

Curriculum Vitae

Michael William Dorrity

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Molecular Systems Biology
Developmental Biology
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date & place of birth: June 11th, 1989, California, USA

Education and Training

University of California, Davis	B.S. Advisor: Siobhan Brady	06/2011	Genetics
University of Washington	Ph.D. Advisors: Stanley Fields, Christine Queitsch	08/2018	Biology
University of Washington	Postdoctoral Mentor: Cole Trapnell	08/2018- 11/2021	Genome Sciences

Academic positions

2022-pres	Group Leader, EMBL Heidelberg
2018-2022	Postdoctoral Fellow, Department of Genome Sciences
2012-2018	Graduate Research Assistant, Department of Genome Sciences
2010-2012	Research Assistant, Genome Center, University of California, Davis

Fellowships and Awards

2026	HD-Mannheim Life Science Alliance NextTech Award
2025	European Research Council Starting Grant: TIMERR
2024	FEBS Excellence Award
2015	Washington Research Foundation Fellowship
2014	Washington Research Foundation Fellowship
2014	National Science Foundation Graduate Research Fellowship (NSF GRFP)

Meeting organization

2027	EMBO EMBL Symposium "Temperature in biology"
2027	EMBO Course "Emerging technologies in developmental biology" (funding award)
2026	EMBL Workshop "Quantitative biology to molecular mechanisms" (funding award)
2024	EMBO EMBL Symposium "Wild frontiers of model organisms"

Selected Presentations

2025	Invited Speaker, EvoDevoTempo, Paris, France
2025	Invited Speaker, SyStem, Vienna, Austria
2025	Invited Speaker, Michael Sars Centre, Bergen, Norway

2024 Invited Speaker, EuroEvoDevol 2024, Helsinki, Finland
 2024 Keynote, DANEMO, Dynamics and Modeling of Biological Systems, Copenhagen
 2024 Speaker, Strategic Conference for Zebrafish Investigators, Asilomar, USA
 2023 Invited Seminar, University of Utah, Department of Biology, Salt Lake City, USA
 2023 Invited Speaker, NYUAD-Genomics & Systems Biology, Abu Dhabi, UAE
 2022 Speaker, ISDB 19th International Congress of Developmental Biology, Algarve, Portugal
 2022 Keynote Speaker, EuroBioC2022, Heidelberg, DE

Publications

Total citations: 1778, h-index: 14 (Google Scholar as of 25/01/2026)

co-corresponding author (*†*), equal contribution (*), *group members*, EMBL collaborators

1. *Bourn, J. J.*, Knoblich, S. A., *Kneeshaw, S. J.*, Benjaminsen, J., Zilova, L., Aulehla, A., ... & **Dorrity, M. W.** (2026). Quantitative mapping of heterochrony to species-specific phenotypes. *bioRxiv*, 2026-06.
2. *Vaidya, G.*, Lagodny, E., *Girish, A.*, Fuentes, A. M., Ross, E., Robb, S., ... **Dorrity, M. W.** [†] & *Vu, H. T. K.* [†] (2026). Life-cycle trajectory inference links temperature-gated progenitors to reproductive fate. *bioRxiv*, 2026-06.
3. Autorino, C., Khoromskaia, D., Harari, L., Floris, E., Booth, H., Pallares-Cartes, C., *Petrasiunaite, V.*, **Dorrity, M.W.**, Corominas-Murtra, B., Hadjivasiliou, Z. and *Petridou, N.I.*, (2026). Tissue rigidity phase transition shapes morphogen gradients. *Nature Cell Biology*, pp.1-13.
4. Yildiz, U., Claringbould, A., Marttinen, M., Campos-Fornés, V., *Lamprousi, M.*, Saraswat, M. , Saver, M., Bunina, D., **Dorrity, M.W.**, *Zaugg, J.* and *Noh, K.M.* (2025). High-throughput single-cell CRISPRi screens stratify neurodevelopmental functions of schizophrenia-associated genes. *bioRxiv*, 2025-06.
5. *Bourn, J. J.*, & **Dorrity, M. W.** (2024). Degrees of freedom: temperature's influence on developmental rate. *Current Opinion in Genetics & Development*, 85, 102155.
6. **Dorrity, M. W.** [†], Saunders, L. M., Duran, M., Srivatsan, S. R., Barkan, E., Jackson, D. L., ... & Trapnell, C. [†] (2023). Proteostasis governs differential temperature sensitivity across embryonic cell types. *Cell*, 186(23), 5015-5027.
7. Saunders, L. M., Srivatsan, S. R., Duran, M., **Dorrity, M. W.**, Ewing, B., Linbo, T. H., ... & Trapnell, C. (2023). Embryo-scale reverse genetics at single-cell resolution. *Nature*, 623(7988), 782-791.
8. Kim, E.D.* , **Dorrity, M.W.***, Fitzgerald, B.A., Seo, H., Sepuru, K.M., Queitsch, C., Mitsuda, N., Han, S.K. and Torii, K.U., 2022. Dynamic chromatin accessibility deploys heterotypic cis/trans-acting factors driving stomatal cell-fate commitment. *Nature Plants*, pp.1-14.
9. **Dorrity, M. W.**, Alexandre, C., Hamm, M., Vigil, A., Fields, S., Queitsch, C., Cuperus, J., 2021. The regulatory landscape of Arabidopsis thaliana roots at single-cell resolution.
10. *Nature Communications* doi: <https://doi.org/10.1038/s41467-021-23675-y>
11. Morton, E. A.* , **Dorrity, M. W.***, Zhou, W., Fields, S., Queitsch, C., 2020. Transcriptional re-wiring by mutation of the yeast Hsf1 oligomerization domain. *bioRxiv* doi: <https://doi.org/10.1101/2020.05.23.112250> (in revision, *eLife*)
12. **Dorrity, M. W.***, Saunders, L. M.* , Queitsch, C., Fields, S., & Trapnell, C., 2020. Dimensionality reduction by UMAP to visualize physical and genetic interactions. *Nature Communications* **11**: 1537
13. Jores, T., Tonnies, J., **Dorrity, M. W.**, Cuperus, J. T., Fields, S., & Queitsch, C. 2020. Identification of plant enhancers and their constituent elements by STARR-seq in tobacco leaves. *The Plant Cell*. **32**:2120-2131.

