Melissa M. Harrison

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EDUCATION

1994 - 1998	Harvard University	A.B. (magna cum laude) Biochemical Sciences
1999 - 2006	MIT	Ph.D. Department of Biology

PROFESSIONAL EXPERIENCE

1994, 1995 Undergraduate researcher with Dr. Charles Aquadro Cornell University

• Studied reproductive isolation in Drosophila populations

1996 - 1998 Undergraduate researcher with Dr. Kevin Struhl Harvard University

• Thesis: TAF17 and SRB4 as potential coactivators in yeast

1998 - 1999 Visiting researcher with Dr. E. Richard Moxon Oxford University

• Determined that carriage of *Neisseria meningitidis* in human tonsillar tissue was more widespread than previously believed.

1999 - 2006 Graduate student with Dr. H. Robert Horvitz

Massachusetts Institute of Technology

- Identified a novel, conserved protein complex with important functions in transcriptional regulation and *Caenorhabditis elegans* vulval specification.
- Characterized the family of malignant-brain-tumor containing proteins in C. elegans.
- 2006 2011 Postdoctoral Fellow with Drs. Michael Botchan and Thomas Cline University of California, Berkeley
- Purified and characterized proteins essential for regulating the onset of zygotic transcription.

2011 – 2018 Assistant Professor, Department of Biomolecular Chemistry
2018 – present University of Wisconsin, Madison

• Using a combination of genetics, genomics and biochemistry to study the mechanisms by which the genome is interpreted during development

HONORS AND AWARDS

HONORD	IND AWARDS
1996 - 1998	John Harvard Scholarship for academic achievement, Harvard College
1996 - 1998	Elizabeth Cary Agassiz Award for academic achievement, Harvard College
1998	Magna cum laude in Biological Sciences, Harvard College
1999	National Science Foundation Predoctoral Fellowship (declined)
1999 - 2004	Howard Hughes Medical Institute Predoctoral Fellowship
2007	NIH NRSA Postdoctoral Fellowship (declined)
2007 - 2010	American Cancer Society Postdoctoral Fellowship
2014	Basil O'Connor Starter Scholar Research Award
2014	Wisconsin Partnership Program New Investigator Award
2016	Vallee Scholar Award
2017	American Cancer Society Research Scholar Award
2020	H.I. Romnes Award
2022	Invited plenary speaker, Annual Drosophila Research Conference

PUBLICATIONS

- 1. Sim, R.J., **Harrison, M.M.**, Moxon, E.R., and C.M. Tang. (2000) Underestimation of meningococci in tonsillar tissue by nasopharyngeal swabbing. *Lancet*. 356: 1653-1654.
- 2. Davison, E.M., **Harrison, M.M.**, Walhout, A.J., Vidal, M., and H.R. Horvitiz. (2005) *lin-8*, which antagonizes *Caenorhabditis elegans* Ras-mediated vulval induction, encodes a novel nuclear protein that interacts with the LIN-35 Rb protein. *Genetics*. 171: 1017-1031.
- 3. Ceol, C.J., Stegmeier, F., **Harrison, M.M.**, and H.R. Horvitz. (2006) New classes of genes that act as negative regulators of *let-60* Ras signaling in *Caenorhabditis elegans*. *Genetics*. 173: 709-726.
- 4. **Harrison, M.M.**, Ceol, C.J., Lu, X., and H.R. Horvitiz. (2006) Some *C. elegans* class B synMuv proteins encode a conserved LIN-35 Rb-containing complex distinct from a NuRD-like complex. *Proc Natl Acad Sci USA*. 103: 16782-16787.
- 5. **Harrison, M.M.**, Lu, X. and H.R. Horvitz. (2007) LIN-61, one of two *Caenorhabditis elegans* malignant-brain-tumor-repeat-containing proteins, acts with DRM and NuRD-like protein complexes in vulval development but not in certain other biological processes. *Genetics*. 176: 255-271.
- 6. **Harrison, M.M.**, Botchan, M.R. and T.W. Cline. (2010) Grainyhead and Zelda compete for binding to the promoters of the earliest-expressed Drosophila genes. *Dev Biol.* 345: 248-255.
- 7. Cline, T.W., Dorsett, M., Sun, S., **Harrison, M.M.**, Dines, J., Sefton, L., and L. Megna. (2010) Evolution of the Drosophila feminizing switch gene *Sex-lethal*. *Genetics*. 186:1321-1336.
- 8. Tabuchi, T.M., Deplancke, B., Osato, N., Zhu, L.J., Barrasa, I.M., **Harrison, M.M.**, Horvitz, H.R., Walhout, A.J. and K.A. Hagstrom. (2011) Chromosome-Biased Binding and Gene Regulation by the *Caenorhabditis elegans* DRM Complex. *PLoS Genetics*. 7:e1002074.
- 9. **Harrison, M.M.** *, Li, X.Y*. Kaplan, T. *, Botchan, M.R., and M.B. Eisen. (2011) Zelda Binding in the Early *Drosophila melanogaster* Embryo Marks Regions Subsequently Activated at the Maternal-to-Zygotic Transition. *PLoS Genet*. 7:e1002266.

