

ELAINE C. SEAVER, Ph.D.

CONTACT INFORMATION

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Honolulu, HI 96813
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PROFESSIONAL EXPERIENCE

Associate Professor, Kewalo Marine Laboratory, University of Hawaii, 2007- present
Graduate Faculty, Dept. of Zoology, University of Hawaii, 2003- present
Assistant Professor, Kewalo Marine Laboratory, University of Hawaii, 2002- 2007
Junior Researcher, Kewalo Marine Laboratory, University of Hawaii, August 2001- April 2002
Graduate Teaching Fellow, Department of Biology, University of Utah, 1988-1989
Laboratory technician, Dr. Thomas Fox, Cornell University, 1986-1987
Research assistant, Dr. Thomas Fox, Cornell University, 1985

ACADEMIC TRAINING

Postdoctoral Researcher, Kewalo Marine Lab, University of Hawaii, 1999-2001 (with Dr. Mark Q. Martindale)
Postdoctoral Researcher, Department of Zoology, University of Texas at Austin, 1997-1999 (with Dr. Marty Shankland)
Embryology Course, Marine Biological Laboratory, Woods Hole, Mass. 1997. Dr. Marianne Bronner-Fraser and Dr. Scott Fraser, directors
Ph.D. in Biology, University of Utah, 1995. Dr. Michael Bastiani, advisor
Developmental Neurobiology Course, Cold Spring Harbor Laboratory, New York, 1990. Dr. Corey Goodman and Dr. Paul Patterson, directors
B.S. in Biology, McGill University, 1986

PUBLICATIONS

*denotes mentored student author

- Layden, M. J., Meyer N. P., Pang K., Seaver, E. C. and Martindale, M. Q. Expression and phylogenetic analysis of the zic gene family in the evolution and development of metazoans. (submitted).
- Meyer, N. P., Boyle*, M. J., Martindale, M. Q. and Seaver, E. C. A comprehensive fate map by intracellular injection of identified blastomeres in the marine polychaete *Capitella teleta*. **EvoDevo** (in review).
- Meyer, N. P. and Seaver, E. C. Cell lineage and fate map of the primary somatoblast in the polychaete annelid *Capitella teleta*. **Integrative and Comparative Biology** (in review).
- Boyle*, M. J. and Seaver, E. C. (2010). Expression of *FoxA* and *GATA* transcription factors correlates with regionalized gut development in two lophotrochozoan marine worms: *Chaetopterus* (Annelida) and *Themiste lageniformis* (Sipuncula). **EvoDevo** 1: 2.
- Cho, S.-J., Valles, Y., Giani*, V. C., Seaver, E. C. and Weisblat, D. A. (2010). Evolutionary dynamics of the Wnt gene family: a lophotrochozoan perspective. **Molecular Biology and Evolution** doi:10.1093/molbev/msq052.
- Shimeld, S. M., Boyle*, M. J., Brunet, T., Luke, G. N. and Seaver, E. C. (2010). Clustered Fox genes in lophotrochozoans and the evolution of the bilaterian Fox gene cluster. **Developmental Biology** 340: 234-248.

