

Research Interests	Evolution of vertebrate morphology with an emphasis on the morphogenesis of ecologically relevant traits. Comparative approaches to the study of organogenesis. Developmental evolution of lung loss in amphibians.	
Education	<p>Harvard University 2009 -</p> <p>PhD candidate in the laboratory of James Hanken Department of Organismic and Evolutionary Biology and Department of Herpetology, Museum of Comparative Zoology</p> <p>Reed College 2002 - 2006</p> <p>Bachelor of Arts in Biology</p>	
Publications	<p>McCarroll MN, Lewis ZR, Culbertson MD, Martin BL, Kimelman, D, Nechiporuk AV. 2012. Graded levels of Pax2a and Pax8 regulate cell differentiation during sensory placode formation. <i>Development</i> 139: 2740-2750.</p> <p>Culbertson MD, Lewis ZR, Nechiporuk AV. 2011. Chondrogenic and Gliogenic Subpopulations of Neural Crest Play Distinct Roles During the Assembly of Epibranchial Ganglia. <i>PLoS ONE</i> 6(9): e24443. doi:10.1371/journal.pone.0024443</p> <p>Lewis ZR, McClellan MC, Postlethwait JH, Cresko WA, Kaplan RH. 2008. Female-Specific Increase in Primordial Germ Cells Marks Sex Differentiation in Threespine Stickleback (<i>Gasterosteus aculeatus</i>). <i>Journal of Morphology</i> 269(8): 909-921. [Cover Article]</p> <p>Lewis ZR. 2006. Proliferation of Primordial Germ Cells and Sex Differentiation in Threespine Stickleback (<i>Gasterosteus aculeatus</i>). Baccalaureate thesis. 113 pages, defended before a panel of faculty.</p>	
Grants and Awards	<p>E.E. Williams Award, Society for the Study of Amphibians and Reptiles Apr. 2014 For plethodontid transcriptome sequencing.</p> <p>Barbour Award, Museum of Comparative Zoology Apr. 2014 Support for fieldwork and collection.</p> <p>Robert G. Goelet Award, Museum of Comparative Zoology Apr. 2013 For summer fieldwork and embryo collection.</p> <p>First prize, Harvard Integrated Life Sciences Gallery Night Mar. 2013 Photo submission to display of science artwork by Harvard graduate students.</p> <p>Sigma Xi Grant-in-Aid of Research Jan. 2013 Support for Next Generation Sequencing.</p> <p>Kenneth Miyata Award, Museum of Comparative Zoology Apr. 2012 Support for fieldwork.</p> <p>NSF Graduate Research Fellowship Sep. 2011 - Aug. 2014 \$121,500 over three years for stipend and tuition support. Title: "A developmental understanding of lung loss in salamanders."</p> <p>The William F. Milton Fund Award, Harvard Medical School 2011 - 2012 \$39,940 awarded to ZRL and James Hanken for reagents and equipment for the project "Lung Development in Lungless Salamanders."</p>	

Elected to Phi Beta Kappa

May 2007

Class of '21 Award

May 2007

Awarded by Reed College upon graduation, in recognition of “creative work of notable character, involving an unusual degree of initiative and spontaneity.”

Betty C. Liu Memorial Biology Research Fellowship

Feb. - Jul. 2007

\$5,000 awarded to ZRL and Maryanne C. McClellan for the investigation of primordial germ cell proliferation in threespine stickleback.

NAS Reed College Summer Research Fellowship

May - Aug. 2006

\$5,000 awarded to ZRL and Maryanne C. McClellan in order to design probes and protocols for whole-mount *in situ* hybridization on threespine stickleback embryos and fry.

Conference Grants

Harvard Graduate Student Council Conference Grants

2012, 2013, 2014

Charlotte Mangum Student Support Program Award (SICB)

2011, 2012, 2013

SDB Student Travel Award

2011

RIKEN Center for Developmental Biology (CDB) Travel Fellowship

2010

**Oral
Presentations**

Lewis ZR, Kerney RK, Dorantes J, Hanken J. “Lung Loss: Molecular and Morphological Consequences” International Congress of Vertebrate Morphology, Barcelona, Spain, July 2013

Lewis ZR, Kerney RK, Dorantes J, Hanken J. “Genetic and Morphological Vestiges of Lost Lungs in Plethodontid Salamanders ” Society for Integrative and Comparative Biology annual meeting, San Francisco, CA. Jan. 2013.

Lewis ZR, Kerney RK, Dorantes J, Hanken J. “Pulmonary surfactant proteins are expressed in lungless salamanders.” Society for Integrative and Comparative Biology annual meeting, Charleston, SC. Jan. 2012.

