

# Windsor E. Aguirre, Ph.D.

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## **Current position:**

-July 2009-Present: Assistant Professor, DePaul University, Department of Biological Sciences.

## **Academic Appointments:**

-August 2007-June 2009: Turner Faculty Trainee, Stony Brook University, Department of Ecology and Evolution.

## **Educational Background:**

-2000-2007: Ph.D., Stony Brook University, Department of Ecology and Evolution.

-1997-2000: M.S., University of Southern Mississippi, Biological Sciences.

-1990-1996: B.S., University of Guayaquil (Ecuador), Biology.

## **Skills:**

-Competent using genetic markers in ecological and evolutionary studies. Extensive experience with PCR, DNA isolation, DNA sequencing, microsatellites, data management and analysis.

-Extensive experience in morphometrics, both traditional and geometric morphometrics.

-Competent with multivariate statistical methods.

-Fluid in Spanish (bilingual upbringing) and HTML.

## **Teaching Experience:**

### *DePaul University:*

Winter 2009: Instructor, Vertebrate Diversity and Evolution (BIO 204)

Winter 2009: Lab Instructor, General Biology (BIO 102)

Fall 2009: Instructor, Molecular Methods in Ecology and Evolution (BIO 321/421)

### *Stony Brook University:*

Spring 2009: Instructor, Grad. Seminar on the Environment and Human Affairs: Evolution and Conservation.

-Fall 2008/07: Instructor, Molecular Diversity Laboratory.

-Spring 2008: Instructor, Chordate Zoology.

-Fall 2005-Spring 2006: Teaching Assistant for Biometry under Distinguished Professor F. James Rohlf.

-Fall 2000-Spring 2001: Teaching Assistant for Aquatic Arthropods and Chordates under George Hechtel.

### **Awards, Grants and Fellowships:**

- Long Term Research in Environmental Biology, National Science Foundation. Collaborative Research: LTREB: Contemporary Evolution of Anadromous Threespine Stickleback in Alaskan Lakes. \$99,620. Pending.
- DePaul University, University Research Council. The Osteological Basis of Body Shape Variation. 2009. \$3,500.
- DePaul University, College of Liberal Arts and Sciences. The Osteological Basis of Body Shape Variation. 2009. \$5,700.
- Howard Hughes Medical Institute Postdoctoral Teaching Fellowship. 2007. \$5,000.
- W. Burghardt Turner Postdoctoral Training Fellowship. State University of New York at Stony Brook. August, 2007 to present. \$35,000 annual.
- Institute of the Environment, University of California, Los Angeles, Travel Grant for Evolutionary Change in Human Altered Environments Symposium, February 8-10, 2007. \$450
- Doctoral Dissertation Improvement Grant (DDIG). National Science Foundation. The pattern and process of evolutionary diversification: Lessons from an Alaskan threespine stickleback radiation. 2005. \$12,000
- W. Burghardt Turner Fellowship Summer Research Award. State University of New York at Stony Brook. 2005, 2004, 2003. \$7,000 total.
- Sokal Award for Statistical Research. State University of New York at Stony Brook. 2004. \$500
- W. Burghardt Turner Fellowship. State University of New York at Stony Brook. 2002 to 2007. \$10,000 annual.
- Lerner-Gray Fund for Marine Research Award. American Museum of Natural History. Phylogeny of the Genus *Cynoscion* (Teleostei: Sciaenidae). 2001. \$2,000.
- North Carolina State University Summer Institute in Statistical Genetics Full Tuition and Travel Scholarship. 2001. \$1,300.
- Presidential Fellowship. Stony Brook University. 2000-2003. \$2,500 annual.
- Graduate Assistants in Areas of National Need (GAANN) Teaching Fellowship. U.S. Department of Education, Washington, D.C. 2000-2001. \$10,255.

### **Publications:**

- Aguirre, W.E., and O. Akinpelu. In review. Sexual dimorphism of head morphology in threespine stickleback. *Journal of Fish Biology*.
- Bell, M.A., A.K. Gangavalli, A. Bewick, and W.E. Aguirre. In review. Frequency of Ectodysplasin alleles and evidence for limited introgression between sympatric anadromous and lake resident threespine stickleback. *Environmental Biology of Fishes*.
- Aguirre, W.E. 2009. Microgeographic diversification of threespine stickleback: body shape-habitat correlations in a small, ecologically diverse Alaskan drainage. *Biological Journal of the Linnean Society* 98:139-151.
- Vergara-Chen, C., W.E. Aguirre, M. Gonzalez-Wanguemert, E. Bermingham. 2009. A mitochondrial DNA-based phylogeny of weakfish species of the *Cynoscion*-group (Pisces: Sciaenidae). *Molecular Phylogenetics and Evolution* 53:602-607.

