

Curriculum Vitae Diane Bridge

Address:

Department of Biology
Elizabethtown College
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Education:

Yale University	Ph.D., Biology	1994
MBL Woods Hole	Molecular Evolution Workshop	Summer 1990
University of Washington	Embryology of Marine Invertebrates	Summer 1988
Yale University	B.A., Biology	1988

Positions Held:

Associate Professor, Department of Biology, Elizabethtown College	2006-present
Assistant Professor, Department of Biology, Elizabethtown College	2000-2006
Postdoctoral Fellow, University of California at Irvine	1995-2000
Postdoctoral Fellow, American Museum of Natural History	1994-1995

Teaching:

Courses at Elizabethtown College

Molecular Biology (with laboratory component)	Fall 2013
Principles of Ecology, Evolution, and Diversity of Life	Spring 2004-present
Molecules, Cells, and Animal Systems laboratory sections	Fall 2000-present
Principles of Ecology, Evolution, and Diversity of Life lab sections	Spring 2000-present
Invertebrate Zoology (with laboratory component)	Fall 2000-2003, 2005, 2007, 2009, 2012
Developmental Biol. (with laboratory component)	Spring, 2001, 2003, Fall 2004, 2006, 2008, 2011
Molecular Evolution (with laboratory component)	Spring, 2002
Evolution and Genetics (nonmajors course, with laboratory component)	Spring, 2002

Guest Lectures at the University of California at Irvine

Developmental Biology	1998-2000
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Teaching Assistant for Courses at Yale University

Evolution	1990
Ecology	1989
Biology of AIDS	1988

Grants and Fellowships:

Templeton Foundation Grant “Identifying and Characterizing the Genes of Immortality in <i>Hydra</i> .” Co-PI Daniel Martínez, \$250,091	2013-2015
National Institutes of Health (NIH) Grant “Mechanisms underlying lack of senescence and inducible senescence in members of the genus <i>Hydra</i> .” Co-PI Daniel Martínez, \$1,010,686.40	2010-2014
Elizabethtown College Faculty Merit Award for Scholarship and Professional Activity	2012
Elizabethtown College Faculty Grant, \$3000	2008
Contractor on National Institute of Health (NIH) Grant “Regulation of Vascular Development in Hydrozoa.” PI Steve Dudgeon, Contract amount \$46,000	2006-2010
National Science Foundation (NSF) RUI Grant “Developmental Bases of Body Plan Diversity within the Phylum Cnidaria.” Co-PI Daniel Martínez, \$78,042	2003-2006
Elizabethtown College Faculty Merit Award for Scholarship and Professional Activity	2004
Mellon Foundation Faculty Research Partnership Grant, Co-PI Daniel Martínez, \$3900	2003
ROA Supplement to NSF Grant “The Cnidarian Genetic Toolkit.” PI Hans Bode, ROA Co-PI Daniel Martínez, \$19,000	2002
Elizabethtown College Faculty Grant, \$2500	2001-2003
Fellowship, UCI NIH Training Program in Developmental Mechanisms Underlying Congenital Defects	1997-2000
NSF/Sloan Molecular Evolution Fellowship	1996-1997
NIH Postdoctoral Fellowship (declined due to other funding)	1995
American Cancer Society Fellowship (declined due to other funding)	1995
Bank of America/Giannini Research Fellowship	1995
John Spangler Nicholas Doctoral Thesis Prize	1995
Kalbfleisch Fellowship, American Museum of Natural History	1994-1995
G. Evelyn Hutchinson Prize	1992-1994
John F. Enders Research Assistance Grant	1992-1993

Publications:

(An asterisk indicates undergraduate coauthors.)

Bellantuono, A.J., **Bridge D.**, and D.E. Martínez. *in press*. *Hydra* as a tractable, long-lived model system for senescence. *Invert. Reprod. Dev.*

Dana, C.E., Glauber, K.M., Chan T.A., **Bridge D.**, and R.E. Steele. 2012. Incorporation of a horizontally transferred gene into an operon during cnidarian evolution. *PLoS One* 7

Publications, cont.

Martínez, D. E. and **D. Bridge**. 2012. *Hydra*, the everlasting embryo, confronts aging. *Intern. J. Dev. Biol.* 56: 479-487.

