

CURRICULUM VITAE

WHITLOW W.L AU

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EDUCATION

Ph.D. Electrical Science, Washington State University, 1970
M.S. Electrical Engineering, Washington State University, 1964
B.S. Electrical Engineering, University of Hawaii, 1962

PRESENT POSITION

Chief Scientist, Marine Mammal Research Program, Researcher Level 5 (Professor Emeritus)
Hawaii Institute of Marine Biology

PROFESSIONAL AWARDS

Gold Medal, Acoustical Society of America, May, 2016
Silver Medal, Acoustical Society of America, October, 1998
Fellow, Acoustical Society of America, May, 1990
Navy Meritorious Civilian Service Award (3rd highest national award for Navy civilian employee), for contributions in dolphin bioacoustics, 1986
Publication Award, Naval Ocean Systems Center, 1990, 1991, 1992
Award of Merit - Quality Step Increase - Dec. 1974; Nov. 1976; Dec. 1979

PROFESSIONAL ACTIVITIES

Acoustical Society of America Chair – Acoustics2012-Hong Kong-joint meeting with Acoustical Society of China.
President, Acoustical Society of America, 2009-2010
President Elect, Acoustical Society of America, 2008
Vice President, Acoustical Society of America, 2006.
Co-organizer, 3rd Conf on Animal Acoustics Communications, Aug, 2011, Cornell U..
Council of Scientific Society Presidents, 2009-2010
Evaluator: Office of Naval Research Ocean Acoustics Program, 2010.
Scientific Committee: 5th Animal Biosonar Conference, Sept, 2009, Kyoto. Japan
Co-organizer, 2nd Conf on Animal Acoustics Communications, Aug, 2008, Corvallis, OR.
Ocean Studies Board, National Res. Council, National Academies, 2004 -2006.
Associate Editor, J. Acoust. Soc. Am., Animal Bioacoustics, 1998-present
Executive Council, Acoustical Society of America, 2001-2004.
National Research Council panel on Ocean Noise & Marine Mammal Populations, 2004.
Chair, Technical Committee on Animal Bioacoustics, Acoustical Soc. Am., 1997-2000
Member of Technical Specialty Committee on Animal Bioacoustics,

Acoustical Society of America, 1989-1994.
Member of organizing committee of the 13th Biennial Conference on the Biology of Marine Mammals, Wailea, Maui, Hawaii, Nov. 28 – Dec 3, p. 9.
Member of organizing committee of the 3rd Joint Acoustical Society of America/Acoustical Society of Japan meeting in Honolulu, Dec 1-7, 1996.
Organizer and Session chairman, Animal Bioacoustics Session, 127th meeting of the Acoustical Society of America, Austin, Texas, 1994.
Organizing Committee member and Session chairman, International symposium on sensory systems and behavior of aquatic mammals, Moscow, 1991.
Organizer and Session chairman, Animal Bioacoustics Session, 122th meeting of the Acoustical Society of America, Houston, 1991.
Session Chairman, Psychological and Physiological Acoustics, Joint Meeting of the Acoustical Society of America and Acoustical Society of Japan, Honolulu, Hawaii, 1988.
Organizing Committee member, 3rd International symposium on animal sonar systems, Helsingor, Denmark, 1986.
Organizer and Chairman, Session on Animal Bioacoustics, 106th meeting of the Acoustical Society of America, San Diego, 1983.
Organizing Committee member and Session chairman, 2nd International symposium on animal sonar systems, Jersey Island, 1979.

INTERNATIONAL RECOGNITION

1. Selected by the Danish National Research Foundation to be on a blue ribbon panel to evaluate several biological research centers in Denmark, May, 1997.
2. One of only two Americans invited to lecture in a summer bioacoustics workshop for PhD students in bioacoustics, at the University of Odense, Odense, Denmark, Aug. 1996.
3. Invited lecturer, Underwater Bioacoustics Workshop sponsored by the Ettore Majorana Center for Scientific Culture: International School of Ethology, Erice, Sicily, Nov. 1994.
4. Plenary speaker, 13th Biennial Conference on the Biology of Marine Mammals, Wailea, Maui, Hawaii, 1999.
5. Keynote speaker at Western Pacific Acoustics Conference, Australia, 2003.
6. Keynote speaker at the International Acoustics Congress, Kyoto, 2004
7. Keynote speaker European Underwater Acoustics Congress, Delf, The Netherlands, 2004
8. ASA chair 1st joint meeting , Acoustical Soc.of America and the Acoustical Soc.China, 2012
9. Keynote speaker Conf Theoretical & Computational Acoustics Hangzhou, China, 2015

