

Dominic Thomas Chaloner

Curriculum Vitae

Contact Information

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Education

- Ph.D. Zoology 1995 University College London (University of London), UK.
- B.S. (Hons.) Zoology 1991 University College London (University of London), UK.

Research Interests

Aquatic biology; ecosystem resource subsidies; Pacific salmon; environmental change; aquatic decomposers; proactive ecotoxicology; use of stable isotopes and artificial systems in aquatic research; ecological effects of introduced salmonids; restoration ecology; undergraduate research.

Professional Experience

- 2005 - Present *Research Assistant Professor*
Dept. of Biological Sciences, University of Notre Dame, Notre Dame, IN, USA.
- 2000 - 2004 *Post-Doctoral Research Associate*
Influence of marine nutrients from salmon on stream ecosystems. Dept. of Biological Sciences, University of Notre Dame, Notre Dame, IN, USA. Advisor: G.A. Lamberti.
- 1997 - 1999 *Post-Doctoral Research Associate*
Invertebrate colonization of Pacific salmon carcasses in southeastern Alaska streams. Dept. of Entomology, Michigan State University, East Lansing, MI, USA *and* Pacific Northwest Research Station (USDA Forest Service), Juneau, AK, USA. Advisor: R.W. Merritt.
- 1996 *Post-Doctoral Research Associate*
Invertebrate colonization of Alaskan glacial melt streams. School of Geography, University of Birmingham, Edgbaston, UK. Advisor: A.M. Milner.
- 1995 - 1996 *Post-Doctoral Research Associate*
Feeding by anopheline mosquito larvae. Dept. of Biology, University College London (University of London), UK. Advisor: R.S. Wotton.

Professional Service

- *Student presentations and posters judge*
Juneau High School Science Fair (1999); North American Benthological Society Annual Meeting (2000 – 2009); Northern Indiana Science Fair (2000 – 2005); College of Science Undergraduate Research Symposium, University of Notre Dame (2007), International Association of Great Lakes Research Conference (2010).

- *Ad hoc reviewer*
Aquatic Biology, Aquatic Ecology, Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative, American Midland Naturalist, Aquatic Microbial Ecology, Canadian Journal of Fisheries and Aquatic Science, Canadian Journal of Water Quality, Ecology, Ecosystems, Fisheries, Fundamental and Applied Limnology, Hydrobiologia, Journal of Applied Ecology, Journal of Animal Ecology, Journal of the North American Benthological Society, Limnology and Oceanography, Methods in Stream Ecology, Minnesota Sea Grant, National Park Service (US Department of Interior), National Science Foundation, Oxford University Press, Pacific Northwest Research Station - Forest Service (US Department of Agriculture).
- *Mentor*
Supervision, guidance, recommendations, and project development for >50 volunteers, technicians, and students (high school, undergraduate, and graduate).
McDonald Summer Research Fellowship – AJ Reisinger (Summer 2008).
Teaching Apprenticeship – General Ecology Lecture (Spring 2006, Fall 2011)
Faculty advisor, *Scientia*: College of Science Journal of Undergraduate Research (2008-2011).
Jordan Hall Science Team – Pablo Quan, Robert Ring, Ian Trudell (Summer 2011).
College of Science Summer Undergrad. Res. Fellowship – Courtney Currier (Summer 2011).
- *Committees*
Undergraduate Research – Dept. of Biological Sciences, University of Notre Dame.
Jordan Hall Galleria Information Displays – College of Science, University of Notre Dame.
Conservation and Environmental Issues – North American Benthological Society.
Carnegie Acad. for the Scholarship of Teaching and Learning Group – Univ. of Notre Dame.
College of Science Joint Annual Meeting/University Scholars Conference Organizing committee – College of Science, University of Notre Dame.
Bernoulli Prize for Undergrad. Statistical Res. – Dept. of Economics, Univ. of Notre Dame.
College of Science Undergraduate Research Travel Grant and Summer Undergraduate Research Fellowship Review Panel – College of Science, University of Notre Dame.
The Notre Dame Hub Faculty advisory committee – Center for Undergraduate Scholarly Engagement, University of Notre Dame.
University Council for Academic Technologies (UCAT) Learning Environment subcommittee – University of Notre Dame.
University Landscaping Sustainability Committee – University of Notre Dame.