Bridge, D., A. G.Theofiles*, R. L. Holler*, E. Marcinkevicius*, R. E. Steele, and D. E. Martínez. 2010. FoxO and stress responses in the cnidarian *Hydra vulgaris*. *PLoS One* 5:e11686.

Blackstone, N. W. and **D. Bridge**. Model systems for environmental signaling. 2005. *Integr. Compar. Biol.* 45: 605-614.

Bridge, D., C. T. Ha*, A. Nemir*, A. Renden*, M. M. Rorick*, A. L. Shaffer*, D. M. Underkoffler*, A. E. Wills* and D. E. Martinez. 2004. Variations on a theme? Polyp and medusa development in *Podocoryna carnea*. *Hydrobiologia* 530: 299-307

Technau, U., M. A. Miller, **D. Bridge** and R. E. Steele. 2003. Arrested apoptosis of nurse cells during *Hydra* oogenesis and embryogenesis. *Dev. Biol.* 260: 191-206.

Bridge, D., N. Stover and R. E. Steele. 2000. Expression of a novel receptor tyrosine kinase gene and a *paired*-like homeobox gene provides evidence of differences in patterning at the oral and aboral ends of hydra. *Dev. Biol.* 220: 253-262.

Yan, L., K. Fei, **D. Bridge** and M. P. Sarras. 2000. Identification of translationally controlled tumor protein (P23/TCTP) in *Hydra vulgaris*. *Dev. Genes Evol.* 210: 506-511.

Martínez, D., **D. Bridge**, L. Masuda Nakagawa and P. Cartwright. 1998. Cnidarian homeobox genes and the zootype. *Nature* 393: 748-749.

Hassel, M., **D. Bridge**, N. A. Stover, H. Kleinholz and R. E. Steele. 1998. The level of expression of a protein kinase C gene may be an important component of the patterning process in *Hydra*. *Dev. Genes Evol.* 207: 502-514.

Bridge, D., C. W. Cunningham, R. DeSalle and L. W. Buss. 1995. Class-level relationships in the phylum Cnidaria: molecular and morphological evidence. *Mol. Biol. Evol.* 12: 679-689.

Siddall, M. E., D. S. Martin, **D. Bridge**, S. S. Desser and D. K. Cone. 1995. The demise of a phylum of protists: phylogeny of Myxozoa and other parasitic Cnidaria. *J. Parasitol.* 8: 961-967.

Bridge, D., C. W. Cunningham, B. Schierwater, R. DeSalle and L. W. Buss. 1992. Class-level relationships in the phylum Cnidaria: Evidence from mitochondrial genome structure. *Proc. Natl. Acad. Sci.* 89: 8750-8753

Dick, M., **D. Bridge**, R. DeSalle and W. C. Wheeler. 1992. Collection and storage of invertebrate material. *Meth. Enzymol.* 224: 51-65

Selected Presentations:

(An asterisk indicates undergraduate coauthors.)

Martinez, D.E. and **D. Bridge**. Identifying and characterizing the genes of immortality in *Hydra*. Mid-point Conference, The Immortality Project, University of California at Riverside, Riverside, California, June 2014

Bridge, D. and D. E. Martinez. Inducible senescence in *Hydra*. 41st Annual Meeting of the American Aging Association, Fort Worth, Texas, May 2012

Selected Presentations, cont.

Martínez, D. E. and **D. Bridge**. Negligible and inducible senescence in *Hydra*. 13th International Workshop on *Hydra* Development, Tutzing, Germany, September 2011

Martínez, D. E. and **D. Bridge**. Lack of senescence and inducible senescence in members of the genus *Hydra*. Invertebrate Models for Aging meeting, National Institute on Aging, Bethesda, Maryland, November 2010

Bridge D., Holler R*, Theofiles A*, Marcinkevicius E*, Steele R, and D Martinez. FoxO and stress responses in *Hydra vulgaris*. 12th International Workshop on *Hydra* Development, Tutzing, Germany, September 2009

Theofiles, A. *, **D. Bridge**, E. Marcinkevicius*, D. Martinez, G. Mclean, J. Kolibachuk, S. Kim, C. Nishimiya-Fujisawa, T. Fujisawa, and R. Steele. The insulin signaling pathway in *Hydra*. 11th International Workshop on *Hydra* Development, Tutzing, Germany, September 2007

