

## Akiko Okusu

Simmons College  
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### APPOINTMENTS

**Assistant Professor** (2007-present)  
*Simmons College, MA*

**Visiting Research Associate** (2007-present)  
*Harvard University, MA*

**Preceptor** in *Genetics, Genomics and Evolution* (2005-2007)  
Undergraduate Life Science Education (Curriculum development)  
*Harvard University, MA*

**Lecturer** in *Graduate Research Methods and Scholarly Writing in the Biological Sciences* (2006-2007)  
*Harvard Extension School, MA*  
Master of Arts and Sciences, Natural Sciences

### EDUCATION

**Ph.D.** (June, 2003)  
*Harvard University, MA, Organismic & Evolutionary Biology*  
*Woods Hole Oceanographic Institution, Guest Student, Department of Biology*  
Thesis Title: “*Evolution of “early” molluscs: Integrating phylogenetic, developmental, and morphological approaches*”

**B. A. Magna Cum Laude**, *Biology with Honors* (1996)  
*Hamilton College, NY*  
Thesis Title: “*Phylogenetic analysis of class Scaphopoda (Mollusca) using shell microstructure*”

### POSTDOCTORAL EXPERIENCES

**Postdoctoral Fellow** (2004-2006)  
*Harvard University, MA, Organismic & Evolutionary Biology*

**Postdoctoral Research Scholar** (2003-2004)  
*Dartmouth College, NH, Biological Sciences*

### TEACHING EXPERIENCES

**Principles of Zoology** (BIOL218)  
*Simmons College, MA*  
Lecturer and lab instructor: Freshmen to sophomore level. Topics covered included: ecology, evolution, phylogeny, animal diversity and development. Enrollment = 55.

**General Biology** (BIOL113-01, BIOL113L)  
*Simmons College, MA*  
Lecturer and lab instructor: Introductory biology for freshmen. Topics covered included: diversity of life, genetics, molecular biology, metabolism, photosynthesis, evolution and ecology. Enrollment = 85.

**Tropical Marine Ecology (BIOL345M)**

*Simmons College, MA*

**Lecturer and field instructor:** Course included a 10-day field trip on the island of San Salvador, Bahamas. Enrollment = 11

**Proseminar in Evolution and Biodiversity (NSCI E-100, 2006)**

*Harvard Extension School, MA, Master of Arts and Sciences*

**Lecturer:** Instructed masters students on reading primary literatures and writing thesis proposals. Enrollment = 15

**Genetics, Genomics and Evolution (LS1b, 2005-2007)**

*Harvard University, MA*

**Preceptor for Life Sciences:** Coordinated and developed course curriculum and weekly laboratory exercises for an undergraduate introductory course *Genetics, Genomics and Evolution* for 300-400 freshman undergraduate students

**Biology & Evolution of Invertebrate Animals (OEB 110, 2005)**

*Harvard University, MA*

**Teaching Fellow:** instructed and led 1-week field trip to the Bahamas for 7 upper-level biology major undergraduate students

**Evolution, Diversity & History of Life (formerly BS 53, 2003)**

*Harvard University, MA*

**Head Teaching Fellow:** developed weekly laboratory exercises and instructed the other Teaching Fellows for 30 upper-level undergraduate students

**Integrative Biology of Organisms (formerly BS 51, 2002)**

*Harvard University, MA*

**Teaching Fellow:** taught weekly 3-hour laboratory sections for a group of 15 freshman and sophomore undergraduate students

**Invertebrate Zoology (OEB 110, 2001)**

*Harvard University, MA*

**Head Teaching Fellow:** developed and led 3-hour weekly laboratory exercises and practical exams for 3 upper-level undergraduate students

**Ecology & Evolution of Marine Invertebrates (formerly OEB 187, 1997)**

*Harvard University, MA*

**Teaching Fellow:** instructed and led 2-3 day trips to local field stations in Nahant, MA, Gloucester, MA, Damariscotta, ME, and Mystic Seaport, CT for 10 upper-level undergraduate students

**Organisms & Evolutionary Biology (formerly BS 51, 1996)**

*Harvard University, MA*

**Teaching Fellow:** taught weekly 3-hour laboratory sections for a group of 15 freshman and sophomore undergraduate students

