

LAURA ALLISON ROMANO

Denison University
Department of Biology
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EDUCATION:

Ph.D., University of Arizona, May 2000.
Major in Cell Biology and Anatomy; Minor in Molecular and Cellular Biology
Advisor: Dr. Raymond Runyan.

B.S. with Honors, College of William and Mary in Virginia, May 1993.
Major in Biology; Minor in Anthropology
Advisor: Dr. Norman Fashing.

SPECIALIZED TRAINING:

Developmental Biology Teaching Workshop
Darling Marine Center, Walpole, ME, June 2004.

Molecular Phylogenetics Course at the Summer Institute in Statistical Genetics
North Carolina State University, Raleigh, NC, Summer 2003.

Seminar in Teaching Biology
Department of Biology, Duke University, Spring 2002.

Computer Applications for Teachers Course
Department of Education, University of Arizona, Fall 1999.

“Embryology: Concepts and Techniques in Modern Developmental Biology” Course
Marine Biological Laboratory, Woods Hole, MA, Summer 1998.

ACADEMIC POSITIONS HELD:

Assistant Professor
Department of Biology, Denison University
September 2003 – present
• sea urchin development; evolution of transcriptional regulation

Postdoctoral Research Associate
Department of Biology, Duke University
April 2000 – August 2003
Advisor: Dr. Gregory Wray
• sea urchin development; evolution of transcriptional regulation

Graduate Research Assistant

Department of Cell Biology and Anatomy, University of Arizona
July 1994 – March 2000

Advisor: Dr. Raymond Runyan

- molecular basis of heart valve development in chicken

Research Assistant

Department of Cell Biology and Anatomy, University of Arizona
July 1993 – June 1994

Advisor: Dr. Joseph Bagnara

- melanization during frog development

Undergraduate Research Assistant

Department of Biology, College of William and Mary in Virginia
January 1990 – May 1993

Advisor: Dr. Norman Fashing

- functional morphology of feeding appendages in mites; scientific illustrations

TEACHING AND MENTORING EXPERIENCE:

Instructor, Evolutionary Developmental Biology (BIO 356), Spring 2005.

Department of Biology, Denison University

- instructed undergraduates through lecture, discussion, and laboratory exercises

Instructor, Introduction to the Science of Biology (BIO 150), Fall 2004, Spring 2005, Spring 2006, Fall 2006.

Department of Biology, Denison University

- instructed undergraduates through lecture, discussion, and laboratory exercises

Guest Instructor, Neurophysiology (BIO 356), April 2004.

Department of Biology, Denison University

- instructed undergraduates on nervous system development through lecture and discussion of primary literature article

Instructor, Cellular and Molecular Biology (BIO 201), Spring 2004, Fall 2005, Spring 2007.

Department of Biology, Denison University

- instructed undergraduates through lecture, discussion, and laboratory exercises

Instructor, Developmental Biology (BIO 324), Fall 2003, 2004, 2006.

Department of Biology, Denison University

- instructed undergraduates through lecture, discussion, and laboratory exercises

Mentor, Summer 2004 – present.

Department of Biology, Denison University

- served as a mentor for a total of 9 undergraduate students working in my laboratory

Mentor, Fall 2002.

Department of Biology, Duke University

- served as a mentor for a first-year graduate student in the Genetics Program

Co-Instructor, Open Course, March 2002.

Marine Biological Station, University of Tohoku (Japan)

- instructed graduate students in molecular biology and organized laboratory exercises

Mentorship in Teaching Biology, Spring 2002.

Department of Biology, University of North Carolina at Greensboro

- discussed teaching-related issues with Dr. Dean Wendt

Guest Instructor, Experiments in Development and Molecular Genetics (BIO 185L),
September 2001.

Department of Biology, Duke University

- instructed undergraduate students in vertebrate embryology through lecture and discussion of my research program

Mentor, Fall 2001.

Department of Biology, Duke University

- served as a mentor for two first-year graduate students in the Genetics Program

Mentor, Howard Hughes Medical Institute Undergraduate Summer Research Program,
Summer 2000.

Department of Biology, Duke University

- served as a mentor for an undergraduate student with no prior laboratory experience

Problem-Based Learning Facilitator, Physiology (PSIO 601), Spring 1998.

College of Medicine, University of Arizona

- facilitated a problem-based learning discussion group of medical students

Teaching Assistant, Human Gross Anatomy (CBA 601), Fall 1995, 1999.

College of Medicine, University of Arizona

- assisted medical students in the laboratory and facilitated a problem-based learning discussion group

Preparatory Teaching Assistant, Introductory Biology II (ECOL 182), Spring 1994.