- Hejnol, A., Obst, M., Stamatakis, A., Ott, M., Rouse, G. W., Edgecombe, G. D., Martinez, P., Baguñà, J., Bailly, X., Jondelius, U., Wiens, M., Muller, W. E. G., Seaver, E., Wheeler, W. C., Martindale, M. Q., Giribet G. & Dunn, C. W. (2009). Rooting the Bilaterian Tree with Scalable Phylogenomic and Supercomputing Tools. **Proceedings of the Royal Society of London Series B** 276: 4261-4270. 10.1098/rspb.2009.0896.
- Meyer, N. P. and Seaver, E. C. (2009). Neurogenesis in an annelid: characterization of neural progenitors in the polychaete *Capitella* sp. I. **Developmental Biology** 335(1): 237-52.
- Boyle*, M. J. and Seaver, E. C. (2009). Evidence of a dorsal pharynx in the marine polychaete, *Capitella teleta* (Polychaeta: Capitellidae). In: N.J. Maciolek and J.A. Blake (Eds.) Proceedings of the Ninth International Polychaete Conference, **Zoosymposia**: 317-328.
- Fröblius A. C., Matus D. Q., Seaver E. C. (2008). Genomic organization and expression demonstrate spatial and temporal *Hox* gene colinearity in the lophotrochozoan *Capitella* sp. I. **PLoS ONE** 3(12): e4004. doi:10.1371/journal.pone.0004004.
- Dill, K. K., and Seaver, E. C. (2008). *Vasa* and *nanos* are co-expressed in somatic and germ line tissue from early embryonic cleavage stages through adulthood in the polychaete *Capitella* sp. I. **Development, Genes and Evolution** 218(9):453-63.
- Thamm*, K. and Seaver, E. C. (2008). *Notch* signaling during larval and juvenile development in the polychaete annelid *Capitella* sp. I. **Developmental Biology**, 320 (1): 304-318.
- Henry, J. Q., Perry, K.J., Wever, J., Seaver, E., C. and Martindale, M. Q. (2008). Functional role of b-catenin in axial polarization and endoderm formation in the nemertean, *Cerebratulus lacteus*. **Developmental Biology** 317: 368-379. doi: 10.1016/j.ydbio.2008.02.042.
- Dunn, C.W., Hejnol, A., Matus, D.Q., Pang, K., Browne, W.E., Smith, S.A., Seaver, E., Rouse, Obst, M., Edgecombe, G.D., Sørensen, M.V., Haddock, S.H.D., G., Schmidt-Rhaesa, A., Okusu, A., Kristensen, R., Wheeler, W.C., Martindale, M.Q., and Giribet, G. (2008). Broad taxon sampling improves resolution of the Animal Tree of Life in phylogenomic analyses. **Nature**, 452(7188): 665-780.
- Boyle*, M. J. and Seaver, E. C. (2008). Developmental expression of *foxA* and *gata* genes during gut formation in the polychaete annelid, *Capitella* sp. I. **Evolution and Development** 10(1):89-105.
- Dill, K. K., Thamm*, K. and Seaver, E. C. (2007). Characterization of *twist* and *snail* gene expression during mesoderm and nervous system development in the polychaete annelid *Capitella* sp. I. **Development, Genes and Evolution** 217(6): 435-47.
- Fröblius, A. C. and Seaver, E. C. (2006). *Capitella* sp. I *homeobrain-like*, the first lophotrochozoan member of a novel paired-like homeobox gene family. **Mechanisms of Development** 6(8):985-91.
- Irvine, S. Q. and Seaver, E. C. (2006). Early Annelid Development, A Molecular Perspective. in Greg Rouse and Fredrick Pleijel, eds. *Reproductive Biology and Phylogeny of Annelida*. Pp. 93-140. Reproductive Biology and Phylogeny, v. 4. Barrie G.M. Jamieson, series ed. Science Publishers: Enfield, NH.
- Fröblius, A. C. and Seaver, E. C. (2006). ParaHox gene expression in the polychaete annelid *Capitella* sp. I. **Development, Genes and Evolution** 216(2): 81-88.
- Seaver, E. C. and Kaneshige*, L. M. (2006). Expression of 'segmentation' genes during larval and juvenile development in the polychaetes *Capitella* sp. I and *H. elegans*. **Developmental Biology** 289: 179-194.
- Seaver, E. C., Thamm*, K. and Hill, S. (2005). Growth patterns during segment formation in the annelids *H. elegans* and *Capitella* sp. I: comparison of distinct life history stages in polychaetes. **Evolution and Development** 7(4): 312-326.
- Seaver, E. C. (2003) Segmentation: mono or polyphyletic? **Int. J. Dev. Biol.** 47: 583-596.