Bridge, D., A. A. Gordon*, H. House*, and A. L. Shaffer*. Did mechanisms regulating angiogenesis arise early? Expression of HIF-1 alpha and VEGF/PDGF genes in a cnidarian. Annual meeting of the Society for the Study of Evolution. Fairbanks, Alaska, June 2005

Bridge, D., M. M. Rorick*, S. Maund*, S. McKinstry* and D. E. Martinez. Polyp and medusa development in *Podocoryna carnea*. Annual meeting of the Society for the Study of Evolution. Fairbanks, Alaska, June 2005

Theofiles, A. *, A. A. Gordon*, A. L. Shaffer*, and **D. Bridge**. VEGF/PDGF genes in *Hydra*. International Workshop on *Hydra* and the Molecular Logic of Regeneration, Tutzing, Germany, September 2005

Bridge, D., M. M. Rorick*, S. Maund*, S. McKinstry*, A. M. Alcamo*, and D. E. Martinez. Polyp and medusa development in *Podocoryna carnea*. International Workshop on *Hydra* and the Molecular Logic of Regeneration, Tutzing, Germany, September 2005

Bridge, D. A. A. Gordon*, and A. L. Shaffer*. Cnidarians and angiogenesis: vascular endothelial growth factors in *Hydra*. Midatlantic Regional Meeting of the Society for Developmental Biology, Duquesne University, Pittsburgh, May 2004

Bridge, D., A. A. Gordon*, and A. L. Shaffer*. Basal metazoans and the evolution circulatory systems. Annual Meeting of the Society for Comparative and Integrative Biology, New Orleans, January 2004

Bridge, D., A. A. Gordon*, and A. L. Shaffer*. Cnidarians and the vertebrate circulatory system: expression of a vascular endothelial factor homologue in *Hydra magnipapillata*. 7th International Conference on Coelenterate Biology, University of Kansas, July 2003

- Bridge, D.**, M. Hoffman*, A. Nemir*, M. M. Rorick*, D. M. Underkoffler*, and D. E. Martinez. Comparison of polyp and medusa development in *Podocoryna carnea*. 7th International Conference on Coelenterate Biology, University of Kansas, July 2003
- Bridge, D.**, M. Hoffman*, A. Nemir*, M. M. Rorick*, D. M. Underkoffler*, and D. E. Martinez. Development of the medusa in *Podocoryne carnea*. Workshop on Cnidarian Development and Evolution, University of California at Irvine, July 2002
- Bridge, D.** Evolutionary changes in metazoan axial patterning: implications of data from *Hydra vulgaris*, Department of Biology, Washington University, March 2000
- Bridge, D.** Evolutionary changes in metazoan and cnidarian axial patterning: implications of data from *Hydra vulgaris*, Department Ecology and Evolutionary Biology, Princeton University, November 1999
- Bridge, D.** Phylogenetic relationships within the Hydrozoa. Sixth International Workshop on Hydroid Development, Tutzing, Germany, September 1995
- Bridge, D.** The phylogenetic position of the genus *Hydra* within the Hydrozoa. Fifth International Workshop on Hydroid Development, Gunzburg, Germany, September 1993
- Bridge, D.** Recapitulation and life cycle diversity. Congress of the European Society for Evolutionary Biology, Debrecen, Hungary, 1991

Presentations by student collaborators:

(An asterisk indicates undergraduate authors.)

- Altares, E*. and C. Hunsberger.* Expression of small heat shock proteins in *Hydra*. Scholarship and Creative Arts Day. Elizabethtown College. April 2014
- Cliatt, K.* Expression in *Hydra vulgaris* of genes involved in insulin/IGF-1 signaling. Scholarship and Creative Arts Day. Elizabethtown College. April 2014
- Welker, R.* Expression of Hsp70 genes in two *Hydra* species with different lifespans. Scholarship and Creative Arts Day. Elizabethtown College. April 2014
- Ruck, R.* and D. Bridge. Production of chimeric *Hydra* to examine effects of gamete precursors on aging. 90th Annual Meeting of the Pennsylvania Academy of Science, Susquehanna University, Pennsylvania. March 2014
- Welker, R.* and D. Bridge. Expression of Hsp70 genes in two *Hydra* species with different lifespans. 90th Annual Meeting of the Pennsylvania Academy of Science, Susquehanna University, Pennsylvania. March 2014
- Douglas, S.* Generation of an Hsp70/RFP expression construct for creation of transgenic *Hydra*. Scholarship and Creative Arts Day. Elizabethtown College. April 2013
- Douglas, S.* and D. Bridge. Generation of an Hsp70/RFP expression construct for creation of transgenic *Hydra*. Beta Beta Beta Northeastern District 2 Convention, Lincoln University, Pennsylvania. March 2013.
- Gingrich, S.* and D. Bridge. Localization of FoxO expression in *Hydra*. 88th Annual Meeting of the Pennsylvania Academy of Science, Cedar Crest College, Pennsylvania. April 2012
- Douglas, S.*, Ellwood, S.*, and S. Gingrich*. Expression of mortalin in *Hydra* stem

