

STACY L. DERUITER

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Born: 20 July 1978, US citizen

Languages: English (native), French (advanced), Haitian Kreyol (beginner)

EDUCATION

Ph.D 2003-2008. Massachusetts Institute of Technology/Woods Hole Oceanographic Institution (Biological Oceanography)

B.A. 1996-2000. St. Olaf College (Biology, with distinction; Paracollege)

RESEARCH EXPERIENCE

- 2008-2010 Postdoctoral Researcher, IFREMER (Brest, France)
Effects of active acoustic devices on the marine environment (with X Lurton)
- 2008-2009 Guest Investigator, Woods Hole Oceanographic Institution Biology Department
Field studies of effects of naval sonar on whales (with PL Tyack)
- 2003-2008 PhD Student, MIT/WHOI Joint Program in Biological Oceanography
Toothed whale echolocation, foraging ecology and noise impacts (with PL Tyack)
- 2001-2003 Research Technician, University of Michigan Mental Health Research Institute
Molecular biology of neural development (with DL Turner)
- 1999 NSF REU Fellow, University of Delaware College of Marine Studies
Patagonian toothfish population genetics (with P Gaffney)
- 1999 Research Assistant, St. Olaf College Biology Department
Leedy's roseroot population genetics (with J Olfelt)
- 1998 HHMI Summer Research Student, St. Olaf College Biology Department
Freshwater mussel distribution and abundance (with MC Swift & G Wagenbach)

PEER REVIEWED PUBLICATIONS

- DeRuiter, SL, Boyd, I, Claridge, D, Clark, C, Moretti, D, Southall, B and Tyack, PL (in prep.). False killer whales, but not pilot whales or melon-headed whales, mimic MFA sonar.
- DeRuiter, SL and Larbi Doukara, K. (in prep.). Loggerhead turtles dive in response to airgun array sounds.
- DeRuiter, SL, Miller, PJO and Tyack, PL. (in prep.). A semi-Markov model to quantify changes in sperm whale foraging behaviour in response to airguns.
- Clausen, KT, Wahlberg, M, Beedholm, K, DeRuiter, SL and Madsen, PT. (in press). Click communication in harbour porpoises, *Phocoena phocoena*. *Bioacoustics*.
- DeRuiter, SL, Hansen, M, Koopman, HN, Westgate, AJ, Tyack, PL and Madsen, PT. (2010). Propagation of narrow-band-high-frequency clicks: Measured and modeled transmission loss of porpoise-like clicks in porpoise habitats. *Journal of the Acoustical Society of America* 127(1), 560-567.
- DeRuiter, SL, Bahr, A, Blanchet, MA, Hansen, SF, Kristensen, JH, Madsen, PT, Tyack, PL and Wahlberg, M. (2009). Acoustic behavior of echolocating porpoises during prey capture. *Journal of Experimental Biology* 212(3100-3107).

- DeRuiter, SL and Solow, AR. (2008). A rotation test for behavioural point-process data. *Animal Behaviour* 76(4), 1429-1434.
- DeRuiter, SL, Tyack, PL, Lin, YT, Newhall, AE and Lynch, JF. (2006). Modeling acoustic propagation of airgun array pulses recorded on tagged sperm whales (*Physeter macrocephalus*). *Journal of the Acoustical Society of America* 120(6), 4100-4114.
- Vojtek, AB, Taylor, J, DeRuiter, SL, Yu, J-Y, Figueroa, C, Kwok, R and Turner, DL. (2003). Akt regulates basic helix-loop-helix transcription factor-coactivator complex formation and activity during neuronal differentiation. *Molecular and Cellular Biology* 23(13), 4417-4427.
- Yu, J-Y, Taylor, J, DeRuiter, SL, Vojtek, AB and Turner, DL. (2003). Simultaneous inhibition of GSK3 α and GSK3 β using hairpin siRNA expression vectors. *Molecular Therapy* 7(2), 228-236.
- Yu, J-Y, DeRuiter, SL and Turner, DL. (2002). RNA interference by expression of short-interfering RNAs and hairpin RNAs in mammalian cells. *Proceedings of the National Academy of Sciences* 99(9), 6047-6052.