- Seaver, E. C., Paulson, D., Irvine, S. Q. and Martindale, M. Q. (2001). The spatial and temporal expression of the *Ch-en*, the *engrailed* gene in the polychaete *Chaetopterus* does not support a role in body axis segmentation. **Developmental Biology** 236: 195-209.
- Seaver, E. C., and Shankland, M. (2001). Establishment of segment polarity in the ectoderm of the leech *Helobdella*. **Development** 128: 1629-1641.
- Seaver, E. C., and Shankland, M. (2000). Leech segmental repeats develop normally in the absence of signals from either anterior or posterior clones. **Developmental Biology** 224: 339-353.
- Shankland, M., and Seaver, E. C. (2000). Evolution of the bilaterian body plan: what have we learned from annelids? **PNAS** 97: 4434-4437.
- Seaver, E. C., Carpenter, E. M., and Bastiani, M. J. (1996). REGA-1 is a GPI-linked member of the immunoglobulin superfamily present on restricted regions of sheath cell processes in grasshopper. **Development** 122: 567-578.
- Seaver, E. C., Karlstrom, R. O., and Bastiani, M. J. (1991). The restricted spatial and temporal expression of a nervous-system-specific antigen involved in axon outgrowth during development of the grasshopper. **Development** 111: 881-893.
- Costanzo, M. C., Seaver, E. C., and Fox, T. D. (1989). The *PET54* gene of *Saccharomyces cerevisiae*: characterization of a nuclear gene encoding a mitochondrial translational activator and subcellular localization of its product. **Genetics** 122: 297-305.
- Fox, T. D., Costanzo, M. C., Strick, C. A., Marykwas, D. L., Seaver, E. C., and Rosenthal, J. K. (1988). Translational regulation of mitochondrial gene expression by nuclear genes of *Saccharomyces cerevisiae*. **Phil. Trans. R. Soc. Lond. B** 319:97-105.
- Costanzo, M. C., Seaver, E. C., Marykwas, D. L., and Fox, T. D. (1987). Multiple nuclear gene products are required to activate translation of a single yeast mitochondrial mRNA, pp. 373-382 in *Genetics of Translation: New Approaches*, edited by M. Picard, M. Bolotin-Fukuhara and M. Tuite. Springer, New York.
- Costanzo, M. C., Seaver, E. C., and Fox, T. D. (1986). At least two nuclear gene products are specifically required for translation of a single yeast mitochondrial mRNA. **EMBO J.** 5: 3637-3641.

MANUSCRIPTS IN PREPARATION

- Seaver, E. C., Richards*, G. S. and Kaneshige*, L. M. Expression of the pair rule 'segmentation' genes *runt*, *pax3/7* and *eve* during larval and juvenile segment formation in *Capitella teleta*.
- Giani*, V. C. Jr. and Seaver, E. C. Somatic and germ line expression of *piwi* throughout the life cycle of the polychaete annelid *Capitella teleta*.
- Yamaguchi, E., and Seaver, E. C. Functional analysis of *Pax6* reveals an ancestral role in central nervous system development in a lophotrochozoan.
- Meyer, N. P. and Seaver, E. C. Functional investigations of *ash1* during brain neurogenesis in *Capitella teleta*.
- Marlow*, H. Q., Speiser, D. I., Matus, D. Q., Johnsen, S., Seaver, E. C., and Martindale, M. Q. The evolution of complex traits: photoreception in the Metazoa.
- Veatch, O. J. and Seaver, E. C. Genomic organization and expression of the NKL family of homeodomain containing genes in the polychaete annelid *Capitella teleta*.
- Seaver, E. C., and Kaneshige*, L. M. "Segmentation" genes in an unsegmented "annelid": developmental expression of two *en* orthologues and *eve* in the sipunculid *Themiste lageniformis*.