highlighted in *Nature Reviews Genetics* and recommended by Faculty of 1000 * contributed equally

10. Gratz, S.J., Cummings, A.M., Nguyen, J.N., Hamm, D.C., Donohue, L.K., **Harrison, M.M.***, Wildonger, J.* and K.M. O'Connor-Giles*. (2013) Genome engineering of Drosophila with the CRISPR RNA-guided Cas9-nuclease. *Genetics*. 194:1029-1035.

recommended by Faculty of 1000 and cited more than 800 times over 1100 samples distributed by Addgene on our behalf * corresponding authors

- 11. Gratz, S.J., Wildonger, J., **Harrison, M.M.**, and K.M. O'Connor-Giles. (2013) CRISPR/Cas9-mediated genome engineering and the promise of designer flies on demand. *Fly.* 7:249-255.
- 12. **Harrison, M.M.**, Jenkins, B.V., O'Connor-Giles, K.M. and J. Wildonger. (2014) A CRISPR view of development. *Genes Dev.* 28: 1859-1872.

remained in the top 5 most read articles at *Genes and Development* for more than 2 years after publication

- 13. Li, X.Y., **Harrison, M.M.**, Villalta, J.E., Kaplan, T. and M.B. Eisen. (2014) Establishment of regions of genomic activity during the Drosophila maternal to zygotic transition. *eLife*.3: doi 10.7554/eLife.03737.
- 14. Akbari, O.S., Bellen, H.J., Bier, E., Bullock, S.L., Burt, A., Church, G.M., Cook, K.R., Duchek, P., Edwards, O.R., Esvelt, K.M., Gantz, V.M., Golic, K.G., Gratz, S.J., **Harrison, M.M.**, Hayes, K.R., James, A.A., Kaufman, T.C., Knoblich, J., Malik, H.S., Matthews, K.A., O'Connor-Giles, K.M., Parks, A.L., Perrimon, N., Port, F., Russell, S., Ueda, R., Wildonger, J. (2015) BIOSAFETY. Safeguarding gene drive experiments in the laboratory. *Science* 349: 927-929.
- 15. Hamm, D.C., Bondra, E.R., and **M.M. Harrison**. (2015) Transcirptional activation is a conserved feature of the early embryonic factor Zelda that requires a cluster of four zinc fingers for DNA binding and a low-complexity activation domain. *J Biol Chem.* 290: 3508-3518.
- 16. Gratz, S.J., **Harrison, M.M.**, Wildonger, J. and K.M. O'Connor-Giles. (2015) Precise Genome Editing of Drosophila with CRISPR RNA-guided Cas9. *Methods in Molecular Biology CRISPR:Methods and Protocols.* 1311: 335-348.
- 17. Gratz, S.J., Rubinstein, C.D., **Harrison, M.M.**, Wildonger, J. and K.M. O'Connor-Giles. (2015) CRISPR-Cas9 Genome Editing in *Drosophila*. *Curr Protoc Mol Biol*. 111: 31.2.1-31.2.20.
- 18. **Harrison**, **M.M.** and M.B. Eisen. (2015) Transcriptional activation of the zygotic genome in Drosophila. *Curr Top Dev Biol*. 113: 85-112.
- 19. Schulz, K.N., Bondra, E.R., Villalta, J.E., Lieb, J.D., Kaplan, T., McKay, D.J., and **M.M. Harrison**. (2015) Zelda is differentially required for chromatin acccessibility, transcription-factor biding and gene expression in the early Drosophila embryo. *Genome Res* 25: 1715-1726.
- 20. Nevil, M., Bondra, E.R., Schulz, K.N., Kaplan, T., and **M.M. Harrison**. (2017) Genome-wide analysis of the conserved transcription factor Grainy head reveals stable binding to target genes during development. *Genetics* 205: 605-620.
- 21. Janssens, D.H., Hamm, D.C., Xiao, Q., Anhezini De Araujo, L., Siller, K.H., Siegrist, S.E., **Harrison, M.M.**, and C.Y. Lee. (2017) A novel Hdac1/Rpd3-poised circuit balances continual self-renewal and rapid restriction of developmental potential during asymmetric stem cell division. *Dev Cell* 40: 367-380.
- 22. Hamm, D.C., Larson, E.D., Nevil, M.N., Marshall, K., Bondra, E.R., and **M.M. Harrison**. (2017) A conserved maternal-specific repressive domain in Zelda revealed by Cas9-mediated mutagenesis in *Drosophila melanogaster*. *PLoS Genet* 13:e1007120. selected for a Perspective in *PLoS Genetics*
- 23. Bier, E., **Harrison, M.M.**, O'Connor-Giles, K.M., and J. Wildonger. (2018) Advances in Engineering the Fly Genome with the CRISPR-Cas System. *Genetics* 208: 1-18.
- 24. Schulz, K.N. and **M.M. Harrison**. (2018) Zygotic genome activation: The dawn of independence. In M. K. Skinner (Ed.) *Encyclopedia of Reproduction* vol 3: 320-325.
- 25. Hamm, D.C. and **M.M. Harrison**. (2018) Regulatory principles governing the maternal-to-zygotic transition: insights from *Drosophila melanogaster*. *Open Biol.* 8: 180183.

