

Curriculum Vitae for:  
**Laura Kathleen Baumgartner, Ph.D.**  
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**Education:**

<b>Post-Doc</b>	<b>University of Colorado at Boulder, Applied Molecular Microbiology</b> Post-Doctoral Advisor: <i>Norman Pace</i>	<b>2006-Present</b>
<b>Ph.D.</b>	<b>University of Connecticut, Biological Oceanography</b> Dissertation Advisor: <i>Pieter Visscher</i>	<b>2006</b>
<b>M.A./B.A.</b>	<b>University of Colorado at Boulder, Environmental Biology</b> Thesis advisors: <i>Richard L. Smith and William Lewis</i>	<b>2000</b>

**Relevant Specialty Educational Experience:**

<b>Teaching and Learning Seminar</b>	<b>2006, 2007, 2009</b>
<b>Marine Biological Laboratory Microbial Diversity Course</b>	<b>2001</b>
<b>Sea Education Association/Boston University</b>	<b>1998</b>
<b>Colorado School of Mines Teacher Enhancement</b>	<b>1995, 1999</b>
<b>Otero Junior College</b>	<b>1995</b>

**Higher Education Teaching Experience:**

**Principal Instructor, Front Range Community College, Longmont, CO**

Spring and Summer 2010 – Teaching *General College Biology with Lab* (BIO 111), an introductory biology class mainly oriented toward students on a health professional career track. Implementing interactive learning and Just-in-Time Teaching, and developing Desire2Learn-based course website.

**Lecturer and Teaching Assistant, University of Colorado, Boulder, CO**

Spring and Fall 2006, Fall 2007, Fall 2008, Fall 2009, Fall 2010 – Taught molecular techniques and worked with undergraduate students in student-directed laboratory investigations for *Molecular Methods* (MCDB 4110). Refined a hands-on molecular phylogeny workshop, provided learning support to individual students, maintained class website via Dreamweaver, and assisted with lecture, assessment, and student-led presentations for *Microbial Diversity in the Biosphere* (MCDB 4350/5350).

**Principal Instructor, University of Colorado, Boulder, CO**

Spring 2008 – Taught and assessed *Applied Environmental Microbiology for Engineers and Environmental Scientists* (CVEN 4484/5584), a cross-listed undergraduate/graduate course intended to introduce microbiology to upper division engineering and environmental science undergraduate and graduate students who do not possess a strong background in the biological sciences. The course presented fundamentals of microbiology, biochemistry and microbial ecology in the context of environmental science applications. As part of course, developed WebCT/Blackboard course website.

**Instructor, University of Colorado, Boulder, CO**

Spring 2007 – Taught course sessions of *Applied Environmental Microbiology for Engineers and Environmental Scientists* (CVEN 4484/5584).

**Lecturer, University of Connecticut, Groton, CT**

Fall 2001 through Fall 2003 – Conducted field and lecture classes in the upper-level undergraduate courses *Coastal Sciences I* (MARN 210), *Coastal Pollution and Bioremediation* (MARN 382), and *Marine Microbiology* (MARN 236).

### **Teaching Assistant, University of Connecticut, Groton, CT**

Spring 2001 and Fall 2002 – Designed and conducted lecture and laboratory classes for *Marine Microbiology* (MARN 236) and *Introduction to Oceanography* (MARN 170). Responsibilities included leading laboratory classes and recitations, lecturing for classes ranging in size from 10 to 80 undergraduate and graduate students, and conducting grading and course evaluation of students.

### **Teaching Assistant, University of Colorado, Boulder, CO**

Spring 1999 – Assisted with assessment and student review for *Limnology* (EPOB 4030).

### **Archival Education Publications:**

#### **Phylogeny Workshop: Hands-on Teaching of Molecular Alignment and Phylogeny.**

Baumgartner LK, and Pace NR. *In prep, to be submitted to the Journal of College Science Teaching.*

#### **Current Taxonomy in Classroom Instruction: How to Teach the New Understanding of Higher-level Taxonomy.**

Baumgartner LK, and Pace NR. 2007. *The Science Teacher* 74(7): 46-51.

### **Educational Outreach Experience:**

#### **Teacher, Biological Sciences Initiative, Boulder, CO**

Spring 2008 – Prepared exercises for and assisted with teaching *The Tree of Life and Microbial Diversity*, a course in taxonomy and evolution for high school teachers.

#### **Curriculum Coordinator and Teacher, Puerto Rico Geomicrobiology Course, Groton, CT**

July 2003 – Developed curriculum, instructed field and laboratory classes, and advised students on individual research projects for an advanced undergraduate-level Geomicrobiology summer course for Puerto Rican students supported by NSF Research in Undergraduate Institutions and Research in Minority Institutions funding.

#### **Teacher, Explorations in Marine Science, Groton, CT**

October 2002 – Hands-on microbiology sessions for gifted and talented 8<sup>th</sup> and 9<sup>th</sup> graders in a day-long science workshop sponsored by the Johns Hopkins Center for Talented Youth and Connecticut SeaGrant.

