

Lauren E. Shipp

leshipp.com

EDUCATION

- 2009-2015 Ph.D. in Marine Biology. Scripps Institution of Oceanography (SIO), University of California, San Diego (UC San Diego).
- 2009-2012 M.S. in Oceanography. SIO, UC San Diego.
- 2001-2006 B.A. in Integrative Biology with Physiology emphasis. Minor in English. University of California, Berkeley (UC Berkeley).

TEACHING and CURRICULUM DEVELOPMENT

College Level

- 2023 **Lecturer**, *Marine Biochemistry*, SIO 181. Scripps Institution of Oceanography. UC San Diego.
As the sole instructor of record, I give lectures, prepare course materials, create practice questions and activities, write exams, and manage Teaching Assistants.
- 2019 **Substitute Instructor** and **Instructional Trainee**, *Applied Biotechnology II*, BIOL 133. Department of Biology. Miramar College.
As a substitute instructor, I gave pre-lab lectures, led laboratory exercises and discussions, and created practice activities. As an instructional trainee, I learned strategies for equity-focused biotechnology instruction and contributed to instruction as needed.
- 2016 **Adjunct Professor**, *Introduction to Cellular Processes Laboratory*, BIOL 225L. Department of Biology. University of San Diego.
As the sole instructor of record, I gave pre-lab lectures, led laboratory exercises and discussions, prepared course materials, and wrote and graded exams.
- 2015 Invited Speaker, *Biology Capstone Seminar*, BIOL 495. University of San Diego.
- 2014 **Adjunct Lecturer**, *Introduction to Cellular Processes*, BIOL 225. Department of Biology. University of San Diego.
As the sole instructor of record, I gave lectures, led discussions, prepared course materials, and wrote and graded exams.
- 2013 Teaching Assistant, *Pollution, Health, and Environment*, SIO 189/289. UC San Diego.
Course Professor: Amro Hamdoun, Ph.D.
In addition to my Teaching Assistant responsibilities, I wrote and taught two lectures on Endocrinology and Endocrine Disruption.
- 2012 **Curriculum design contributor** for Marine Biology undergraduate major at SIO. UC San Diego.
I created an undergraduate laboratory activity and corresponding lab manual section, which are now part of the upper division core course SIO 136, *Marine Biology Laboratory*. I created this as part of the graduate course *Designing Laboratory Exercises*.

High School Level

- 2018-present **Director**, Amgen Biotech Experience-San Diego outreach program. San Diego Miramar College.
I provide curriculum, professional development, reagents, equipment, and support to empower teachers to bring hands-on biotechnology to their high school classrooms. I also support student career development in biology with a focus on underserved communities.
- 2020-present **Lead Science Educator & Content Expert**, Illumina Genomic Discoveries outreach program. Biocom California Institute.
I develop curriculum, labs, and professional development to empower teachers to bring advanced sequencing biotechnology to their high school classrooms. My team provides reagents, equipment, and subject matter expertise to support teachers.
- 2018-present **Faculty Instructor**, Marine Model Systems and *In Vitro* Fertilization. Reproductive and Oncofertility Science Academy (ROSA) teacher training program. UC San Diego.
I train high school teachers to design and implement a fertilization lab in their classrooms.
- 2011-present **Faculty Instructor**, Fertilization and Early Development. ROSA. UC San Diego.
I created and teach a lecture and lab exercise in this summer program for high school girls, providing hands-on training in the biology of reproduction and fertility following cancer.
- 2016 Instructor, March of Dimes High School Science Day. Salk Institute.
- 2012-2014 Guest Laboratory Instructor, Biology. High Tech High School, San Diego, CA; Canyon High School, Spring Valley, CA; Helix High School, La Mesa, CA.