Department of Ecology and Evolutionary Biology, University of Arizona

- prepared laboratory supplies and equipment; assisted undergraduate students in laboratory exercises related to ecology, genetics, and evolution

Preparatory Teaching Assistant, Introductory Biology I (MCB 181), Fall 1993.

Department of Molecular and Cellular Biology, University of Arizona

- prepared laboratory supplies and equipment; assisted undergraduate students in laboratory exercises related to molecular, cellular, and developmental biology

GRANTS, FELLOWSHIPS, AND SCHOLARSHIPS:

- Society for Developmental Biology Travel Grant for Teaching Faculty (for conference in Ann Arbor, MI), 2006.
- Scholarship for Summer Institute in Statistical Genetics, 2003.
- ARCS (Achievement Rewards for College Scientists) Scholarship, 1999 – 2000.
- College of Medicine Fellowship (University of Arizona), 1999 – 2000.
- Society for Developmental Biology Scholarship (for course at the Marine Biological Laboratory in Woods Hole, MA), 1998.
- Graduate and Professional Student Council Travel Grant (University of Arizona), 1998.
- Graduate Registration Scholarship (University of Arizona), 1998, 1999.
- American Heart Association Predoctoral Fellowship, 1997 – 1998.
- American Heart Association Student Stipend Award, 1996 – 1997.
- Honorable Mention, United States Department of Defense Science and Engineering Fellowship, 1995, 1996.
- Graduate College Fellowship (University of Arizona), 1995.
- Biology 21 Flinn Fellowship, 1994 – 1995.
- Minor Research Grant awarded by the College of William and Mary, 1992 – 1993.

HONORS:

- Langman Award Finalist, American Association of Anatomists, 1998.
- Graduation from the College of William and Mary with Honors, 1993.

PEER-REVIEWED PUBLICATIONS:

Walters, J. L.*, Binkley, E. M.*, Haygood, R. and **Romano, L. A.** (2008) Evolutionary analysis of the cis-regulatory region of *SM50* in stronglylocentrotid sea urchins. *Developmental Biology* **315**, 567-578. *denotes undergraduate co-authors

Romano, L. A. and Wray, G. A. (2006) Endo16 is required for gastrulation in the sea urchin *Lytechinus variegatus*. *Development Growth and Differentiation* **48**, 487 – 497.

Romano, L. A., and Wray, G. A. (2003) Conservation of *Endo16* expression in sea urchins despite evolutionary divergence in both *cis* and *trans*-acting components of transcriptional regulation. *Development* **130**, 4187 – 4199.

Wray, G. A., Hahn, M., Abouheif, E., Balhoff, J., Pizer, M., Rockman, M. V., and **Romano, L. A.** (2003) Evolution of eukaryotic transcription. *Molecular Biology and Evolution* **20**, 1377 – 1419.

Romano, L. A., and Runyan, R. B. (2000) Slug is an essential target of TGF β 2 signaling in the developing chicken heart. *Developmental Biology* **223**, 91 – 102.

Romano, L. A., and Runyan, R. B. (1999) Slug is a mediator of epithelial-mesenchymal cell transformation in the developing chicken heart. *Developmental Biology*. **212**, 243 – 254.

Runyan, R. B., Wendler, C. C., **Romano, L. A.**, Boyer, A. S., Dagle, J. M., and Weeks, D. L. (1999) Utilization of antisense oligodeoxynucleotides with embryonic tissues in culture. *Methods*, **18(3)**, 316 – 321.

PROFESSIONAL SOCIETIES:

American Society for the Advancement of Science, Fall 2003 – present.
Society for Developmental Biology, Spring 1999 – present.

PROFESSIONAL ACTIVITIES:

Chair of plenary session titled “Use of the sea urchin and its genome in the undergraduate curriculum” at the Developmental Biology of the Sea Urchin Meeting in Woods Hole, MA, Spring 2008.

Reviewer for “Life: The Science of Biology” textbook published by Sinauer Associates, Inc. Fall 2005.

Reviewer for manuscripts published in: *Developmental Biology*; *Evolution and Development*; *Development, Genes, and Evolution*; *Genetika*. Spring 2000 – present.

Member, Organizing Committee for the Weinstein Cardiovascular Development Conference in Tucson, AZ. Spring 1999.

UNIVERSITY SERVICE:

Chair, Student Enrollment and Retention Committee, Fall 2007 – present.
Denison University

- examined issues such as the impact of non-tenure track faculty members on first-year students’ performance

Member, Search Committee for Organismal Biologist, Spring 2007.