PATENTS

Simulated Echo Transponder for Training Marine Mammals
Marine Mammal Guidance Device
Broadband Sonar Signal Processor and Target Recognition System

RESEARCH AND/OR PROFESSIONAL EXPERIENCE

1993-present **Chief Scientist**-Marine Mammal Research Program
Hawaii Institute of Marine Biology

- 1971-1993 **Senior Scientist**, Naval Ocean Systems Center, Hawaii Laboratory
 Conduct dolphin sonar research
 Conduct theoretical acoustic research
 Conduct sonar signal processing research
 Perform acoustic signal processing
 Perform underwater acoustic and backscatter measurements
 Design analog and digital electronics
 Perform analog and digital signal processing
 Principle investigator and former branch head
- 1970-1971 **Scientist**, Naval Ocean Systems Center, San Diego
 Conducted research in theoretical acoustic propagation
- 1969-1970 **Graduate Assistant.**, EE Depart.Wash. St.Univ., Pullman, WA.
 Conducted research in magnetospheric physics
 Conducted research in ionospheric physics
 Conducted research in radio-wave propagation in the ionosphere
 Investigated generation of F-layer field aligned irregularities
 Taught basic electronics course
 Teaching assistance for senior electronic lab. 1964-1968
- 1964-1968 **R&D Project Officer and Engineer.**, Air Force Weapons Lab., N.M.
 Project officer on research program to study propagation of radar signals through plasma sheath of reentry vehicles.
 Conducted research on propagation of radar signals through plasma sheath of reentry vehicles.

PROFESSIONAL SOCIETIES

- Acoustical Society of America (Committee Member on Animal Bioacoustics)
- Institute of Electrical and Electronics Engineers
- Marine Mammal Society
- Sigma Tau Honor Society
- Sigma Xi Honor Society

PROFESSIONAL PRESENTATIONS – 216 presentations and abstracts in open literature
 Invited Speaker (16), Session Chairman (14), Session Organizer (9)

PUBLICATION SUMMARY

3 authored books, 3 edited books, 226 papers in open literature, 221 Published abstracts,
 6 Technical Reports

Authored Books:

Au, W. W. L. (1993). *The Sonar of Dolphins*, Springer-Verlag N.Y.

Marine Mammal Populations and Ocean Noise: Determining When Noise Causes Biologically Significant Effects, The National Academies, **2005**.

Au, W. W. L. & Hastings, M. (2008). *Principles of Marine Bioacoustics*, Springer-Verlag, N. Y.

Edited Books:

Au, W. W. L. and Lammers, M. O., (2016). *Listening in the Ocean*, Springer-Verlag, New York

Au, W. W. L., Popper, A., and Fay, R., editors, (2000). *Hearing in Whales and Dolphins*, Springer-Verlag, New York.

Nachtigall, P. E., Lien, J., Au, W. W. L. and Read, A. J. (1995). *Harbour Porpoises: A Study of Bycatch*, De Spiel, The Netherlands.

PUBLICATIONS

Wei, C., Au, W.W., Ketten, D.R., and Zhang, Y. (2018). “Finite element simulation of broadband biosonar signal propagation in the near- and far-field of an echolocating Atlantic bottlenose dolphin (*Tursiops truncatus*).” *J. Acoust. Soc. Am.*, **143**, 2611-2620.

Giorli, G., Drazen, J. C., Neuheimer, A. B., Copeland, A., and Au, W.W.L. (2018). “Deep sea animal density and size estimated using a Dual-frequency IDentification SONar (DIDSON) offshore the island of Hawaii,” *Progress in Oceanography*, **160**, 155-165.

Gorli, G., Au, W. W. L. (2017). “Combining passive acoustics and imaging sonar techniques to study sperm whales’ foraging strategies (L)”, *J. Acoust. Soc. Am.* **142**, 1428-1431.

