

## CURRICULUM VITAE

### 1. Name: Erica Nicole Larschan

### 2. Home address:

1246 Central Ave  
Needham, MA  
02492

### 3. Education:

Undergraduate: Wellesley College, Wellesley, MA  
1998 B.A. Biochemistry, Summa cum laude, GPA 4.0

Graduate: Harvard Medical School, Boston, MA  
Mentor: Fred M. Winston, Ph.D

2004 Ph.D., Genetics  
Dissertation Title: Genetic and biochemical characterization of  
*S.cerevisiae* SAGA complex as a coactivator for transcriptional activation  
by Gal4

Postgraduate: Brigham and Women's Hospital, Boston, MA  
2004-2009 Postdoctoral Fellow, Department of Medicine, Division of Genetics  
Mentor: Mitzi Kuroda, Ph.D

### 4. Professional appointments:

2010-present Brown University, Providence, RI  
Richard and Edna Salomon Assistant Professor of Biology (tenure-track)  
Department of Molecular Biology, Cell Biology, and Biochemistry

### 5. Completed Publications:

#### *Refereed journal articles (27 total publications)*

#### My research laboratory at Brown University:

**Brown University graduate student authors are denoted with a † symbol.**

**Brown University undergraduate student authors are denoted with a ‡ symbol.**

**Members of my laboratory are underlined.**

- 1) **Larschan, E**, Soruco, MM<sup>†</sup>, Lee, O-K, Peng, S, Bishop E, Chery, J<sup>†</sup>, Goebel, K, Feng, J<sup>‡</sup>, Park, PJ, and Kuroda, MI. 2012. Identification of chromatin-associated regulators of MSL complex targeting in *Drosophila* dosage compensation. *PLoS Genetics*. 8(7):e1002830.

I conceived this study and performed initial experiments as a postdoctoral fellow in the laboratory of Mitzi Kuroda. After starting my own laboratory at Brown, I advised graduate students Marcela Soruco and Jessica Chery, undergraduate student Jessica Feng, and research technician Karen Goebel (underlined authors) on additional experiments. My

trainees performed extensive secondary screens on over 100 candidate genes that I had initially identified and conducted the genomic approaches that constitute the majority of the study, and I wrote the manuscript. Collaborators Eric Bishop, Shouyong Peng, and Peter Park performed computational analysis. Ok-Kyung Lee was a technician in the Kuroda laboratory who assisted with the genetic screen.

- 2) Soruco, MM<sup>†\*</sup>, Chery, J<sup>†\*\*</sup>, Bishop, E.P<sup>\*</sup>, Siggers, T, Tolstorukov, M, Leydon, AR<sup>†</sup>, Sugden, A<sup>†</sup>, Goebel, K, Feng, J<sup>‡</sup>, Xia, P<sup>‡</sup>, Vendenko, A, Bulyk, M.L., Park, P.J., and **Larschan, E.** 2013. The CLAMP protein links the MSL complex to the X chromosome during *Drosophila* dosage compensation. *Genes and Development*: 27: 1551-6.

\*these authors contributed equally to this work

As the corresponding author, I conceived the study, wrote the manuscript, and advised my two graduate students Marcela Soruco and Jessica Chery, who performed the majority of experiments. Additional members of my laboratory who contributed were rotation graduate students Alexander Leydon and Arthur Sugden, Brown undergraduates Jessica Feng and Peng Xia, and research technician Karen Goebel. Collaborators Eric Bishop and Peter Park performed computational analysis. Collaborators Anastasia Vendenko, Trevor Siggers and Martha Bulyk conducted protein binding microarrays with purified proteins provided by my laboratory. Collaborator Michael Tolstorukov performed computational analysis of chromatin accessibility.

- 3) Rieder LE, Larschan EN. 2014. Wisdom from the fly. *Trends Genet.* 30(11):479-81.

I wrote this invited review on how *Drosophila* research has contributed to our understanding of human disease with my postdoctoral fellow Dr. Leila Rieder.

- 4) Chery J<sup>†</sup>, Larschan E. 2014. X-marks the spot: X-chromosome identification during dosage compensation. *Biochim Biophys Acta.* 1839(3):234-40.

I wrote this invited review on dosage compensation with my graduate student Jessica Chery.

- 5) Soruco MM<sup>†</sup>, Larschan E. 2014. A new player in X identification: the CLAMP protein is a key factor in *Drosophila* dosage compensation. *Chromosome Res.* 22(4):505-15.

I wrote this invited review on dosage compensation with my graduate student Marcela Soruco.

- 6) Kuzu G<sup>\*</sup>, Kaye EG<sup>†</sup>, Chery J<sup>†</sup>, Siggers T, Yang L, Dobson JR, Boor S<sup>‡</sup>, Bliss J, Liu W, Jogi G, Rohs R, Singh ND, Bulyk ML, Tolstorukov, MY, Larschan, E. 2016. Expansion of GA dinucleotide repeats increases the density of CLAMP binding sites on the X-Chromosome to promote *Drosophila* dosage compensation. *PLoS Genetics.* 12(7):e1006120.

\* these authors contributed equally to this work

As the corresponding author, I conceived the project, wrote the manuscript, and advised the trainees conducting the research. The underlined authors were members of my group including postdoctoral fellows Guray Kuzu and Jason Dobson, graduate students Emily Kaye and Jessica Chery, Brown undergraduate Sonia Boor, and research technician Jacob Bliss. Collaborators Lin Yang and Remo Rohs conducted computational analysis of DNA sequence motif shape. Collaborators Trevor Siggers and Martha Bulyk designed protein binding microarrays. Collaborator Nadia Singh contributed evolutionary computational analysis. Collaborators Wei Liu and Gerwald Jogl assisted with protein purification. Collaborator Michael Tolstorukov advised on computational approaches.

- 7) Urban JA<sup>†</sup>, Doherty CA<sup>‡</sup>, Jordan WT, Bliss JE, Feng J<sup>‡</sup>, Soruco MM<sup>†</sup>, Rieder LE, **Larschan, E.** 2016. The essential *Drosophila* CLAMP protein differentially regulates non-coding roX RNAs in male and females. *Chromosome Research* Dec 19 2016. Epub ahead of print.

