

# Curriculum Vitae

Erin Baumgartner

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## **Education and Credentials**

2007: Teaching License, 7-12 Science, Hawaii Teacher Standards Board

2006: Post-Baccalaureate Certificate, Secondary Education (Science), University of Hawaii-Manoa.

2002: Ph.D., Zoology, University of Hawaii-Manoa.

1996: B.A., Biology, with Distinction and with Honors in the field of Biology, University of Kansas.

## **Employment History**

2011-present: Associate Professor, Biology, Western Oregon University

2008-2011: Assistant Professor, Biology, Western Oregon University

2007-2008: Associate Professor, College of Education, Curriculum Research & Development Group, University of Hawai'i-Manoa.

2002-2007: Assistant Professor, College of Education, Curriculum Research & Development Group, University of Hawai'i-Manoa.

## **Honors & Awards**

2011: National Association of Biology Teachers Four Year College & University Section Research in Teaching Award.

## **Societal/Professional Associations**

2008-present: National Association of Biology Teachers

2011-present: Four Year College & University Section Research Committee

2007- 2009: Pacific Circle Consortium

2006-2007: Planning Committee, Pacific Circle Consortium 31<sup>st</sup> Annual Conference

2003-present: National Science Teachers Association

2009-present: NSTA *Reports* Advisory Board

2002-2009: Association for Supervision & Curriculum Development

2007-2009 ASCD Emerging Leader

2006-2008: ASCD Leadership council

2003-2006: Hawaii ASCD Board

2002-present: National Marine Educators Association

2008-present: Ocean Literacy Committee

## **Publications**

### **Chapters in Books:**

Baumgartner, E., Zabin, C.J., Philippoff, J.K., Cox, E., & Knope, M.L. (2009). Ecological monitoring provides a thematic foundation for student inquiry. Pp 191-209 in Yager, R. (Ed). *Inquiry: The Key to Exemplary Science*. Arlington, VA: National Science Teachers Association.

Duncan, K.D., & **Baumgartner, E.** (2010). Your students as scientists: guidelines for teaching science through disciplinary inquiry. In Yager, R. (Ed). *Inquiry Monograph Series*. Arlington, VA: National Science Teachers Association.

#### **Journal Articles:**

Zabin, C.J., Danner, E.M., **Baumgartner, E.**, Spafford, D., Miller, J.S., & Pearse, J.S. (in press). A comparison of intertidal species richness and composition between central California and Oahu, Hawaii. *Marine Ecology*.

Cox, T.E., Philippoff, J., **Baumgartner, E.**, Zabin, C., & Smith, C.M. (2012). Spatial and temporal patterns of rocky intertidal communities along the main islands of Hawai'i. *Pacific Science*. Preprint available online at <http://pacificscience.files.wordpress.com/2012/08/pac-sci-early-view-67-1-3.pdf>.

Cox, T.E., Philippoff, J., **Baumgartner, E.**, & Smith, C.M. (2012). Expert variability provides perspective on the strengths and weaknesses of citizen driven intertidal monitoring program. *Ecological Applications*. Preprint available online at <http://www.esajournals.org/doi/pdf/10.1890/11-1614.1>.

Baumgartner, E., Duncan, K.D., Handler, A.T., & Yalap, Y.P. (2010). Scientist-teacher workshops as a mechanism for building partnerships and scientific inquiry teaching skills. *Pacific Asian Education*, 21(2): 27-42.

Baumgartner, E. (2010). Thinking outside the kit: Failure provides a learning opportunity for pre-service science teachers. *The Journal of College Science Teaching*, 40(1), 54-57.

Cox, T.E., **Baumgartner, E.**, Philippoff, J., & Boyle, K. (2010). Quantitative description and examination of the tidepool fish assemblage on the island of O'ahu, Hawai'i. *Environmental Biology of Fishes*. Available online 20 November 2010.

Baumgartner, E., & Duncan, K.D., & Young, D.B. (2009). The role of the University of Hawaii Laboratory School in an NSF GK-12 training grant. *The National Association of Laboratory Schools Journal*, 31(2), 1- 6.

Baumgartner, E., & Duncan, K.D. (2009). Evolution of students' ideas about natural selection through a constructivist framework. *The American Biology Teacher*, 71(4). 218-227.