- 26. Dufourt, J., Trullo, A., Hunter, J., Fernandez, C., Lazaro, J., Dejean, M., Morales, L., Nait-Amer, S., Schulz, K.N., **Harrison, M.M.**, Favard, C., Radulescu, O., Lagha, M. (2018) Temporal control of gene expression by the pioneer factor Zelda through transient interactions in hubs. *Nat. Commun.* 9: 5194.
- 27. Mir, M., Stadler, M.R., Ortiz, S., **Harrison, M.M.**, Darzacq, X., and M.B. Eisen. (2018) Dynamic hubs of the pioneer factor Zelda organiz pattering factor binding but are not stably associated with sites of active transcription. *eLife*. 7:e40497.
- 28. Schulz, K.N. and **M.M. Harrison**. (2019) Mechanisms regulating zygotic genome activation. *Nat. Rev. Genet.* 20:221-234.
- 29. McDaniel, S.L., Gibson, T.J., Schulz, K.N., Fernandez Garcia, M., Nevil, M.N., Jain, S.U., Lewis, P.W., Zaret, K.S., and **M.M. Harrison**. (2019) Continued activity of the pioneer factor Zelda is required to drive zygotic genome activation. *Mol Cell*. 74:185-195.
- 30. Reese, R.M., **Harrison, M.M.**, and E.T. Alarid. (2019) Grainyhead-like protein 2: The emerging role in hormone-dependent cancers and epigenetics. *Endocrinology.* 160:1275-1288.
- 31. McDaniel, S.L. and **M.M. Harrison.** (2019). Optogenetic Inactivation of Transcription Factors in the Early Embryo of *Drosophila*. *Bio-protocol* 9(13): e3296.
- 32. Fernandez Garcia, M, Moore, C.D., Schulz, K.N., Alberto, O., Donague, G., **Harrison, M.M.**, Zhu, H., and K.S. Zaret. (2019) Structural features of transcription factors associating with nucleosome binding. *Mol Cell*. 75:921-932.
- 33. McDaniel, S.L., Hollatz, A.J., Branstad, A.M., Gaskill, M.M., Fox, C.A., and **M.M. Harrison**, (2020) Tissue-Specific DNA Replication Defects in *Drosophila melanogaster* caused by a Meier-Gorlin Syndrome Mutation in Orc4. *Genetics* 214: 355-367. selected for a highlight in *Genetics*
- 34. Nevil, M., Gibson, T.J., Bartolutti, C., Iyengar, A., and **M.M. Harrison.** (2020) Establishment of chromatin accessibility by the conserved transcription factor Grainy head is developmentally regulated. *Development*. 147: doi: 10.1242/dev.185009 selected for a Research Highlight in *Development*
- 35. Jain, S.U., Rashoff, A.Q*., Krabbenhoft, S.D*., Hoelper, D., Do, T.J., Gibson, T.J., Lundgren, S.M., Bondra, E.R., Deshmukh, S., Harutyunyan, A.S., Juretic, N., Jabado, N., **Harrison, M.M.**, Lewis, P.W. (2020) H3 K27M and EZHIP impede H3K27-methylation spreading by inhibiting allosterically stimulated PRC2. *Mol Cell* 80: 726-735.
 - * contributed equally
- 36. Larson, E.D., Marsh, A.J., and **M.M. Harrison.** (2021) Pioneering the developmental frontier. *Mol Cell* 81: 1640-1650.
- 37. Gaskill, M.M.*, Gibson, T.J.*, Larson, E.D., and **M.M. Harrison.** (2021) GAF is essential for zygotic genome activation and chromatin accessibility in the early *Drosophila* embryo. *eLife* 10: e66668 doi.org/10.7554/eLife.66668
 - * contributed equally