HONORS AND AWARDS

Major Grants and Projects:

Current

PI, NSF IOS09-23754, (7/1/09-6/31/12). "Mechanisms of neurogenesis in a segmented polychaete" (\$350,000)

Co-PI, NSF DBI-0922789, (9/1/09-8/31/11). "MRI: Acquisition of a versatile single cell labeling and high resolution multi-channel imaging system" (\$470,751)

Previous

PI, NSF IOB05-44869, (6/1/06-5/31/10). "Multiple origins of mesoderm in a model polychaete" (\$300,000)

PI, NSF, 07/01/08. REU supplement to "Multiple origins of mesoderm in a model polychaete" (\$6000)

PI, Hawaii Community Foundation HCF42992, 11/01/08-6/04/10, "Functional investigations of early neurogenesis". (\$50,000)

Co-PI, NSF EF05-31558, (1/1/06-12/31/09) "ATOL: Collaborative proposal: Assembling the protostome tree of life" (PI: Gonzalo Giribet, Harvard University), (\$975,000)

PI, Hawaii Community Foundation, 5/10/07 – 11/10/2008, "Functional investigations of cell fate specification during embryonic and adult nervous system formation" (\$50,000)

Co-PI, NSF EAR-0120646, 10/1/01-6/30/2007, "Wormnet: Reconstructing the early evolution of segmented annelid worms". (PI: Ken Halanych, Auburn University), (\$212, 503)

Co-PI, NSF EF03-34871, 1/1/04-12/31/06, "Assembling the tree of life: Collaborative Research: An integrated approach to the origin and diversification of protostomes" (PI: Gonzalo Giribet, Harvard University) (\$370,349)

PI, Hawaii Community Foundation, 1/1/04-12/31/05, "Molecular regulation of asymmetric segregation of developmental regulatory genes in identified embryonic cells". (\$44,625)

Co-PI, NSF IBN00-94925, 1/1/01-12/31/2004, "The formation and evolution of the metameric body plan in basal annelids". (PI: Mark Martindale, University of Hawaii) (\$258,566)

University of Hawaii Funding:

University Research Council, 2007. University of Hawaii travel award (\$2000)

University Research Council, 2005. University of Hawaii travel award (\$2500)

Hawaii State BRIN Equipment Fund Grant, 2003. (\$64,010)

Fellowships and Awards:

National Research Service Award 1F32GM19257-01, "Determinants of annelid segmental patterning", 1997-2000

Evelyn and Melvin Spiegel Endowed Fellow, 1998 (\$20,000).

Post course Research Award, Marine Biological Laboratory, Woods Hole, Mass. NASA Center for Advanced Studies in the Space Life Sciences, 1997

Society for Developmental Biology Scholarship, Marine Biological Laboratory, Woods Hole, Mass., 1997

National Institute of Health, Genetics Training Grant, University of Utah, 1990 – 1994

TEACHING

Courses Taught at University of Hawaii:

Ecological Developmental Biology (Zoology 691), co-Instructor, Spring 2010

Directed Research (Biology 499), Fall 2008, Spring 2010

Evolution of Novelty (Zoology 691), Fall 2007

Evolution of Morphological Change (Zoology 691), Fall 2005

Contributed Lectures at University of Hawaii:

Seminars in Developmental and Reproductive Biology (DRB 613), DRB graduate program, Institute for Biogenesis Research, 2009
Biology of Marine Organisms (Zool 301), Dept. of Zoology, 2005-2010
Introduction to Neuroscience (Zool 442), Dept. of Zoology, 2005-2010
Developmental Biology (Zool 420), Dept. of Zoology, 2003
Topics in Development and Reproductive Biology (Zool 610), Dept. of Zoology, 2002

Other courses:

Co-Instructor, Embryology Course, Marine Biological Laboratory, Woods Hole, MA, 2004-2007, 2009-2010
Co-Instructor, Introduction to Biology of Organisms (301), Dept. of Zoology, University of Texas @ Austin, 1999
Lecturer, Development and Neurobiology of the Leech, Marine Biological Laboratory, Woods Hole, MA, 1998
Teaching assistant, Embryology Course, Marine Biological Laboratory, Woods Hole, MA, 1997, 2000
Teaching assistant, Cell Biology (240), Dept. of Biology, University of Utah, 1989
Teaching assistant, Genetic Engineering (545), Dept. of Biology, University of Utah, 1988, 1989

