

# MARYNA P LESOWAY

SCRIPPS INSTITUTION OF OCEANOGRAPHY • UNIVERSITY OF CALIFORNIA, SAN DIEGO  
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## PROFESSIONAL EXPERIENCE :

- Postdoctoral Scholar** 2020-present  
*Scripps Institution of Oceanography, University of California, San Diego*  
*Advisor: Deirdre Lyons*
- Postdoctoral Research Associate** 2018–2020  
**FRQNT Postdoctoral Fellow** 2016–2018  
*Department of Cell and Developmental Biology, University of Illinois at Urbana-Champaign*  
*Advisor: Jonathan Henry*

## EDUCATION :

- Doctor of Philosophy, Biology, Neotropical Environment Option** 2015  
*McGill University, Montreal, QC, Canada*  
*Smithsonian Tropical Research Institute (STRI), Panama, Republic of Panama*  
*Advisors: Ehab Abouheif (McGill), Rachel Collin (STRI)*  
Thesis: Direct Development with Nutritive Embryos: Developmental Polyphenisms in Evolution and Development
- Certificat en Sciences de l'environnement** 2009  
*Université du Québec à Trois-Rivières, Trois-Rivières, QC, Canada*
- Master of Science, Biology** 2004  
*University of Victoria, Victoria, BC, Canada*  
*Advisor: Louise R. Page*  
Thesis: Comparing gastropods during delay of metamorphosis: Post-competent growth of larvae of the caenogastropod *Euspira lewisii* and the heterobranchs *Haminoea vesicula* and *Onchidoris bilamellata*
- Bachelor of Science, Zoology** 2001  
*University of Calgary, Calgary, AB, Canada*

## GRANTS AWARDED :

- National Science Foundation, Division of Integrative Organismal Systems.** 2018-2020  
Principal Investigator: Jonathan Henry. IOS #1827533, \$300,000.00 USD.  
*Enabling Discovery through GENomic tools (EDGE): Generating Tools to Study Spiralian Development.*  
Role: Co-wrote grant, named post-doctoral researcher.
- Society for Developmental Biology.** Emerging Models Grant. \$5000 USD. 2017  
*Crepidula atrasolea : A new model for sex change in a sequential hermaphrodite.*  
Role: Principal Investigator.

**PUBLICATIONS :***SUBMITTED PUBLICATIONS :*

Taraporevala, N\*, **Lesoway MP**, Goodheart JA, Lyons DC. *Submitted*. 2022. *Precocious sperm exchange in the simultaneously hermaphroditic nudibranch, Berghia stephanieae*.  
<https://www.biorxiv.org/content/10.1101/2022.03.02.482740v1> \* Undergraduate Mentee