As the corresponding author, I designed the study, wrote the manuscript, and advised trainees. All authors including two Brown undergraduates Caroline Doherty and Jessica Feng were members of my laboratory.

- 8) Day DS, Zhang B, Stevens SM, Ferrari F, **Larschan EN**, Park PJ, Pu WT. 2016. Comprehensive analysis of promoter-proximal RNA polymerase II pausing across mammalian cell types. *Genome Biology*. Jun 3;17(1):120.

I advised graduate student Daniel Day, a member of collaborator Peter Park's laboratory, on this project over a two-year period. I also contributed to the writing of the manuscript.

- 9) Mieczkowski J, Cook A, Bowman SK, Mueller B, Alver BH, Kundu S, Deaton AM, Urban JA<sup>†</sup>, **Larschan E**, Park PJ, Kingston RE, Tolstorukov MY. 2016. MNase titration reveals differences between nucleosome occupancy and chromatin accessibility. *Nature Communications*. 6;7:11485.

Graduate student Jennifer Urban in my laboratory prepared key experimental samples and I provided experimental and editorial advice.

- 10) Kaye EG<sup>\*</sup>, Kurdibaeva, A<sup>\*</sup>, Wolle, D, Aoki, T, Schedl, P and **Larschan, E.** 2017. *Drosophila* dosage compensation loci associate with a boundary forming insulator complex. *Molecular and Cellular Biology*. 37(21):e00253-17. \* these two authors contributed equally to this work

As the corresponding author, I conceived the project, wrote the manuscript, and advised my graduate student Emily Kaye, who conducted the majority of the experiments. Amina Kurbidaeva, Daniel Wolle, and Tstomu Aoki in collaborator Paul Schedl's laboratory performed additional gel shift experiments.

- 11) Rieder, LE<sup>\*</sup>, Koreski, KP<sup>\*</sup> Boltz, KA, Kuzu, G, Urban, JA<sup>†</sup>, Bowman, SK, Zeidman, A<sup>‡</sup>, Jordan, WT<sup>3rd†</sup>, Tolstorukov, MY, Marzluff, WF, Duronio, RJ and **Larschan, E.** Histone Locus Regulation by the *Drosophila* Dosage Compensation Adaptor Protein CLAMP. 2017. *Genes and Development*. 31(14):1494-1508.  
\*these two authors contributed equally to this work

As the corresponding author, I conceived the project and wrote the manuscript in collaboration with my postdoctoral fellow Leila Rieder, who performed the majority of the

experiments. Kaitlin Koreski and Kara Boltz in Robert Duronio's group are collaborators who generated the histone gene array that lacks GA-repeat sequences used in Figure 1. William Marzluff, the founder of the histone locus body (HLB) field, provided additional advice. Jennifer Urban and Guray Kuzu in my laboratory and Sarah Bowman contributed a key data set allowing analysis of chromatin opening at the HLB. Graduate student William Jordan and undergraduate Anna Zeidman each contributed to data collection. Collaborator Michael Tolstorukov advised on computational approaches.

- 12) Urban, J<sup>†</sup>, Kuzu, G<sup>\*</sup>, Bowman, S, Scruggs, B, Henriques, T, Kingston, RE, Adelman, K, Tolstorukov, MY and **Erica Larschan**. Enhanced chromatin accessibility of the dosage compensated *Drosophila* male X-chromosome requires the CLAMP zinc finger protein. 2017. *PLoS ONE* 12(10). \*these two authors contributed equally to this work

As the corresponding author, I conceived the project, wrote the manuscript, and advised the trainees conducting the research. Co-first authors Jennifer Urban and Guray Kuzu were members of my laboratory and conducted most of the experiments and computational analysis presented in this manuscript. Collaborators Sarah Bowman and Robert Kingston contributed to MNase-seq experiments. Collaborators Ben Scruggs and Karen Adelman advised on the nascent RNA-sequencing experiments. Collaborator Michael Tolstorukov advised on computational approaches to integrate chromatin and gene expression data sets.

- 13) Urban, JA<sup>†</sup>, Urban, J, Kuzu, G and **Larschan, E**. The *Drosophila* CLAMP protein associates with diverse sex-specific and non-sex-specific proteins on chromatin. 2017. *PLoS ONE*, **accepted**.

As the corresponding author, I conceived the project, wrote the manuscript, and advised my trainees Jennifer Urban and Guray Kuzu on conducting the research. Collaborator John Urban performed computational analysis.

- 14) Kaye, E<sup>\*</sup>, Booker, M<sup>\*</sup>, Conicella, A, Kurland, JV, Fawzi, N, Bulyk, ML, Tolstorukov, M, **Larschan, E**. 2018. Sequence variation within similar *cis*-elements promotes context-specific functions of two GA-binding *Drosophila* transcription factors. *Cell Reports*, \*These two authors contributed equally to this work.

As the corresponding author, I conceived the project, wrote the manuscript, and advised my trainees Emily Kaye and Matthew Booker on conducting the research. Collaborators Alexander Conicella and Nicholas Fawzi advised Emily Kaye on protein purification. Collaborator Michael Tolstorukov advised on computational approaches. Collaborators Jesse Kurland and Martha Bulyk performed protein binding microarrays on samples generated in my laboratory.

#### **My postdoctoral work in Dr. Mitzi Kuroda's group at Brigham and Women's Hospital:**

- 1) Alekseyenko, AA, **Larschan, E**, Lai, WR, Park, PJ, and Kuroda, MI. 2006. High-resolution ChIP-chip analysis reveals that the *Drosophila* MSL complex selectively identifies active genes on the male X chromosome. *Genes Dev.* 20:848-57.

**Faculty of 1000.** Must read rating.

**Highlighted in:** Schubeler D. 2006. Dosage compensation in high resolution: global up-regulation through local recruitment. *Genes Dev.* 20:749-53.