Department of Biology, Denison University

- reviewed applications for a temporary faculty position

Representative, Marine Sciences Education Consortium Retreat, Spring 2007, 2008.

Duke Marine Laboratory

- investigated academic programs available for undergraduate students

Facilitator, Workshop on Academic Dishonesty at International Orientation, August 2006.

Denison University

- discussed the importance of academic integrity with freshmen

Member, Search Committee for Molecular Biologist, Spring 2006.

Department of Biology, Denison University

- reviewed applications for a temporary faculty position

Member, Honorary Degrees Committee, Fall 2005 – Spring 2007.

Denison University

- involved in selecting candidates for honorary degrees

Member, Wells Scholarship Selection Committee, March 2005.

Denison University

- reviewed material prepared by prospective science students

Coordinator, Departmental Assessment Exam, Fall 2004 – Spring 2006.

Department of Biology, Denison University

- organized exam for undergraduate students who had completed the core curriculum in the biology department

Member, Greek Awards Selection Committee, March 2004.

Denison University

- reviewed material prepared by sororities

Member, Search Committee for Ecologist, Spring 2004.

Department of Biology, Denison University

- reviewed >100 applications for a tenure-track faculty position

Volunteer, Fundraiser for the Muscular Dystrophy Association, March 2004.

Denison University

- selected by undergraduate students in Sigma Phi Epsilon to help raise money (~\$300) for their philanthropy

Volunteer, Select Scholars Overnight Program, March 2004, 2005, 2006.

Denison University

- organized a Faculty Focus Session entitled “Cloning Pets: Are We Barking Up the Wrong Tree?” for high school students selected for early admission to Denison University; attended a dinner to meet with prospective students’ parents

Volunteer, Admissions Workshop for Prospective Students, November 2003, 2004.
Denison University

- organized a laboratory exercise about sea urchin development for high school students interested in pursuing a biology degree at Denison University

Member, Graduate Studies Committee, August 1996 – July 1997.
Department of Cell Biology and Anatomy, University of Arizona

Member, Seminar Committee, August 1995 – July 1996.
Department of Cell Biology and Anatomy, University of Arizona

COMMUNITY OUTREACH:

Judge, Ohio Academy of Sciences Fair, May 2005, 2006, 2007.
Columbus, Ohio

E-mentor, Spring 2004 – present.

- responds to questions from K-12 students submitted via e-mail to the Society for Developmental Biology

Judge, Ohio Regional Science and Engineering Fair, February 2004.
Columbus, Ohio

Guest Instructor, Embryology Course, October 2002.
North Carolina School of Science and Mathematics

- instructed high school students in sea urchin development through lecture, discussion, and laboratory exercises

Judge, Southern Arizona Regional Science and Engineering Fair, March 1997, 1998.
Tucson, Arizona

Judge, International Science and Engineering Fair, March 1996.
Tucson, Arizona

INVITED SEMINARS:

Kenyon College, January 2008. [Presented to the Department of Biology]
• The evolution of morphological diversity: insight from the sea urchin.

Denison University, December 2002. [Presented to the Department of Biology]
• The developmental basis of morphological diversity: functional analysis of evolutionary changes in the *endo16* promoter of sea urchins.

Marine Biological Station, University of Tohoku (Japan), March 2002.

- The developmental basis of morphological diversity: functional analysis of evolutionary changes in the *endo16* promoter of sea urchins.

College of William and Mary in Virginia, February 2002. [Presented to the Department of Biology]

- The developmental basis of morphological diversity: functional analysis of evolutionary changes in the *endo16* promoter of sea urchins.

OTHER SEMINARS:

Denison University, April 2007. [Presented to the Denison Scientific Association]

- The evolution of morphological diversity: insight from the sea urchin.

Denison University, October 2006. [Presented to the Department of Biology]

- The molecular basis of morphological diversity: evolutionary analysis of genes that regulate the development of the larval skeleton in sea urchins.

Denison University, March 2005. [Presented to the Tuesday Lunch Series]

- Poodles versus pitbulls: insight into the molecular basis of diversity.

Denison University, November 2004. [Presented to the Department of Biology]

- The molecular basis of morphological diversity: evolutionary analysis of genes that regulate the development of the larval skeleton in sea urchins.

Denison University, November 2004. [Presented to Women in Science]

- The molecular basis of morphological diversity: evolutionary analysis of genes that regulate the development of the larval skeleton in sea urchins.

PRESENTATIONS AT CONFERENCES:

Walters, J. L. *, Binkley, E. M. *, Thaman, K. *, and **Romano, L. A.** (2006) Evolutionary analysis of the cis-regulatory region of *SM50*, a gene that is essential for skeletogenesis in the sea urchin. Developmental Biology of the Sea Urchin Meeting, Woods Hole, MA.