Yu Zhang, Song, Z., Wang, X, Cao, W., Au W.W.L. (2017). “Directional Acoustic Wave Manipulation by a Porpoise via Multiphase Forehead Structure,” *Phys. Rev. Appl.* **8**, 064002-1- , 064002-8.

Wei, C., Au, W. W. L., Ketten, D. R., Song, Z., and Zhang, Y. (2017). “Biosonar signal propagation in the harbor porpoise (*Phocoena phocoena*) head: The role of various structures in the formation of the vertical beam,” *J. Acoust. Soc. Am.* **141**, 4179-4187.

Au, W.W.L., “Echolocation.” In B. Wursig, J.G.M.H. Thewissen, K.M. Kovacs, editors: *Encyclopedia of Marine Mammals*, 3rd ed, Oxford: Academic Press , **2017** , pp. 321 - 331.

Au, W. W. L., and Wei, C. (2017). “A Review of New Understanding of the Role of Individual Structure within the Head of Dolphins in Formation of Biosonar Signal and Beam.” *Oceanography and Fisheries*, **2**, DOI: 10.19080/OFOAI.2017.02.555579.

Au, W. W. L., Martin, S.W., Moore, P. W., Branstetter, B., and Copeland, A. M. (2016). “Dynamics of biosonar signals in free-swimming and stationary dolphins: The role of source levels on the characteristics of the signal.” *J. Acoust. Soc. Am.* **139**, 1381–1389.

Wei, C., Au, W.W.L., Song, Z., and Zhang, Y. (2016). “The role of various structures in the head on the formation of the biosonar beam of the Baiji (*Lipotes vexillifer*),” *J. Acoust. Soc. Am.* **139**, 875–880.

Giorli, G., Neuheimer, A. & Au, W.W.L. (2016). “Spatial variation of deep diving odontocetes' occurrence around a canyon region in the Ligurian Sea as measured with acoustic techniques.” *Deep Sea Res. Part 1*, <http://dx.doi.org/10.1016/j.dsr.2016.08.002>.

Au, W. W. and Giorli, G. (2016). “Studying the biosonar activities of deep diving odontocetes in Hawaii and other western Pacific locations.” *Listening in the ocean: new discoveries and insights on marine life from autonomous passive acoustic recorders*. Edited by Au & Lammers, Springer. New York.

Wang Z.T., Au, W.W.L., Rendell, L., Wang, K.X., Wu, H.P., Wu, Y.P., Liu J. C., Duan, Q. O., Cao, H. J., and Wang, D., (2016). “Apparent source levels and active communication space of whistles of free-ranging Indo-Pacific humpback dolphins (*Sousa chinensis*) in the Pearl River Estuary and Beibu Gulf, China.” *PeerJ*, DOI 10.7717/peerj.1695

Au, W.W.L. (2015). “History of Dolphin Biosonar Research,” *Acoustics Today*, **11**, 10-17.

Rudd, R., A., Richlen, F., M., Stimpert, A. K., and Au, W. W. L. (2015). “Underwater Sound Measurements of a High-Speed Jet-Propelled Marine Craft: Implications for Large Whales.” *Pacific Sci.* **69**. 155 – 164. doi:10.2984/69.2.2

Ou, H., Au, W. W. L., Van Parijs, Oelson, E. M., and Rankin, S. (2015). “Wigner-Ville spectrogram analysis for baleen whale frequency down-sweeps classification.” *J. Acoust. Soc. Am.* **137**, 3024–3032.

Wei, C., Wang, Z., Song, Z., Wang, K., Ding, W., Au, W. W. L., Zhang, Y., (2015). “Acoustic Property Reconstruction of a Yangtze Finless Porpoise’s (*Neophocaena asiaeorientalis asiaeorientalis*) Head Base on CT,” *PlosOne*, Doi: : 10.1371/journal.pone.0121442

Giorli, G., Au, W. W. L., Ou, H., Jarvis, S., Morrissey, R., Moretti, D., (2015). “Passive acoustics monitoring of Odontocetes foraging activity in the Josephine seamount Marine Protected Area.” *JASA* **137**, 2495-2501.