Teaching Experience

- 2000 - Present *Research Associate, Faculty*

Instructor

Earth in Crisis - Current Environmental Issues (BIOS 10107; Spring and Fall 2003 - 2004) is a 3-credit non-science major's course that considers the most critical environmental issues in the context of important ecological ideas and concepts. The course intent is to inform non-science major students about environmental issues while increasing their awareness of ecological science through classroom teaching and guided discussion of scientific literature by undergraduate teaching assistants.

General Ecology Lecture (BIOS 30312; Spring and Fall 2006, Spring and Fall 2011) is a 3-credit course for science major's that examines the distribution and abundance of organisms in the natural world. Overall course objectives are to increase awareness about the natural world while contributing to a science education by integrating ecology with other disciplines. Specific course objectives are to enable students to understand key concepts in ecology while developing their critical thinking by discussing the primary literature. The course introduces core principles, classic studies, and current field and laboratory research in ecology.

General Ecology Laboratory (BIOS 31312; Fall 2006 - 2011) is a 1-credit laboratory course associated with BIOS 30312. Students undertake a variety of field and laboratory exercises designed to illustrate classic studies in ecology while developing their critical thinking skills.

Biostatistics (BIOS 40411/42411; Spring 2008 - 2010) is a 4-credit course for science majors and graduate students that considers all aspects of the use of statistical analysis in biology. Overall course objectives include increased understanding and application of statistics, especially in the context of biological research. Specific course objectives include the ability to design experiments and studies, analyze data appropriately, and report results effectively. The course includes both a lecture and a tutorial/laboratory component.

Mentor

Human Genetics, Evolution, and Society (BIOS 10101; Spring and Fall 2004 - 2005) is a 3-credit non-science major's course in which the principles of human genetics are taught using the cornerstones of modern biology, genetics and evolution. This course was partially funded by grants to Harvey Bender from the Lumina Foundation for Education, and is innovative in its use of undergraduate teaching assistants (UTA) to provide peer-directed learning. My responsibilities included management and mentorship of ten UTAs, implementation of educational technology, and classroom teaching when required.

Undergraduate Research (BIOS 48498; Spring and Fall 2006 - 2011) is 1-2 credit (8 hours of research per credit hour) in which undergraduates engage in research during one or more semesters, depending upon their experience and interests.

Teaching Apprenticeship (BIOS 30671; Spring 2006, Fall 2011) is a 1-credit course that provides graduate students with experience of various aspects of undergraduate teaching.

Introduction to Research (BIOS 29498; Spring 2006, 2008, 2009, 2011) is a 1-credit course that provides undergraduate students with an introduction to scientific research to prepare them to engage in their own research with a faculty mentor.

Directed Readings (BIOS 21017; Spring 2009) is a 1-credit course that provides students with the opportunity to discuss research in the context of relevant scientific literature.

Coordinator

Biostatistics (BIOS 42411; Spring 2005) is the laboratory component of a science majors course (BIOS 411) that covers the basic principles of statistics used in the life sciences. Responsibilities included management and mentorship of 12 graduate and undergraduate TAs for weekly lab classes, together with classroom teaching as and when required.

Undergraduate Research – College of Science (2007- present). The purpose of this position is to promote undergraduate research within the College of Science, through consultations with

students and faculty, distribution of funds for travel and materials and summer research fellowships, acquisition and analysis of data on participation, and increased visibility of undergraduate research through publications, invited speakers, and undergraduate symposia.