- cells. Scholarship and Creative Arts Day. Elizabethtown College. April 2012
- Gingrich, S.*. Is FoxO expressed in *Hydra* stem cells. Scholarship and Creative Arts Day. Elizabethtown College. April 2012
- Ellwood, S.*, Douglas, S.*, and S. Gingrich*. Expression of heat shock factor and heat shock proteins in *Hydra* stem cells. Scholarship and Creative Arts Day. Elizabethtown College. April 2011
- Ellwood, S.*, S. Gingrich*. Does heat shock factor play a role in causing extreme differences in lifespan between two closely related invertebrate species? Scholarship and Creative Arts Day. Elizabethtown College. April 2010
- Holler, R.*, A. Theofiles*, and D. Bridge. Stress and aging in a basal metazoan: FOXO regulation in *Hydra vulgaris*. 85th Annual Meeting of the Pennsylvania Academy of Science, Camp Hill, Pennsylvania. April 2009
- Evans, L.* and D. Bridge. PVF genes and colony growth in the invertebrate *Podocoryna carnea*. 85th Annual Meeting of the Pennsylvania Academy of Science, Camp Hill, Pennsylvania. April 2009
- Holler, R.*, A. Theofiles*, and D. Bridge. Stress and aging in a basal metazoan: FOXO regulation in *Hydra vulgaris*. Beta Beta Beta Biology Honors Society District Convention, Moravian College, March 2009 (Received award for best oral presentation.)
- Holler, R.*, A. Theofiles*, E. Marcinkevicius*, R. Steele, D. Martinez, and D. Bridge. Stress and aging in a basal metazoan: FOXO regulation in *Hydra vulgaris*. International Symposium on Integrating Evolution, Development, and Genomics, Berkeley, California, May 2008
- Holler, R.*, A. Theofiles*, and D. Bridge. A FoxO transcription factor in *Hydra vulgaris*: the roles of a lifespan-extending protein in an immortal animal 84th Annual Meeting of the Pennsylvania Academy of Science, Grantville, Pennsylvania. April 2008
- Saul, M.*, W. Besson*, and D. Bridge. Expression of a putative VEGF receptor in interstitial cell derivatives in *Hydra magnipapillata*. 84th Annual Meeting of the Pennsylvania Academy of Science, Grantville, Pennsylvania. April 2008
- Hines, J.*, A. Theofiles*, D. Bridge, and C. Nolt*. The role of VEGF receptor homologues in the cnidarian *Hydra magnipapillata*. 83rd Annual Meeting of the Pennsylvania Academy of Science, Monroeville, Pennsylvania. April 2007
- Theofiles, A*., A. Shaffer*, R. Steele, and D. Bridge. Use of transgenic *Hydra* to investigate the roles of the FoxO transcription factor in *Hydra*. 83rd Annual Meeting of the Pennsylvania Academy of Science, Monroeville, Pennsylvania. April 2007
- Alcamo, A. M.*, H. L. House*, and D. Bridge. A *Podocoryna carnea* EST project. 82nd Annual Meeting of the Pennsylvania Academy of Science, Grantville, Pennsylvania April 2006
- Theofiles, A.*., C. Nolt*, and D. Bridge. Expression of VEGF receptor homologues in the cnidarian *Hydra magnipapillata*. 82nd Annual Meeting of the Pennsylvania Academy of Science, Grantville, Pennsylvania April 2006
- Gordon, A. A*., A. L. Shaffer*, and D. Bridge. Expression of the VEGF gene *VEGF3* in *Hydra magnipapillata*. 81st Annual Meeting of the Pennsylvania Academy of Science, Camp Hill, Pennsylvania April 2005
- House, H. and D. Bridge. Expression of a *hypoxia-inducible factor 1 a* homologue in the

invertebrate *Hydra magnipapillata*. 81st Annual Meeting of the Pennsylvania Academy of Science, Camp Hill, Pennsylvania April 2005

