

# Teresa W. Lee, PhD

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## Academic Appointments

**Assistant Professor of Biological Sciences** 2020-present  
University of Massachusetts Lowell

## Scientific Training

**IRACDA Postdoctoral Fellow** 2015-2020  
Emory University School of Medicine

Supported by an **NIH IRACDA Fellowship**, advised by David J. Katz, PhD  
Research Focus: Epigenetic transgenerational inheritance of longevity in *C. elegans*

**Ph.D. Molecular and Cell Biology** 2007-2014  
University of California, Berkeley

Supported by an **NSF Graduate Research Fellowship**, advised by Barbara J. Meyer, PhD  
Dissertation: Regulation of meiotic crossover recombination in *C. elegans*

**B.S. Biology with honors & distinction** 2003-2007  
Minor in Creative Writing, *with honors*  
University of North Carolina at Chapel Hill

Supported by a **Summer Undergraduate Research Fellowship**, advised by Shawn Ahmed, PhD  
Thesis: Investigating the effects of *cku-80*, *pot-2*, and *mrt-2* on *C. elegans* telomeres

## Extramural Funding (as a PI)

**NIH R15, NIGMS** – Principal Investigator 2021-2024  
Linking transgenerational epigenetic inheritance to gene expression and lifespan in *C. elegans*.

**NIH R15, NICHD** – Co-Investigator 2021-2024  
Chromatin-mediated maintenance of genomic integrity in germ cells.

## Extramural Funding (during PhD and Postdoc)

National Institutes of Health IRACDA Postdoctoral Fellowship in Research and Science Teaching 2015-2018

American Society of Cell Biology Promoting Active Learning & Mentoring Fellow 2016

National Science Foundation Graduate Research Fellowship 2009-2012

## Selected Awards

Outstanding Poster Award – Society for Developmental Biology SE Meeting 2018

T.H. Huxley Award for Education and Outreach – Society for the Study of Evolution 2018

Best Postdoctoral Talk – Society for Developmental Biology SE Meeting 2017

## Publications

underline denotes undergraduate mentee

Croft JC, Schultz CE, Ananthaswamy D, **Lee TW** invited review, *in prep*  
“*C. elegans* as a model for the transgenerational inheritance of histone modifications.”  
*Epigenomes*

- Ananthaswamy, D\***, Croft, JC\*, **Woozencroft N**, **Lee TW** 2022  
 “*C. elegans* Gonad Dissection and Freeze Crack for Immunofluorescence and DAPI Staining.”  
*J. Vis. Exp.* 187: e64204, <https://doi.org/10.3791/64204>  
 \*equal contribution
- Carpenter BS, **Lee TW**, **Plott CF**, Rodriguez JD, Brockett JS, Myrick DA, Katz DJ. “*C. elegans* establishes germline versus soma by balancing inherited histone methylation.”  
*Development* 2021: dev.196600 <https://doi.org/10.1242/dev.196600>
- Lee TW**, Katz DJ. “Hansel, Gretel, and the Consequences of Failing to Remove Histone Methylation Breadcrumbs” *Trends in Genetics* 36: 3. <https://doi.org/10.1016/j.tig.2019.12.004> 2020
- Lee TW**, Engstrom AK, **David HS**, Carpenter BS, Katz DJ. “Repressive H3K9me2 protects lifespan against the transgenerational burden of COMPASS activity in *C. elegans*” *eLife*. 8:e48498 <https://doi.org/10.7554/eLife.48498> 2019  
 - selected for *eLife* Insight article & recommended for the Faculty of 1000
- Lee TW**, Carpenter BS, Birol O, Katz DJ, Schmeichel KL. “The Pipeline CURE: an iterative approach to introduce all students to research throughout a biology curriculum.” *CourseSource*. <https://doi.org/10.24918/cs.2019.29> 2019
- Lee TW**, Grogan KE, Liepkalns JS. “Making evolution stick: using sticky notes to teach the mechanism of evolutionary change.” *Evolution: Education and Outreach* 10: 11. <https://doi.org/10.1186/s12052-017-0074-2>. 2017  
 - won T.H. Huxley Award for Education & Outreach from the Society for the Study of Evolution
- Rodriguez, JD, Myrick DA, Falcatori I, Christopher MA, **Lee TW**, Hannon GJ, Katz DJ. 2017  
 “A model for epigenetic silencing via transvection in the mouse.” *Genetics* 207(1): 129-138; <https://doi.org/10.1534/genetics.117.201913>.
- Lowden MR, Meier B, **Lee TW**, Hall J, Ahmed S. “End-Joining at *C. elegans* telomeres.” *Genetics* 180: 741-754. <https://doi.org/10.1534/genetics.108.089920>. 2008

