

# Laura B. Chipman

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**SUMMARY:** Thoughtful and hardworking University of California San Diego Biological Sciences PhD student graduating in July 2022 with expertise in molecular, bioinformatic, and genetics methodologies. Impactful scientist, effective communicator, and changemaker looking to help bring innovative medicines to patients.

## EDUCATION:

2022 **UC San Diego/Salk Biological Sciences PhD Program** San Diego, CA  
2014 **University of Washington** Seattle, WA

- B.S. in Biochemistry (Minor in Classical Studies)

## AWARDS and HONORS:

2021-2022 **David V. Goeddel Endowed Graduate Fellowship** – UC San Diego Division of Biological Sciences  
2018-2021 **ARCS Scholar** – San Diego ARCS Foundation  
2017-2020 **NSF Graduate Research Fellow** – National Science Foundation  
2016-2017 **Cell, Molecular, & Genetic Training Grant Affiliate** – UC San Diego  
2010-2014 **Dean's List** – University of Washington  
2014 **Husky Leadership** – University of Washington

## RESEARCH EXPERTISE:

### Molecular Biology

Isolation and detection of DNA/RNA/Protein, qPCR, TaqMan qPCR, Northern Blots, Western blots

### Genetic Techniques

Creating CRISPR/cas9 mutations in *C. elegans*, strain maintenance and crossing in mice and *C. elegans*, performing phenotypic assays (lifespan, heat shock, brood size)

### Sequencing & Bioinformatic Analysis

Proficient in using and customizing RNA sequencing protocols, Illumina (NGS) and Nanopore based kits and instrumentation, managed, and analyzed data using command line, super computing resources, R, and Python

### Cell Culture Experience

Tissue culture/sterile technique, lentiviral production, culturing and maintaining cells lines from HEK293, primary murine cell lines, and stem cells

## RESEARCH EXPERIENCE:

2015-present **UC San Diego Biological Sciences PhD Graduate Student Researcher**

Dr. Amy Pasquinelli Laboratory

- Explored role of the microRNA pathways in aging in *C. elegans* by using and creating genetic mutants and probing gene expression change and their effect on aging
- Researching how highly related sister microRNAs, usually thought of as redundant, can differentially regulate targets, leading to different roles in aging

2014-2015 **Scientist 1**

Dr. Thomas A. Reh Laboratory

- Explored the regenerative ability of mammalian retinas *in vivo*, managed project after post-doc left from paper revisions to mentoring next project lead
- Performed communal responsibilities such as lentiviral production, mentoring students

2011- 2014 **Undergraduate Research Assistant at UW Medical Center Seattle, WA**

Dr. Thomas A. Reh Laboratory

- Assisted Dr. Yumi Ueki in exploring retinal regeneration with confocal imaging and molecular techniques
- Established and tested effectiveness of different CRE recombinase systems in mice

## PUBLICATIONS:

- 2020 VandenBosch LS, Wohl SG, Wilken MS, Hooper M, Finkbeiner C, Kristen C, **Chipman L**, Reh TA. (2020) Developmental changes in the accessible chromatin, transcriptome and Ascl1-binding correlate with the loss in Müller Glial regenerative potential. *Sci Rep*. DOI: 10.1038/s41598-020-70334-1.
- 2019 **Chipman LB**, Pasquinelli AE. (2019) miRNA Targeting: Growing beyond the Seed. *Trends Genet.* **35**, 215-222. DOI: 10.1016/j.tig.2018.12.005
- 2018 Aalto AP, Nicastro IA, Broughton JP, **Chipman LB**, Schreiner WP, Chen JS, Pasquinelli AE. (2018) Opposing roles of microRNA Argonautes during *Caenorhabditis elegans* aging. *PLOS Genet.* **14**, e1007379. DOI: 10.1371/journal.pgen.1007379
- 2017 Lima SA, **Chipman LB**, Nicholson AL, Chen YH, Yee BA, Yeo GW, Coller J, Pasquinelli AE. (2017) Short poly(A) tails are a conserved feature of highly expressed genes. *Nat. Struct. Mol. Biol.* **24**, 1057-1063. DOI: 10.1038/nsmb.3499
- 2015 Ueki Y, Wilken MS, Cox KE, **Chipman L**, Jorstad N, Sternhagen K, Simic M, Ullom K, Nakafuku M, Reh TA. (2015) Transgenic expression of the proneural transcription factor Ascl1 in Müller glia stimulates retinal regeneration in young mice. *PNAS* 1–6. DOI: 10.1073/pnas.1510595112
- 2015 Ueki Y, Wilken MS, Cox KE, **Chipman LB**, Bermingham-McDonogh O, Reh TA. (2015) A transient wave of BMP signaling in the retina is necessary for Muller glial differentiation. *Development* **142**, 533–543. DOI: 10.1242/dev.118745