- 38. Larson, E.D.*, Komori, H.*, Gibson, T.J., Ostgaard, C.M., Hamm, D.C., Schnell, J.M., Lee, C.Y., and **M.M. Harrison.** (2021) Cell-type-specific chromatin occupancy by the pioneer factor Zelda drives key developmental transitions in *Drosophila*. *Nat Comm.* 12: 7153.

 * contributed equally
- 39. Gaskill, M. and **M.M. Harrison**. (2022) Tethering gene regulation to chromatin organization. *Science* 375:491-492.
- 40. Bellec, M., Dufourt, J., Hunt, G., Lenden-Hasse, H., Trullo, A., Makrini, A., Lamarque, M., Gaskill, M.M., Faure-Gautron, H., Mannervik, M, **Harrison, M.M.**, Andrau, J.C., Favard, C., Radulescu, O., and M. Lagha (2022) The control of transcriptional memory by stable mitotic bookmarking. *Nat Comm.* 13:1176.
- 41. Larson, E.D., Komori, H., Fitzpatrick, Z.A., Krabbenhoft, S.D., Lee, C.Y., and **M.M. Harrison.** (2022) Premature translation of the zygotic genome activator Zelda is not sufficient to precociously activate gene expression. *G3* 12: jkac159.

PROFESSIONAL MEMBERSHIPS

National and International Associations

2019 - present Society for Developmental Biology

2014 - present American Society for Biochemistry and Molecular Biology

2011 - present Genetics Society of America

<u>University Memberships and Training Affiliations</u>

2021 - present	Affiliate faculty, UW-Madison Center for Genomic Science Innovation
2021 - present	Member, UW-Madison Stem Cell and Regenerative Medicine Center
2017 - present	Member, Carbone Cancer Center
2016 - present	Genome Sciences Training Program
2012 - present	Genetics Training Program
2012 - present	Institute for Clinical and Translational Research
2011 - present	Integrated Program in Biochemistry
2011 - present	Cellular and Molecular Biology Training Program
2011 - 2020	Molecular Biosciences Training Grant

INVITED ORAL PRESENTATIONS

- 2005 5th Annual *C. elegans* Meeting
- 2009 Gordon Research Conference: Developmental Biology
- 2011 University of Wisconsin, Madison, WI, Department of Biomolecular Chemistry
 - University of Massachusetts, Amherst, MA, Department of Biology
- 2012 University of Wisconsin, Madison, WI, Department of Cell and Regenerative Biology
- 2013 University of Wisconsin, Madison, WI, RNA Maxi Group
 - American Society of Biochemistry and Molecular Biology Evolution of Core Processes in Gene Regulation Meeting
- National Institute of Diabetes and Digestion and Kidney Disease, Bethesda, MD, Laboratory of Cell and Developmental Biology
 - Annual Drosophila Research Conference, Regulation of Gene Expression Session
 - Co-organizer: The Practice and Promise of CRISPR-Cas9-mediated Genome Engineering Workshop, Annual Drosophila Research Conference
 - Midwest Chromatin and Epigenetics Meeting
- University of Michigan, Ann Arbor, MI, Department of Molecular, Cellular and Developmental Biology