OTHER PUBLICATIONS (BOOK CHAPTERS, REPORTS, THESIS)

- DeRuiter, SL. (in press). Chapter 10: Marine Animal Acoustics. In *An Introduction to Underwater Acoustics: Principles and Applications*, (Ed. by X. Lurton). Chichester, UK: Praxis Publishing Limited.
- DeRuiter, SL and Lurton, X. (2009). Impact sonore potentiel de la campagne BobGeo sur les mammifères marins [Potential acoustic impacts of the Bobgeo cruise on marine mammals – original in French]. Document A080707 DOP/CB/NSE/AS/39-A. Brest, France: Ifremer.
- DeRuiter, SL and Lurton, X. (2009). Impact sonore potentiel de la campagne SPIRAL sur les mammifères marins [Potential acoustic impacts of the SPIRAL cruise on marine mammals – original in French]. Document A080707 DOP/CB/NSE/AS/41-A. Brest, France: Ifremer.
- DeRuiter, SL and Lurton, X. (2009). Potential impacts of active acoustic devices used during the SANBA cruise on marine animals. Document A080707 DOP/CB/NSE/AS/40-A. Brest, France: Ifremer.
- DeRuiter, SL and Lurton, X. (2009). Premier rapport d'étude: Marine Mammal Bioacoustics and Effects of Sound Pollution. Document A080707 NSE-AS/2009-42. Brest, France: Ifremer and Sercel.
- DeRuiter, SL and Lurton, X. (2009). Impact sonore potentiel de la campagne GWADASEIS sur les mammifères marins [Potential acoustic impacts of the GWADASEIS cruise on marine mammals – original in French]. Report. Brest, France: Ifremer.
- Le Gall, Y, DeRuiter, SL, Lurton, X, Regnault, J-P and Menut, E. (2009). PAM et Répulsif Acoustique – Descriptif et Premier Bilan [PAM and Acoustic Deterrent Device: Description and First Performance Evaluation – original in French]. Document A080707 NSE/AS-09/46. Brest, France: Ifremer.
- Artzt, C and DeRuiter, SL. (2008). JIP Sound & Marine Life Review. Memo DGEP/GSR/TG/MTS/AS n° 08 - 207. Pau, France: Total.
- DeRuiter, SL. (2008). Echolocation-based foraging by harbor porpoises and sperm whales, including effects of noise exposure and sound propagation. PhD thesis, Biological

Oceanography, Massachusetts Institute of Technology/Woods Hole Oceanographic Institution Joint Program, Cambridge and Woods Hole, MA.

DeRuiter, SL, Solow, A, Miller, PJO and Tyack, PL. (2008). Sperm Whale Seismic Study in the Gulf of Mexico: Synthesis Report, Section 6.2, Modeling Sperm Whale Responses to Airgun Signals. (Ed. by A. Jochens et al.). OCS Study MMS 2008-006. New Orleans, LA: U.S. Department of the Interior, Minerals Management Service, Gulf of Mexico OCS Region.