Guest instructor

Biological Sciences Laboratory (BIOS 161), *Genetic Technology* (BIOS 191), *Stream Ecology* (BIOS 527), *Summer Program in Life Sciences* (Summer 2004, 2006, 2008 - 2010).

- 1991 - 1995 *Graduate Student*

Teaching Assistant

Laboratory classes for *Zoology*, *Ecology*, and *Aquatic Biology* courses. Responsibilities included preparation and teaching of classes.

Professional Affiliations

Freshwater Biological Association (UK); Society of Freshwater Science; Ecological Society of America.

Grants, Awards and Honors

- Co-PI Great Lakes Fishery Trust Competitive grant, University of Notre Dame (2007 - 2010).
- Co-PI USDA-CSREES NRI Competitive grant, University of Notre Dame (2006 - 2008).
- Co-PI NOAA Non-Competitive grant, University of Notre Dame (2006 - 2007).
- USDA Forest Service Cooperative Research Agreement (PNW 96-3012-2-CA), Michigan State University (1997 - 1999).
- Graduate School supplementary research grant, University College London (1993 and 1995).
- M. Brown Memorial scholarship, University College London (1993).
- SERC/BBSRC postgraduate studentship, University College London (1992 - 1995).
- Fantham Memorial postgraduate scholarship, University College London (1991).
- Frances Perch Bedford prize (top zoology student in class), University College London (1991).

Publications

- **Chaloner, D.T.**, A.J. Reisinger, S.D. Tiegs, P.S. Levi, J. Rüegg, J.L. Tank, and G.A. Lamberti. Temporal variation in isotopic responses to salmon spawners in a Southeast Alaskan stream. *Oecologia*, in preparation.
- Shirey, P.D., **D.T. Chaloner**, S. Ryzner, and G.A. Lamberti. The role of environmental legislation in the preservation and restoration of rivers. *Regulated Rivers and Management*, in preparation.
- Rüegg, J., C.M. Currier, **D.T. Chaloner**, S.D. Tiegs, and G.A. Lamberti. Habitat type and watershed alter tissue decomposition of Pacific salmon (*Oncorhynchus* spp.). *Journal of North American Benthological Society*, in preparation.
- Reisinger, A.J., **D.T. Chaloner**, J. Rüegg, S.D. Tiegs, and G.A. Lamberti. Factors influencing the stable isotope composition of epilithon and juvenile coho salmon (*Oncorhynchus kisutch*) in Southeast Alaska streams receiving salmon spawners. *Freshwater Biology*, in preparation.