- 2) Bai, XB\*, **Larschan, E\***, Kwon, SY, Badenhorst, P, and Kuroda, MI. 2007. Regional control of chromatin organization by noncoding roX RNAs and the NURF remodeling complex in *Drosophila melanogaster*. *Genetics*. 176:1491-9.  
\*these authors contributed equally to this work
- 3) Peng, S, Alekseyenko, AA, **Larschan, E**, Kuroda, MI, and Park, PJ. 2007. Normalization and experimental design for ChIP-chip data. *BMC Bioinformatics*. 8:219.
- 4) **Larschan, E\***, Alekseyenko, AA\*, Gortchakov, A, Li, B, Lai, WR, Peng, SY, Yang, P, Workman, JR, Park, PJ, and Kuroda, MI. 2007. MSL complex is attracted to genes marked by H3K36 trimethylation using a sequence-independent mechanism. *Mol. Cell* 28:121-33.  
\*these authors contributed equally to this work
- 5) Alekseyenko, AA\*, Peng, SY\*, **Larschan, E**, Gortchakov, A, Lee, OK, Karchenko, P, McGrath, SD, Wang, CI, Mardis, ER, Park, PJ, and Kuroda, MI. 2008. A sequence motif within chromatin entry sites directs MSL establishment on the *Drosophila* X chromosome. *Cell* 134:599-609. \*these authors contributed equally to this work  
**Highlighted in:** Muers, M. 2008. Sequence guided entry for MSL. *Nat. Rev. Genetics* 9:732.
- 6) Gelbart, M, **Larschan, E**, Peng, S, Park, PJ, and Kuroda, MI. 2009. Broad domains of histone acetylation characterize the *Drosophila* male X chromosome. *Nat. Struct. & Mol. Biology*. 16:825-32.  
**Highlighted in:** Weake, VM and Workman, JL. 2009. Hit and run: X marks the spot! *Nat Struct. & Mol. Biology* 16:801-3.
- 7) Kharchenko, PV, Alekseyenko, AA, Schwartz, YB, Minoda, A, Riddle, NC, Ernst, J, Sabo, PJ, **Larschan, E**, Gorchakov, AA, Gu, T, Linder-Basso, D, Plachetka, A, Shanower, G, Tolstorukov, MY, Luquette, LJ, Xi, R, Jung, YL, Park, R, Bishop, EP, Canfield, TP, Sandstrom, R, Thurman, RE, MacAlpine, DM, Stamatoyannopoulos, J, Kellis, M, Elgin, SCR, Kuroda, MI, Pirrotta, V, Karpen, G, and Park, PJ. 2010. Comprehensive analysis of the chromatin landscape in *Drosophila melanogaster*. *Nature*, 471(7339):480-5.
- 8) **Larschan, E\***, Bishop E\*, Kharchenko, P, Park, PJ, and Kuroda, MI. 2011. X chromosome dosage compensation via enhanced transcription elongation in *Drosophila* males. *Nature*, 471(7336):115-8. \*these authors contributed equally to this work
- 9) Alekseyenko AA\*, Ho JWK\*, Peng S\*, Gelbart M, Tolstorukov M, Plachetka A, Kharchenko PV, Jung YL, Gorchakov AA, **Larschan E**, Gu T, Minoda A, Riddle NC, Schwartz YB, Elgin SCR, Karpen GH, Pirrotta V, Kuroda MI\*\*, Park PJ\*\*. 2012. Sequence-specific targeting of dosage compensation in *Drosophila* favors an active chromatin context. *PLoS Genetics*, 2012 8(4). epub. \* and\*\*these authors contributed equally
- 10) Bateman, J.R.\*, **Larschan, E\***, Marshall, L., Dempsey, K.E., Johnson, J.E., D'Souza, R, Mellone, B.G., and Kuroda, M.I. 2012. A genome-wide screen identifies genes that affect somatic homolog pairing in *Drosophila* cell culture. in press, *G3*. \*these authors contributed equally to this work

**My doctoral work in Dr. Fred Winston's group at Harvard Medical School:**

- 1) **Larschan, E** and Winston, F. 2001. The *S. cerevisiae* SAGA complex functions *in vivo* as a coactivator for transcriptional activation by Gal4. *Genes Dev.*15:1946-56.
- 2) **Larschan, E** and Winston, F. 2005. The *Saccharomyces cerevisiae* Srb8-Srb11 complex functions with the SAGA complex during Gal4-activated transcription. *Mol Cell Biol.* 25:114-23.
- 3) Prather, DM, **Larschan, E**, and Winston, F. 2005. Evidence that the elongation factor TFIIS plays a role in transcription initiation at *GAL1* in *Saccharomyces cerevisiae*. *Mol Cell Biol.* 25:2650-9.

**Non-refereed journal article:**

**Larschan, E**, Alekseyenko, AA, Lai, WR, Park, PJ, and Kuroda, MI. 2006. MSL complex associates with clusters of actively transcribed genes along the *Drosophila* male X chromosome. *Cold Spring Harb Symp Quant Biol.* 71:385-94.

**Abstracts:**

- 1) **Larschan, E.** and Winston, FM. 2000. SAGA complex functions as a coactivator for Gal4 *in vivo*. Cold Spring Harbor Meeting: Mechanism of Eukaryotic Transcription. Cold Spring Harbor, NY.
- 2) **Larschan, E** and Winston, FM. 2001. SAGA complex functions as a coactivator for Gal4 *in vivo*. FASEB Chromatin and Transcription. Snowmass, CO.
- 3) Alekseyenko, AA, **Larschan, E**, Lai, WR, Park, PJ, and Kuroda, MI. 2006. High-resolution ChIP-chip analysis reveals that the *Drosophila* MSL complex selectively identifies active genes on the male X chromosome. Gordon Conference: Chromatin structure and function. Ciocco, Italy.
- 4) **Larschan, E**, Alekseyenko, AA, Gortchakov, A, Li, B, Lai, WR, Peng, SY, Yang, P, Workman, JR, Park, PJ, and Kuroda, MI. 2007. MSL complex is attracted to genes marked by H3K36 trimethylation using a sequence-independent mechanism. FASEB: Chromatin and Transcription. Snowmass, CO.
- 5) Chery, J, Goebel, K and **Larschan, E**. 2011. Identifying the function of the CLAMP protein. International *Drosophila* meeting, San Diego, CA.
- 6) Soruco, M, Bishop, E, Goebel, K, Feng, J, Park, PJ, and **Larschan, E**. 2011. Identification of the X chromosome during dosage compensation in *Drosophila*. International *Drosophila* Meeting, San Diego, CA.
- 7) Chery, J, Goebel, K, and **Larschan, E**. 2011. Identifying the function of the CLAMP protein. Penn State Chromatin Symposium, State College, PA.
- 8) Soruco, M, Bishop, E, Goebel, K, Feng, J, Park, PJ, and **Larschan, E**. 2011. Identification of the X chromosome during dosage compensation in *Drosophila*. Penn State Chromatin Symposium, State College, PA.