STUDENT AND POSTDOCTORAL RESEARCH SUPERVISION

Graduate Students (Major Advisor):

Emi Yamaguchi (PhD, 2008-present)
Michael Boyle (PhD, 2003–2009)
Katrin Thamm (PhD, 2003-2007)

Graduate Students (Committee Member):

Nick Shikuma (MS, 2005)
Mahealani Kaneshiro (MS, 2007)
Tim Dubuc (MS, 2008)
Nisha P S Kumburegama (PhD, 2003–2009)
Brian Nedved (PhD, -present)
Kevin Pang (PhD, 2005-present)
Cawa Tran (PhD, 2009-present)
Ying Huang (PhD, 2009-present)

Undergraduate Students (Research Advisor):

Lori Kaneshige, University of Hawaii (2002-2003)
Timothy Rodenberger, University of Hawaii (2004-2005)
Courtney Noa, University of Hawaii (2004-2005)
Maureen Bannigan, University of Pennsylvania (Summer, 2007)
Andrew Burch, California Polytechnic State University, San Luis Obispo (Summer, 2007)
Travis Weber, University of Hawaii (2008)
Vinny Giani, University of Hawaii (2008- present)
Tyler Smith, University of Hawaii (2009- present)

Undergraduate Students (Committee Member):

Grace Liu (Senior Honors thesis, 2003; currently a medical student at the University of Hawaii)

Absalon Galat (Senior Honors thesis, 2007)

K-12 Students (Research Advisor):

Taylor Haines, Hawaii Baptist Academy (high school student, 2002-2003)

Nathan Tanoue, home schooled (eighth grade student, 2004)

Post-baccalaureate Students (Research Advisor):

Lori Kaneshige (2003-2005; currently teaching high school science at Waipahu high school, Honolulu, HI)

Michelle Lentini (2002; currently a phlebotomist)

Maja Makagon (2002-2003; M.S., Cornell University, currently a PhD student at UC, Davis)

Gemma Richards (2004-2005; currently a PhD student at the University of Queensland)

Rachel Schwab (2002; Spring 2006 completed MS at University of Florida, Gainesville, FL)

Olivia Veatch (2006-2008; currently a PhD student at Vanderbilt University)

Tara Chandrasekharan (2008)

Postdoctoral Advisees:

Dr. Andreas Fröbuis (2003-2005)

Dr. Kariena Dill (2005–2008)

Dr. Neva Meyer (2006-present)

Dr. Aldine Amiel (2009-present)

Visiting Researchers and Students:

David Simmons (CMB rotation student, 2009-2010)

Dr. Robert Zeller, UCSD (2008)

Dr. Christina Grande, UC Berkeley (2008)

RJ Stillwell, CMB rotation student (2005-2006)

Alicia Taase, undergraduate student, University of Utah (2005)

Tami Stuart, undergraduate student, Agnes Scott College (2004)

PROFESSIONAL ACTIVITIES AND SERVICE

University Committees and Activities

Interim Graduate Student Committee, Dept. of Zoology, 2009

Faculty Search Committee, Dept. of Zoology, 2008/2009

Acting Director, Kewalo Marine Laboratory, Summer 2008

Speaker and participant, PBRC research symposium, 2008, 2009

Graduate Admissions Committee, Dept. of Zoology, 2004, 2008, 2009

Temporary Faculty Search Committee, Dept. of Zoology, 2007

Ad Hoc Graduate Admissions Review Committee, Dept. of Zoology, 2007

Chair, Graduate Student Advisory Committee, Cell and Molecular Program, 2007, 2008