- Co-organizer: Diverse Applications of CRISPR-Cas9 Genome Engineering Workshop, Annual Drosophila Research Conference
- Gordon Research Conference: Developmental Biology
- University of North Carolina, Chapel Hill, NC, Department of Biology
- Massachusetts Institute of Technology, Cambridge, MA Genome Engineering Workshop
 - EMBO Conference: Molecular and Developmental Biology of Drosophila
 - Brown University, Dept. of Molecular Biology, Cell Biology, and Biochemistry
- University of California, Irvine, CA, Department of Developmental and Cell Biology
 - Panel member: Annual Drosophila Research Conference, Early PI Symposium
 - Case Western Reserve University, Cleveland Arbor, OH, Department of Genetics
 - EMBO Workshop: Awakening the genome: the maternal to zygotic transition
 - Vallee Scholars Symposium
- 2018 EMBO Conference: Molecular and Developmental Biology of Drosophila
 - Metazoan Systems Biology Workshop, Bordeaux, France
- Washington University School of Medicine, St. Louis, MO, Department of Developmental Biology
 - University of Wisconsin, Madison, WI, Department of Genetics
 - Iowa State University, Ames, IA, Department of Biochemistry, Biophysics, and Molecular Biology
 - EMBO Workshop: Awakening the genome: the maternal to zygotic transition
 - Northwestern, Evanston IL, Department of Molecular Bioscience
- Cincinnati Children's Hospital Research Foundation, Cincinnati OH, Molecular and Developmental Graduate Program
 - Crete Workshop on Molecular and Developmental Biology of Drosophila (virtual)
 - University of Pittsburgh, Pittsburgh PA, Department of Biological Sciences (virtual)
- Children's Hospital of Philadelphia, Philadelphia, PA, Center for Computational and Genomic Medicine (virtual)
 - University at Albany, SUNY Albany, NY, Dept. of Biological Sciences (virtual)
 - University of Wisconsin, Madison, WI, Stem Cell and Regenerative Medicine Center
 - Vallee Scholar's Meeting Boston, MA
- 2022 Plenary speaker, 63rd Annual Drosophila Research Conference San Diego, CA
 - University of Rochester, Dept of Biology
 - EMBO Conference: Molecular and Developmental Biology of Drosophila
 - EMBL Transcription and Chromatin Meeting Heidelberg, Germany
 - University of Colorado School of Medicine, Molecular Biology Seminar Series
- 2023 University of Michigan, Center for Cell Plasticity and Organ Design
 - University of Alabama at Birmingham, Dept. of Biochemistry and Molecular Genetics
 - Johns Hopkins, Department of Biology

SERVICE

Member, IPiB Admissions Committee
Member, VCRGE Biological Sciences Research Committee
Member, BMC Research Committee
Participant, Women in Science and Engineering (WISE) Faculty Dinner
Member, CMB Graduate Program Steering Committee
Chair, Transcriptional Mechanisms Focus Group for Cellular and
Molecular Biology graduate training program
Co-chair, IPiB Graduate Program Recruitment Committee
Member, IPiB Graduate Program Steering Committee

2021 – 2022 2021	Chair, BMC Assistant Professor Search Committee Reviewer, Sophomore Research Fellowship
2015 – 2020	Member, Faculty Advisory Committee Translational Genomics Facility
2017 – 2019	Co-chair, IPiB Curriculum Committee
2015 – 2017	Member, Cellular and Molecular Biology Exceptional Thesis Award Selection Committee
2016 – 2017	Co-chair, IPiB Admissions Committee
2016	Member, BMC Assistant Professor Search Committee
2016 2016	Reviewer, Hatch Grant Judge, Poster contest, IPiB Retreat
2016	Judge, Poster contest, WARF Discovery Challenge
2015	Panelist, Cellular and Molecular Biology graduate training program Professional Development Event
2014 – 2015	Member, IPiB Admissions Committee
2014	Reviewer, Ruth Dickie Scholarship Competition sponsored by the Graduate Women in Science, Inc. (SDE-GWIS)
2014	Panelist, Postdoc Academic Career Panel hosted by the Office of Postdoctoral Studies at SMPH
2013	Helped to establish University of Wisconsin Madison Genome Editing Facility at the Biotech Center and the GeeWisc initiative
2012 – 2013	Member, IPiB New Student Orientation Committee
2013	Participant, Undergraduate Genetics Association Student-Faculty Event
2012	Judge, Graduate Women in Science Seminar Competition
National and Internat	
2022 – present 2022 – present	Gene Expression Section Editor, FlyBook Member, NIH MRAA study section (USA)
2022 – present 2021 – present	Co-organizer, ZGA virtual symposium
2021 – present	Member, Organizing Committee EMBO Workshop Molecular and Developmental Biology of Drosophila
2021	Member, NIH MGB study section (USA)
2019 – present	Co-organizer EMBO Workshop Awakening of the genome: The maternal-
2011 – present	to-zygotic transition 2021 Adhoc reviewer for Cell Reports, Development, Developmental Biology,
2011 procent	Developmental Cell, Cell Reports, eLife, Epigenetics and Chromatin,
	Faculty Opinions, Genes and Development, Genetics, Genome
	Research, G3, Journal of Biological Chemistry, Journal of Genetics and
	Genomics, JoVE, Molecular Reproduction and Development, Molecular
	Cell, Nature, Nature Communications, Nature Cell Biology, Nature
	Structure Molecular Biology, Nucleic Acids Research, PLoS One, PLoS Genetics, Science, Seminars in Cell and Developmental Biology, Trends in Genetics
2022	Ad hoc reviewer, Boehringer Ingelheim Fonds Foundation (Germany)
2020	Session co-chair: The Allied Genetics Conference, Gene Regulation
2020	Ad hoc member, NIH MGB study section (USA)
2020	Ad hoc reviewer, National Science Centre (Poland)
2020	Ad hoc reviewer, European Research Council (European Union)
2020	Ad hoc reviewer, Boehringer Ingelheim Fonds Foundation (Germany)
2019	Ad hoc reviewer, FWF Austrian Science Fund (Austria)
2019	Ad hoc reviewer, BBSRC (UK)
2019 2018	Guest editor, PLoS Genetics Ad hoc reviewer, Wellcome Trust Sir Henry Dale Fellowship (UK)
2018	Ad hoc reviewer, NICHD Developmental Biology Subcommittee (USA)
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2017	Session co-chair: Annual Drosophila Research Conference, Chromatin and Epigenetics Session
2016	Ad hoc reviewer, Marsden Fund (New Zealand)
2016	Ad hoc reviewer, Israel Science Foundation (Israel)
2016	Ad hoc reviewer, Gordon and Betty Moore Foundation (USA)
2016	Ad hoc reviewer, BBSRC (UK)
2016	Outside Reader, Nicole Dominado Thesis (Hime Lab, University of
	Melbourne)
2016	Outside Reader, Jennifer Urban Thesis (Larschan Lab, Brown University)
2015	Session co-chair: Annual Drosophila Research Conference, Regulation of
	Gene Expression Session
2015	Co-organizer: Diverse Applications of CRISPR-Cas9 Genome
	Engineering Workshop, Annual Drosophila Research Conference
2014	Co-organizer: The Practice and Promise of CRISPR-Cas9 mediated
	Genome Engineering Workshop, Annual Drosophila Research
	Conference
2013	Member, Faculty Round Table with Senator Tammy Baldwin to discuss
	Next Generation Research Act