- 9) Soruco, M, Chery, J, Bishop, E, Goebel, K, Feng, J, Xia, T, Bulyk, M, Park, PJ, and **Larschan, E.** 2011. Essential proteins regulate *Drosophila* dosage compensation. *Cell Epigenetics conference*, Boston, MA.
- 10) Chery, J, Soruco, M, Bishop, E, Goebel, K, Feng, J, Xia, T, Bulyk, M, Park, PJ, and **Larschan, E.** 2012. The CLAMP protein interacts with both DNA and RNA. Keystone symposium on Chromatin and Epigenetics, Keystone, CO. **This abstract was selected for a talk.**
- 11) Soruco, M, Chery, J, Bishop, E, Goebel, K, Feng, J, Xia, T, Bulyk, M, Park, PJ, and **Larschan, E.** 2012. Synergistic interactions between the CLAMP protein and MSL complex regulate *Drosophila* dosage compensation. Gordon Conference on Chromatin structure and function. Il Ciocco, Italy.
- 12) Chery, J, Soruco, M, Bishop, E, Goebel, K, Feng, J, Xia, T, Bulyk, M, Park, PJ, and **Larschan, E.** 2012. The CLAMP protein interacts with both DNA and RNA. NIH Frontiers in Genomics summer course. Bethesda, MD
- 13) Soruco, M, Chery, J, Bishop, E, Goebel, K, Feng, J, Xia, T, Bulyk, M, Park, PJ, and **Larschan, E.** 2012. Synergistic interactions between the CLAMP protein and MSL complex regulate *Drosophila* dosage compensation. National SACNAS Research Conference. Seattle, WA. **This abstract was selected for a talk.**
- 14) Chery, J, Soruco, M, Bishop, E, Goebel, K, Feng, J, Xia, T, Bulyk, M, Park, PJ, and **Larschan, E.** 2012. The CLAMP protein interacts with both DNA and RNA. ABRCMS national meeting.
- 15) Chery, J, Soruco, M, Bishop, E, Goebel, K, Feng, J, Xia, T, Bulyk, M, Park, PJ, and **Larschan, E.** 2012. The CLAMP protein interacts with both DNA and RNA. New England Science Symposium, Boston, MA.
- 16) Soruco, M, Chery, J, Bishop, E, Goebel, K, Feng, J, Xia, T, Bulyk, M, Park, PJ, and **Larschan, E.** 2013. Synergistic interactions between the CLAMP protein and MSL complex regulate *Drosophila* dosage compensation. NIH Chromatin Symposium.
- 17) Soruco, M, Chery, J, Bishop, E, Goebel, K, Feng, J, Xia, T, Bulyk, M, Park, PJ, and **Larschan, E.** 2013. Synergistic interactions between the CLAMP protein and MSL complex regulate *Drosophila* dosage compensation. International *Drosophila* Meeting. Washington, Dc. **This abstract was selected for a talk.**
- 18) Soruco, M, Chery, J, Bishop, E, Goebel, K, Feng, J, Xia, T, Bulyk, M, Park, PJ, and **Larschan, E.** 2013. Synergistic interactions between the CLAMP protein and MSL complex regulate *Drosophila* dosage compensation. FASEB Chromatin Meeting. Nassau, Bahamas. **This abstract was selected for a talk.**
- 19) Chery, J, Dobson, J, Siggers, T, Bulyk, M, and **Larschan, E.** 2013. A conserved zinc finger protein targets the *Drosophila* dosage compensation complex to the X-chromosome. Cold Spring Harbor Transcription Meeting. **This abstract was selected for a talk.**
- 20) Dobson, J, Chery, Siggers, T Bulyk, M and **Larschan, E.** 2013. A conserved zinc finger protein targets the *Drosophila* dosage compensation complex to clusters of binding sites

that are enriched on the male X-chromosome. ABCAM Chromatin and Transcription meeting.