Organizer, Kewalo Marine Laboratory seminar series, PBRC, 2007, 2008

University of Hawaii Institutional Biosafety Committee, 2005-2008

Departmental Personnel Committee, Pacific Biosciences Research Center, 2007

Graduate Student Advisory Committee, Cell and Molecular Program, 2004-2006

Graduate Student Instructional Committee, Dept. of Zoology, 2005-2006

Faculty Search Committee, Kewalo Marine Lab, PBRC, 2004, 2005

Search Committee, Administrative Officer, Kewalo Marine Lab, PBRC, 2005

Graduate Student Diagnostic Exam Committee, Dept. of Zoology, 2004, 2007

Chair, Albert L. Tester Memorial Symposium, Dept. of Zoology, 2004, 2007, 2008, 2009

Judge, Albert L. Tester Memorial Symposium, Dept. of Zoology, 2003

Kane Lecture Committee, Kewalo Marine Lab, PBRC, 2002

Community Service

Judge, Hawaii State Science and Engineering Fair, Hawaii Academy of Science, 2006, 2007, 2009
Organized and hosted Waipahu High School Marine Science student visit to Kewalo Marine Laboratory, 2008

Reviewer for Grant Proposals

Biotechnology and Biological Sciences Research Council (BBSRC), 2009
Royal Society of New Zealand, Marsden Fund, 2006
National Institute of Child Health and Human Development, 2007
National Science Foundation, 2003, 2006, 2008, 2009, 2010

Reviewer for Professional Journals:

Biochemical Genetics, 2004; Biological Bulletin, 2005, 1997; BioEssays, 2009; Developmental Biology, 2009, 2010; Development, Genes and Evolution, 2005, 2006, 2007; Evolution and Development, 2004, 2005, 2006, 2007, 2008 (2); Gene Expression Patterns (MOD), 2010; International Journal of Developmental Biology, 2010; Journal of Experimental Zoology, 2007; Gene, 2002; Natural History, 2000; PNAS, 2006, 2009; Zootaxa, 2008 (2)

National Service

Co-organizer, Symposium on 'Spiralian Development: Conservation and Innovation', Society for Integrative and Comparative Biology Annual Meeting, 2010.
Secretary for the Division of Evolutionary Developmental Biology, Society for Comparative and Integrative Biology, 2009-2011
Invited reviewer of book project proposal, Springer Science, New York, NY, 2007
Secretary-elect for the Division of Evolutionary Developmental Biology, Society for Comparative and Integrative Biology, 2008-2009
Panelist, Division of Integrative and Organismal Systems, National Science Foundation, 2007
Contact person for DOE Joint Genome Institute *Capitella* sp. I genome project, provider of high quality genomic DNA and cDNA libraries for 8x coverage complete genome sequencing project 2004-2006
Expert Consultant, Lophotrochozoan Genome Selection Workshop, Joint Genome Institute, Walnut Creek, CA, 2003
Co-chair, Contributed papers for Evolution and Development: plants and invertebrates. Society for Integrative and Comparative Biology Annual Meeting, 2001

PROFESSIONAL SOCIETIES

Hawaii Chapter of the Society for Neuroscience
Society for Invertebrate Morphology
Hawaii Academy of Science
Society for Integrative and Comparative Biology
Society for Developmental Biology
Women Leaders in Higher Education
American Association of University Women

MEETINGS AND CONFERENCES

Invited Lectures

Symposium on Spiralian Development: Conservation and Innovation, Society for Integrative and Comparative Biology Annual Meeting, Seattle, WA, 2010.