14. Zhou, W., **Dorrity, M.W.**, Bubbs, K.L., Queitsch, C., Fields, S., 2020. Binding and regulation of transcription by yeast Ste12 variants to drive mating and invasion phenotypes. *Genetics* **214.2**: 397-407.
15. **Dorrity, M.W.**, Queitsch, C. and Fields, S., 2019. High-throughput identification of dominant negative polypeptides in yeast. *Nature Methods* **16**:413.
16. Jean-Baptiste, K., McFaline-Figueroa, J.L., Alexandre, C.M., **Dorrity, M.W.**, Saunders, L., Bubbs, K.L., Trapnell, C., Fields, S., Queitsch, C., Cuperus, J.T., 2019. Dynamics of Gene Expression in Single Root Cells of *Arabidopsis thaliana*. *The Plant Cell* **31**: 993-1011.
17. **Dorrity, M.W.**, Cuperus, J.T., Carlisle, J.A., Fields, S. and Queitsch, C., 2018. Preferences in a trait decision determined by transcription factor variants. *Proceedings of the National Academy of Sciences*, **115**:E7997-E8006.
18. Maher, K.A., Bajic, M., Kajala, K., Reynoso, M., Pauluzzi, G., West, D.A., Zumstein, K., Woodhouse, M., Bubbs, K., **Dorrity, M.W.** and Queitsch, C., 2018. Profiling of accessible chromatin regions across multiple plant species and cell types reveals common gene regulatory principles and new control modules. *The Plant Cell*, **30**:15-36.
19. Alexandre, C.M., Urton, J.R., Jean-Baptiste, K., Huddleston, J., **Dorrity, M.W.**, Cuperus, J.T., Sullivan, A.M., Bemm, F., Jolic, D., Arsovski, A.A. Thompson, A., and Queitsch, C. 2017. Complex relationships between chromatin accessibility, sequence divergence, and gene expression in *Arabidopsis thaliana*. *Molecular Biology and Evolution*, **35**:837-854.
20. Ron, M., **Dorrity M.W.**, de Lucas, M., Toal ,T., Hernandez ,R.I., Little, S.A., Maloof, J.N., Kliebenstein, D.J., and Brady, S.M. 2013. Identification of novel loci regulating interspecific variation in root morphology and cellular development in tomato. *Plant Physiology* **162**:755-768.

Presentations at internationally established courses and conferences

2024-25	EMBL Lautenschlager Course: Inferring developmental dynamics
2024	Invited speaker at EMBL EMBO Symposium: Quantitative Biology to Molecular Mechanisms
2024	EMBL Practical Course: ATAC-seq

Mentoring, institutional responsibilities

- Member of 16 thesis advisory committees at EMBL and Heidelberg University
- Member of Graduate Committee of the EMBL PhD Program, Committee to Advance Environmental Research at EMBL (CAERE), Organizing member of transversal theme Planetary Biology at EMBL, member of Mobile Laboratory Core Facility and Genomics Core Facility committees
- Reviewer for scientific journals: *Nature Biotechnology*, *Cell Reports*, *Genome Research*, *Current Biology*, *Molecular Systems Biology*, *Genome Biology*, *Bioinformatics Advances*, *Plant Physiology*, *Plant Cell*, *PLoS One*
- Reviewer for funding agencies: European Research Council (ERC), Innoviris Brussels

Organization of Scientific Meetings

- Primary organizer of EMBO | EMBL Workshop: Quantitative Biology to Molecular Mechanisms. November 2026. Heidelberg, Germany
- Scientific Committee, European Zebrafish Society Meeting. July 2026. Vienna, Austria.
- Co-organizer of Fish Satellite Meeting @ EuroEvoDev. June 2026. Glasgow, Scotland
- Co-organizer of EMBO | EMBL Symposium: Wild Frontiers of Model Organisms. April 2025. Heidelberg, Germany

Teaching

2026	Lecture, genetics and epigenetics, Master's series in Developmental & Stem Cell Biology
2023 – 2025	EMBL Predoc course, genomics. <i>Lectures, design and organization of scRNA practical.</i>