RESEARCH GRANT SUPPORT

Current Funding

RSG DDC-130854 Harrison (PI) 7/1/2017-12/31/2022

American Cancer Society

Mechanistic Insights into the Role of Grainy Head Proteins

This grant supports research to understand how the deeply conserved transcription factor Grainy head regulates epithelial cell fate.

Role: PI

R01 NS111647 Harrison (PI) 4/01/2019-3/31/2024

National Institute of Neurological Disease and Stroke

Shared mechanisms regulate transcription-factor activity to control cell fate in neural stem cells and the embryo

This grant funds research into transcriptional and translational process that control cell fate decisions and reprogramming in both neural stem cells and in the early embryo.

Role: PI

R35 GM136298 Harrison (PI) 5/01/2020-4/30/2025

National Institute of General Medical Sciences

Genomic reprogramming in the early embryo

This grant funds research investigating how the early embryonic genome is reprogrammed following fertilization to allow for the transition from specified germ cells to the totipotent cells of the early embryo.

Role: Pl

H I Romnes Faculty Fellowship Harrison (PI) 7/01/2020-6/30/2025

Wisconsin Alumni Research Foundation

This grant funds a broad array of ongoing research in the lab.

Role: PI

GEM CCSG Program Pilot Award Harrison(co-PI) 4/01/2021-3/31/23

UW Comprehensive Cancer Center Support-Year 44RPPR Using Drosophila as a model system to investigate oncohistones

This grant provides funding to support a collaboration between the Harrison lab and the lab of Dr. Peter Lewis to investigate oncohistone function using Drosophila as a model system.

Completed Funding

Basil O'Connor Starter Scholar Award #5-FY14-29 Harrison (PI) 2/1/2014-1/31/2016 March of Dimes

Mechanistic insights into the role of Grainyhead in embryonic development

Role: PI

New Investigator Award #2826 Harrison (PI) 3/1/2014-2/28/2016

Wisconsin Partnership Program

Mechanistic insights into the role of Grainyhead proteins in neural tube closure defects

Role: PI

R01 GM111694 Harrison (PI) 7/15/2015-6/30/2020

National Institute of General Medical Sciences

Mechanisms of genomic reprogramming and transcriptional activation in the embryo This grant funds research into how an essential transcription factor, Zelda, reprograms the genome of the early embryo to allow for the rapid and efficient dedifferenatiation of the fertilized egg to the totipotent cells that will eventually give rise to a new organism.