Baumgartner, E., Phillips, L., & Kumabe-Maynard, E. (2008). Building ocean literacy through science and art. *Current: The Journal of Marine Education*, 24(3), 18-23.

Baumgartner, E., & Zabin, C.J. (2008). A case study of project-based instruction in the 9<sup>th</sup> grade: A semester-long study of intertidal biodiversity. *Environmental Education Research*, 14(2), 97-114.

Baumgartner, E. (2007). A professional development teaching course for science graduate students. *The Journal of College Science Teaching*, 36(6), 16-21.

Baumgartner, E., Duncan, K.D., & Handler, A.T. (2006). Student-scientist partnerships at work in Hawai'i. *Journal of Natural Resources and Life Sciences Education*, 35, 72-78.

Baumgartner, E., & Zabin, C.J. (2006). Visualizing zonation patterns. *The Science Teacher*, 73(6), 60-64.

Baumgartner, E. (2006). Literary readings to supplement a marine science curriculum. *Current: The Journal of Marine Education*, 22(1), 9-13

Baumgartner, E., & Zabin, C.J. (2004). Student-scientist partnerships fill multiple needs. *Middle Matters*, 13(2). Online at <http://www.naesp.org/ContentLoad.do?contentId=1367>.

Baumgartner, E. (2003). Student poster sessions. *The Science Teacher*, 71(3), 39-41.

Baumgartner, E. (2003). Hawai'i high school students participate in an authentic research project. *Current: The Journal of Marine Education*, 19(3), 16-19.

Englund, R.A., & **Baumgartner, E.** (2000). The fang-toothed blenny, *Omobranchus ferox* from Pearl Harbor, O'ahu, a probable unintentional introduction to the Hawaiian Islands. *Occasional Papers of the Bishop Museum*, 64, 61-63.

### **Conference Proceedings:**

Baumgartner, E. (2011). Toward a better biology experience: The impact of implicit instruction in the nature of science in an undergraduate biology survey course. in *Proceedings of the National Association of Biology Teachers Four Year College & University Section 2011 Research Symposium*. Online at <http://www.nabt.org/websites/institution/File/docs/Four%20Year%20Section/2011%20Proceedings/NOS%20Baumgartner%202011.pdf>.

### **Curriculum materials:**

Baumgartner, E. (2006) *Taxonomy*. Honolulu, HI: Bishop Museum ECHO project.

Baumgartner, E. (2006) *Science Skills*. Honolulu, HI: Bishop Museum ECHO project.

Klemm, E.B., Reed, S.A., Pottenger, F.M., and **Baumgartner, E.** (2006). *Teaching Science as Inquiry: Aquatic Science Inquiry Lab Book*. Honolulu HI: Curriculum Research & Development Group.

Klemm, E.B., Reed, S.A., Pottenger, F.M., and **Baumgartner, E.** (2006). *Teaching Science as Inquiry: Aquatic Science Inquiry Guide*. Honolulu HI: Curriculum Research & Development Group.

Baumgartner, E., Speitel, T.W., and Pottenger, F.M. (2005). Using Biotechnology for Environmental Monitoring. In *Marine Biotechnology: Biotech Gets Wet. A Curriculum for Grades 9-12*. Eugene, OR: University of Oregon Sea Grant Program.

### **Presentations**

#### **Peer-Reviewed:**

Orr, T. and **Baumgartner, E.** (2012). Participatory science improves scientific literacy in pre-service elementary teachers. Presented at the National Association of Biology Teachers' Four-Year College & University Section Research Symposium. Dallas, TX: October 2012.

Baumgartner, E. (2012). Participatory science benefits different learners in different ways. Presented at the Conference on Public Participation in Scientific Research. Portland, OR: July 2012.

Philippoff, J. and **Baumgartner, E.** (2012). An analysis of common student technical errors in field data collection. Presented at the Conference on Public Participation in Scientific Research. Portland, OR: July 2012.

Orr, T. and **Baumgartner, E.** (2012). Contrasting Effects of Inquiry-Based Instruction on Biology Experts and Novices. Presented at the 71<sup>st</sup> meeting of the Oregon Academy of Science. Portland, OR: February 2012.

Baumgartner, E. (2010). The nature of science in an undergraduate biology survey course. Presented at the 69<sup>th</sup> meeting of the Oregon Academy of Science. Portland, OR: February 2010.