Departmental seminar, Biology Department, University of Miami, Miami, FL, 2009
Departmental seminar, Smithsonian Marine Station, Fort Pierce, FL, 2009
Gordon Research Conference on Molecular Evolution, Crowne Plaza, Ventura, CA, 2008
Catalysis meeting on Myelin: a new model for evolutionary innovation, National Evolutionary Synthesis Center, Durham, NC, 2007
West Coast Society for Developmental Biology Meeting, Asilmar, CA, 2007
Conference on Integrating Evolution, Development, and Genomics, UC Berkeley, Berkeley, CA, 2006
Departmental seminar, Department of Organismal Biology and Anatomy, University of Chicago, Chicago, IL, 2006
Society for Integrative and Comparative Biology, San Diego, CA, 2005
Kyoto University, Kyoto, Japan, 2004
Japanese Zoological Society Annual Meeting, Kobe, Japan, 2004
Conference on the Evolution of Developmental Diversity, Cold Spring Harbor, LI, 2004
Conference on the Developmental Basis of Evolutionary Change, University of Chicago, Chicago, IL, 2003
Departmental seminar, Stazione Zoologica Anton Dohrn, Naples, Italy, 2003
Departmental seminar, Cellular and Molecular Biology, University of Hawaii, Honolulu, HI, 2003
Invited seminar, Department of Molecular and Cellular Biology, UC Berkeley, Berkeley, CA, 2002
Departmental seminar, Department of Zoology, University of Hawaii, Honolulu, HI, 2002, 2001
NASA sponsored workshop, Understanding Mechanisms of Evolution, Woods Hole, MA, 2002
Symposium on Evolution of Morphological Diversity, Society for Developmental Biology Annual Meeting, Madison, WI, 2002
Segmentation Meeting in Nara. Nara-ken New Public Hall, Nara, Japan, 2001
Symposium on Cell Lineage and Cell Polarity, Society for Developmental Biology Annual Meeting, Charlottesville, VA, 1999
Conference on the Developmental Basis of Evolutionary Change, University of Chicago, Chicago, IL, 1999
NASA sponsored workshop on Developmental Gene Regulation and Mechanisms of Evolution, Woods Hole, Mass., 1998
Departmental seminar, Department of Molecular and Cellular Biology, University of Arizona, Tucson, AZ, 1996
Departmental seminar, Department of Neurobiology, Harvard University, Boston, MA, 1996

Contributed Presentations at Scientific Meetings

*denotes student author

Meyer, N. P., Boyle, M. J., Martindale, M. Q., and Seaver, E. C. The complete cell lineage of the polychaete annelid *Capitella teleta*. Society for Integrative and Comparative Biology Annual Meeting, Seattle, WA, 2010.
Meyer, N. P. and Seaver, E. C. Cellular and molecular mechanisms of brain development in the annelid *Capitella teleta*. Society for Integrative and Comparative Biology Annual Meeting, Seattle, WA, 2010.
Giani*, V. C., Boyle, M. J., and Seaver, E. C. Expression of *piwi* during development and regeneration in the marine polychaete *Capitella teleta*. Society for Integrative and Comparative Biology Annual Meeting, Seattle, WA, 2010.
Yamaguchi*, E. and Seaver, E. C. Characterization of apoptosis during development and metamorphosis of *Capitella teleta*. Society for Integrative and Comparative Biology Annual Meeting, Seattle, WA, 2010.