- Arif, S., Aguirre, W.E., and M.A. Bell. 2009. Evolutionary diversification of operculum shape in Cook Inlet threespine stickleback. *Biological Journal of the Linnean Society* 97:832-844.
- Aguirre, W.E., K.E. Ellis, M. Kusenda, and M.A. Bell. 2008. Phenotypic variation and sexual dimorphism in anadromous threespine stickleback: implications for postglacial adaptive radiation. *Biological Journal of the Linnean Society* 95:465-478.
- Kimmel, C.B., W.E. Aguirre, B. Ullmann, M. Currey, W.A. Cresko. 2008. Allometric change accompanies opercular shape evolution in Alaskan threespine sticklebacks. *Behaviour* 145:669-691.
- Shervette, V.R., W.E. Aguirre, R. Cevallos, M. Gonzalez, F. Pozo, E. Blacio, and F. Gelwick. 2007. Fish communities of a disturbed mangrove wetland and an adjacent tidal river in Palmar, Ecuador. *Estuarine, Coastal and Shelf Science* 72:115-128.
- Felix, F., B. Haase, and W.E. Aguirre. 2007. A case of spondylitis in a humpback whale (*Megaptera novaengliae*) in the southeast Pacific. *Diseases of Aquatic Organisms* 75:259-264.
- Aguirre, W.E., V.R. Shervette, R. Cevallos, M. Gonzalez, and F. Pozo. 2006. Occurrence of *Sphoeroides rosenblatti* Bussing, 1996 (Teleostei: Tetraodontidae) along the coast of Guayas Province, Ecuador, and a comparison with sympatric *Sphoeroides annulatus* (Jenyns, 1842). *Revista de Biología Marina y Oceanografía* 41:231-238.
- Aguirre, W.E., and V.R. Shervette. 2005. Morphological diversity of the *Cynoscion* group (Perciformes: Sciaenidae) in the Gulf of Guayaquil, Ecuador (Perciformes: Sciaenidae), a comparative approach. *Environmental Biology of Fishes* 73:403-413.
- Alava, J.J., and W.E. Aguirre. 2005. Scanning electron microscopy of *Neoechinorhynchus* sp. (Acanthocephala: Neoechinorhynchidae), a possible new species of intestinal parasite of the tallfin croaker *Micropogonias alpinnis* (Gunther, 1864). *Parasitologia Latinoamericana* 60:48-53.
- Alava, J.J., P. Jiménez, M. Peñafiel, W. Aguirre, and P. Amador. 2005. Sea turtle strandings and mortality in Ecuador: 1994-1999. *Marine Turtle Newsletter* 108:4-7.
- Aguirre, W.E., P. Doherty, and M.A. Bell. 2004. Genetics of lateral plate and gill raker phenotypes in a rapidly evolving population of threespine stickleback. *Behaviour* 141:1465-1483.
- Bell, M.A., W.E. Aguirre, and N. Buck. 2004. Twelve years of contemporary armor evolution in a threespine stickleback population. *Evolution* 58:814-824.
- Aguirre, W.E. 2003. Allometric growth of the sulcus in *Cynoscion* (Sciaenidae). *Journal of Fish Biology* 63:1341-1346.
- Chiluiza, D., W. Aguirre, F. Felix, y B. Haase. 1998. Varamientos de mamíferos marinos en la costa continental Ecuatoriana período 1987-1995. *Acta Oceanográfica del Pacífico* 9(1):209-217.

#### **Book Reviews:**

- Aguirre, W.E. 2008. Review of Red Snapper Ecology and Fisheries in the U.S. Gulf of Mexico (edited by W.F. Patterson III, J.H. Cowan Jr., G.R. Fitzhugh, and D.L. Nieland). *Quarterly Review of Biology* 83:416.

- Aguirre, W.E. 2008. Review of Genetic Diversity, A Lab Manual (edited by M.P. Weiner, S.B. Gabriel, and J.C. Stephens). Quarterly Review of Biology 83:313-314.
- Aguirre, W.E. 2006. Review of Frozen earth : the once and future story of ice ages (by Doug Macdougall). Quarterly Review of Biology 81:193-194.
- Aguirre, W.E. 2003. Review of Ecology of the marine fishes of Cuba (edited by R. Claro, K.C. Lindeman, and L.R. Parenti). Quarterly Review of Biology 78(1):110.

**Select Contributed Papers/Posters at Professional Meetings:**

- Aguirre, W.E., and M.A. Bell. Rapid adaptation of sea-run threespine stickleback fish after introduction to a lake. Evolutionary change in human-altered environments, an international summit, 8-10 February 2007, UCLA, Los Angeles, California, USA.
- Aguirre, W.E. The geography of adaptive radiation: gene flow and natural selection acting on threespine stickleback in an Alaskan lake/stream system. 1. Society for the Study of Evolution Annual Meeting, 23-27 June 2006, Stony Brook, NY, USA. 2. American Society of Ichthyologists and Herpetologists Meeting, 12-17 July 2006, New Orleans, Louisiana, USA.
- Aguirre, W.E. The evolutionary trajectory of a recently established threespine stickleback population. 1. Society for the Study of Evolution Meeting, 10-14 June, 2005, Fairbanks, Alaska, USA. 2. American Society of Ichthyologists and Herpetologists Meeting, 6-11 July, 2005, Tampa, FL, USA.
- Aguirre, W.E. Body shape evolution of threespine stickleback in Loberg Lake, Alaska. 1. American Society of Ichthyologists and Herpetologists Meeting, 26 June - 1 July, 2003, Manaus, Brazil. 2. Northeast Ecology and Evolution Meeting, 11 - 13 April, 2003, Rutgers University, New Brunswick, NJ, USA.
- Aguirre, W.E. Notes on otolith morphology and ontogeny of *Cynoscion* spp. (Teleostei: Sciaenidae). American Society of Ichthyologists and Herpetologists Meeting, 5 - 10 July, 2001, Penn State University, PA, USA.
- Others: Estuarine Research Federation (2005), Einstein in the City Student Research Conference (2005), A Gathering of Science Scholars (Stony Brook University- 2004), American Society of Ichthyologists and Herpetologists (2002, 1999), Mississippi Academy of Sciences (2000), Marine and Estuarine Graduate Student Association (GCRL) and Graduate Student Forum (University of Southern Mississippi) Graduate Student Symposium (2000, 1999), Joint Gulf Estuarine Research Society and Marine Benthic Ecology Annual Meeting (1999).