- 21) Soruco, M, Chery, J, Bishop, E, Siggers, T, Tolstorukov, M, Leydon, A, Sugden, A, Goebel, K, Feng, J, Xia, P, Bulyk, Park, PJ, and **Larschan, E.** 2014. Synergistic interactions promote chromosome-specificity during *Drosophila* dosage compensation. Gordon Conference on Chromatin and Epigenetics, Waltham, MA.
- 22) Rieder, L, Zeidman, A, **Larschan, E.** 2014. The function of the dosage compensation protein, CLAMP, at the histone locus body. International *Drosophila* Meeting, San Diego, CA.
- 23) Johnson, J, Doherty, C, and **Larschan, E.** 2014. Determining general and male-specific functions of the essential protein CLAMP in *Drosophila melanogaster*. International *Drosophila* meeting, San Diego, CA.
- 24) Johnson, J, Doherty, C, and **Larschan, E.** 2014. Determining general and male-specific functions of the essential protein CLAMP in *Drosophila melanogaster*. Cell Symposia on Transcription and Development.
- 25) Dobson, J, Chery, J, Rohs, R, Bulyk, M, **Larschan, E.** 2014. Evolution of Dosage Compensation in *Drosophila* increased the occupancy of the CLAMP protein on the X chromosome. Keystone Symposium, Santa Fe, NM.
- 26) Kaye, E, Kuzu, G, Kurland, J, Bulyk, ML, Tolstorukov, M and **Larschan, E.** 2015. Competition between the essential transcription factors GAF and CLAMP for GA-repeats defines their binding patterns in *Drosophila melanogaster*. Penn State Chromatin and Epigenetic regulation of Transcription symposium.
- 27) Rieder, L, Zeidman, A, Curry, K, Duronio, R, and **Larschan, E.** 2015. The dosage compensation protein CLAMP is involved in non sex-specific histone transcript misprocessing. 2015 *Drosophila* Research Conference, Chicago, IL.  
**\*This poster won best poster out of 2000 posters at The International *Drosophila* Research Conference**
- 28) Rieder, L, Curry, K, Boltz, K, Bowman, S, Duronio, R, and **Larschan, E.** 2015. Dual roles for the *Drosophila* dosage compensation protein CLAMP in two diverse nuclear bodies: the male X-chromosome and the histone locus body. 2015 EMBO Meeting. Birmingham, UK.  
**\*This abstract was selected for a talk and won best poster out of 800 posters at this international meeting**
- 29) Kaye, E, Kuzu, G, Kurland, J, Bulyk, ML, Tolstorukov, M and **Larschan, E.** 2015. Expansion of GA repeats promotes dosage compensation across species. Gordon Conference on Epigenetics, Waltham, MA.
- 30) Kaye, E, Kuzu, G, Kurbidaeva, A, Schedl, P, Tolstorukov, M and **Larschan, E.** 2016. Competition between two essential transcription factors regulates dosage compensation in *D. melanogaster*. Cold Spring Harbor Nuclear Organization Meeting.  
**\*This abstract was selected for a talk.**



- 31) Jordan, W, Kaye, E, Kuzu, G, Tolstorukov, M, and **Larschan, E.** 2016. CLAMP: Sex Specific or Global Transcription Factor. Allied Genetics Meeting, Orlando, FL.
- 32) Tsiarli, M, Xu, L. and **Larschan, E.** 2016. The dosage compensation complex regulates brain development in *Drosophila melanogaster*. Cell Press Transcription in Development meeting, Chicago, IL.
- 33) Leila Rieder, Kaitlin Curry, Kara Boltz, Guray Kuzu, Michael Tolstorukov, William Marzluff, Robert Duronio and **Erica Larschan.** 2017. The *Drosophila* CLAMP protein regulates the formation of two different active chromatin domains. International *Drosophila* Meeting: San Diego, CA. **\*This abstract was selected for a talk.**
- 34) Leila Rieder, Jennifer Urban, Emily Kaye, Kaitlin Curry, Kara Boltz, Guray Kuzu, Michael Tolstorukov, William Marzluff, Robert Duronio and **Erica Larschan.** 2017. The *Drosophila* CLAMP protein regulates the formation of two different active chromatin domains. Cold Spring Harbor Symposium: Chromosomes and chromatin.
- 35) Leila Rieder, Jennifer Urban, Emily Kaye, Kaitlin Curry, Kara Boltz, Guray Kuzu, Michael Tolstorukov, William Marzluff, Robert Duronio and **Erica Larschan.** 2017. The *Drosophila* CLAMP protein regulates the formation of two different active chromatin domains. Gordon Epigenetics Conference. Holderness School, NH.
- 36) William Jordan, III and **Erica Larschan.** 2018. Three-dimensional organization of the *Drosophila* X-chromosome is regulated by the CLAMP zinc finger protein. FASEB Chromatin meeting, Florence, Italy.
- 37) William Jordan, III and **Erica Larschan.** 2018. Machine learning models for understanding how the X-chromosome is distinguished from autosomes in *Drosophila*. Cold Spring Harbor Biological Data Science Meeting.
- 38) William Jordan, III and **Erica Larschan.** 2018. Three-dimensional organization of the *Drosophila* X-chromosome is regulated by the CLAMP zinc finger protein. HHMI Gilliam meeting, Chevy Chase, MD.
- 39) Leila Rieder, Kaitlin Koreski, Robert Duronio, William Marzluff and **Erica Larschan.** 2018. The CLAMP protein is required for the formation of the histone locus body. Cold Spring Harbor Meeting on Nuclear organization and function.
- 40) Leila Rieder, Kaitlin Koreski, Robert Duronio, William Marzluff and **Erica Larschan.** 2018. The CLAMP protein is required for the formation of the histone locus body. Cold Spring Harbor Meeting on Nuclear organization and function. Society for Developmental Biology Meeting. **\*This abstract was selected for a talk.**

**Invited Lectures:**

2009 Brown University, Department of Molecular Biology, Cell Biology, and Biochemistry

2009 Memorial Sloan Kettering Cancer Center, Program in Molecular Biology

- 2009 University of Rochester, Department of Biology
- 2009 Wesleyan University, Department of Molecular Biology and Biochemistry
- 2009 Bowdoin College, Department of Biology (Host: Dr. Jack Bateman)
- 2010 Gordon Conference on Chromatin and Transcription, Bryant College, RI
- 2010 New York University, Department of Biology (Host: Dr. Christine Rushlow)
- 2010 North East Society for Developmental Biology, Woods Hole, MA
- 2011 Harvard Medical School, Department of Genetics (Host: Dr. Fred Winston)
- 2011 UConn, Department of Biology (Host: Dr. Barbara Mellone)
- 2011 Penn State Chromatin Symposium
- 2011 FASEB Meeting on Chromatin and Transcription
- 2012 Center for Computational and Molecular Biology, Brown University
- 2012 Wellesley College, Department of Biochemistry (Host: Dr. Don Elmore)
- 2013 International *Drosophila* Meeting, Washington DC
- 2013 Gordon Conference on Epigenetics, Bryant College, RI
- 2013 Brandeis University, Waltham, MA
- 2013 Universite Laval, Quebec, CA (Host: Dr. Amine Nourani)
- 2013 Keynote speaker for American Cancer Society 100<sup>th</sup> anniversary celebration
- 2013 Speaker at Epigenomics Conference, Harvard Medical School, Boston, MA
- 2013 UMass Medical School, Worcester, MA (Host: Dr. Tony Imbalzano)
- 2014 Plenary speaker at the International *Drosophila* meeting in San Diego, CA (audience of 3,000 participants)
- 2014 NIH (Host: Dr. Elissa Lei)
- 2014 Brandeis University, Waltham, MA (Host: Dr. Michael Marr)
- 2015 UNC Chapel Hill, Chapel Hill, NC (Host: Dr. Robert Duronio)
- 2015 Abcam chromatin meeting, Harvard Medical School
- 2015 UMass Amherst, MA (Host: Dr. Michele Markstein)