### Teaching Experience

#### Classes taught at UMass Lowell:

- Chromatin & Epigenetics – BIOL.4385/5385** pending Spring 2023  
 Developed a new course on epigenetic phenomena & molecular mechanism.
- Advanced Genetic Analysis – BIOL.4380/5380** Fall 2021  
 Developed a new course on applying classical & modern molecular genetic analyses.
- Senior Seminar – BIOL.4510** Spring 2021, 2022  
 A required course for seniors covering scientific presentation and professional development.

#### Classes taught as a postdoc in Atlanta:

- Special Topics – Authentic Research in Epigenetics**, Oglethorpe University Fall 2017  
*Instructor of Record:* Developed and taught a new upper-division elective in which undergrads conducted molecular genetics research in support of my postdoctoral work.
- Introductory Biology, Emory-Tibet Science Initiative**, Drepung Loseling Monastery Summer 2016  
*Professor:* Designed and taught a two-week class for Tibetan Buddhist monks.

<b>Foundations in Developmental Genetics</b> , Emory University <i>Co-Instructor:</i> Co-taught a two-week module in a literature-based class for first-year graduate students in the Biochemistry, Cell, and Developmental Biology program.	Fall 2015
<b>General Biology</b> , Clark Atlanta University <i>Adjunct Professor:</i> Co-taught an introductory biology class for freshmen biology majors; designed and implemented active-learning modules for the course.	Fall 2015

### Invited Seminars

“Repressive chromatin enables the transgenerational inheritance of longevity in <i>C. elegans</i> ”	
<ul style="list-style-type: none"> <li>Molecular Biology &amp; Biochemistry Department Seminar, Wesleyan University, hosted by Scott Holmes</li> <li>Keynote speaker at Cell &amp; Systems Biology Research Day, University of Toronto, invited by CSB graduate students</li> <li>Biology Department Seminar, UMass Boston, hosted by Labib Rouhana</li> <li>Summer Seminar, College of the Holy Cross, hosted by Michelle Mondoux</li> <li>Boston Area Worm Meeting (virtual due to COVID-19), hosted by Victor Ambros</li> </ul>	<p>Oct 2022</p> <p>Sep 2022</p> <p>Sep 2022</p> <p>Jul 2022</p> <p>Mar 2021</p>
“The Road Ahead: Getting Grants at an R2 University”	
<ul style="list-style-type: none"> <li>Professional Development Workshop, Emory University, hosted by FIRST-IRACDA postdocs</li> </ul>	Feb 2022

### Conference Presentations

#### Invited talks

“CUREs that integrate undergrad research throughout a biology curriculum increase STEM equity.”	
<ul style="list-style-type: none"> <li><i>C. elegans</i> Development, Cell Biology, &amp; Gene Expression Meeting, Madison WI</li> </ul>	Aug 2022

#### Talks selected from abstracts

“Repressive H3K9me2 protects lifespan against the transgenerational burden of germline transcription”	
<ul style="list-style-type: none"> <li>Society for Developmental Biology NE Meeting, virtual due to COVID-19</li> <li>The Allied Genetics Conference, virtual due to COVID-19</li> </ul>	<p>Apr 2021</p> <p>Jun 2020</p>
“A curriculum-wide Pipeline CURE connects small colleges with research universities”	
<ul style="list-style-type: none"> <li>Society for Developmental Biology SE Meeting, virtual due to COVID-19</li> <li>The Allied Genetics Conference, virtual due to COVID-19</li> </ul>	<p>Apr 2020</p> <p>Jun 2020</p>