## PRESENTATIONS:

- Presented my research at 9 international, national, and local conferences, and 10+ times within UCSD
  - Honed communication skills to experts and non-experts by taking UCSD Drama and Theatre’s “Presenting Your Research” Course
  - Select presentations:
- 2021 **Chipman LB**. “UCSD ARCS Scholar Celebration” (January 28<sup>th</sup>, 2021) Q&A on research and impact of ARCS support with UCSD Graduate Division and ARCS – San Diego Chapter, Zoom.
- invite by ARCS to partake in panel
- 2019 **Chipman LB**, Aalto AP, Nicastro IA, Broughton JP, Schreiner WP, Chen JS, Pasquinelli AE. “Opposing Roles of MicroRNA Argonautes in *Caenorhabditis elegans* Aging” (May 15<sup>th</sup> - 17<sup>th</sup>, 2019) Poster presented at the Microsymposium on Small RNA, IMBA, Vienna, Austria.
- 2019 **Chipman LB**, Aalto AP, Nicastro IA, Broughton JP, Schreiner WP, Chen JS, Pasquinelli AE. “Opposing Roles of MicroRNA Argonautes in *Caenorhabditis elegans* Aging” (April 26<sup>th</sup>, 2019) Poster presented at the SoCAL RNA Conference presented by the City of Hope, Monrovia, CA.
- poster award winner
- 2019 **Chipman LB**, Pasquinelli AE. “Opposing Roles of MicroRNA Argonautes in *Caenorhabditis elegans* Aging” (January 25<sup>th</sup>, 2019) Seminar presented at the Cell and Molecular Genetics Training Grant Conference: RNA Revolution, La Jolla, CA.
- applied to and selected to give seminar

## SELECT TRAINING AND MENTORING EXPERIENCE:

**Graduate & Professional Student Association (GPSA) – UC San Diego**2020-2021 **Vice President of Campus Affairs – UC San Diego**

- Oversaw rigorous and fair appoints to and managed 16 committees
- Collaborated with students, UC San Diego administration, and the student union to improve access to information and basic needs to increase student success

2017-2020 **Biological Sciences Student Representative – UC San Diego**

- Created and managed Biology Student Council with two other student representatives
- Incited a culture of advocacy within department with fellow representatives

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**SELECT TRAINING AND MENTORING EXPERIENCE: (cont'd)****Research Mentor - Pasquinelli Lab at UC San Diego**2017-2019 **Undergraduate/Master Student Mentor**

- Mentored undergraduate who continued as master's student from training in basic laboratory skills to successful master's defense

**Instructional Assistant – UC San Diego**2018 **Molecular Mechanisms of Human Disease (BIMM 110)** – Dr. Christopher Day

- Independently ran two discussion sections and created student materials, highly praised by students

2017 **Molecular Biology (BIMM 100)** – Dr. Amy Pasquinelli

- Led two discussion sections to correspond with instructor's lectures, highly praised by students

2016 **Recombinant DNA Techniques (BIMM 101)** – Dr. Christopher Day

- Ran laboratory section, highly praised by students

**Biology Education and Art for Scientific Innovation (BioEASI) – UC San Diego**2016-2020 **Volunteer**

- Effectively communicated complex scientific topics to lay audiences
- Created outreach material to increase scientific understanding on topics such as GFP

2016-2019 **Organizer**

- Restarted organization with other students, partnered with local libraires, schools

**Girls in STEAM Conference – Preuss School, San Diego, CA**2017-2018 **Conference Mentor**

- Served as a mentor for small group of girls from Preuss School, a charter school established to serve low income and underrepresented groups