

PROFESSIONAL EXPERIENCE	
2011-present	<p><i>Senior Scientist, JASCO Applied Sciences</i></p> <ul style="list-style-type: none"> • Provide acoustic predictive modeling and measurement for marine operations • Provide environmental risk assessment due to anthropogenic sound in marine environments
2008 - 2011	<p><i>Staff Scientist/Engineer, Marine Acoustics Incorporated (MAI), Arlington, VA</i></p> <ul style="list-style-type: none"> • Provided environmental risk assessment for marine operations, including sonar, seismic exploration, and construction and operation of alternative energy devices. Project responsibilities included proposal writing, cost estimation, acoustic modeling, research, report writing, and briefing. I applied best scientific and engineering practices to analysis for clients such as the U.S. Navy and multinational energy interests.
2004 - 2008	<p><i>Postdoctoral fellow, Comparative and Evolutionary Biology of Hearing Laboratory of Arthur Popper, University of Maryland at College Park</i></p> <ul style="list-style-type: none"> • Conducted experiments in Seneca Lake, NY, on the effects of exposure to high-intensity naval sonar systems on fish hearing. • Worked on methods of measuring acoustic particle motion • Lecturer: Taught cochlear mechanics and hair cell function in "Bases of Hearing Science" for the Minor in Neuroscience.
2003	<p><i>Grass Foundation Fellow in Neurobiology, Marine Biological Laboratory at Woods Hole, MA</i></p> <ul style="list-style-type: none"> • Explored new techniques in fluorescent imaging to monitor brain cell activity in larval fish resulting from acoustic stimulation.
2001 - 2003	<p><i>Research Associate, Laboratory of Richard Fay, Loyola University, Chicago, IL</i></p> <ul style="list-style-type: none"> • Conducted research into the development of hearing in fish. I designed and built systems for automated testing and recording of responses of larval and adult fish. The study was the first to show that developing fish can have as broad a frequency hearing range as adults and was one of the first to measure hearing abilities in terms of both acoustic particle motion and pressure. • While at Loyola, I also continued work on a project in the laboratory of Joseph Takahashi at Northwestern University to insert into fish genes that encode for bioluminescent proteins.
1994 - 1995	<p><i>Teaching Assistant, Lecturer, Northwestern University, Evanston, IL</i></p> <ul style="list-style-type: none"> • Taught and evaluated students in Neurobiology Laboratory and Honors Neurobiology courses. Invited lecturer to several courses, including Honors Neurobiology, Neurobiology Laboratory, and Fundamentals of Hearing Science.
1992 - 1993	<p><i>Electrician, Richard Klein & Son, Reading, PA</i></p> <ul style="list-style-type: none"> • Designed, built, installed, and field-tested industrial electrical control systems. • Responsibilities: complete system assembly, field installation, testing and troubleshooting
1990 - 1991	<p><i>Machine Design Engineer, Yeaman Packaging Group, Wheeling, IL</i></p> <ul style="list-style-type: none"> • Designed fully-automated, high-speed packaging lines • Responsibilities: mechanical design of conveyor and filler systems, design and programming of electrical control systems.
EDUCATION	
2001	Ph.D., Neuroscience; in the Department of Neurobiology and Physiology, Northwestern University, Evanston, Illinois
1990	B.S., Mechanical Engineering, University of Illinois at Urbana-Champaign

PUBLICATIONS (SELECTED)

