Christopher M. Uyehara

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Education

2014 – Present **University of North Carolina, Chapel Hill NC**
Degree: Ph.D. Candidate, Curriculum in Genetics and Molecular Biology
Adviser: Daniel J. McKay

2012 – 2014 **College of William and Mary, Williamsburg VA**
Degree: M.S., Biology
Adviser: Diane C. Shakes

2008 – 2012 **University of Virginia, Charlottesville VA**
Degree: B.S. Biology
Adviser: Herman Wijnen

Research Experience

2014 – Present **University of North Carolina, Chapel Hill**
Tissue- and temporal-specific binding of the ecdysone hormone receptor directs genome-wide changes in gene expression

- Integrated RNAseq, FAIREseq, and CUT&RUN to investigate the role of the ecdysone hormone receptor in directing changes in gene expression over time and across tissues.
- Performed targeted experiments on cloned enhancers to determine how their activity patterns were established and regulated.
- Used immunofluorescence to connect genome-wide observations to broader developmental phenotypes

2012 – 2014 **College of William and Mary**
New Insights into Fibrous Body Protein Complexes Involved in C. *elegans* Spermatogenesis

- Used fluorescence microscopy, DIC, western blots and immunoprecipitations to characterize the protein localization and PTM states of MSP accessory proteins.

2011 – 2012 **University of Virginia**
Circadian Rhythms in *D. melanogaster*

- Performed a targeted screen of candidate transcription factors using RNAi and overexpression lines to identify novel transcription factors involved in effecting the rhythms of *D. melanogaster*.

Publications

Price, K.L., Presler, M., **Uyehara, C.M.**, and Shakes, D.C. (2020). The intrinsically disordered protein SPE-18 promotes localized assembly of the major sperm protein in C. *elegans* spermatocytes. BioRxiv 2020.08.10.244988.

Uyehara, C.M., and McKay, D.J. (2019). Direct and widespread role for the nuclear receptor EcR in mediating the response to ecdysone in Drosophila. Proc Natl Acad Sci U S A *116*, 9893–9902.

Leatham-Jensen, M., **Uyehara, C.M.**, Strahl, B.D., Matera, A.G., Duronio, R.J., and McKay, D.J. (2019). Lysine 27 of replication-independent histone H3.3 is required for Polycomb target gene silencing but not for gene activation. PLoS Genet *15*, e1007932.

Uyehara, C.M.*, Nystrom, S.L.*, Niederhuber, M.J., Leatham-Jensen, M., Ma, Y., Buttitta, L.A., and McKay, D.J. (2017). Hormone-dependent control of developmental timing through regulation of chromatin accessibility. Genes Dev. *equal contributions

Academic and Professional Honors

University of North Carolina – Chapel Hill
Spring 2015 NIGMS T32 Training Grant Recipient

College of William and Mary, Williamsburg VA
Fall 2013 Outstanding Teaching Assistant Award
Spring 2013 Graduate Student Research Grant

University of Virginia, Charlottesville VA
Dean's List, Four Semesters

Teaching Experience

Spring 2016 **Biol 202: Introduction to Genetics and Molecular Biology, UNC Chapel Hill**
Teaching Assistant

Fall 2013 **BIOL 221L: Introduction to Organisms, Ecology, and Evolution, College of W&M**
Teaching Assistant

Spring 2013 **BIOL 310: Molecular Cell Biology, College of W&M**
Teaching Assistant

Spring 2013 **BIOL 407: Cell Biology Lab, College of W&M**
Teaching Assistant

Fall 2012 **BIOL 221L: Introduction to Organisms, Ecology, and Evolution, College of W&M**
Teaching Assistant

Research Presentations

May 2019 **Triangle Fly Symposium, Chapel Hill NC**
Poster Presentation
Uyehara CM and McKay DJ. "The ecdysone hormone receptor directs the spatial and temporal activity of target enhancers."

April 2019 **Annual Drosophila Research Conference, Dallas TX**
Poster Presentation
Uyehara CM and McKay DJ. "The ecdysone hormone receptor directs the spatial and temporal activity of target enhancers."

March 2019 **MIBIO Back to Basics Symposium, Chapel Hill NC**
Poster Presentation
Uyehara CM and McKay DJ. "A direct and widespread role for the nuclear receptor EcR in mediating the response to ecdysone in Drosophila"

May 2018 **Triangle Fly Symposium, Durham NC**
Platform Presentation
Uyehara CM and McKay DJ. "A direct and widespread role for the nuclear receptor EcR in mediating the response to ecdysone in Drosophila"

April 2018 **Annual Drosophila Research Conference, Philadelphia PA**
Platform Presentation.
Uyehara CM and McKay DJ. "The Ecdysone Hormone Receptor directs genome-wide changes in gene expression and chromatin accessibility during wing morphogenesis."

Dec. 2017 **Chromatin and Epigenetics Symposium, Chapel Hill NC**
Platform Presentation

Uyehara CM and McKay DJ. "The Ecdysone Hormone Receptor Directs Genome-Wide Changes in Gene Expression and Chromatin Accessibility During Wing Morphogenesis in *D. melanogaster*"

Aug 2017 **Genetics Department Retreat, Chapel Hill NC**
Platform Presentation.
Uyehara CM and McKay DJ. "The Role of the Ecdysone Hormone Receptor in Directing a Gene Expression and Chromatin Accessibility Program in *D. melanogaster*"

March 2014 **Graduate Research Symposium, Williamsburg VA**
Platform Presentation
Uyehara CM, Messina KL and Shakes DC. "New Insights into Fibrous Body Protein Complexes Involved in C. *elegans* Spermatogenesis"

Dec. 2013 **American Society of Cell Biology, New Orleans LA**
Poster Presentation
Uyehara CM and Shakes DC. "An Investigation of MFP2 – A Protein Involved in C. *elegans* Spermatogenesis"

April 2013 **College of William and Mary Graduate Research Symposium, Williamsburg VA**
Poster Presentation
Uyehara CM, Messina KL and Shakes DC. "Investigation of Two Proteins Involved in Cytoskeletal Dynamics of C. *elegans* Spermatozoa"