**Introductory Biology (BIO 110, 1994-1996)**

*Hamilton College, NY*

**Laboratory Assistant:** helped run weekly 3-hour laboratory sections for a group of 20 freshman undergraduate students

**Calculus (1994)**

*Hamilton College, NY*

**Tutor:** privately tutored freshman undergraduate students

**AWARDS &  
HONORS**

**Excellence in Teaching Award (2003)**  
*Harvard University, MA*

**Excellence in Teaching Award (2002)**  
*Harvard University, MA*

**Development Traveling Grant (2002)**  
The journal *Development*

**NSF Dissertation Improvement Grant (2000-2002)**  
*Systematic Biology*

**Putnam Travel Grant for Systematics (1996)**  
*Harvard University, MA*

**The James H. Glass Fellowship (1996-1998)**  
*Hamilton College, NY*

**The Elihu Root Fellowship in Science (1996-1997)**  
*Hamilton College, NY*

**Sigma Xi, The Scientific Research Society (1996)**  
*Hamilton College, NY*

**Phi Beta Kappa, Epsilon of New York (1996)**  
*Hamilton College, NY*

**The Herbert and Nancy Salkin Scholarship (1994-1996)**  
*Hamilton College, NY*

**Dean's List (1993-1995)**  
*Hamilton College, NY*

**RESEARCH  
INTERESTS**

- Metazoan evolution and phylogeny
- Evolution of metazoan bauplan and development
- Population genetics of invertebrates
- Molecular systematics

**FIELD  
RESEARCH  
EXPERIENCES**

**Perry Institute for Marine Science, Bahamas (2005).** Coordinated and instructed a week long field trip for a Harvard University course, *Biology & Evolution of Invertebrate Animals* (OEB 110).

**Tjärnö Marine Biological Laboratory, Göteborg University, Sweden (2004).** Tree of Life (NSF) funded investigation and collection of protostome invertebrates.

**Kristineberg Marine Research Station, Sweden (2003).** Tree of Life (NSF) funded investigation and collection of protostome invertebrates.

**Kewalo Marine Laboratory, University of Hawaii** (2002). Cell lineage and apoptosis studies of *Epimenia babai* Aplacophora, Mollusca, collaboration with Dr. M. Q. Martindale.

**Marine Biological Laboratory, Woods Hole, MA** (1999-2002). Cell lineage studies of *Chaetopleura apiculata* Polyplacophora Mollusca, colaboration with Dr. M. Q. Martindale and Dr. J. Q. Henry.

**Amakusa Marine Biological Laboratory, Japan** (1998-2004). Development of *Epimenia babai* Aplacophora, Mollusca.

**Kristineberg Marine Research Station, Sweden** (1998). Development of *Chatoderma nitidulum*.

**Tropical Forests, Venezuela** (1997). Field work on tropical ecology.

**Darling Marine Center, University of Maine, Damariscotta, ME** (1996-1998). Collection of marine invertebrates.

**Woods Hole Oceanographic Institution, Woods Hole, MA** (1996-2003). Taxonomic studies of Class Aplacophora (Mollusca) using morphological characters.

**The Whitney Laboratory, University of Florida, Augustine, FL** (1995). Research Experience for Undergraduates (REU) summer internship. The effect of neuropeptides (FMRFa and SCPs) on mechanical activity and cAMP level on the bivalve clam (*Mercenaria mercenaria*) heart (pharmacology, radioimmunoassay ( $I^{125}$ )).

**Great Gull Island, American Museum of Natural History, NY** (1993). Migration and breeding behavior of common tern (*Sterna hirundo*) on Great Gull Island New London, CT (bird-banding, bird-trapping).

**Saga University, Japan** (1993). Parental investment of the female stink bug (*Parastrachia japonesis*).

## PROFESSIONAL TALKS

**Okusu, A.** Genes, Fossils and Embryos: The new perspective on animal evolution (2009). Invited talk at Darwin Festival, Salem State University.

**Okusu, A.** Biology and Art (2009). Invited talk at Sigma Xi Honorary ceremony at Simmons College, Boston, MA.

**Okusu, A.** Genes, Fossils and Embryos: The new perspective on animal evolution (2008). Invited talk at The Whitney Laboratory, University of Florida.