Au, W. W. L. (2014). “Dolphin biosonar target detection in noise: wrap up of a past experiment,” *J. Acoust. Soc. Am.* **136**, 9-12.

Au, W. W. L., Ou, H. (2014). “Temporal signal processing of dolphin biosonar echoes from salmon prey,” J. Acoust. Soc. Am. Express Letter, **136**, EL67-71.

Wei, C., Zhang, Yu, Au, W. W. L. (2014). “Modeling of Ultrasound Beam Formation of Baiji (*Lipotes vexillifer*).” J. Acoust. Soc. Am. **136**, 423-429.

Au, W. W. L., Giorli, G., Chen, J., Copeland, A., Lammers, M., Richlen, M., Jarvis, S., Morrissey, R., and Moretti, D. (2014). Presence and seasonal variation of deep diving foraging odontocetes around Kauai, Hawaii using remote autonomous acoustic recorders.” J. Acoust. Soc. Am, **135**, 521-530.

Au, W. W. L., Giorli, G., Chen, J., Copeland, A., Jarvis, S., Morrissey, R., Moretti, D., and Klinck, H. (2013). “Nighttime Foraging by Deep Diving Echolocating Odontocetes off the Hawaiian Islands of Kauai and Ni’iahu as Determined by Passive Acoustic Monitors,” J. Acoust. Soc. Am. **133**, 3119-3127.

Ou, H., Au, W. W. L., Zurk, L., and Lammers, M. O., (2013). “Automated extraction and classification of time-frequency contours in humpback vocalizations,” J. Acoust. Soc., Am., **133**, 301-310.

Stimpert, A. K., Matilla, D., Nosal, E.M., and Au, W. W. L. (2012). “Tagging young humpback whale calves: methodology and diving behavior.” Endangered Species Res., **19**, 11-17.

Ou, H., Au, W. W. L., Oswald, J. N. (2012). “A non-spectrogram-correlation method of automatically detecting minke whale boings,” J. Acoust. Am. **132**, E1317-EL322.

Au, W. W. L., Branstetter, B., Moore, P. W., and Finneran, J. J. (2012). “The biosonar field around an Atlantic bottlenose dolphin (*Tursiops truncatus*),” J. Acoust. Soc. Am., **131**, 569-576.

Au, W. W. L., Branstetter, B., Moore, P. W., and Finneran, J. J. (2012). “Dolphin biosonar signals measured at extreme off-axis angles: Insights to sound propagation in the head.” J. Acoust. Soc. Am. **132**, 1199-1206.

Rudd, A.B. and Au, W.W.L. (2012). Partnering with Commercial Shipping for Whale Research: Challenges and Compromises in Design Allow for a Unique Research Platform. Sea Technology 51(3): 37-39.

Au, W. W. L., and Martin, S. W., (2012). Why dolphin biosonar performs so well in spite of mediocre “equipment.” IET Radar, Sonar & Navigation, doi: 10.1049/iet-rsn.2011.0194, 1-10.

Lemond, D., Au, W. W. L., Vlachos, S., and Nachtigall, P. E., (2012). “High-frequency auditory filter shape for the Atlantic bottlenose dolphin,” J. Acoust. Soc. Am. **132**, 1222-1228.

Stimpert, A. K., Au, W. W. L., Parks, S. E., Hurst, T., Wiley, D. N. (2011). “Common humpback whale (*Megaptera novaeangliae*) sound types for passive acoustic monitoring,” J. Acoust. Soc. Am. **128**, 476-482.

Ibsen, S. D., Krause-Nehring, J., Nachtigall, P. E., Au, W. W. L., Breese, M. (2011). “Similarities in echolocation strategy and click characteristics between a *Pseudorca crassidens* and *Tursiops truncatus*,” J. Acoust. Soc. Am. **130**, 3085-3089.

Lemonds, D. W., Kloepper, L. N., Nachtigall, P. E., Au, W. W. L., and Vlachos, S. A., Branstetter, B. K. (2011). “A re-evaluation of auditory filter shape in delphinid odontocetes: Evidence of constant-bandwidth filters,” J. Acoust. Soc. Am. **130**, 3107-3114.