CONFERENCE PRESENTATIONS

- DeRuiter, SL and Larbi Doukara K. (2010). Loggerhead turtles dive in response to airguns [presentation]. *Joint 159th Acoustical Society of America Meeting and Noise-Con 2010*. Baltimore, Maryland: 19-23 April 2010.
- Clausen, KT, Wahlberg, M, Beedholm, K, DeRuiter, SL and Madsen, PT. (2009). Click communication in harbor porpoises (*Phocoena phocoena*) [presentation]. *Society for Marine Mammalogy - 18th Biennial Conference*. Quebec, Canada: 12-16 October 2009.
- DeRuiter, SL. (2009). Risques acoustiques pour les mammifères marins [Effects of sound on marine mammals] [presentation]. *Réunion de Département DOP/CB/NSE, Ifremer*. Brest, France: 5 février 2009.
- DeRuiter, SL, Boyd, I, Claridge, D, Clark, C, Moretti, D, Southall, B and Tyack, PL. (2009). False killer whales mimic MFA sonar [presentation]. *Society for Marine Mammalogy - 18th Biennial Conference*. Quebec, Canada: 12-16 October 2009.
- DeRuiter, SL, Boyd, I, Claridge, D, Clark, C, Moretti, D, Southall, B and Tyack, PL. (2009). False killer whales, but not pilot whales or melon-headed whales, mimic MFA sonar [poster]. *Office of Naval Research Marine Mammal Program Review*. Alexandria, VA: 7-10 December 2009.
- DeRuiter, SL. (2008). Echolocation-based foraging by harbor porpoises and sperm whales, including effects of noise and acoustic propagation [invited presentation]. *Sea Mammal Research Unit Seminar Series*. St. Andrews, Scotland: 11 Dec 2008.
- DeRuiter, SL, Bahr, A, Blanchet, M-A, Hansen, S, Kristensen, JH, Madsen, PT, Tyack, PL and Wahlberg, M. (2008). Acoustic behavior of echolocating porpoises during prey capture [presentation]. *ACOUSTICS '08*. Paris, France: 29 June to 4 July 2008.
- DeRuiter, SL. (2007). Modeling sperm whale foraging & response to airgun sounds as a semi-Markov process in continuous time [poster]. *2007 World Conference on Natural Resource Modeling*. Cape Cod, MA: 19 - 22 June 2007.
- DeRuiter, SL, Claridge, DE, Hickmott, LS and Tyack, PL. (2007). A noninvasive molecular method for diet determination from toothed whale fecal samples [presentation]. *17th Biennial Conference on the Biology of Marine Mammals*. Cape Town, South Africa: 29 November to 3 December 2007.
- DeRuiter, SL, Solow, A, Miller, PJO and Tyack, PL. (2007). Modeling sperm whale responses to airgun signals [presentation]. *24th Annual Minerals Management Service Gulf of Mexico Information Transfer Meeting*. Kenner, LA: 9-11 January 2007.
- DeRuiter, SL and Tyack, PL. (2007). Contact recordings of buzz-like calls of a harbor porpoise (*Phocoena phocoena*) [presentation]. In *5th Annual Boston Behavior Club Symposium*. Woods Hole, MA.
- DeRuiter, SL, Solow, A, Miller, PJO and Tyack, PL. (2006). Changes in sperm whale (*Physeter macrocephalus*) foraging behavior during controlled exposure to airgun sounds

- [presentation]. *86th Annual Meeting of the American Society of Mammalogists*. Amherst, MA: June 2006.
- DeRuiter, SL, Lin, Y-T, Newhall, AE, Madsen, PT, Miller, PJO, Lynch, JF and Tyack, PL. (2005). Quantification and acoustic propagation modeling of airgun noise recorded on Dtag-tagged sperm whales in the Gulf of Mexico [presentation]. *16th Biennial Conference on the Biology of Marine Mammals*. San Diego, CA: 12-16 December 2005.
- Lynch, JF, DeRuiter, SL, Tyack, PL, Newhall, A and Lin, Y-T. (2005). Preliminary modeling of Dtag acoustic arrivals from the Gulf of Mexico in 2002 and 2003 [presentation]. *Twenty-third Gulf of Mexico Information Transfer Meeting*, (Ed. by M. McKay and J. Nides). New Orleans, LA.
- DeRuiter, SL, Lynch, JF, Newhall, A and Tyack, PL. (2004). Acoustic propagation modeling of airgun sounds in the Gulf of Mexico and comparison with data from Dtag tagged sperm whales [poster]. *MIT Biology Department poster session*. Boston, MA.
- DeRuiter, SL. (1999). Freshwater mussel - fish interactions in the Superior National Forest and the Canon River watershed, MN [poster]. *47th Annual Meeting of the North American Benthological Society*. Duluth, MN: 25-28 May 1999.