Shaffer, A. L.*, A. A. Gordon*, R. Steele and D. Bridge. The role of the vascular endothelial growth factor gene *VEGFI* in the simple invertebrate *Hydra magnipapillata*. 81st Annual Meeting of the Pennsylvania Academy of Science, Camp Hill, Pennsylvania April 2005

Alcamo, A. M.*, S. Maund*, H. House*, and D. Bridge. Development of the polyp and medusa life cycle stages in the cnidarian *Podocoryna carnea*. 81st Annual Meeting of the Pennsylvania Academy of Science, Camp Hill, Pennsylvania April 2005

A. A. Gordon, A. L. Shaffer, and D. Bridge. Characterization of the expression of *vascular endothelial growth factor 2 (VEGF2)* in *Hydra magnipapillata*. 80th Annual Meeting, Pennsylvania Academy of Science, Monroeville Pennsylvania, March 2004

A. L. Shaffer, A. A. Gordon, and D. Bridge. Expression of *VEGFI* in a simple invertebrate, hydra. 80th Annual Meeting, Pennsylvania Academy of Science, Monroeville Pennsylvania, March 2004

Budnitz, T. and D. Bridge. Characterizing the expression of the paired-like homeobox gene *manacle* in *Hydra vulgaris*. 79th Annual Meeting, Pennsylvania Academy of Science, Grantville Pennsylvania, April 2003

Hoffman, M. and D. Bridge. Using reagents affecting the phosphoinositide cycle to investigate development of the cnidarian *Podocoryna carnea*. 79th Annual Meeting, Pennsylvania Academy of Science, Grantville Pennsylvania, April 2003

Underkoffler, D. M. and D. Bridge. Investigating the role of Emx family homeobox genes in the development of the cnidarian *Podocoryna carnea*. 79th Annual Meeting, Pennsylvania Academy of Science, Grantville Pennsylvania, April 2003

College Service Activities:

Merit Committee	2013, 2014
Chair of Professional Standards Committee	Fall 2012-Spring 2014
Member of Professional Standards Committee	Fall 2011-Spring 2014
Member of Professional Development Committee	Fall 2011
Member of Health Professions Advisory Committee	Summer 2008-present
Chair of Health Professions Advisory Committee	Summer 2008-2013
Member of CISP Committee	Fall 2010-present
Member of Senior Merit Committee	Fall 2008-Fall 2011
Member of Institutional Animal Care and Use Committee	Fall 2009-present
Chair of Core Committee	Fall 2007-Spring 2009
Co-Chair of Health Professions Advisory Committee	Summer 2006-2008
Junior Leave Review Committee	Spring 2007
Provost Search Committee	Fall 2006-Spring 2007

Faculty Advisor, Allies Club	Fall 2006-Spring 2011
Faculty Advisor, Biology Club	Fall 2004-Fall 2011
Chair of Professional Development Committee	Fall 2004-Spring 2005
Member of Academic Council	Spring 2004-2005
Member of Institutional Review Board for Human Subject Research	Spring 2002-Fall 2008
Biology instructor for summer science camp, run by Elizabethtown College students for students from inner city elementary schools in Lancaster and Harrisburg	Summer 2002-2004
Member of Professional Development Committee, Chair of Sabbatical Subcommittee	Spring 2003-2004

Recent Professional Service Activities

Reviewed manuscripts for *Development*, *Genes*, and *Evolution*, *Journal of Experimental Biology*, *Journal of Experimental Zoology*, *Molecular Phylogenetics and Evolution*, *Physiological and Biological Zoology*, *PLoS One*

Reviewed grant applications for the National Science Foundation, Divisions of Integrative Organismal Systems and Evolutionary Biology

Reviewed a chapter for the textbook *Biological Science*, 4th edition, by S. Freeman

Served on the thesis committee of Maria Christina Vasquez, 2009, California State University, Northridge