Baumgartner, E. (2009). Involving students in authentic scientific inquiry through monitoring programs. Invited symposium presentation to Western Region Meeting of the National Science Teachers Association. Phoenix, AZ: December 2009.

Baumgartner, E., Phillips, L., and Kumabe-Maynard, E. (2009). Picturing Science: Scientific Literacy meets Visual and Language Literacy. Invited presentation to National Marine Educators Association. Pacific Grove, CA: June 2009.

Baumgartner, E. (2009). Examining a new model of graduate education: The impact of NSF's GK-12 program on professional development of science graduate students. Presented at the 68<sup>th</sup> meeting of the Oregon Academy of Science. Monmouth, OR: February 2009.

Baumgartner, E., Duncan, K.M., & Morehead, L. (2008). More than the "third rock": Unique properties of water influence life on Earth. Presented at the National Marine Educators Association annual meeting, Savannah, GA: July 2008.

Baumgartner, E., Bruno, B.C., Davidson, K.G., Hicks-Johnson, T., and Rivera, M. (2008). Ocean Literacy Alliance-Hawaii: A New Model of Collaboration. Presented at the National Marine Educators Association annual meeting, Savannah, GA: July 2008.

Baumgartner, E., Duncan, K.M., and Young, D.B. (2008). The laboratory school as STEM partner. Presented at the National Association of Laboratory Schools annual meeting. Providence, RI: April 2008.

Baumgartner, E. (2008). Multidisciplinary instruction in science. Presented at the National Science Teachers Association annual meeting. Boston, MA: March 2008.

Baumgartner, E., and Duncan, K. (2008). Avoiding pitfalls of community/school partnerships. Presented at the National Science Teachers Association annual meeting. Boston, MA: March 2008.

Baumgartner, E., Philippoff, J.K., Cox, T.E., and Zabin, C.J. (2008). Our Project in Hawaii's Intertidal: A 5-Year retrospective. Presented at the Hawaii Educational Research Association Annual Conference. Honolulu, HI: January 2008.

Philippoff, J.K., **Baumgartner, E.**, and Cox, T.E. (2008). An analysis of common student technical errors in field data collection. Presented at the Hawaii Educational Research Association Annual Conference. Honolulu, HI: January 2008.

Pottenger, F.M., **Baumgartner, E.**, and Brennan, C.A. (2007). Teaching Science as Inquiry (TSI): Teacher professional development. Presented at Hawai'i Charter School Administrative Office Breaking Barriers to Learning Professional Development Conference. Honolulu, HI: September 2007.

Zabin, C., Pearse, J.S., Danner, E.M., and **Baumgartner, E.** (2007). Comparison of species composition in two contrasting open-coast, rocky-intertidal habitats: California and Hawai'i. Presented at the Ecological Society of America annual meeting. San Jose, CA: August, 2007.

Baumgartner, E., and Duncan, K.M. (2007). Our Fluid Earth: Revisions to the Fluid Earth/Living Ocean program. Presented at the National Marine Educators Association annual meeting. Portland, ME: July 2007.

Maynard, E.K., and **Baumgartner, E.** (2007). Picturing Science, an innovative approach to coastal stewardship. Presented at the National Marine Educators Association annual meeting. Portland, ME: July 2007.

Duncan, K.D., and **Baumgartner, E.** (2007). A workshop model for developing research-educator partnerships from Palau to Hawai'i. Presented at the Pacific Circle Consortium 31<sup>st</sup> Annual Conference. Honolulu, HI: June 2007.

Baumgartner, E. (2007). Enriching science classes through multidisciplinary instruction. Presented at the Association for Supervision and Curriculum Development annual conference. Anaheim, CA: March 2007.

Baumgartner, E., and Duncan, K.M. (2007). Strategies for the ecological study of coastal environments. Presented at the National Science Teachers Association annual meeting. St. Louis, MO: March 2007.

Baumgartner, E., and Duncan, K.M. (2007). Our Fluid Earth: Integrated study in aquatic systems. Presented at the Hawai'i International Conference on Education 5<sup>th</sup> annual meeting. Honolulu, HI: January 2007

Baumgartner, E. (2006). Shaping powerful learning through performance-based assessment. Presented at the Association for Supervision and Curriculum Development annual conference. Chicago, IL: April 2006.