- Levi, P.S., J.L. Tank, J. Rüegg, D.J. Janetski, S.D. Tiegs, **D.T. Chaloner**, and G.A. Lamberti. Comparing the response of whole-stream metabolism to Pacific salmon across streams in two biomes. *Ecosystems*, in preparation.
- Shirey, P.D. B.N. Kunycky, **D.T. Chaloner**, M.A. Brueseke, and G.A. Lamberti. Commercial Internet trade of endangered plants cultivates opportunity for do-it-yourself assisted colonization. *Frontiers*, in preparation.
- Levi, P.S., J.L. Tank, S.D. Tiegs, **D.T. Chaloner**, and G.A. Lamberti. Sediment nitrification transforms the nutrient subsidy provided from Pacific salmon to stream ecosystems. *Ecology*, in preparation.
- Rüegg, J., **D.T. Chaloner**, S.D. Tiegs, and G.A. Lamberti. Scale-dependent effects of Pacific salmon on benthic biofilm in southeast Alaska streams. *Freshwater Biology*, in preparation.
- Janetski, D.J., **D.T. Chaloner**, A.H. Moerke, R.R. Rediske, J.P. O’Keefe and G.A. Lamberti. 2011. Spawning salmon elevate organic pollutant in resident fish of Great Lakes tributaries. *Environmental Science and Technology*, submitted.
- Rüegg, J., **D.T. Chaloner**, P. Levi, S.D. Tiegs, J.L. Tank, and G.A. Lamberti. 2011. Environmental variability and the ecological effects of spawning Pacific salmon on stream biofilm. *Freshwater Biology*, 57:129–142.
- Collins, S.F., A.H. Moerke, **D.T. Chaloner**, D.J. Janetski, and G.A. Lamberti. 2011. Response of dissolved nutrients and periphyton to the presence of spawning Pacific salmon in three Northern Michigan streams. *Journal of North American Benthological Society*, 30:831-839.
- Levi, P.S., J.L. Tank, S.D. Tiegs, **D.T. Chaloner**, and G.A. Lamberti. 2011. Pacific salmon alter the concentration and export of dissolved and particulate nutrients in Southeast Alaska streams. *Canadian Journal of Fisheries and Aquatic Sciences*, 68:1316-1329.
- **Chaloner, D.T.**, and R.S. Wotton. 2011. Overview: the links that bind aquatic ecosystems. *Journal of North American Benthological Society* 30:751-761.
- Tiegs, S.D., P.S. Levi, J. Rüegg, **D.T. Chaloner**, J.L. Tank, and G.A. Lamberti. 2011. Live-salmon effects on streamwater nutrients and biofilm exceed those of salmon carcasses during an annual spawning migration. *Ecosystems* 14:598-614.
- Janetski, D.J., A.H. Moerke, **D.T. Chaloner**, and G.A. Lamberti. 2011. Chinook salmon spawners alter brook trout movements in a Lake Michigan tributary. *Ecology of Freshwater Fish* 20:209-219.
- Rüegg, J., S.D. Tiegs, **D.T. Chaloner**, J.L. Tank, and G.A. Lamberti. 2011. Pacific salmon (*Oncorhynchus* spp.) resource subsidies alter biofilm nutrient limitation in Southeast Alaskan streams. *Canadian Journal of Fisheries and Aquatic Sciences* 68:277-287.
- Kulacki, K.J., **D.T. Chaloner**, D.M. Costello, K.M. Docherty, J.H. Larson, R.J. Bernot, M.A. Brueseke, M.A. Evans-White, C.F. Kulpa, and G.A. Lamberti. 2011. Proactive ecotoxicology for the evaluation of emerging aquatic contaminants. *Organic Chemistry* 15:1918-1927.
- Sena, D.W., K.J. Kulacki, **D.T. Chaloner**, and Gary A. Lamberti. 2010. The role of the cell wall in the susceptibility of *Chlamydomonas reinhardtii* to ionic liquids. *Green Chemistry* 12:1066–1071.
- Lamberti, G.A., **D.T. Chaloner**, and A.E. Hershey. 2010. Linkages among aquatic ecosystems. *Journal of North American Benthological Society* 29:245-263.

