Camas, WA ~60 attendees)
2. Camas middle school girls in STEM conference keynote talk, "Chasing fish: my continuing journey" (Camas WA 2016, ~200 attendees)
3. Three Creeks Rotary Club, "Protecting our hearing, one fish at a time" (Vancouver, WA 2016, 20 attendees)
4. Vancouver Rotary Club, "Protecting our hearing, one fish at a time" (Vancouver, WA 2016, ~70 attendees)
5. American Association of University Women keynote talk, "Listening to fish: my continuing journey" (Vancouver, WA 2015, ~100 attendees)
6. Science on Tap "An Animal's Guide to Dating Success" (Vancouver, WA 2015, Portland, OR 2016)
7. Vancouver Lion's Club "Fish and hearing loss: what's the catch?" (Vancouver, WA 2014)
8. Science on Tap "Music to your ears? How to save your hearing...and how fish can help" (Vancouver, WA 2014)

9. Camas High School "Fish and hearing loss: what's the catch?" (Camas, WA 2014)
10. Camas High School "Fish and hearing loss: what's the catch?" (Camas, WA 2013)
11. Camas High School "Protecting our hearing, one fish at a time" (Camas, WA 2012)
12. San Diego Symphony, hosted by the Capita Foundation "Hearing: from the symphony to the lab" (San Diego, CA 2011)
13. Truman High School "Protecting our hearing, one fish at a time" (Seattle, WA 2010)
14. Science on Tap "Using fish to cure hearing loss" (Seattle, WA 2009)
15. Center High School "Using zebrafish to protect human hearing" (Seattle, WA 2009)
16. Snoqualmie Middle School "Fish sensory adaptations" (Snoqualmie, WA 2009)