FELLOWSHIPS and SCHOLARSHIPS

- 2016-2017 Glenn Center for Research on Aging Postdoctoral Fellowship.
- 2016 Salk Pioneer Fund Postdoctoral Scholar Award.
- 2014-2015 Philanthropic Educational Organization (P.E.O.) Scholarship.
- 2013-2015 National Science Foundation Graduate Research Fellowship (NSF GRF)
- 2012-2015 Achievement Rewards for College Scientists (ARCS) Scholarship.
- 2010-2013 National Defense Science & Engineering Graduate (NDSEG) Fellowship.
- 2006 Undergraduate Research Apprenticeship Summer Fellowship.
- 2001-2006 Full Athletic Scholarship, NCAA Division I Women's Gymnastics, UC Berkeley.

AWARDS and HONORS

- 2021 Athena Pinnacle Award Nominee.
- 2015 Best Student Presentation, 3rd place, Society for Developmental Biology National Meeting, Snowbird, UT.
- 2015 Best Student Oral Presentation, Society for Developmental Biology West Coast Meeting, Yosemite, CA.
- 2014 Best Student Oral Presentation, Molecular Reproduction and Development, AAAS Pacific Division Meeting, Riverside, CA.

- 2010 Equal Opportunity/Affirmative Action & Diversity Award, UC San Diego.
 2006 Rhodes Scholarship Nominee.
 2005 NCAA Academic All-American.
 2005 Dean's Honor List, UC Berkeley.
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OTHER OUTREACH and MENTORING

- 2018-2022 Mentor for Miramar College student McKenna Stamp, Miramar College.
 Currently completing an internship at the Salk Institute for Biological Studies.
- 2018-2019 Mentor for Miramar College students Joy Baal and Amy Manary. Miramar College.
 Joy is currently working in academic research.
- 2016-2017 Mentor for UC San Diego undergraduate student Eric Liang. Salk Institute.
 Currently working in biotechnology.
- 2015 Educator for Birch Aquarium Eggstravaganza event. SIO, UC San Diego.
 I created an interactive exhibit to demonstrate echinoderm fertilization and early development.
- 2011-2014 Mentor for undergraduate students Rose Hill, Lisa Mesrop, Boris Stepanyuk, Alysha Vu. UC San Diego.
 Currently these students are either pursuing advanced degrees, completing postdoctoral research, or working in biotechnology.
- 2010,12 Summer mentor for high school students through Focus on the Future: the Compton – UC San Diego Connection program. UC San Diego.
 I was awarded a UC San Diego Equal Opportunity/Affirmative Action & Diversity Award for co-creating this program.
- 2011 Mentor for undergraduate student Saloni Mehta through Scripps Undergraduate Research Fellowship (SURF) program. UC San Diego.
 Currently working in biotechnology after completing a Ph.D. in Neuroscience.
- 2006-2009 Mentor for undergraduate students Jason Chan, Olivia Dong, Lily Lam, Joyce Lee, Michelle Lew, Cam Phu, Sandy Sun, Joanna Tran, David Wei, Mei Wu. UC Berkeley.
 Currently all of these students have completed advanced degrees in biology or health sciences.
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ACADEMIC and RESEARCH EXPERIENCE

- 2018-2023 Visiting Scholar. UC San Diego.
- 2018-2019 Collaborating Researcher. Salk Institute for Biological Studies.
- 2015-2017 Postdoctoral Researcher. Salk Institute for Biological Studies.
 Advisor: Sreekanth Chalasani, Ph.D.
 Research Area: molecular neurobiology and behavior in the roundworm, *C. elegans*
- 2009-2015 Graduate Student Researcher. SIO, UC San Diego.
 Advisor: Amro Hamdoun, Ph.D.
 Research Area: cell signaling and protection in embryos of the sea urchin, *S. purpuratus*

- 2006-2009 Staff Research Associate & Laboratory Manager. Department of Nutritional Science & Toxicology, UC Berkeley.
Principal Investigator: Jen-Chywan (Wally) Wang, Ph.D.
Research Area: endocrine control of gene regulation and cell physiology in mammals
- 2005-2006 Undergraduate Student Researcher. Department of Integrative Biology, UC Berkeley.
Advisor: Sheila Patek, Ph.D.
Research Area: behavior and biomechanics of sound production in the California spiny lobster, *P. interruptus*
Field work: USC Wrigley Marine Science Center; 2006, 2008
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PUBLICATIONS