#### **Curriculum Coordinator and Teacher, Taste Touch and Smell of Science, Groton, CT.**

June 2002 – Designed, organized, and supervised classes and activities for a summer camp exposing local children ages 7-13 to the various areas of marine science. Developed and taught a microbiology session.

#### **Curriculum Coordinator and Teacher, Pfizer Sea of Microbes Program, Groton, CT.**

August 2001 and 2002 – Constructed curriculum and taught field and laboratory classes for an outreach program coordinated by Pfizer and University of Connecticut to expose high school science teachers to field microbiology. Responsibilities included coordinating classes as well as teaching lecture, laboratory, and field classes in microbiology, chemical analysis, and data analysis.

#### **Teacher, JASON Project, East Otero School District, La Junta, CO.**

1993 to 1998 – Taught geology, biology, oceanography and geography concepts to students in grades 4-12 using the JASON Project National Science Teachers' Association curriculum developed through Woods Hole Oceanographic Institute. Participated in teacher enrichment courses to enhance teaching.

### **Relevant Research Experience:**

#### **Post-Doctorate Research, University of Colorado, Boulder, CO**

May 2006 to Present – Studying microbial diversity of air and water in human-occupied environments to develop a baseline understanding of the microbiota humans are exposed to in our daily lives. Mentoring graduate and undergraduate students.

### **Doctoral Dissertation Research, University of Connecticut, Groton, CT**

Fall 2000 to May 2006 – Examined ecological function, microbial community structure, and biotransformation of chemical compounds in microbial mats.

### **Master's Thesis Research, U. S. Geological Survey, Boulder, CO**

May 1997 to August 2000 – Investigated short-term nitrite production and consumption within a contaminated aquifer in Cape Cod, MA, utilizing chemiluminescent nitrite analysis and emphasizing rates and causative processes.

### **Archival Research Publications:**

#### **Microbes in recreational swimming pools: Partitioning of pathogens between water, biofilm, and air.**

Peterson KL, Baumgartner LK, Hernandez M, and Pace NR. *In prep.*

*\*\*This paper is the result of an undergraduate mentorship.*

#### **Culture-independent analysis of bioaerosols in concentrated animal feeding operations (CAFOs).**

Rodriguez de Evgrafo, M, Frank DN, Koll PK, Baumgartner LK, Hernandez MT, and Pace NR. *In prep.*

#### **Microbial species richness and metabolic activities in hypersaline microbial mats: Potential role in mineral biosignature formation.**

Baumgartner LK, Dupraz C, Buckley DH, Spear JR, Pace NR, Dupraz C, and Visscher PT. 2009. *Astrobiology*. 9(9): 861-874.

#### **Opportunistic pathogens enriched in showerhead biofilms.**

Feazel LM, Baumgartner LK, Peterson KL, Frank DN, Harris JK, and Pace NR. 2009. *Proceedings of the National Academy of Sciences* 106(38): 16393-16399.

*\*\*This paper is the result of undergraduate student research in MCDB 4110 (Molecular Methods) and an undergraduate mentorship.*

#### **Microbial diversity in modern marine stromatolites, Highborne Cay, Bahamas.**

Baumgartner LK, Spear JR, Buckley DH, Pace NR, Reid RP, Dupraz C, and Visscher PT. 2009. *Environmental Microbiology* 11(10): 2710-2719.

#### **Vertical distribution of methane metabolism in microbial mats of the Great Sippewissett Salt Marsh.**

Buckley DH, Baumgartner LK, and Visscher PT. 2008. *Environmental Microbiology* 10(4): 967-977.

#### **Sulfate reducing bacteria in microbial mats: Changing paradigms, new discoveries.**

Baumgartner LK, Reid RP, Dupraz C, Decho AW, Buckley DH, Spear JR, Przekop KM, and Visscher PT. 2006. *Sedimentary Geology* 185: 131-145.

#### **Assessment of nitrification potential in ground water using short term, single-well injection experiments.**

Smith RL, Baumgartner LK, Miller DN, Repert DA, and Böhlke JK. 2006. *Microbial Ecology* 51(1): 22-35.

#### **Microbe-mineral interactions: early carbonate precipitation in a hypersaline lake (Eleuthera Island, Bahamas).**

Dupraz C, Visscher PT, Baumgartner LK, and Reid RP. 2004. *Sedimentology*. 51: 745-765.

#### **Dimethyl sulfide and methanethiol formation in microbial mats: potential pathways for biogenic signatures.**

Visscher PT, Baumgartner LK, Buckley DH, Rogers DR, Hogan M, Raleigh C, Turk K, Des Marais D. 2003. *Environmental Microbiology*. 5(4): 296-308.

#### **Time-place learning and the ecology of recruitment in a stingless bee, *Trigona amalthea* (Hymenoptera, Apidae).**

Breed MD, Stocker EM, Baumgartner LK, and Vargas SA. 2002. *Apidologie*. 33: 251-258.

**Memberships:**

**American Geophysical Union**

**American Society for Microbiology**

**National Science Teachers Association**

**Society for College Science Teachers**