Lammers, M.O., Fisher-Pool, P.I., Au, W.W.L., Meyer, C.C., Wong, K.C., and Brainard, R.E. (2011). “Humpback whale (*Megaptera novaeangliae*) wintering behavior in the Northwestern Hawaiian Islands observed acoustically,” Mar. Ecol. Progress Series, **423**, 261-268.

Au, W. W. L., Richlen, M., Lammers, M. O. (2011). “The Soundscape of a Nearshore Reef near an Urban Center,” in Effects of Noise on Aquatic Life, (A. Popper and H. Hawkins, eds). Springer, N.Y., pp. 345-352.

Lammers, M.O., Small, R., Atkinson, S., Castellote, M., Jenniges, J., Rosinski, A., Moore, S., Chris Garner, C., Au, W.W.L. (2011). “Acoustic monitoring of beluga whales (*Delphinapterus leucas*) in Cook Inlet, Alaska.” in Effects of Noise on Aquatic Life, edited by A. Popper and A. Hawkins, Springer Verlag, N.Y., pp. 341-344.

Oswald, J.N., Au, W. W. L., and Dunnebie, F. (2011). “Temporal patterns in the occurrence of minke whale boings detected at the Station Aloha Cabled Observatory,” J. Acoust. Soc. Am. **129**, 3353-3360.

Yovel, Y. , and Au, W. W. L. (2010). “How can dolphins recognize fish according to their echoes,” PLoS Comp. Biol. **5**, e14054

Au, W. W. L., Horne, J. , Jones, C. (2010). “Basis of acoustic discrimination of Chinook salmon from other salmon by echolocating *Orcinus orca*.” J. Acoust. Soc. Am. **128**, 2225-2232.

Au, W. W. L., Houser, D., Finneran, J. J., Lee, W. J., Talmadge, L. A., Moore, P. W. (2010). “The acoustic field on the forehead of echolocating Atlantic bottlenose dolphins (*Tursiops truncatus*),” J. Acoust. Soc. Am. **128**, 1426-1434.

Au, W.W.L., Lammers, M.O. and Yin, S. (2010). "Acoustics of dusky dolphins" In: Dusky Dolphins: Master Acrobats Off Different Shores. Eds. Würsig, B. & Würsig, M. Elsevier

Ibsen, S.D, Au, W.W.L., Nachtigall, P. E., Delong, C. E., and Breese, M. (2010). "Changes in consistency patterns of click frequency over time of an echolocating bottlenose dolphin," J. Acoust. Soc. Am. **126**, 3821-3829.

Yovel, Y., and Au, W. W. L. "How Can Dolphins Recognize Fish According to Their Echoes? A Statistical Analysis of Fish Echoes." (2009). Plos One, **5**, 14054, 1-10.

Kastelein, R. A., Wensveen, W. J., Hoek, L., Au, W. W. L., Terhune, J., and de Jong, C. A. F. (2009). "Critical ratio in the harbor porpoise (*Phocoena phocoena*) for tonal signals between 0.315 and 150 kHz in random white noise," J. Acoust. Soc. Am. **126**, 1588-1597.

Au, W. W. L., Branstetter, B., K., Benoit-Bird, K.J., and Kastelein, R. A. (2009). "Acoustic basis for fish prey discrimination by echolocating dolphins and porpoises," J. Acoust. Soc. Am. **126**, 460-467.

Benoit-Bird, K. J., and Au, W.W.L. (2009). "Cooperative prey herding by the pelagic dolphin, *Stenella longirostris*." J. Acoust. Soc. Am. **125**, 125-137.

Benoit-Bird, K. J., and Au, W.W. L. (2009). "Phonation behavior of cooperatively foraging dolphins," J. Acoust. Soc. Am. **125**, 539-546.

Mooney, T.A., Nachtigall, P.E., Breese, M., Vlachos, S. and Au, W.W. L. (2009). "Predicting temporary threshold shifts in a bottlenose dolphin (*Tursiops truncatus*): The effects of noise level and duration," J. Acoust. Soc. Am. **125**, 1816-1826.

Au, W. W. L., Lammers, M. O., and Yin, S. (2009). "Acoustics of Dusky Dolphin (*Lagenorhynchus obscurus*)," in *Dusky Dolphins: Master Acrobats off Different Shores*, edited by Bernd and Melany Würsig, Academic/Elsevier Press.