**Invited Presentations:**

- Aguirre, W.E. The pattern and process of evolutionary diversification: lessons from a threespine stickleback adaptive radiation. University of South Carolina, Charleston, SC, October 16, 2009.
- Aguirre, W.E. Genética de poblaciones y recursos genéticos: biodiversidad y conservación de recursos genéticos. Workshop at Escuela Politécnica del Litoral, Guayaquil, Ecuador, June 19-20, 2009.
- Aguirre, W.E. The pattern and process of evolutionary diversification: lessons from a threespine stickleback adaptive radiation. DePaul University, Chicago, IL, February 18, 2009.

- Aguirre, W.E. Contemporary evolution: lessons from threespine stickleback fish. Invited lecture given to Marine Biology class taught by J. Matt Hoch, Stony Brook University, Stony brook, NY, June 25, 2009.
- Aguirre, W.E. A primer to geometric morphometrics for stickleback biologists. Seminar given to Susan Foster and John Baker's lab group, Clark Univeristy, Worcester, MA, October 13, 2006.
- Aguirre, W.E. Geometric morphometrics and stickleback biology: an overview and applications. Fifth International Conference on Stickleback Behavior and Evolution, July 30 - August 04, 2006, Anchorage, Alaska, USA.
- Aguirre, W.E. Hybridization as a source of (adaptive?) variation in threespine stickleback fish. Seminar given to Andrew Hendry's Lab Group, Redpath Museum, McGill University, Montreal, Canada, April 21, 2006.
- Aguirre, W.E. Filogenia parcial del genero *Cynoscion* (Perciformes: Sciaenidae) a base de secuencias de ADN mitocondrial. 1. April 28, 2003. Universidad Experimental Fransisco de Miranda, Punto Fijo, Estado Falcon, Venezuela. 2. November 6, 2003. Universidad Estatal Peninsula de Santa Elena, Santa Elena, Guayas Province, Ecuador.

**Reviewing Experience:**

- Behaviour, Biological Conservation, Biological Journal of the Linnean Society, Canadian Journal of Zoology, Copeia, Environmental Biology of Fishes, Estuaries and Coasts, Evolution, Hydrobiologia, Journal of Biosciences, Journal of Fish Biology, Molecular Ecology, Quarterly Review of Biology, Zootaxa.

**Mentoring and Service:**

- 2009-present: Direct supervision of one undergraduate student at DePaul University.
- 2003-2009: Direct supervision of 18 undergraduate students at Stony Brook University. Five of these students presented posters at an undergraduate research conference at Stony Brook (URECA Celebration of Undergraduate Research) and two presented posters at National Meetings (Annual Biomedical Research Conference for Minority Students).
- 2008: Writing to Win, NSF - Alliance for Graduate Education and the Professoriate mentoring program.
- 2005-2007: Graduate Student Mentor- Alliance for Inclusive Graduate Education and the Professoriate Community of Science Mentors Program. Stony Brook University, Stony Brook, NY, <http://www.sunysb.edu/agep/>
- 2004-2009. Co-Director. Stony Brook Ecology and Evolution Books Program. Program for distributing science books to libraries in developing countries. <http://life.bio.sunysb.edu/ee/books/>
- Invited Presentation: Ecuador- A biologist's dreamland. 1. Roots and Shoots Club, Harborside Middle School, Milford, CT, January 12, 2006. 2. Chemung Valley Montessori School (Middle School), Big Flats, NY, February 4, 2005.
- President. Stony Brook Ecology Club (Graduate Student Club at Stony Brook University), 2003.

**References:**

- Professor Michael A. Bell. Doctoral Advisor. Stony Brook University, Department of Ecology and Evolution, 023 Life Sciences Bldg. Telf.: 631-632-8574, mabell@life.bio.sunysb.edu
- Distinguished Professor F. James Rohlf. Stony Brook University, Department of Ecology and Evolution, 620 Life Sciences Bldg. Telf.: 631-632-8580, rohlf@life.bio.sunysb.edu
- Associate Professor John J. Wiens. Stony Brook University, Department of Ecology and Evolution, 616 Life Sciences Bldg. Telf.: 631-632-1101, wiensj@life.bio.sunysb.edu