Baumgartner, E. and Handler, A.T. (2006). Hawai'i researchers work to augment environmental education in Palau. Presented at the Hawai'i International Conference on Education 4<sup>th</sup> annual meeting. Honolulu, HI: January 2006.

Baumgartner, E., and Zabin, C.J. (2005). Field Ecology Sampling Techniques. Presented at the National Marine Educators Association annual meeting. Kihei, HI: July 2005.

Baumgartner, E., and Zabin, C.J. (2005). Project-based learning in marine science. Presented at the National Marine Educators Association annual meeting. Kihei, HI: July 2005.

Young, D.B., **Baumgartner, E.**, Gruner, D.S., Rodman-Bergman, L.M., Lutzow-Felling, C., and Adams, D.N. (2005). Developing effective university-school partnerships in science education: the national science foundation's graduate students in K-12 education program impact in Hawai'i. Presented at the Pacific Circle Consortium 29th annual conference. Sydney, Australia: July 2005.

Baumgartner, E. (2005). Filling a professional development gap: Training scientists to communicate with K-12 students & teachers. Presented at the Hawai'i Educational Research Association annual meeting. Honolulu, HI: March 2005.

Baumgartner, E., and Zabin, C.J. (2005). A case study of project-based learning. Presented at the Hawai'i Educational Research Association annual meeting. Honolulu, HI: March 2005.

Pottenger, F.M., Brennan, C.A., Gray, M., **Baumgartner, E.**, Shimabukuro, S., and Berg, K.S. (2005). Science as Inquiry. Presented at the Hawai'i Educational Research Association annual meeting. Honolulu, HI: March 2005.

Baumgartner, E., Burgess, S.L., Chao, D., and Young, D.B. (2005). Impact of the National Science Foundation GK-12 project on graduate education. Presented at the Hawai'i International Conference on Education 3<sup>rd</sup> annual meeting. Honolulu, HI: January 2005.

Baumgartner, E., Zabin, C.J., Vest, C., Ing, C., Pedrina, K., Ho, B.T., and Wu, J. (2004). High numbers of invasive species in O'ahu's intertidal zone. Presented at the Hawai'i Conservation Conference. July 2004.

Baumgartner, E., Zabin, C.J., and Young, D.B. (2004). Shaping powerful learning through student-scientist partnerships. Presented at the Association for Supervision and Curriculum Development annual conference. New Orleans, LA: April 2004.

Baumgartner, E., Zabin, C.J., Duncan, K.D., and Handler, A.T. (2004). Student-scientist partnerships in Action. Presented at the American Association for the Advancement of Science annual meeting. Seattle, WA: February 2004.

Zabin, C.J., **Baumgartner, E.**, and Adams, D.N. (2003). Between Hawaiian tides: A surprising diversity in O'ahu's intertidal. Presented at the Western Society of Naturalists 84th Annual Meeting. Seattle, WA: November 2003.

Young, D.B. and **Baumgartner, E.** (2003). Energizing and sustaining science learning communities: The NSF GK-12 program at work. Presented at the Association for Supervision and Curriculum Development annual conference. San Francisco, CA: March 2003.

**Invited:**

Baumgartner, E. (2012). Building scientific literacy through mutual partnerships. Roger Williams University Math & Science Seminar Series. Bristol, RI: April 2012.

Baumgartner, E. (2011). Toward a better biology experience through data driven decision-making. National Association of Biology Teachers' Four-Year College & University Section Research Symposium. Anaheim, CA: October 2011.

Duncan, K., and **Baumgartner, E.** (2011). Your students as scientists. Invited presentation in Exemplary Science Practices Symposium at the National Meeting of the National Science Teachers Association. San Francisco: March 2011.

Baumgartner, E. (2009). Involving students in authentic scientific inquiry through monitoring programs. Invited presentation to Western Region Meeting of the National Science Teachers Association. Phoenix, AZ: December 2009.

Phillips, L., **Baumgartner, E.**, and Kumabe-Maynard, E. (2009). Picturing Science: Scientific Literacy meets Visual and Language Literacy. Invited presentation to National Marine Educators Association. Pacific Grove, CA: June 2009.

Baumgartner, E., Zabin, C.J., Philipppoff, J., and Cox, T.E. (2008). Our Project in Hawaii's Intertidal. Presented at the 21<sup>st</sup> Annual Pacific Congress on Marine Science and Technology. Honolulu, HI: June 2008.