2016 Duke University, Raleigh, NC (Host: Dr. Don Fox)

2016 University of Rochester, Rochester, NY (Host: Dr. Amanda Larracuenta)

2016 International Crete *Drosophila* meeting, Chania, Crete

2016 Cold Spring Harbor Chromatin and Epigenetics Meeting

2016 Cornell University, Ithaca, NY (Host: Dr. John Lis)

2017 University of Wisconsin, Madison (Host: Dr. Melissa Harrison)

2017 ASBMB conference (spotlight talk) Chicago, IL

2017 Johns Hopkins (Host: Dr. Robert Johnston)

## 6. Research grants:

### Current grant:

NIH R35 MIRA  
5/1/2018-4/30/2023  
“Establishing domains of coordinate gene activation”  
Effort months: 4.5 months  
\$1,764,845 direct costs  
Role: PI

### Past grants:

1) **NIH R01 GM098461-1**  
**(PECASE award: proposal obtained top new investigator award score at 6<sup>th</sup> percentile)**  
“Establishing coordinate gene regulation during *Drosophila* dosage compensation”  
8/1/2011-7/31/2018  
Effort: 4.5 months/37.5%  
\$945,000 direct costs  
Role: PI

### A competing supplement was awarded for this R01 in 2014 (\$80,000/year)

2) **ACS Research Scholar Grant**  
“Epigenetic targeting of histone acetylation”  
1/1/2013-12/31/2016  
Effort: 1.9 months/18%  
\$600,000 direct costs  
Role: PI

3) **Pew Biomedical Scholars program**  
“Establishing domains of coordinate gene regulation”  
7/1/2011-6/30/2015  
Effort: 0.84 months/7%  
\$220,812 direct costs  
Role: PI

4) **ADVANCE Grant from NSF through Brown University**  
“Using Next Generation sequencing to study dosage compensation in *Drosophila*”  
4/01/2010-3/31/2011  
Effort: 0 months/0%  
\$15,000

Role: PI

5) **RI-INBRE pilot award** Effort: 0.12 months/1.5%  
“Establishing sub-nuclear domains of coordinate gene regulation”  
12/1/2010-4/30/2011 \$30,000  
Role: PI

6) **Brown Salomon Award** Effort: 0 months/0%  
“Establishing sub-nuclear domains of coordinate gene regulation”  
2/28/2011-2/27/2012 \$15,000  
Role: PI

7) **Rhode Island Foundation Research Grant** Effort: 0.3 Months/2.5%  
“Establishing domains of coordinate gene regulation”  
6/01/2011-5/31/2012 \$15,000  
Role: PI

## 7. Service

### ***Service to the University***

2010-present Member of NextGen Sequencer Steering Committee led by Dean Hawrot and Dr. Gary Wessel

2010 Organizer of day-long NextGen sequencer symposium

2010-2016 Presenter of Career Center seminar “How to find a post-doc”

2010 MCB Graduate Program Faculty Representative at ABRCMS student recruiting meeting

2011 Co-organizer of MCB Graduate Program Annual Retreat

2011 Presenter of Summer UTRA Program Faculty Lunch Seminar

2011 Presenter of “How to negotiate a job offer” seminar through the Brown Bio-Med Division Office of Graduate and Postdoctoral Studies

2011-present Junior Faculty representative to the MCB graduate program executive committee

2012 Presentation and tour for the staff of U.S. Senator Whitehouse from RI

2013-2015 Member of MCB Department Space Allocation Committee

2014-present Larschan laboratory initiated the Brown *Drosophila* Fly Club meeting that brings together 7 *Drosophila* labs at Brown and across Rhode Island monthly

2018-present Larschan laboratory initiated monthly Epigenetics Club

2018 Member of MCB admissions committee

2018 Co-director of CCMB graduate program

2018 Member of CCMB graduate program admissions committee

**Hosting Seminar Speakers at Brown:**

- 2011 Dr. Fred Winston (Harvard), Dr. Jack Bateman (Bowdoin), Dr. Barbara Mellone (UConn) for MCB Graduate Program
- 2012 Dr. Barbara Meyer (Berkeley), Dr. Susan Mango (Harvard) for MCB Graduate Program co-sponsored by the NSF ADVANCE Distinguished Women in Science Program
- 2013 Dr. John Lis (Cornell) for MCB Graduate Program; Dr. Remo Rohs (USC) for CCMB
- 2014 Dr. Nadia Singh (NC State), Dr. Robert Duronio (UNC) for MCB Graduate Program
- 2015 Dr. Jonathan Whetstone (Harvard) for MCB Graduate Program
- 2016 Dr. Donald Fox (Duke) for MCB Graduate Program
- 2017 Dr. Robert Johnston (Johns Hopkins) for MCB Graduate Program; Dr. Amanda Larracuente (U Rochester) for CCMB; Dr. Michael Tolstorukov (MGH) for CCMB
- 2018 Dr. Julius Brennecke (IMBA Vienna)

***Service to the Profession***

- 2010-present Ad-hoc review of manuscripts for *Genetics*, *PLoS Genetics*, *Molecular and Cellular Biology*, *Chromosome Research*, *BMC Biology*, *Molecular Cell*, *Elife*
- 2010 Session Chair at the North East Society for Developmental Biology meeting
- 2011 Ad hoc review of grants for the NSF
- 2012 Ad hoc member of the NIH Molecular Genetics A Study Section
- 2014-2016 Ad hoc member of the American Cancer Society Grant Review Panel: DNA Mechanisms in Cancer
- 2015-2018 Guest Editor for *PLoS Genetics* (selected reviewers for and made acceptance decisions on manuscripts).
- 2016-2017 Member of first mentor training cohort for the Gilliam program for under-represented minority students at Howard Hughes Medical Institute involving monthly webinars and two multi-day training sessions at HHMI headquarters
- 2018 Member of Blue Sky meeting advisory committee for the Genetics Society of America