#### Posters

“Repressive H3K9me2 protects lifespan against the transgenerational burden of germline transcription”	
<ul style="list-style-type: none"> <li>Cold Spring Harbor Laboratory Germ Cells, virtual due to COVID-19</li> </ul>	Oct 2020

### Conference Presentations by Research Mentees

bold indicates presenter, underline denotes undergraduate mentee

<b><u>Deepshikha Ananthaswamy</u></b> , <u>Sereen El Jama</u> , Paula Checchi, Teresa Lee	
Poster, <i>C. elegans</i> Development, Cell Biology and Gene Expression meeting, Madison WI	Aug 2022
“Investigating How NuRD component LET-418 Promotes DSB Repair in the Germline”	

<b>Jaime Croft</b> , Teresa Lee	Poster, <i>C. elegans</i> Development, Cell Biology and Gene Expression meeting, Madison WI "Transgenerational Repressive Chromatin and Healthspan in Longevity Mutants"	Aug 2022
<b>Cassidy Schultz</b> , <u>Allie Sciarratta</u> , Teresa Lee	Poster, <i>C. elegans</i> Development, Cell Biology and Gene Expression meeting, Madison WI "Interactions Between Heterochromatin Modifiers in Transgenerational Longevity"	Aug 2022
<b>Natilia Woozencroft</b> , <b>Deepshikha Ananthaswamy</b> , Teresa Lee	Poster, Northeast Society for Developmental Biology meeting, Woods Hole MA "Analyzing lipid accumulation in a <i>C. elegans</i> model of transgenerational longevity"	Apr 2022
<b>Jaime Croft</b> , Teresa Lee	Poster, Northeast Society for Developmental Biology meeting, Woods Hole MA "The effect of transgenerational repressive chromatin on health in <i>C. elegans</i> "	Apr 2022
<b>Teya Nigro</b> , <b>Cassidy Schultz</b> , Teresa Lee	Poster, Northeast Society for Developmental Biology meeting, Woods Hole MA "Does transgenerational longevity improve response to stress in <i>C. elegans</i> ?"	Apr 2022
<b>Jaime Croft</b> , <u>Michaela Dillon</u> , <u>Lea Solh</u> , Teresa Lee	Poster, International <i>C. elegans</i> Meeting, virtual due to COVID-19 "The transgenerational accumulation of repressive H3K9me2 affects healthspan in <i>C. elegans</i> "	Jun 2021

#### Research Trainees

##### UML graduate students

Deepshikha Ananthaswamy – MS thesis	2022-
Cassidy Schultz – MS thesis	2022-
Teya Nigro – MS project	2021-2022

##### UML post-bac trainee

Jaime Croft – research technician	2020-
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##### UML undergraduate students

Arthur Colunga – KCS Science Scholar, LSAMP Fellow	2022-2025
Alex Beaudoin – Honors Fellow	2022-2025
Allie Sciarratta – Immersive Scholar	2022-2025
William Miguel – LSAMP Fellow, LSAMP Peer Mentor, UMass BaccMD Pathway Program	2021-2024
Michaela Dillon – Immersive Scholar, Honors Fellow	2021-2024
Lea Solh – Immersive Scholar, Honors Fellow	2021-2024
Natilia Woozencroft – Honors Fellow, LSAMP Fellow, Biology Travel Fellowship	2021-2024
Deepshikha Ananthaswamy – KCS Science Scholar, Biology Travel Fellowship	2021-2022

##### Other undergraduate students

Sereen El Jamal – Marist College, summer intern	2022
Mélia Pillet – Université de Versailles Saint-Quentin-en-Yvelines, summer exchange student	2022