*PEER-REVIEWED PUBLICATIONS :*

- Lesoway MP**, and Henry JQ. 2021. *Retinoids promote penis development in sequentially hermaphroditic snails*. *Dev Biol*. 478: 122–132. doi: 10.1016/j.ydbio.2021.06.013
- Collin R, Shishido C, Cornejo A, **Lesoway MP**. 2021. *Ancestral form and function of larval feeding structures are retained during development of non-planktotrophic gastropods*. *Int J Dev Biol*. 65: 413–425. doi: 10.1387/ijdb.200154rc
- Henry JQ, **Lesoway MP**, and Perry KJ. 2020. *An automated aquatic rack system for rearing marine invertebrates*. *BMC Biology*. 18: 46. doi: 10.1186/s12915-020-00772-w
- Armisen D, and 54 co-authors [including **Lesoway MP**]. 2018. *The genome of the water strider Gerris buenoi reveals expansions of gene repertoires associated with adaptations to life on the water*. *BMC Genomics*. 19: 832. doi:10.1186/s12864-018-5163-2
- Henry JQ, **Lesoway MP**, Perry KJ, Osborne CC, Shankland M, and Lyons DC. 2017. *Beyond the Sea: Crepidula atrasolea as a spiralian model system*. *Int J of Dev Biol*. 61: 479–493. doi: 10.1387/ijdb.170110jh
- Lesoway MP**, Collin R, and Abouheif E. 2017. *Early activation of MAPK and apoptosis in nutritive embryos of calyptraeid gastropods*. *J Exp Zool B: Mol Dev Evol*. 328:449–461. doi: 10.1002/jez.b.22745
- Lesoway MP**, Abouheif E, and Collin R. 2016. *Comparative transcriptomics of alternative developmental phenotypes in a marine gastropod*. *J Exp Zool B: Mol Dev Evol*. 326:151–167. doi: 10.1002/jez.b.22674
- Lesoway MP**. 2016. *The Future of Evo-Devo: The Inaugural Meeting of the Pan American Society for Evolutionary Developmental Biology*. *Evol Dev*. 18:71–77. doi: 10.1111/ede.12181
- Lesoway MP**, Abouheif E, and Collin R. 2014. *The development of viable and nutritive embryos in the direct developing gastropod Crepidula navicella*. *Int J Dev Biol*. 58: 601–611. doi: 10.1387/ijdb.140136rc
- McDonald KA, Collin R and **Lesoway MP**. 2014. *Poecilogony in the caenogastropod Calyptraea lichen*. *Invert Biol*. 133: 213–220. doi: 10.1111/ivb.12057
- Abouheif E, Favé MJ, Ibarrarán-Viniegra AS, **Lesoway MP**, Rafiqi AM, and Rajakumar R. 2014. *Eco-evo-devo: The time has come*. In: *Ecological Genomics: Ecology and the Evolution of Genes and Genomes*. C. Landry and N. Aubin-Horth (eds.). Springer. doi: 10.1007/978-94-007-7347-9\_6
- Lyons DC, Perry KJ, **Lesoway MP**, Henry JQ. 2012. *Cleavage pattern and fate map of the mesentoblast, 4d, in the gastropod Crepidula: a hallmark of spiralian development*. *EvoDevo*. 3:21. 19 September 2012. doi:10.1186/2041-9139-3-21
- Lesoway MP** and Page LR. 2008. *Growth and differentiation during delayed metamorphosis of feeding gastropod larvae: signatures of ancestry and innovation*. *Mar Biol*. 153: 723–734. doi:10.1007/s00227-007-0849-z

*INVITED REVIEWS :*

- Lesoway MP** and Henry JQ. 2019. *Sex Determination and Sex Change in Slipper Snails*. In: *Evo-Devo: Non-model Species in Cell and Developmental Biology*. Eds: W Tworzydło and S Bilinski. Results and Problems in Cell Differentiation. Springer. doi: 68. 10.1007/978-3-030-23459-1
- Lesoway MP** and Henry JQ. 2019. *Twisted shells, spiral cells, and asymmetries: Evo-Devo lessons learned from gastropods*. In: *Evolutionary Developmental Biology: A Reference Guide*. Eds: GB Müller and L Nuño de la Rosa. Springer. doi:10.1007/978-3-319-33038-9\_179-1

*NON-PEER REVIEWED PUBLICATIONS :*

- Lesoway MP**. 2021. *In the Spotlight -- Postdoc*. *J Exp Zool B: Mol Dev Evol*. 336: 5– 6. doi: 10.1002/jez.b.22991

**PRESENTATION AWARDS :**

1st Place, Postdoctoral Podium Talk Competition, \$200 USD. August 2019  
*Sex change in marine snails: leveraging ecotoxicology to identify developmental mechanisms.*  
 Pan-American Society for Evolutionary Developmental Biology. 3rd Biennial Meeting, Miami, FL.

**INVITED PRESENTATIONS:**

*Cannibals and sexual deviants : Calyptraeid gastropods as a model for eco-evo-devo.* October 2021  
 Department of Biology. University of Saskatchewan, Saskatoon, SK, Canada. (Virtual)

*Calyptraeid gastropods : a model clade for eco-evo-devo.* November 2019  
 Spiralian White Paper Meeting.  
 Whitney Laboratory for Marine Biosciences, St. Augustine, FL, USA.