10. Shipp LE, Hill RZ, Hamdoun A. A teaching laboratory on the activation of xenobiotic transporters at fertilization of sea urchins. *Methods in Cell Biology*. 2019; 150: 429-447.
9. Gökırmak T, Campanale JP, Reitzel AM, Shipp LE, Moy GW, Hamdoun A. Functional diversification of sea urchin ABCC1 (MRP1) by alternative splicing. *American Journal of Physiology – Cell Physiology*. 2016 Jun; 310 (11): C911-920.
8. *°Shipp LE, Hill RZ, Moy GW, Gökırmak T, Hamdoun A. ABCC5 is required for cAMP-mediated hindgut invagination in sea urchin embryos. *Development*. 2015 Oct; 142 (20): 3537-3548.
*Cover Article
°Featured as Editors' Choice in *Science Signaling*. 2015 Oct 27; 8 (400) ec310.
7. *Gökırmak T, Shipp LE, Campanale JP, Nicklisch SC, Hamdoun A. Transport in technicolor: Mapping ATP-binding cassette transporters in sea urchin embryos. *Molecular Reproduction and Development*. 2014 Sep; 81 (9): 778-793.
*Cover Article
6. Gökırmak T, Campanale JP, Shipp LE, Moy GW, Tao H, Hamdoun A. Localization and substrate selectivity of sea urchin multidrug (MDR) efflux transporters. *Journal of Biological Chemistry*. 2012 Dec; 287 (52): 43876-83.
5. Shipp LE, Hamdoun A. ATP-binding cassette (ABC) transporter expression and localization in sea urchin development. *Developmental Dynamics*. 2012 Jun; 241 (6): 1111-1124.
4. Shipp LE, Lee JV, Yu CY, Pufall M, Zhang P, Scott DK, Wang JC. Transcriptional regulation of human dual specificity protein phosphatase 1 (DUSP1) gene by glucocorticoids. *PLoS One*. 2010 Oct 29; 5 (10): e13754.
3. Roohk DJ, Varady KA, Turner SM, Emson CL, Gelling RW, Shankaran M, Lindwall G, Shipp LE, Scanlan TS, Wang JC, Hellerstein MK. Differential in vivo effects on target pathways of a novel arylpyrazole glucocorticoid receptor modulator compared with prednisolone. *Journal of Pharmacology and Experimental Therapeutics*. 2010 Apr; 333 (1): 281-289.
2. Koliwad SK, Kuo T, Shipp LE, Gray NE, Backhed F, So AY, Farese RV Jr, Wang JC. Angiopoietin-like 4 (ANGPTL4, fasting-induced adipose factor) is a direct glucocorticoid receptor target and participates in glucocorticoid-regulated triglyceride metabolism. *Journal of Biological Chemistry*. 2009 Sep 18; 284 (38): 25593-601.

1. Patek SN, **Shipp LE**, Staaterman E. The acoustics and acoustic behavior of the California spiny lobster (*Panulirus interruptus*). *Journal of the Acoustical Society of America*. 2009 May; 125 (5): 3434-43.
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SELECTED PRESENTATIONS and PUBLISHED ABSTRACTS