Au, W. W. L. (2008). "The effects of noise on echolocating odontocetes," Bioacoustics, **117**, 155-158.

Au, W. W. L., and Benoit-Bird, K. J. (2008). "Broadband backscatter from individual Hawaiian mesopelagic boundary community animals with implications for spinner dolphin foraging." J. Acoust. Soc. Am. **123**, 2884-2894.

Lammers, M. O., Brainard, R. E., Au, W. W. L., Mooney, T. A., and Wong, K. B. (2008). "An ecological acoustic recorder (EAR) for long-term monitoring of biological and anthropogenic sounds on coral reefs and other marine habitats," J. Acoust. Soc. Am. **123**, 1720-1728.

Benoit-Bird, K. J., Gilly, W. F., Au, W. W. L., Mate, B. (2008). Controlled and *in situ* target strengths of the jumbo squid *Dosidicus gigas* and identification of potential acoustic scattering sources, J. Acoust. Soc. Am. **123**, 1318-1323.

Muller, M. W., Allen III, J. S., Au, W. W. L. and Nachtigall, P. E. (2008). "Time-frequency analysis and modeling of the backscatter of categorized dolphin echolocation clicks for target discrimination," J. Acoust. Soc. Am. **124**, 657-666.

Ibsen, S. D., Au, W. W. L., Nachtigall, P.E., Breese, M. (2008). "Functional bandwidth of an echolocating Atlantic bottlenose dolphin (*Tursiops truncatus*)," J. Acoust. Soc. Am. **125**, 1214-1221.

Au, W. W. L., and Simmons, J. A. (2007). "Echolocation in dolphins and bats," Physics Today, Sept., pp. 40-45.

Au, W. W. L., Benoit-Bird, K. J. and Kastelein, R. A. (2007). "Modeling the detection range of fish by echolocating bottlenose dolphins and harbor porpoises." J. Acoust. Soc. Am. **121**, 3954-3962.

Au, W. W. L., Thomas, J. A., and Ramirez, (2007). "Evoked potential measurement of the Masked hearing threshold of the Pacific white-sided dolphin (*Lagenorhynchus obliquidens*)." Aquatic Mammals, **33**, 76-84.

Stimpert, A.K., Wiley, D.N., Au, W.W.L., Johnson, M.P., Arsenault, R. (2007). "Megapclicks": acoustic click trains and buzzes produced during nighttime foraging of humpback whales (*Megaptera novaeangliae*)." Biology Letters, **3**, 467-470.

Muller, M., Au, W., Nachtigall, P. Allen, J. and Breeze, M. (2007). "Phantom echo highlight amplitude and temporal difference resolutions of an echolocating *Tursiops truncatus*." J. Acoust. Soc. Am. **122**, 2255-2262.

Branstetter, B., Mercado III, E., and Au, W. W. L. (2007). "Representing multiple discrimination cues in a computational model of the bottlenose dolphin auditory system," J. Acoust. Soc. Am. **120**, 2459-2459.

DeLong, C, Au, W., Harley, H., Roitblat, H., and Pytka, L. (2007). "Human listeners provide insights into echo features used by dolphins to discriminated among objects," J. Comp. Psych. **121**, 306-319.

Mooney, T. A., Au, W. W. L., Nachtigall, P. E., Trippel, E.A. (2007). "Acoustic and stiffness properties of gillnets as they relate to small cetacean bycatch." Submitted to ICES Journal of Marine Science.

Ibsen, S., Au, W., Nachtigall, P., DeLong, C., and Breese, M. (2007). "Changes in signal parameters over time for an echolocating Atlantic bottlenose dolphin," J. Acoust. Soc. Am. **120**, 2446-2450.

DeLong, C. M., Au, W. W. L., and Stamper, S. A. (2007). "Echofeatures used by human listeners to discriminate among objects that vary in material or wall thickness: Implications for echolocating dolphins." J. Acoust. Soc. Am. **121**, 605-617.

Au, W.W.L., Pack, A.A., Lammers, M.O., Herman, L., Deakos, M., and Andrews, K. (2006) "Acoustic properties of humpback whale songs." J. Acoust. Soc. Am. **120**, 1103-1110.