*Generating molecular tools to study gastropod development.* August 2019  
 Symposium : Utility of Molluscan Genomics. World Congress of Malacology. Pacific Grove, CA, USA.

*Career and Research : The view from here.* July 2019  
 REU Student Program. Marine Biological Laboratory, Woods Hole, MA, USA.

**SELECTED PRESENTATIONS:**

Talk. *Virtual Evolution 2021.* Online. June 2021

Selected Talk. *3<sup>rd</sup> Biennial Meeting, Pan-American Society for Evolutionary Biology.* August 2019  
 Miami, FL, USA.

Poster. *Society for Developmental Biology 78th Annual Meeting.* Boston, MA, USA. July 2019

Talk. *Annual Meeting of the Canadian Society of Zoologists.* Windsor, ON, Canada. May 2019

Poster. *National Science Foundation, 1<sup>st</sup> Annual EDGE (Enabling Discovery through GENomic Tools) Awardee Meeting.* Alexandria, VA, USA. April 2019

Outreach Talk. *Coastal Interpretive Training, MA State Park Interpretive Staff.* June 2018  
 Waquoit Bay National Estuarine Research Reserve. Waquoit, MA, USA.

Selected Talk. *29th CDB Meeting: Mavericks, New Models in Developmental Biology.* October 2017  
 RIKEN Center for Developmental Biology (CDB). Kobe, Japan.

Selected Talk. *2nd Biennial Meeting, Pan-American Society for Evolutionary Developmental Biology.* August 2017  
 Calgary, AB, Canada.

Talk. *Quebec Centre for Biodiversity Science Symposium.* Montreal, QC, Canada. October 2015

Talk. *Annual Meeting of the Canadian Society of Zoologists.* Calgary, AB, Canada. May 2015

Talk. *BESS (Biodiversity, Ecosystem Services, and Sustainability) / NEO (Neotropical Environment Option) Symposium 2015.* May 2015  
 McGill University, Montreal, QC, Canada.

**RESEARCH AWARDS :**

Whitman Center Early Career Investigator Award, approx. \$20,000 USD. Summer 2018  
*Understanding sex change in marine snails: leveraging ecotoxicology to identify developmental mechanisms.*  
 Marine Biological Laboratory, Woods Hole, MA, USA.

Whitman Center Early Career Investigator Award, \$25,706 USD. Summer 2017  
*Sex change and reproductive development in sequentially hermaphroditic marine snails.*  
 Marine Biological Laboratory, Woods Hole, MA, USA.

Bourse de recherche postdoctorale, \$70,000 CAD. 2016–2018  
*Changements de sexe: mécanismes moléculaires et influences environnementales chez Crepidula, un hermaphrodite séquentiel. Sex change: molecular mechanisms and environmental influences in Crepidula, a sequential hermaphrodite.*  
 Fonds de recherche du Québec - Nature et technologies (FRQNT).