Baumgartner E. (2008). GK-12 alumni remaining active. Presented at the 8<sup>th</sup> annual National Science Foundation Graduate Teaching Fellowships in K-12 Education Program Meeting. Washington, DC: February 2008

Kaneshiro, K.Y., **Baumgartner, E.**, Dewan L., and Sawyer, J.P. (2007). Integrating graduate fellow research into K-12 classrooms. Presented at the 7<sup>th</sup> annual National Science Foundation Graduate Teaching Fellowships in K-12 Education Program Meeting. Washington, DC: March 2007.

Baumgartner, E. (2006). Building scientific literacy. Presented at the University of Hawai'i Zoology Department weekly seminar. Honolulu, HI: December 2006.

Baumgartner, E. (2004). Preparing scientists to communicate with K-12 students & teachers. Presented at the American Association for the Advancement of Science forum for school science. Seattle, WA: February 2004.

Baumgartner, E., Adams, D.N., Hoof, J.L., and Kaneshiro, S. (2003). Innovative math and science teaching and research across cultures. Presented in symposium: University of Hawai'i - University of the Ryukyus cross-cultural research paradigms at the First Worldwide Uchinanchu Conference. Honolulu, HI: September 2003.

### **Grants and contracts**

Co-PI, Northwest Biosciences Consortium. \$500,000 Research Network Grant Proposal to National Science Foundation (Stasinou Stavrianeas, Willamette University, PI). Submitted June 15, 2012.

Co-Principle Investigator. Response Of Marsh Insects And Benthic Invertebrates To Dike Removal In The Salmon River Estuary: Follow-up, Synthesis And Education. \$80,000 grant from Oregon Sea Grant. Karen Haberman, Principle Investigator. February 2010.

Contractor. Curriculum and Professional Development Related to Biodiversity and Change. \$19,000 contract from Bishop Museum Education through Cultural and Historical Organization program. September 2007.

Contractor. Review and Dissemination of Termite Education Program. \$11,800 contract from University of Hawai'i Termite Education Program. September 2007.

Principle Investigator. Ocean Literacy Alliance- Hawai'i. \$9,300 supplemental grant from National Oceanic and Atmospheric Administration. August 2007.

Principle Investigator. Ocean Literacy Alliance-Hawai'i. \$9,300 supplemental grant from National Science Foundation. August 2007.

Contractor. Picturing Hanauma Bay! Development and Instruction for Teacher Professional Development. \$3,600.00 contract from Hawai'i Sea Grant Education Extension program. June 2007.

Principle Investigator. Inquiry-Based Investigations into the Unique Properties of Water. \$5,000 Toshiba America Foundation grant. January 2007.

Co-Principle Investigator. The GK-12 Program in Hawai'i: Using the Native Biota for Science Education. \$500,000 Accomplishment-Based Renewal of National Science foundation GK-12 grant. Kenneth Y. Kaneshiro, Principle Investigator. February 2006.

Contractor. Curriculum Development to Support Bishop Museum Magnet School. \$18,000 contract from Bishop Museum Education through Cultural and Historical Organizations program. August 2005.

Contractor. Curriculum Development to Support Bishop Museum Magnet School. \$6,500 contract from Bishop Museum Education through Cultural and Historical Organizations. June 2005.

Principle Investigator. Monitoring of Intertidal Biodiversity by High School Students. \$600 grant from the Hawai'i Community Foundation. September 2004.

Principle Investigator. Monitoring of Invasive Species in O'ahu's Intertidal by High School Students. \$6,000 grant from the Hawai'i Invasive Species Committee. November 2004.

Principle Investigator. University of Hawai'i Travel Grant. \$1,200 grant to support travel to the 2004 meeting of the Association for Supervision & Curriculum Development in New Orleans, LA. April 2004.

Co-Principle Investigator. Marine Science & Education Symposium of the National Marine Educators' Association 2005 Conference. \$10,000 University of Hawai'i SeaGrant College Program Grant. Ann Coopersmith, Principle Investigator. March 2004.

Co-Principle Investigator. The GK-12 Program in Hawai'i: Using the Native Biota for Science Education. \$1.5 million National Science Foundation GK-12 grant, Kenneth Y. Kaneshiro, Principle Investigator. August 2003.