Poster presentation. *denotes undergraduate students

Walters, J. L. *, Binkley, E. M. *, Haygood, R., and **Romano, L. A.** (2006) Evolutionary analysis of the cis-regulatory region of *SM50*, a gene that is essential for skeletogenesis in the sea urchin. Society for Developmental Biology Meeting, Ann Arbor, MI. **Poster presentation.** *denotes undergraduate students

Cannon, L. E. *, Kiehl, N. I. *, and **Romano, L. A.** (2005) Preliminary work for investigating the evolution of transcriptional regulation of spicule matrix genes in the sea urchin. Developmental Biology of the Sea Urchin Meeting, Woods Hole, MA. **Poster presentation.** *denotes undergraduate students

Romano, L. A., and Wray, G. A. (2004) Antisense morpholinos directed against *LvEndo16* disrupt morphogenesis in the sea urchin embryo. Mid-Atlantic Regional Developmental Biology Conference. **Poster presentation.**

Romano, L. A., and Wray, G. A. (2003) Antisense morpholinos directed against *LvEndo16* disrupt morphogenesis in the sea urchin embryo. Developmental Biology of the Sea Urchin Meeting, Woods Hole, MA. **Poster presentation.**

Romano, L. A., and Wray, G. A. (2002) Functional analysis of evolutionary changes in the *endo16* promoter of sea urchins. Developmental Biology of the Sea Urchin Meeting, Woods Hole, MA. **Poster presentation.**

Romano, L. A., and Wray, G. A. (2002) *Endo16* is required for morphogenesis in *Lytechinus variegatus*. Developmental Biology of the Sea Urchin Meeting, Woods Hole, MA. **Poster presentation.**

Romano, L. A. and Wray, G. A. (2000) Evolution of *endo16* promoter structure and function. Developmental Biology of the Sea Urchin Meeting, Woods Hole, MA. **Oral presentation.**

Romano, L. A. and Runyan, R. B. (2000) *Slug* is an essential target of TGF β 2 signaling in the developing chicken heart. Weinstein Cardiovascular Development Conference, St. Louis, MO. **Oral presentation.**

Runyan, R. B., Wendler, C. C., **Romano, L. A.,** and Boyer, A. S. (2000) Epithelial-mesenchymal cell transformation is a multi-step process in the atrioventricular canal. Society for Experimental Biology. San Francisco, CA. *FASEB J.* **14(4)**, A272. **Oral presentation.**

Romano, L. A. and Runyan, R. B. (1999) *Slug* is a mediator of epithelial-mesenchymal cell transformation in the developing chicken heart. Weinstein Cardiovascular Development Conference, Tucson, AZ. **Poster presentation.**

Romano, L. A. and Runyan, R. B. (1998) The transcription factor *Slug* plays a role in the epithelial-mesenchymal cell transformation which occurs in the developing heart. Society for Experimental Biology. San Francisco, CA. *FASEB Journal.* **12(4)**, A46. **Oral presentation.**

Romano, L. A. and Runyan, R. B. (1998) The transcription factor *Slug* plays a role in the epithelial-mesenchymal cell transformation which occurs in the developing heart. Scientific Sessions of the Arizona Heart Association (Arizona Affiliate), Phoenix, AZ. **Poster presentation.**

Romano, L. A. and Runyan, R. B. (1998) The transcription factor *Slug* plays a role in the epithelial-mesenchymal cell transformation which occurs in the developing heart.

Weinstein Cardiovascular Development Conference, Nashville, TN. **Poster presentation.**

Romano, L. A. and Runyan, R. B. (1997) U-Pa is a marker of epithelial-mesenchymal cell transformation in vitro. Flinn Foundation Meeting, Phoenix, AZ. **Poster presentation.**

Romano, L. A. and Runyan, R. B. (1996) U-Pa is a marker of epithelial-mesenchymal cell transformation in vitro. Weinstein Cardiovascular Development Conference, Philadelphia, PA. **Poster presentation.**

Romano, L. A. and Runyan, R. B. (1996) U-Pa is a marker of epithelial-mesenchymal cell transformation in vitro. Scientific Sessions of the American Heart Association (Arizona Affiliate), Phoenix, AZ. **Poster presentation.**

Romano, L. A. and Fashing, N. J. (1993) The functional morphology of the chelicerae of six species of algophagid mites. Eastern Branch of the Entomological Society of America, Williamsburg, VA. **Poster presentation.**