***Service to the Community***

- 2005 Roxbury Latin High School Genomics Seminar
- 2005, 2007, 2011, 2013, 2015, 2017 Presenter of science career seminars at Wellesley College
- 2011 Initiator of Harvard Personalized Genome Project Education Initiative link to RI high schools
- 2012 Presenter at Wellesley High School Science Fair
- 2013-2018 Presenter at Wellesley College Pre-school and Newman Elementary school, Needham, MA

**8. Honors**

***Academic***

- 1994 Wellesley College: four-year full tuition scholarship
- 1995 NIH Research Experience for Undergraduates fellowship
- 1996 Staley Fellowship for cancer research
- 1997 American Cancer Society Undergraduate research fellowship
- 1998 National Barry M. Goldwater Scholarship in Science
- 1998 Mary F.C. Gross Prize for Academic Achievement
- 1998 Horton-Hallowell Fellowship for graduate study
- 1998 Wellesley College Valedictorian (summa cum laude)
- 2002 Albert J. Ryan Scholar at Harvard Medical School
- 2011 Pew Biomedical Scholar
- 2011 Ellison Foundation New Scholar in Aging (declined)
- 2012 Presidential Early Career Award in Science and Technology (PECASE) from President Obama
- 2013 Mentor-of-the-year Award from the Molecular and Cellular Biology Graduate Program
- 2014 Endowed Assistant Professor: Richard and Edna Salomon Professorship
- 2018 Early Career Research Award from Brown University

***Fellowships***

- 2004 NIH F32 Postdoctoral Fellowship (declined)
- 2004 American Cancer Society Postdoctoral Fellowship (declined)
- 2004 Leukemia and Lymphoma Postdoctoral Fellow
- 2008 Medical Foundation Charles A. King Trust Postdoctoral Fellow

***Honorary Societies***

- 1997 Phi Beta Kappa, Wellesley College, Wellesley, MA
- 1998 Sigma Xi Science Honor Society, Wellesley College, Wellesley, MA

**9. Teaching:**

**BIOL2200D (Fall 2011): Current Topics in Biochemistry: Transcription and chromatin**

6 students enrolled: 2 undergraduates and 4 graduate students Co-taught with Dr. Gerwald Jogl

Received a teaching evaluation score of **1.0** (*on a scale of 1.0-5.0 where 1.0 is the best*)

**BIOL1950/1960: Independent Study**

Fall 2010: Aneesha Tewari

Spring 2011: Jessica Feng, Aneesha Tewari, Peng Xia

Fall 2011: Jessica Feng, Mei Cao, Aneesha Tewari, Peng Xia

Spring 2012: **Senior Honors theses:** Jessica Feng, Mei Cao, Aneesha Tewari, Catherine McManus

Fall 2012: Catherine McManus, Peng Xia

Spring 2013: Sonia Boor, Catherine McManus

Fall 2013: Sonia Boor, Anna Zeidman

Spring 2014: Sonia Boor, Anna Zeidman, Caroline Doherty

Fall 2014: Sonia Boor, Anna Zeidman, Caroline Doherty

Spring 2015: **Senior Honors theses:** Sonia Boor, Anna Zeidman, Caroline Doherty

Fall 2015: Lucy Xu

Spring 2016: **Senior Honors Thesis:** Lucy Xu

Fall 2017: Erica Nyugen, Julia Gross (Senior Honors thesis planned for Spring 2018)

Spring 2018: Erica Nyugen

Fall 2018: Erica Nyugen

**BIOL2150 (Fall 2012): Scientific Communication**

8 students enrolled: 8 graduate students Co-taught with Dr. Judith Bender

Received a teaching evaluation score of **1.5** (*on a scale of 1.0-5.0 where 1.0 is the best*)

**BIOL1540/2540 (Spring 2013): Molecular Genetics**

18 students enrolled: 14 undergraduates, 4 graduate students. Co-taught with Dr. Judith Bender and Dr. Eric Morrow

Received a teaching evaluation score of **1.6** (*on a scale of 1.0-5.0 where 1.0 is the best*)

**BIOL2150 (Fall 2013): Scientific Communication**

9 students enrolled: 9 graduate students. Co-taught with Dr. Kim Mowry and Dr. Richard Freiman

Received a teaching evaluation score of **1.5** (*on a scale of 1.0-5.0 where 1.0 is the best*)

**BIOL1540/2540 (Spring 2014): Molecular Genetics**

34 students enrolled: 30 undergraduates and 4 graduate students. Co-taught with Dr. Eric Morrow

Received a teaching evaluation score of **1.5** (*on a scale of 1.0-5.0 where 1.0 is the best*)

**BIOL1540/2540 (Spring 2015): Molecular Genetics**

17 students enrolled: 9 undergraduates and 8 graduate students. Co-taught with Dr. Eric Morrow

Received a teaching evaluation score of **1.33** (*on a scale of 1.0-5.0 where 1.0 is the best*)

**BIOL2000F (Spring 2015): Current Topics in Biochemistry: From Kinases to Chromatin**

7 students enrolled: 5 undergraduates and 2 graduate students. Co-taught with Dr. Art Salomon

Received a teaching evaluation score of **1.25** (*on a scale of 1.0-5.0 where 1.0 is the best*)

**BIOL2150 (Fall 2015): Scientific Communication**

9 students enrolled: 9 graduate students. Co-taught with Dr. Judith Bender



Received a teaching evaluation score of **1.83** (*on a scale of 1.0-5.0 where 1.0 is the best*)

**BIOL1540/2540 (Spring 2016): Molecular Genetics**

19 students enrolled: 13 undergraduates and 6 graduate students. Co-taught with Dr. Eric Morrow

Received a teaching evaluation score of **1.15** (*on a scale of 1.0-5.0 where 1.0 is the best*)