- Amiel, A. and Seaver, E. C. Evolution of the Wnt pathway, insights from the annelid *Capitella teleta*. Society for Integrative and Comparative Biology Annual Meeting, Seattle, WA, 2010.
- Meyer, N. P. and Seaver, E. C. Brain development in the annelid *Capitella* sp. I: molecular and cellular insights into nervous system evolution. 68th Annual Society for Developmental Biology Meeting, San Francisco, CA, 2009.
- Meyer, N. P. and Seaver, E. C. Early brain development in the polychaete annelid *Capitella* sp. I. Northwest Regional Developmental Biology Conference, Friday Harbor Laboratories, San Juan Island, WA, 2009.
- Seaver, E. C. Dual origins of mesoderm in a model polychaete with terminal addition. 1st International Congress on Invertebrate Morphology, Copenhagen, Denmark, 2008.
- Boyle*, M. and Seaver, E. C. Conserved gene expression during gut development in Metazoa – a lesson from annelids. Integrating Evolution, Development and Genomics, University of California, Berkeley, 2008.
- Meyer, N. P. and Seaver, E. C. Early neurogenesis in a polychaete annelid: characterization of neural precursor cells during brain development in *Capitella* sp. I. Integrating Evolution, Development and Genomics, University of California, Berkeley, 2008.
- Seaver, E. C. Evolution of Axes in the Lophotrochozoa. Gordon Research Conference on Molecular Evolution, Crowne Plaza, Ventura, CA, 2008.
- Seaver, E. C., and Meyer, N. P. Neural development in the polychaete annelid *Capitella* sp. I. Society for Integrative and Comparative Biology Annual Meeting, San Antonio, CA 2008.
- Seaver, E. C., and Thamm*, K. Developmental mechanisms of segment formation. 9th International Polychaete Conference, Portland, ME, 2007.
- Boyle*, M. and Seaver, E. C. Morphological and molecular development of the gut in the polychaete *Capitella* sp. I. 9th International Polychaete Conference, Portland, ME, 2007.
- Seaver, E. C., Dill, K. D., Boyle*, M. J., Thamm*, K., Fröbius, A. C., Meyer, N. P. Mesoderm development in the polychaete *Capitella* sp. I. Gordon Research Conference on Myogenesis, Il Ciocco, Barga, Italy, 2007.
- Seaver, E. C. Polychaete annelids: developmental insights into body plan evolution. West Coast Society for Developmental Biology Meeting, Asilmar, CA, 2007.
- Dill, K. D., Kaneshige*, L. K., Thamm*, K. and Seaver, E. C. Mesoderm development in the Lophotrochozoa: a view from the polychaete annelid, *Capitella* sp. I. Integrating Evolution, Development, and Genomics, UC Berkeley, Berkeley, CA, 2006.
- Meyer, N. P., Kaneshige*, L. K., Boyle*, M. and Seaver, E. C. Investigating neural development in the polychaete annelid, *Capitella* sp. I. Integrating Evolution, Development, and Genomics, UC Berkeley, Berkeley, CA, 2006.
- Boyle*, M. and Seaver, E. C. *Gata* and *forkhead* gene expression during gut development in *Capitella* sp. I. Integrating Evolution, Development, and Genomics, UC Berkeley, Berkeley, CA, 2006.
- Seaver, E. C. Molecular insights into the formation of the segmented body plan in polychaete annelids. Integrating Evolution, Development, and Genomics, UC Berkeley, Berkeley, CA, 2006.
- Fröbius, A. C., Schwab*, R. L., Seaver, E. C. ParaHox gene expression in the polychaete annelid *Capitella* sp. I: surprises and expected outcomes. Developmental Basis of Evolutionary Change, Chicago, 2005.
- Seaver, E. C. Segmentation in the Lophotrochozoa: 'segmentation' gene expression in polychaete annelids. 15th International Society of Developmental Biologists Congress, Sydney, Australia, 2005.
- Thamm*, K. and Seaver E. C. Involvement of the Notch signaling pathway in the development of the polychaete annelid *Capitella* sp. I. 16th Scientific Meeting of the Society of Developmental Biology, Universität Münster, Münster, Germany 2005.

- Seaver, E. C. Development of the segmented polychaete body plan. Society for Integrative and Comparative Biology Annual Meeting, San Diego, CA 2005.
- Fröblius, A. C., Schwab*, R. L. and Seaver, E. C. Expression of Hox and ParaHox genes during development of the polychaete annelid *Capitella* sp. I. Society for Integrative and Comparative Biology Annual Meeting, San Diego, CA, 2005.
- Giribet G, Edgecombe GD, Kristensen RM, Martindale MQ, Seaver EC, Sorensen MV, Rouse GW, Wheeler WC. Assembling the protostome tree of life. Society for Integrative and Comparative Biology Annual Meeting, San Diego, CA, 2005.
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