##### Mentored as a postdoc at Emory

Juan Rodriguez – graduate student, Yale Ciencia Academy Fellow, NIH NRSA Fellow	2017-2020
Sindy Chavez – undergraduate researcher, Honors thesis	2018-2020
Heidi David – high school researcher, awarded High Honors at the Georgia Science Fair	2016-2018
Caroline Plott – undergraduate researcher, Honors thesis	2015

### Student Committee Member

#### PhD dissertation

Tom Wolfe – advisor: Frédéric Chain – DNAm and histone modifications in *Dictyostelium*

#### MS thesis

Taylor Wright – advisor: Naomi Wernick – the impact of neurodiversity in undergraduate learning

Bethany Weinberg – advisor: Frédéric Chain – Tardigrade viral defense and RNA interference grad 2022

#### Honors thesis

Shelbi Gill – advisor: Frédéric Chain – copy number variation in *Dictyostelium* grad 2022

Caitlin Panessiti – advisor: Nicolai Konow – feeding mechanics of bichir grad 2022

### Selected Professional Service

#### **Genetics Society of America**

*Chair*, Education Committee 2022-2025

*Member*, DeLill Nasser Travel Award Selection Committee 2021-2024

*Member*, Education Committee 2019-2021

#### **National Science Foundation**

*Panelist*, BIO IOS, BRC-BIO 2022

*Panelist*, BIO MCB, Genetic Mechanisms 2022

*Graduate Research Fellowship Program reviewer*, Genetics, Genomics & Proteomics Panel Jan 2021

*Proposal reviewer, ad hoc* for BIO MCB Apr 2021

#### **Latino Initiative Program, Center for Astrophysics, Harvard & Smithsonian**

*Panelist*, Effective Community Building - Moving Beyond Patriarchy May 2022

#### **Swiss National Science Foundation**

*External proposal reviewer* May 2022

#### **UMass Lowell ADVANCE Office for Faculty Equity**

*Faculty Equity Leader* since 2022

#### **UMass Lowell River Hawk Scholars Academy**

*Faculty Advocate* for first-generation college students since 2021

#### **Department of Biological Sciences, UMass Lowell**

*Member*, Website & Building Committee since 2022

*Member*, Graduate Policy and Education Committee since 2021

*Member*, Student Affairs Committee 2021-2022

#### **Genetics Society of America Summer Seminar Series**

*Organizer & Moderator*, Workshop: How to get a faculty job and thrive in it May 2022

*Moderator*, GSA Award Seminar for Excellence in Education Apr 2022

#### **Manuscript reviewer** for the following journals:

eLife, PLoS Genetics, G3, Seminars in Cell & Developmental Biology, since 2021

CourseSource, microPublication Biology

#### **Becoming a Scientist in the 21<sup>st</sup> Century**, Emory University 2020

*Chair*, Organizing Committee

*Moderator*, Careers Panel

**Co-organizer** of The Ins and Outs of Grad School workshops 2015-2017  
 • Spelman College, Morehouse College, & Clark Atlanta University, Atlanta GA

**Professional Development**

**UML Seed Grant**, ADVANCE Office for Faculty Equity – Convener, Co-PI 2022-2023  
 #PandemicProfs – peer support for junior female faculty in unprecedented times

**UML Center for Learning & Teaching Collaborative** 2021-2022  
 Peer-led learning community for pedagogy with monthly meetings through the academic year.

**NRMN Grant Writing Coaching research study** 2021  
 An NIH-funded study to provide early-career faculty with four months of intensive group coaching.  
 Coach: Avery August, Vice-Provost for Academic Affairs, Cornell University  
 Mentor: Siu Sylvia Lee, Professor, Cornell University

**UML VCRI Grant Proposal Writing Workshop** 2021  
 Four-week intensive workshop on developing a competitive grant proposal.

**Society Membership**

Society for Developmental Biology since 2015  
 Genetics Society of America since 2008