1. **Zeddies**, D.G., Fay, R.R., Alderks, P.W., Acob, A., Gray, M., and Sisneros, J.A. (in preparation) Local acoustic particle motion guides plainfin midshipman fish (*Porichthys notatus*) in sound source localization.
2. Halvorsen*, M.B., **Zeddies***, D.G., Ellison, W.T., Song, J., Chicoine D.R., and Popper A.N. (in preparation) Effects of mid-frequency sonar on fish.
3. Halvorsen*, M.B., **Zeddies***, D.G., Miller, D.L., Smith, M.E., Song, J., Wysocki, L.E., Chicoine, D., Hastings, M.C., and A.N. Popper (in preparation) Effects of exposure to SURTASS LFA sonar on three species of fish.
4. Popper*, A.N., Fay*, R.R., Bartol, S., Carlson, T., Coombs, S, Ellison, W.T., Gentry, R., Halvorsen, M.B., Hawkins, A., Løkkeborg, S., Lang, W.H., Mann, D., Rogers, P., Southall, B.A., Tavolga, W., and **Zeddies**, D.G. (in preparation) Sound exposure criteria for fish and sea turtles.
5. **Zeddies**, D.G., Fay R.R., and Sisneros J.A. (in press) Sound source localization and directional hearing in fish. In: Fish Physiology Encyclopedia Project. Farrell, T. (ed), The Encyclopedia of Fish Physiology: from genome to environment.
6. **Zeddies**, D.G., Fay, R.R., Alderks, P.W., Shaub, K.S., and Sisneros, J.A. (2010) Sound source localization by the plainfin midshipman fish, *Porichthys notatus*. *J Acoust Soc Am*. 127(5):3104-3113.
7. Kane, A. S., Song, J., Halvorsen, M. B., Miller, D. L., Salierno, J. D., Wysocki, L. E., **Zeddies**, D., Popper, A. N. (2010) Exposure of fish to high intensity sonar does not induce acute pathology. *J. Fish Biol.*, 76:1825-40.
8. Rogers, P.H. and **Zeddies**, D.G. (2007) Multipole mechanisms for directional hearing in fish. In: Web JF, Fay, RR and Popper, AN (eds) Fish Bioacoustics. New York: Springer-Verlag, pp 233-252.
9. Kwak, S.J., Vemaraju, S., Moorman, S.J., **Zeddies**, D.G., Popper, A.N., and Riley B.B. (2006) Zebrafish pax5 regulates development of the utricular macula and vestibular function. *Dev Dyn* 235(11):3026-38.
10. **Zeddies**, D.G. and Fay, R.R. (2005) Development of the acoustic startle response of zebrafish to tones. *J Exp Biol* 208(7):1363-1372.
11. **Zeddies**, D.G. & Siegel, J.H. (2004) A biophysical model of the inner hair cell. *J Acoust Soc Am* 116:426-41.
12. **Zeddies**, D.G., Fay R.R., Alderks, P.W., Acob A., and Sisneros, J.A. (2010) Sound source localization of a dipole by the plainfin midshipman fish (*Porichthys notatus*). (A) *J. Acoust. Soc. Am.* 127:1886.
13. **Zeddies**, D.G., Fay R.R., Alderks, P.W., Shaub K., and Sisneros, J.A. (2009) Sound source localization by the plainfin midshipman fish, *Porichthys notatus*. (A) *J. Acoust. Soc. Am.* 125:2488.
14. Halvorsen M.B., **Zeddies** D.G., Ellison W.T., Song J., Chicoine, D.R., and Popper, A.N. (2010) Effects of mid-frequency sonar on fish. (A) *J. Acoust. Soc. Am.* 127:1755.
15. Arvelo Jr., J.I., **Zeddies**, D.G., and Ellison, W.T. (2009) A practical approach towards a timely seafloor interaction database. (A) *J. Acoust. Soc. Am.* 126:2225.
16. Vigness-Raposa, K.J., Ellison, W.T., Frankel, A.S., **Zeddies**, D.G., Schroeder C.L., August, P.V., Damon, C., and LaBash, C. (2009) Comprehensive, integrated database of elements contributing to bottom and volume clutter. (A) *J. Acoust. Soc. Am.* 125:2643.
17. **Zeddies**, D.G., Fay, R.R., Alderks, P., Shaub, K., and Sisneros, J.A. (2008) Sound source localization by the plainfin midshipman fish (*Porichthys notatus*). (A) *J. Acoust. Soc. Am.* 124:2549.
18. Ellison, W.T., Frankel, A.S., **Zeddies**, D.G., Vigness-Raposa, K.J., and Schroeder, C.L. (2008) Underwater acoustic scene analysis: Exploration of appropriate metrics. (A) *J. Acoust. Soc. Am.* 124:2433.
19. Popper, A.N., Deng X., **Zeddies**, D.G., and Hastings M.C. (2006) Structure/function relationships in the saccule of fishes (A) *J. Acoust. Soc. Am.* 119:3432.
20. **Zeddies**, D.G. and Fay, R.R. (2004) Development of the acoustic startle response of zebrafish to tones. *Abst. Assoc. Res. Otolarygol.* 27:43.
21. **Zeddies**, D.G. and Siegel, J.H. (2000) Is there a presynaptic mechanism for adaptation in IHCs? *Abst. Assoc. Res. Otolarygol.* 23:194.
22. **Zeddies**, D.G., Dong, Q., and Siegel, J.H. (2000) Rapid swelling of hair cells in isolated cochleas perfused with standard media. *Abst. Assoc. Res. Otolarygol.* 23:259.
23. **Zeddies**, D.G. and Siegel, J.H. (1999) Some currents of inner hair cells of the adult gerbil cochlea. *Abst. Assoc. Res. Otolarygol.* 22:211.