International Research Travel Award, \$2147 CAD. <i>Department of Biology, McGill University.</i>	Sept 2013
International Research Travel Award, \$1700 CAD. <i>Department of Biology, McGill University.</i>	April 2013
Research Travel Award, \$1300 CAD. <i>Department of Biology, McGill University.</i>	April 2012
EDEN Research Exchange Award, \$3000 USD. <i>Evo-Devo-Eco Network (EDEN), NSF Research Coordination Network. MAPK activation in two closely related species of gastropod molluscs. Hosted by Dr. Jonathan Henry, University of Illinois at Urbana-Champaign.</i>	May 2011
Bourse de doctorat en recherche, \$60,000 CAD. <i>Direct development with nutritive embryos in the calyptraeid gastropods: Mechanisms and evolutionary transitions. Fonds de recherche du Québec - Nature et technologies (FRQNT).</i>	2009–2012
Graduate Research and Teaching Fellowship, \$8,200 CAD. <i>University of Victoria.</i>	2001–2004
<b>OTHER AWARDS :</b>	
Travel Award, \$330 USD. <i>Pan-American Society for Evolutionary Developmental Biology.</i>	August 2019
Travel Fellowship, ¥115,000 JPY. <i>RIKEN Center for Developmental Biology, Kobe, Japan.</i>	October 2017
Travel Award, \$260 USD. <i>Pan-American Society for Evolutionary Developmental Biology.</i>	August 2017
Excellence Award, \$928 CAD. <i>Quebec Centre for Biodiversity Sciences.</i>	April 2015
Student Travel Award, \$250 CAD. <i>Canadian Society of Zoologists.</i>	April 2015
Excellence Award, \$245 CAD-DECLINED. <i>Quebec Centre for Biodiversity Sciences.</i>	May 2014
GREAT Travel Award, \$270 CAD. <i>Department of Biology, McGill University.</i>	May 2014
GREAT/GTC Travel Award, \$500 CAD. <i>Department of Biology, McGill University.</i>	January 2012
Excellence Award, \$1319 CAD. <i>Quebec Centre for Biodiversity Sciences.</i>	January 2012
Fellows' Travel Award, \$600 USD. <i>Smithsonian Tropical Research Institute.</i>	Sept 2011
Student Financial Support, \$1400 USD. <i>Friday Harbor Laboratories, University of Washington.</i>	June 2010
Excellence Award, \$2500 CAD. <i>Quebec Centre for Biodiversity Sciences.</i>	June 2010
Charlotte Mangum Student Support, \$130 USD. <i>Society for Integrative and Comparative Biology.</i>	January 2010
GREAT/GTC Travel Award, \$1000 CAD. <i>Department of Biology, McGill University.</i>	January 2010
Provost's Graduate Fellowship, \$5,000 CAD. <i>McGill University.</i>	Sept 2009
Principal's Graduate Fellowship, \$5,000 CAD. <i>McGill University.</i>	Sept 2009
STRI-NEO-McGill Fellowship, \$5,000 CAD. <i>McGill University.</i>	Sept 2009

**PROJECT SUPERVISION AND MENTORSHIP :**

\* *Co-author on a publication, + Presented work at Meeting or Conference*

Molly Rivers. PhD Student, University of Aberdeen. Scotland. Advisor: Victoria Sleight <i>Project: GRNs in shell development of Crepidula and role in response to ocean acidification.</i> External Thesis Advisor.	2022 – present
Rebecca Lopez-Anido. Laboratory Research Assistant, UC San Diego. <i>Project: Gene Regulatory Network validation in Crepidula.</i>	2021 – present
Neville Taraporevala <sup>*+</sup> . Undergraduate, UC San Diego. <i>Project: Reproductive timing and development of the nudibranch, Berghia stephaniae.</i>	2020 – present
Lauren Serrano <sup>+</sup> . Undergraduate, UC San Diego. <i>Project: Expression of shell matrix proteins in Crepidula atrasolea,</i> <i>Scripps Undergraduate Research Fellowship (SURF) Research Experience for Undergraduates.</i>	2020 – present
Amina Niaz. Undergraduate, University of Illinois at Urbana-Champaign. <i>Project: Endocrine disruption in the sequential hermaphrodite, Crepidula atrasolea.</i>	2017 – 2018

**INSTITUTIONAL SERVICE :**

PASEDB Media Officer. Pan-American Society for Evolutionary Developmental Biology. • Responsible for implementation of social media marketing of the society.	2019 – 2023
Informal Mentor. Choose Development, Society for Developmental Biology. • Providing guidance, support, and mentorship to undergraduate research students with the goal of increasing representation of minority groups in developmental biology.	2019 – 2020
Committee Member. CDB Careers Committee. University of Illinois, Urbana, IL • Assist with identifying, inviting, and hosting speakers, ideally graduates of the department, representing diverse post-doctoral career paths.	2018 – 2020
Student Representative, Neotropical Environment Option. McGill University / Smithsonian Tropical Research Institute. • Represent student concerns to administration and faculty, organizing meetings student/faculty meetings, creation of student-only listserv to facilitate communication.	2010 – 2014