Role: PI

GEM CCSG Program Pilot Award

Harrison(co-PI) 4/01/2019-3/31/20

UW Comprehensive Cancer Center Support-Year 44RPPR

Using Drosophila as a model system to investigate oncohistones

This grant provides funding to support a collaboration between the Harrison lab and the lab of Dr. Peter Lewis to investigate oncohistone function using Drosophila as a model system.

Vallee Scholar Award

Harrison (PI)

9/1/2016-8/31/2022

The Vallee Foundation

Mechanisms driving rapid and efficient genome reprogramming in the early embryo

This grant funds our research into early embryonic development and the mechanisms by which the genome is reprogrammed to establish a pluripotent state.

Role: PI

TEACHING

2013 – 2014 Biochemistry/Biomolecular Chemistry 710: Exploring Biochemical Functions of Macromolecules

- 1 2 hour lecture covering chromatin dynamics during development
- ~20 graduate students

2012 – 2013 **Biomolecular Chemistry 314: Human Biochemistry**

- 15 1.25 hour lectures covering topics in human metabolism
- ~100 undergraduates

2016 – 2018 **Biomolecular Chemistry 314: Human Biochemistry**

- 7 1.5 hour lectures covering topics nucleic acid biochemistry
- ~40 undergraduates

2015- 2019 **Biomolecular Chemistry 901: IPiB Seminar**

- 20 1 hour student lectures on which I provide feedback
- ~40 graduate students

2015- present Biomolecular Chemistry 720: Paradigms and Experimental Design in Biochemistry

- 6 1.5 hour lectures covering topics in model organisms and genetics
- ~15 graduate students

TRAINEES

Graduate Students

Danielle Hamm (IPiB) (2012 – 2018)

currently postdoc at Fred Hutchinson Cancer Research Center

Katharine Schulz (IPiB) (2012 - 2018)

currently patent officer at Quarles and Brady LLP

Markus Nevil (IPiB) (2013 - 2019)

currently postdoc at University of North Carolina

Elizabeth Larson (IPiB) (2016 – 2022)

currently Applications Scientist at Promega

Marissa Gaskill (CMB) (2016 – 2022)
Tyler Gibson (CMB) (2017 – present)
Audrey Marsh (Genetics) (2018 – present)
Sam Krabbenhoft (MSTP) (2019 – present)
Meghan Freund (Genetics) (2020 – present)
Annemarie Branks (CMB) (2021 – present)

Postdoctoral Fellows

Alexandra Theis (2022 – present) Eliana Zelada Torres (2021 – present) Stephen McDaniel (2016 -2019)

currently Senior Research Scientist at Promega

Undergraduate Researchers

Eric Brooks (2012 – 2014)

graduated with an MBA from Vanderbuilt

Juliana Panelli (2014 -2015)

Sarah Arndt (2016)

Kelsey Marshall (2016 – 2017)

currently enrolled in PA school

Constantine Bartolutti (2016 – 2017)

currently graduate student at UC Berkeley

Anna Branstad (2017 – 2019)

currently in medical school at the University of Minnesota

Anusha lyengar (2017 – present)

currently graduate student at Southern Methodist University

Jack Schnell (2018 – 2019)

currently graduate student at USC

Hao-Yu (Steven) Huang (2019 – 2022)

currently technician with Dominique Bergman at Stanford, HHMI

Katherine Hullin (2020 – 2021)

currently postbac at NIH

Tyler Masuda (2021 – 2022)

currently postbac at NIH

Megan Moskal (2021 – 2022)

Abby Ruffridge (2022)

Zoe Fitzpatrick (2021 – present) Yannick Wyss (2022 – present) Kerstin Hurd (2022 – present)

Summer Undergraduate Students through Biological Interactions Summer REU

Fernando Vera Urbina (2021)

University of Puerto Rico – Rio Piedras

Hope Hawthorne (2022) University of Pennsylvania

Summer Visiting Undergraduate Researchers (as part of USTC Summer Program)

Dun Liu (2014)

currently graduate student at University of Arizona

Xiechao Zhan (2015)

currently graduate student at Tsinghua University

Yimao Huang (2016)

currently graduate student at University of Minnesota

Yinan Chen (2017)