**Okusu, A., Schwabe, E., & Giribet, G.** Phylogeny of Polyplacophora (2004). Abstracts, World Congress of Malacology, Perth, Australia. R. Rieker & P. M. Mikkelsen, eds. *Unitas Malacologia*

**Okusu, A.** Embryogenesis and development of *Epimenia babai* (Aplacophora Mollusca) (2002). *Abstracts, Society for Integrative and Comparative Biology (SICB) conference.*

**Okusu, A.** Embryogenesis and development of *Epimenia babai* (Aplacophora Mollusca) (2001). *Abstracts, World Congress of Malacology, Washington, D.C. R. Rieker & P. M. Mikkelsen, eds. Unitas Malacologia.*

**Okusu, A.** Phylogenetic relationships of the Aplacophora and the Polyplacophora (Mollusca): a

molecular analysis using the nuclear coding gene elongation factor - 1 alpha (1998). *Abstracts, World Congress of Malacology, Washington, D.C. R. Bieler & P. M. Mikkelsen, eds. Unitas Malacologica.*

**Okusu, A.** & McHugh, D. Phylogenetic relationships of the Aplacophora and the Polyplacophora (Mollusca): preliminary analyses based on DNA sequences from a highly conserved nuclear coding gene (1997). *American Zoologist* 35 (5): 696(A).

## PUBLICATIONS

Woodruff, J.D., J.P., Donnelly, and **A. Okusu** (2009), Exploring typhoon variability over the mid-to-late Holocene: evidence of extreme coastal flooding from Kamikoshiki, Japan. *Quaternary Science Reviews*

Dunn, C., A. Hejnol, D. Matus, K. Pang, W. Browne, S. Smith, E. Seaver, G. Rouse, M. Obst, G. Edgecombe, M. Sorensen, S. Haddock, A. Schmidt-Rhaesa, **A. Okusu**, R. Kristensen, W. Wheeler, M. Q. Martindale, & G. Giribet. (2008) Broad taxon sampling improves resolution of the Animal Tree of Life in phylogenomic analyses. *Nature* 452:745-749.

Todt, C., **A. Okusu**, C. Schander & E. Schwabe. (2008). Aplacophorans and Polyplacophora. In *Molluscan Phylogeny* by W. Ponder & D.R. Lindberg (eds.). U. C. Berkeley Press, CA, USA. Chapter4. Pp. 71-96.

Giribet, G., **A. Okusu**, A.R. Lindgren, S.W. Huff, M. Schrödl & M.K. Nishiguchi (2006). Evidence for a clade composed of molluscs with serially repeated structures: Monoplacophorans are related to chitons. *Proceedings of the National Academy of Sciences of the USA* 103: 7723-7728.

Henry, J. Q., **A. Okusu**, & M. Q. Martindale (2004). The cell lineage of the polyplacophoran, *Chaetopleura apiculata*: variation in the spiralian program and implications for molluscan evolution. *Developmental Biology* 272: 145-160.

**Okusu, A.**, E. Schwabe, D. J. Eernisse, & G. Giribet (2003). Towards a phylogeny of chitons (Mollusca, Polyplacophora) based on combined analysis of five molecular loci. *Organisms Diversity and Evolution*. 3:281-302.

**Okusu, A.** & G. Giribet. (2003). New 18S rRNA sequences from neomenioid aplacophorans and the possible origin of persistent exogenous contamination. *J. Moll. Stud.* 69: 385-387.

**Okusu, A.** (2002). Embryogenesis and development of *Epimenia babai* (Neomeniomorpha Mollusca). *Bio. Bull.* 203: 87-103.

Reynolds, P. & **A. Okusu** (1998). Phylogenetic relationships among families of Scaphopoda (Mollusca). *Zoological Journal of the Linnean Society* 126: 131-154.

Weeks, B., M. Nomizu, A. Otaka, C. Weston, **A. Okusu**, H. Tamamura, N. Yamamoto, N. Fujii (1995). The synthetic [TYR5,12, LYS7]-polyphemusin II peptide (T22) binds to the CD4 cell surface molecule. *Biochemical and Biophysical Research Communications* 215: 626-631.

Weeks, B., M. Nomizu, A. Otaka, C. Weston, **A. Okusu**, H. Tamamura, A. Matsumoto, N. Yamamoto, N. Fujii (1994). Lymphocytes and promonocytes attach to the synthetic [TYR5,12, LYS7]-polyphemusin II peptide. *Biochemical and Biophysical Research Communications* 202: 470-475.