Lewis ZR. “Lung Development in Lungless Salamanders.” SICB Regional Meeting, Division of Vertebrate Morphology, Harvard University, Oct. 2010.

**Posters
Presentations**

Lewis ZR and Hanken J. “Co-evolution of heart and lung development in lungless salamanders.” Society for Integrative and Comparative Biology annual meeting, Austin, TX. Jan. 2014

Lewis ZR, Kerney RK, Dorantes J, Hanken J. “Extrapulmonary Expression of Surfactant Proteins in Lungless Salamanders” Keystone Lung Development, Cancer and Disease Symposium, Taos, NM. Feb. 2013.

Lewis ZR, Kerney RK, Hanken J. “Lung Development in Lungless Salamanders!” Society for Developmental Biology annual meeting, Chicago, IL. Jul. 2011.

Lewis ZR, Kerney RK, Hanken J. “Lung Development in Lungless Salamanders!” Keystone Lung Development and Repair Symposium, Santa Fe, NM. Feb. 2011.

Kerney RK, Lewis ZR, Hanken J. “Lung Development in Lungless Salamanders!” Society for Integrative and Comparative Biology annual meeting, Salt Lake City, UT. Jan. 2011.

Lewis ZR, Nechiporuk AV. “Origins of the Epibranchial Placodes and Ganglia in Zebrafish.” RIKEN CDB Symposium 2010 “Frontiers in Organogenesis,” Kobe, Japan. Mar. 2010.

Lewis ZR, Nechiporuk AV. “Cell Lineage of the Epibranchial Placodes and Ganglia in Zebrafish.” Northwest Developmental Biology Conference, Friday Harbor, WA. Mar. 2009.

Lewis ZR, McClellan MC, Postlethwait JH, Cresko WA, Kaplan RH. "Sex Differentiation in Threespine Stickleback." Northwest Developmental Biology Conference, Friday Harbor, WA. Mar. 2008.

Teaching	Teaching Fellow for "Herpetology" (OEB 167), Harvard University. Professors James Hanken and Jonathan Losos. Two sections. Spring 2014	
	Teaching Fellow for "Life Sciences 1b: Genetics, Genomics, and Evolution," Harvard University, Spring 2013. Professors Kevin Eggan, Hopi Hoekstra, Maryellen Ruvolo, and Pardis Sabeti. Section Size: 14 students.	
	Teaching Fellow for "From Egg to Embryo to Organ" (MCB 118/SCRB 118), Professor Andrew McMahon, Harvard University, Fall 2010.	
Professional Service	Peer Review: Transactions of the Royal Society of South Africa	2012
	Peer Review: PNAS	2014
	Curator and content contributor for the Encyclopedia of Life	2010 -
Outreach	Oral presentation, Science at the Seashore, Cape Cod National Seashore	2013
	Oral presentation, Pioneer Charter School of Science, Everett, MA	2013
	Active member of Harvard Life Sciences Outreach and Gradwagon	2010 -
Society Membership	The Society for Integrative and Comparative Biology	2010 -
	Society for Developmental Biology	2011 -
	American Association of Anatomists	2013 -
	The Herpetologists' League	2013 -
	Society for the Study of Amphibians and Reptiles	2013 -
Work Experience	Oregon Health and Science University	Research Assistant II
	Portland, OR	Feb. 2008 - Aug. 2009
	Investigated the morphogenesis of the peripheral nervous system in zebrafish by single cell labeling and fate-mapping, working with Dr. Alex Nechiporuk.	
	Reed College	Post-Baccalaureate Research Fellow
	Portland, OR	Feb. - Jul. 2007
	Researched gonadal sex differentiation in threespine stickleback through traditional histology and <i>in situ</i> hybridization under the guidance of Dr. Robert Kaplan and Dr. Maryanne McClellan.	
	Dr. Maryanne McClellan, Reed College	Research Associate
	Portland, OR	May - Aug. 2006
	Designed and created an <i>in situ</i> hybridization probe for germ cells in threespine stickleback, intended for use as a the earliest endpoint in studies of endocrine disruption on developing fry.	
	Reed College	Tutor
	Portland, OR	Jan. - May 2006
	Tutored in cellular biology.	
	Dr. Robert Kaplan, Reed College	Laboratory Assistant
	Portland, OR	May - Aug. 2005
	Assisted in a study of <i>Bombina orientalis</i> development.	
	Center for Health Studies, Group Health Cooperative	Research Assistant
	Seattle, WA	Jun. - Aug. 2001
	Created cost-effectiveness models for the implementation of cystic fibrosis screening within a large HMO.	