Student Thesis Committees

	Student	Program	Lab	Terminal Degree
1	Kelly Manthei	IPiB	Keck	PhD
2	Jessica Feldman	IPiB	Denu	PhD
3	Clay Williams	IPiB	Coon	MS
4	Hillary St. John	IPiB	Pike	PhD
5	Matt Mead	IPiB	Hull	PhD
6	Mingwei Wang	IPiB	Hull	PhD
7	Antoninette Dummer	CMB	C. Fox	PhD
8	Yunsik Kang	Genetics	Bashirullah	PhD
9	Josue Baeza	IPiB	Denu	PhD
10	Ming-yeuh Wu	Genetics	J. Yu	PhD
11	Kimberly Haupt	IPiB	Kimble	PhD
12	Michael Kelliher	IPiB	Wildonger	PhD
13	Megan Dowdle	IPiB	Sheets	PhD
14	Dominik Hoelper	IPiB	Lewis	PhD
15	Anastasia Lindahl	IPiB	Denu	PhD
16	Evgenia Shishkova	IPiB	Coon	PhD
17	Blake Martin	Biophysics	Hardin	PhD
18	Erin Weisenhorn	IPiB	Coon	PhD
19	Tina Lynch	IPiB	Kimble	PhD
20	Aayushi Jain	IPiB	Lewis	in progress
21	Kelsey Perry	IPiB	C. Fox	Masters
22	Caleb Dillingham	CMP	Sridharan	in progress
23	Justin McKetney	IPiB	Coon	PhD
24	Emma Gougen	IPiB	Brow	in progress
25	Heungyun Moon	Plant Pathology	J. Yu	PhD
26	Rebecca Reese	CMB	Alarid	PhD
27	Josephine Mitchell	IPiB	Wildonger	PhD

28	Iryna Pustova	IPiB	Audhya	in progress
29	Zena Jensvold	CMB	Lewis	in progress
30	Kanika Jain	IPiB	Cox	PhD
31	Katherine Senn	IPiB	Hoskins	in progress
32	Trevor Chamberlain	Genetics	Pelegri	in progress
33	Christine Hustmyer	IPiB	Landick	in progress
34	Truman Do	MSTP/CMB	Lewis	in progress
35	Lily Miller	IPiB	Denu	in progress
36	Andrew Rashoff	Genetics	Lewis	in progress
37	Tyler Reich	MSTP/CMB	Lewis	in progress
38	Auguste Dutcher	Genetics	Gasch	in progress
39	Megan McKeon	Genetics	Hull	in progress
40	Marie Keith	CMB	Masson	in progress
41	Anna Frerichs	IPiB	Hull	in progress
42	Zhejing (Maggie) Xu	IPiB	Coyle	in progress
43	Alex Fister	CMB	Huttenlochcer	in progress
44	Expery Omollo	IPiB	Landick	in progress
45	Ahlan Ferdous	IPiB	Kimble	in progress
46	Zoe Tesone	CMB	Hardin	in progress
47	Grace Boyum	Genetics	Hess	in progress
48	Rodsy Modhurima	CMB	Bresnick	in progress
49	Siyuan Feng	Genetics	Pool	in progress

Rotation Students (37): Danielle Hamm (IPiB Fall 2012), Katharine Schulz (IPiB Fall 2012), Clay Williams (IPiB Fall 2012), Dean Sanders (Genetics Fall 2013), Markus Nevil (IPiB Fall 2013), Kasi Crocker (Genetics Fall 2013), Sophie Sdao (IPiB Fall 2015), Kyle Robinson (IPiB Fall 2015), Lauren Hiller (CMB Fall 2015) Rebecca Reese (CMB Fall 2015) Annette Dean (Genetics Fall 2015) Christine Isabella (IPiB Fall 2015) Jose Cruz-Arzon (IPiB Fall 2016), Marissa Gaskill (CMB Fall 2016), Emma Gougen (IPiB Fall 2016), Elizabeth Larson (IPiB Fall 2016), Elizabeth De Leon (IPiB Fall 2016), Kelsey Winchell (IPiB Fall 2016), Justin McKetney (IPiB Fall 2016) Tyler Gibson (CMB Fall 2017), Katherine Senn (IPiB Fall 2017), Audrey Marsh (Genetics Fall 2018), Megan McKeon (Genetics Fall 2018), Keer Jiang (CMB Fall 2018), Sam Krabbenhoft (MSTP Summer 2019), Alex Fister (CMB Fall 2020), Meghan Freund (Genetics Fall 2020), Fletcher Metz (Genetics Fall 2020), Jennifer Picw (MSTP Summer 2021), Annemarie Branks (CMB Fall 2021), Clarine Larsen (CMB Fall 2021), Jose Espina (CMB Fall 2021), Rodsy Modhurima (CMB Fall 2021), Grace Boyum (Genetics Fall 2021), Julia Flood (IPiB Fall 2022), Alyssa Koehler (Genetics Fall 2022), Beatrice Diep (CMB Fall 2022)