TEACHING EXPERIENCE

Feb.-May 2008	Teaching Assistant, WHOI. <i>Communicating Ocean Sciences</i> .
Jan.-May 2008	Guest Instructor, Boston College. <i>Environmental Oceanography</i> and <i>Environmental Oceanography Seminar</i> .
2005-2008	Guest Lecturer, Marine Studies Consortium. <i>Biology and Conservation of Whales</i> and <i>Introduction to Marine Mammals</i> (5 course weeks total).
Feb.-June 2007	Teaching Assistant, WHOI. <i>Biological Oceanography</i> .
Sept.-Apr. 2007	Instructor, Tufts University Experimental College. <i>Endangered Waters: Human Interaction with Ocean Ecosystems</i> .
Sept.-Dec. 2006	Instructor, Marine Studies Consortium. <i>Introduction to Marine Mammals</i> .
2005-2006	Discussion Group Leader, MIT. <i>Introductory Biology</i> (2 semesters).
2005-2006	Instructor, MIT ESP (middle- & high-school). <i>Marine Biology</i> (10 sessions), <i>Whales and Seals</i> (1 session), and <i>Audio Illusions</i> (1 session).
Mar.-June 2006	Ocean Science Enrichment Teacher, Mullen Hall School. <i>4th grade</i> .
Jan.-June 2005	Classroom Assistant & Tutor, Cambridge Rindge and Latin School. <i>Marine Science</i> and <i>Chemistry</i> .
1997-2000	Tutor, St. Olaf College. <i>Biology</i> , <i>Chemistry</i> , and <i>Russian</i> .
1998-1999	Teaching Assistant, St. Olaf College. <i>Cellular Biology and Genetics</i> , <i>Plants and People</i> , and <i>Plant Morphology</i> .

AWARDS & GRANTS

2006-2008	P.I., WHOI Ocean Life Institute Grant (Design and test acoustic porpoise tag)
2006-2007	P.I., WHOI Coastal Oceans Institute Student Research Award (porpoise biosonar)
2005-2008	P.I., WHOI Ocean Ventures Fund Grant (whale prey ID using fecal DNA)
2007	2 nd prize, student poster competition, World Conf. on Natural Resource Modeling
2003-2006	NSF Graduate Research Fellow
2000	Bonde Award for exceptional St. Olaf College Paracollege senior work
2000	Phi Beta Kappa
1999-2000	Barry M. Goldwater Scholar

1997-1999 MIAC Academic All-Conference Cross-Country Team Member
 1998-2000 E.T. Tufté Biology Scholarship
 1997 CRC Outstanding First-Year Chemistry Student
 1996-2000 Buntrock Scholar
 1995-1996 National Merit Scholar, Valedictorian

ACTIVITIES & SERVICE

2007-2008 Marine Mammal Stranding Response, Cape Cod Stranding Network
 2006-2007 Student Representative to the Educational Assembly, MIT/WHOI Joint Program
 2001-2008 Volunteer Coaching Assistant, high school cross country and track teams
 1996-2006 Clarinet Player, various bands and orchestras
 2001-2003 First Presbyterian Church Medical Missions Task Force – Haiti volunteer
 2000 Peace Corps Agroforestry Volunteer, Desarmes and Bergeaud, Haiti
 1999-2000 WHAP! (Women’s Health and Power) Founding member/volunteer
 1996- Amnesty International member, MN Group 151 President (’99-’00), and MN Student Area Coordinator (’97-’99)

FIELD WORK & RESEARCH CRUISES

2009 (23 days) SPIRAL aboard N.O. *L’Atalante*, Algeria, Marine mammal observer.
 2009 (22 d) MED09 aboard R.V. *Alliance*, Spain to Italy, Dtag technician.
 2009 (9 d) ESSATA aboard N.O. *L’Atalante*, France, Passive acoustic monitoring technician.
 2008 (25 d) BRS08 aboard R.V. *Roger Revelle*, Bahamas, Dtag technician.
 2008 (21 d) Fjord&Baelte (marine park), Denmark, Visiting researcher.
 2005-2007 (21 d) Grand Manan Whale and Seabird Research Station, Canada, Visiting researcher.
 2003 (24 d) Sperm whale cruise aboard R.V. Delaware II, US east coast, Visual/acoustic observer
 2003 (10 d) WHOI student cruise aboard S.S.V. *Corwith Cramer*, US east coast
 1999 (3 months) St. Olaf College, Freshwater mussel abundance surveys, MN, USA.

MEMBERSHIPS & HONOR SOCIETIES

Acoustical Society of America (since 2006), American Society of Mammalogists (since 2006), Society for Marine Mammalogy (since 2003), Phi Beta Kappa (since 2000), Tri-Beta Biology Honor Society (1997 - 2000)