- Shipp LE**, Bowers-Gentry R. Pathways to Biotech: the Miramar College K12-to-Career Pipeline. Department of Defense STEM Technical Exchange. Washington, DC, USA. 2023 Feb. Oral presentation.
- Shipp LE**, Liang EK, Chalasani SH. Neuronal control of reproduction and health. Salk Science at the Seaside. La Jolla, CA, USA. 2016 Oct. Poster.
- **Shipp LE**, Hill RZ, Moy GW, Gökırmak T, Tresguerres M, Hamdoun A. ABCC5 is required for cAMP-mediated hindgut invagination in sea urchin embryos. Society for Developmental Biology, National Meeting. Snowbird, UT, USA. 2015 Jul. Poster.
- **Award Recipient.**
- **Shipp LE**, Hill RZ, Moy GW, Gökırmak T, Hamdoun A. The ATP-binding cassette transporter ABCC5a in pigment cells is required for sea urchin gastrulation. Society for Developmental Biology, West Coast Meeting. Yosemite, CA, USA. 2015 Mar. Oral presentation.
- **Award Recipient.**
- **Shipp LE**, Hill RZ, Moy GW, Gökırmak T, Hamdoun A. Expression of the ATP-binding cassette transporter Sp-ABCC5a in pigment cells is required for sea urchin gastrulation. AAAS Pacific Division. Riverside, CA, USA. 2014 Jun. Oral presentation.
- **Award Recipient.**
- Shipp LE**, Hill RZ, Moy GW, Gökırmak T, Hamdoun A. Expression of the ATP-Binding Cassette transporter Sp-ABCC5a in pigment cells is required for sea urchin gastrulation. Developmental Biology of the Sea Urchin XXII. Woods Hole, MA, USA. 2014 Apr. Poster.
- Shipp LE**, Moy GW, Hamdoun A. The potential role of ABC transporters in glycosaminoglycan efflux during sea urchin development. Glycobiology Symposium. San Diego, CA, USA. 2013 Jan. Oral presentation.
- Shipp LE**, Moy GW, Gökırmak T, Hamdoun A. Spatial and temporal profiling of ATP-binding cassette (ABC) transporters reveals a role for ABCC5a in archenteron fusion. Developmental Biology of the Sea Urchin XXI. Woods Hole, MA, USA. 2012 Oct. Oral presentation.
- Shipp LE**, Hamdoun A. Developmental expression of ATP-binding cassette (ABC) transporters in sea urchins. FEBS-ABC2012. Innsbruck, Austria. 2012 Mar. Poster.
- Shipp LE**, Gökırmak T, Hamdoun A. Expression of ATP-binding cassette transporters in sea urchins. Pollution Responses in Marine Organisms. Long Beach, CA, USA. 2011 May. Poster.
- Shipp LE**, Patek SN. Two sides to sound production: behavior and pulse patterns in spiny lobsters. Society of Integrative & Comparative Biology. Phoenix, AZ, USA. 2007 Jan. Poster.
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SERVICE and SHARED GOVERNANCE

2023-present	Los Angeles Mission College Advisory Board member
2022-present	Department of Defense STEM Education Consortium Underrepresented Youth Working Group member
2020-2022	Amgen Biotech Experience Equity Access Engagement working group member
2021	California Statewide Supply Chain Faculty Task Force
2009-2015	Scripps Community Outreach Program for Education (SCOPE) member
2009-2015	Graduate Women in Science & Engineering UC San Diego (GradWiSE) member
2009-2014	Grassroots Diversity Action Working Group at SIO (GDAWG-SIO) member
2010-2011	Scripps Library Committee, student representative
2010	Focus on the Future Team at SIO, founding member I co-created a summer program to bring Compton High School students to UC San Diego for a three-week immersive education experience.
2010	Scripps Faculty Hiring Committee, student representative
2006-2007	English as a Second Language teacher. East Bay Sanctuary, Berkeley, CA.

SOCIETY MEMBERSHIPS

2014-present	Sigma Xi Scientific Research Society, Associate Member
2013-present	Golden Key International Honor Society member, UC San Diego chapter
2015-2017	Genetics Society of America member
2012-2016	Society for Developmental Biology Member
2012-2016	AAAS member via AAAS/Science Program for Excellence in Science

UNDERGRADUATE NCAA DIVISION I ATHLETIC HONORS

2001-2005	Scholarship Athlete on UC Berkeley Women's Gymnastics Team
2004-2015	School Record Holder on the Vault
2005	NCAA Strength & Conditioning All-American
2004-5	Team Captain; Women's Gymnastics Endowment Awardee
2003,5	Pac-10 All-Academic Honors