**BIOL2200D (Fall 2016): Functional Genomics**

11 students enrolled: 7 graduate students and 4 undergraduate students. Co-taught with Dr. Nicola Neretti

Received a teaching evaluation score of **1.00** (*on a scale of 1.0-5.0 where 1.0 is the best*)

**BIOL1540/2540 (Spring 2017): Molecular Genetics**

**15** students enrolled: **11** undergraduates and **4** graduate students. Co-taught with Dr. Judith Bender

Received a teaching evaluation score of **1.86**. (*on a scale of 1.0-5.0 where 1.0 is the best*)

**BIOL2150 (Fall 2017): Scientific Communication**

**12** students enrolled: **12** graduate students. Co-taught with Dr. Judith Bender and Dr. Kimberley Mowry

Received a teaching evaluation score of **1.0** (*on a scale of 1.0-5.0 where 1.0 is the best*)

**BIOL1540/2540 (Spring 2018): Molecular Genetics**

**16** students enrolled: **14** undergraduates and **2** graduate students. Co-taught with Dr. Judith Bender

Received a teaching evaluation score of **1.38** (*on a scale of 1.0-5.0 where 1.0 is the best*)

**BIOL2150 (Fall 2018): Scientific Communication**

**5** students enrolled: **5** graduate students. Co-taught with Dr. Judith Bender and Dr. Kimberley Mowry

Received a teaching evaluation score of **1.0** (*on a scale of 1.0-5.0 where 1.0 is the best*)

**Guest Lectures**

March 11, 2010      BIOL1540/2540 Molecular Genetics

March 14, 2012      BIOL 2310 Advanced Developmental Biology

March 10, 2013      BIOL 2310 Advanced Developmental Biology

November 2014      BIOL 1300 Biomolecular Interactions  
October 2015      BIOL 1300 Biomolecular Interactions  
November 2016      BIOL 1300 Biomolecular Interactions

**10. Advisees:**

***Postdoctoral Fellows***

Dr. Leila Rieder (2013-present)  
Dr. Maria Tsiarli (2014-present)  
Dr. Jason Dobson (2013)  
Dr. Guray Kuzu (2014-2016)  
Dr. Matthew Booker (2017-present)  
Dr. Mukulika Ray (2018-present)

***Graduate Students***

Jessica Chery (2010-2014)  
Marcela Soruco (2010-2014)  
*Marcela Soruco won the Brown Joukowski Thesis Prize for Best Thesis in Biology*  
Jennifer Urban (2012-2016)  
Emily Kaye (2013-2017)  
William Jordan (2015-present)

**Additional Rotation students**

Feb-Apr 2010: Arthur Sugden  
Feb-Apr 2011: Alexander Leydon  
Feb-April 2012: Tara Fresques  
Feb-April 2012: Max Leiserson (CCMB)  
November-January 2015: Anastasia Vedenko  
October 2016-January 2017: Ethan Fitzgerald

Fall 2017: Brendan McCarthy-Sinclair

Fall 2018: Leslie Pedraza (withdrew for medical reasons)

***Research Technicians***

Karen Goebel (2010-2012)

Jessica Feng (2012-2014)

Jacob Bliss (2014-present)

***Undergraduates (2010-present)***

Aneesha Tewari, Jessica Feng, Tina Xia, Mei Cao, Catherine MacManus, Anna Zeidman, Sonia Boor, Caroline Doherty, Alexander Hadik, Lucy Xu, Emma Thygesen, Erica Nguyen, Rhaadika Kher, Julia Gross, Rachel Lee

***Thesis committees (2010- present)***

Leila Reider, Georges St. Laurent, Stephen (Zak) Swartz, Stephen Jones, Alexander Leydon, Christopher Neil, John Urban, Abbie Frederick, Jenna Kotak, Brian Jones, Trent Woodham, Megan Gura, Sarah Kaptur, Corinne Hufflitz, Alice Pieplow, Shane Evans

**Outside reader for three Ph.D theses:** Dr. Jeannie Lee's laboratory (MGH), Dr. Jeannie Lawrence's laboratory (UMass Worcester), Dr. Tom Fazio's laboratory (UMass Worcester)

***First year advisees (2011)***

William Conway, Sonia Boor, Madeleine Borges, Michael Franklin

***Concentration advisees***

Victoria Tran, Shivam Nadimpalli, Ian Sabula, Savannah

***Advisee Funding***

**Jessica Chery:** Travel fellowship to Keystone chromatin meeting, [travel fellowship to?] NHGRI Advances in Genomics week long-seminar course at NIH, represented the MCB Graduate Program at the ABRCMS meeting for minority students

**Marcela Soruco:** NIH F31-Diversity Individual Fellowship, travel fellowship as invited speaker to SACNAS National Conference, represented the MCB Graduate Program at SACNAS three times, MCB T32 training grant appointee

**Jennifer Johnson:** NIH F31-Diversity Individual Fellowship, IMSD training grant appointee

**Emily Kaye:** Molecular Biology of Aging T32 training grant appointee

**Dr. Leila Reider:** Postdoctoral NIH F32 Individual Fellowship funded at 3<sup>rd</sup> percentile. Travel award to the EMBL meeting in Birmingham, UK. Travel and funding for CSHL proteomics

course.

K99/R00 Transition to Independence award with a perfect score of "10"

**Anna Zeidman (undergraduate):** National Victoria Finnerty travel award to attend the International Drosophila meeting in Chicago, IL (2015)

**William Jordan:** National Science Foundation Graduate Fellowship, HHMI Gilliam Fellowship, Funding for CSHL Chromatin and Transcription course, MCB T32 training grant appointee

**UTRA funding (15 total students funded)**

Summer 2010: Aneesha Tewari

Summer 2011: Aneesha Tewari (individual) Team: Mei Cao, Catherine MacManus, Jessica Feng, Tina Xia

Summer 2012: Tina Xia

Summer 2013: Alexander Hadik and Sonia Boor

Summer 2014: Sonia Boor, Anna Zeidman, Caroline Doherty

Summer 2016: Emma Thygesen

Summer 2017: Erica Nuygen, Julia Gross

**10. Date:** January 30, 2019