**SERVICE AS A REVIEWER :**

*JOURNALS* : BMC Evolutionary Biology; EvoDevo; G3: Genes, Genomes, Genetics; Journal of Experimental Zoology B: Molecular and Developmental Evolution; Journal of Molluscan Studies; Journal of Sea Research; Marine Biology; PloS ONE; Regional Studies in Marine Science  
*GRANTING AGENCIES* : National Science Foundation, Division of Ocean Sciences

**COURSE AND WORKSHOP PARTICIPATION :**

Gene Regulatory Networks for Development (POSTPONED). Marine Biological Laboratory. Woods Hole, MA, USA.	October 2021
Summer School in Evolutionary Developmental Biology: From Gene Networks to Organismal Systems. Istituto Veneto di Scienze, Lettere ed Arti. Venice, Italy.	Sept 2013
Tomlinson Project in University-Level Science Education (T-PULSE) Graduate Teaching Workshop. McGill University. Montreal, QC, Canada.	January 2013
Next Generation Sequencing Workshop. Smithsonian Institution. Washington, DC, USA.	October 2011
Comparative Invertebrate Embryology. Friday Harbor Laboratories, University of Washington. Friday Harbor, WA, USA.	Summer 2010

**TEACHING EXPERIENCE :***UNDERGRADUATE-LEVEL TEACHING ASSISTANT :*

Laboratory Instructor. Biology 112: Cell and Molecular Biology. McGill University. Montreal, QC, Canada.	2013, 2014
Laboratory Instructor. Biology 111: Principles: Organismal Biology. McGill University. Montreal, QC, Canada.	2013
Teaching Assistant. Biology 304: Evolution. McGill University. Montreal, QC, Canada.	2012
Laboratory Instructor. Biology 321: Survey of the Invertebrates. University of Victoria, Victoria, BC, Canada.	2001–2003
Laboratory Instructor. Biology 322: Invertebrate Adaptations. University of Victoria, Victoria, BC, Canada.	2002, 2003

*COURSE COORDINATION :*

Laboratory Coordinator. Biology 322: Invertebrate Adaptations. University of Victoria, Victoria, BC, Canada.	2003
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*FIELD COURSE INSTRUCTION :*

Research Facilitator. Embryology: Concepts and Techniques in Modern Developmental Biology. Marine Biological Laboratory. Woods Hole, MA, USA.	2019, 2011
Instructor. Curso de Introducción a las Ciencias Biológicas. Laboratorios Marinos Galeta. Smithsonian Tropical Research Institute. Galeta, Panama.	Nov 2011

*CLASSROOM INSTRUCTION :*

Replacement Teacher, Mathematics. Secondary 1-3 (Grades 7-9). Substitute Teacher, Various. Secondary 1-5 (Grades 7-11). Three Rivers Academy. Central Quebec School Board. Trois-Rivières, QC, Canada.	2008
English Language Monitor. Secondary 1-5 (Grades 7-11) Odyssey Program, Heritage Canada. École Sécondaire Val-Mauricie, Commission Scolaire de l'Énergie. Shawinigan-Sud, QC, Canada.	2008–2009
Language Specialist (ALT). Kindergarten, Primary, Secondary, Adult. Japan Exchange and Teaching (JET) Programme, Kamikawa Town Board of Education. Kamikawa-cho, Hokkaido, Japan.	2005–2007

**REFERENCES :****Dr. Ehab Abouheif****Professor***Ph.D. Supervisor*

Department of Biology,

McGill University

Stewart Biological Sciences

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1205 Docteur Penfield

Montreal, QC, Canada H3A 1B1

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**Dr. Jonathan Henry****Professor***Postdoctoral Advisor*

Department of Cell and

Developmental Biology,

University of Illinois at Urbana-

Champaign

601 South Goodwin Avenue

Urbana, IL, USA 61801

e-mail: j-henry4@illinois.edu

**Dr. Deirdre Lyons****Assistant Professor***Postdoctoral Advisor*

Centre for Marine

Biotechnology and Biomedicine,

Scripps Institution of

Oceanography,

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