- Wipfli, M.S., J.P. Hudson, J.P. Caouette, N.L. Mitchell, J.L. Lessard, R.A. Heintz, and **D.T. Chaloner**. 2010. Salmon Carcasses Increase Stream Productivity More than Inorganic Fertilizer Pellets: A Test on Multiple Trophic Levels in Streamside Experimental Channel. *Transactions of the American Fisheries Society* 139:824-839.
- Hershey, A.E., G.A. Lamberti, **D.T. Chaloner**, and R.M. Northington. 2009. Aquatic insect ecology. Pages 659-694 in J.H. Thorp and A. P. Covich (Eds.). *Ecology and Classification of North American Freshwater Invertebrates (Third Edition)*. Elsevier, New York.
- Tiegs, S.D., E.Y. Campbell, P.S. Levi, J. Rüegg, M.E. Benbow, **D.T. Chaloner**, R.W. Merritt, J.L. Tank, and G.A. Lamberti. 2009. Separating Physical Disturbance and Nutrient Enrichment Caused by Pacific Salmon in Stream Ecosystems. *Freshwater Biology* 54:1864-75.
- Janetski, D., **D.T. Chaloner**, S.D. Tiegs, and G.A. Lamberti. 2009. Pacific salmon effects on stream ecosystems: a quantitative synthesis. *Oecologia* 159:583-595.
- **Chaloner, D.T.**, A.E. Hershey, and G.A. Lamberti. 2009. Benthic Invertebrate Fauna. Pages 157-172 in G.E. Likens (Eds.). *Encyclopedia of Inland Waters (Vol. 2)*. Elsevier, New York.
- Cak, A.D., **D.T. Chaloner**, and G.A. Lamberti. 2008. Influence of spawning Pacific salmon on southeastern Alaskan estuaries. *Aquatic Sciences* 70:169-178.
- Tiegs, S.D., **D.T. Chaloner**, P. Levi, J. Ruegg, and G.A. Lamberti. 2008. Timber harvest transforms ecological roles of salmon in southeast Alaska rain forest streams. *Ecological Applications* 18:4-11.
- **Chaloner, D.T.**, G.A. Lamberti, A.D. Cak, N.L. Blair, and R.T. Edwards. 2007. Inter-annual variation in the water chemistry and epilithon responses to Pacific salmon spawners in an Alaskan stream. *Freshwater Biology* 52:478-490.
- Kulacki, K.J., **D.T. Chaloner**, D.M. Costello, K.M. Docherty, J.H. Larson, R.J. Bernot, M.A. Brueseke, C.F. Kulpa, and G.A. Lamberti. 2007. Aquatic Toxicity and Biodegradation of Ionic Liquids: A Synthesis. *Chemistry Today* 25:32-36.
- **Chaloner, D.T.**, G.A. Lamberti, R.W. Merritt, N.L. Mitchell, P.H. Ostrom, and M.S. Wipfli. 2004. Variation in responses to spawning Pacific salmon among three south-eastern Alaska streams. *Freshwater Biology* 49:587-599.
- Wipfli, M.S., J.P. Hudson, J.P. Caouette, and **D.T. Chaloner**. 2003. Marine subsidies in freshwater: salmon carcasses increase the growth rate of stream-resident salmonids. *Transactions of the American Fisheries Society* 132:371-381.
- **Chaloner, D.T.**, K.M. Martin, M.S. Wipfli, P.H. Ostrom, and G.A. Lamberti. 2002. Marine carbon and nitrogen isotopes in southeastern Alaska stream food webs: evidence from artificial and natural streams. *Canadian Journal of Fisheries and Aquatic Science* 59:1257-1265.
- **Chaloner, D.T.**, and M.S. Wipfli. 2002. Influence of decomposing Pacific salmon carcasses on macroinvertebrate growth and standing stock in southeastern Alaska streams. *Journal of the North American Benthological Society* 21:430-442.
- **Chaloner, D.T.**, M.S. Wipfli, and J.P. Caouette. 2002. Mass loss and macroinvertebrate colonization of Pacific salmon carcasses in southeastern Alaskan streams. *Freshwater Biology* 47:263-274.

- Wipfli, M.S., J.P. Hudson, **D.T. Chaloner**, and J.P. Caouette. 1999. Influence of salmon spawner densities on stream productivity in Southeast Alaska. *Canadian Journal of Fisheries and Aquatic Science* 56:1600-1611.
- Wotton, R.S., **D.T. Chaloner**, C.A. Yardley, and R.W. Merritt. 1997. Growth of *Anopheles* mosquito larvae on dietary microbiota in aquatic surface microlayers. *Medical and Veterinary Entomology* 11:65-70.
- **Chaloner, D.T.**, and R.S. Wotton. 1996. Tube building by larvae of three species of midge (Diptera: Chironomidae). *Journal of the North American Benthological Society* 15: 300-307.
- **Chaloner, D.T.**, and R.S. Wotton. 1996. Substratum preferences by larvae of three species of midge (Diptera: Chironomidae). *Hydrobiologia* 339:93-99.
- Wotton, R.S., **D.T. Chaloner**, and P.D. Armitage. 1996. Midges in slow sand filters - their colonization, role in filtration and potential nuisance value. Pages 149-157 in N. Graham and R. Collins (Eds.). *Advances in Slow Sand and Alternative Biological Filtration*. John Wiley and Sons, Chichester, UK.