Au, W.W.L., Kastelein, R.A., and Benoit-Bird, K.J., Cranford, T. W., and McKenna, M. F. (2006). "Acoustic Radiation from the head of echolocating harbor porpoise (*Phocoena phocoena*)," J. Exp.Biol. **209**, 2726-2733.

Benoit-Bird, K.J., Au, W.W.L., and Kastelein, R.A. (2006) "Testing the odontocete acoustic prey debilitation hypothesis:No stunning results." J. Acoust. Soc. Am. **120**, 1118-1123.

Benoit-Bird, K.J., Au, W.W.L. (2006) "Extreme diel horizontal migrations by a tropical near-shore resident micronekton community" Marine Ecology Progress Series, **319**, 1-14

Au, W. W. L. and Lammers, M. O. (2006). "Cetacean Acoustics", Handbook of Acoustics, Chapter 20, edited by T. Rossing, Springer-Verlag, N. Y. pp. 805-837.

DeLong, C. M, Au, W. W. L., Lemond, D., Harley, H., and Roitblat, H. L. (2006). "Acoustic Analyses of Objects matched by an echolocating bottlenose dolphin. J. Acoust. Soc. **119**, 1867-1879.

Lammers, M. O., Schotten, M., and Au, W. W. L. (2006). "The spatial context of free ranging Hawaiian spinner dolphins (*Stenella longirostris*) producing acoustic signals," J. Acoust. Soc. Am. **119**, 1244-1250.

Lammers, M. O., Brainard, R. E., and Au, W. W. L.(2006). "Diel trends in mesopelagic biomass community of the Northwest Hawaiian Islands observed acoustically," Atoll Res. Bull. **543**, 391-407.

Andrews, K. R., Karczmarski, L., Au, W. W. L., Rickards, S. H., Vanderlip, C. A., and Toonen, R. J. (2006). Patterns of genetic diversity of the Hawaiian spinner dolphin (*Stenella longirostris*). Atoll Res. Bull. **543**, 65-73.

Au, W. W. L. "A comparison of the sonar capabilities of bats and dolphins," (2004). in *Echolocation in bats and dolphins*, edited by J. Thomas, C. Moss, and M. Vater (University of Chicago press, Chicago), pp. xiii-xxvii.

Au, W. W. L. (2004). "The dolphin sonar: Excellent capabilities in spite of some mediocre properties," in *High Frequency Ocean Acoustics*, edited by M.B. Porter, M. Siderius and W. A. Kuperman, American Institute of Physics, New York, pp. 247-259.

Bazua-Duran, C. and Au, W. W. L. (2004). Geographic variations in the whistles of spinner dolphins (*Stenella longirostris*) of the Main Hawai`ian Islands", *J. Acoust. Soc. Am.* **116**, 3757-3769.

Au, W. W. L., Ford, J. K. B., Horne, J. K., and Newman-Allman, K. A. (2004). "Echolocation signals of free-ranging killer whales (*Orcinus orca*) and modeling of foraging for chinook salmon (*Oncorhynchus tshawytscha*)," *J. Acoust. Soc. Am.*, **116**, 901-909.

Nachtigall, P. E., Supin, A. Ya., Pawloski, J., Au, W. W. L. (2004). "Temporary Threshold shifts after noise exposure in the bottlenose dolphin (*Tursiops truncatus*) measured using evoked auditory potentials," *Mar. Mamm. Sci.* **20**, 673-687.

Au, W. W. L. (2004). "The sonar of dolphins," *Australian Acoustics* **32**, 61 – 63.

Supin, A. Ya, Nachtigall, P.E., Au, W. W. L., and Breese, M. (2004). "The interaction of outgoing echolocation pulses and echoes in the false killer whale's auditory system: Evoked-potential study," *Acoust. Soc. Am.*, **115**, 3218—3225.

Au, W. W. L. and Würsig, B. (2004). "Echolocation signals of dusky dolphins (*Lagenorhynchus obscurus*) in Kaikoura, New Zealand," *J. Acoust. Soc. Am.* **115**, 2307-2313.

Au, W. W. L. (2004). "Echolocation Signals of Wild Dolphins," *Acoustical Physics (Russia)*, **50**, 454-462.

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