Selected Presentations (of >30)

- Stable isotopes reveal the influence of land use on aquatic food webs in agricultural watersheds of the Mississippi alluvial plain. 59th meeting of NABS, Providence, RI, USA (May 2011).
- Ecological effects of Pacific salmon spawners on Great Lakes stream ecosystems. 53rd International Conference of International Association of Great Lakes Research, Toronto, Ontario, Canada (May 2010).
- Temporal patterns of isotopic enrichment in a Southeast Alaska stream foodweb: The role of salmon spawners and environmental context. 57th meeting of NABS, Grand Rapids, MI, USA (May 2009).
- Environmental change alters the ecological role of Pacific salmon in Southeast Alaska rivers. 93rd Meeting of ESA, Milwaukee, WI, USA (August 2008)
- Ecological influence of Pacific salmon in managed forested watersheds. 55th meeting of NABS, Columbia, SC, USA (June 2007).
- Long-term studies of the effects of salmon spawners on stream ecosystems. 53rd meeting of NABS, New Orleans, LA, USA (May 2005).
- Do salmon carcasses and pellets of processed salmon carcasses have the same effects on streams? 51st meeting of NABS, Athens, GA, USA (May 2003).
- Spawning Pacific salmon: what are they good for? **Invited**. Dept of Biology, Eastern Michigan University, Ypsilanti, MI, USA (February 2003).
- Do spawning Pacific salmon increase the productivity of freshwater ecosystems? 50th meeting of NABS, Pittsburgh, PA, USA (May 2002).
- Ecological consequences of salmon enrichment for streams: where do marine-derived nutrients go? 49th meeting of NABS, La Crosse, WI, USA (June 2001).
- Influence of enrichment by Pacific salmon on macroinvertebrate growth and standing stock in southeast Alaska streams. International Salmon Nutrient Conference: Restoring Nutrients to Salmonid Ecosystems, Eugene, OR, USA (March 2001).
- Carcass-invertebrate interactions: implications for the influence of Pacific salmon on ecosystem productivity. **Invited**. 48th meeting of NABS, Keystone, CO, USA (May 2000).

- Aquatic and terrestrial invertebrates colonizing salmon carcasses in southeast Alaska. **Invited.** AFS Western Division meeting, Anchorage, AK, USA (October 1998).
- Invertebrate fauna of salmon carcasses. **Invited.** University of Alaska Southeast, Juneau, AK, USA (June 1998).
- Invertebrates colonizing anadromous salmonid carcasses in southeastern Alaskan freshwater systems. AFS Alaska Chapter meeting, Juneau, AK, USA (November 1997).
- The biology of chironomid midges in slow sand filter beds. **Invited.** Dept. of Biology, Birbeck College, University of London, UK (June 1996).
- Particles and the coexistence of three species of midge (Diptera: Chironomidae). 43rd meeting of NABS, Keystone, CO, USA (June 1995).

References

- Dr. G.A. Lamberti. Professor and Chair. Department of Biological Sciences, University of Notre Dame, Notre Dame, IN 46556-0369, USA. Email: lamberti.1@nd.edu
- Dr. R.W. Merritt. Professor. Department of Entomology, Michigan State University, East Lansing, MI 48824-1115, USA. Email: merrittr@msu.edu
- Dr. R.S. Wotton. Professor. Department of Biology, University College London, Gower St., London WC1E 6BT, UK. Email: ucbt212@ucl.ac.uk