

PROMOTION RECOMMENDATION  
The University of Michigan  
College of Literature, Science, and the Arts

Eleanor J. Clowney, assistant professor of molecular, cellular, and developmental biology, College of Literature, Science, and the Arts, is recommended for promotion to associate professor of molecular, cellular, and developmental biology, with tenure, College of Literature, Science, and the Arts.

Academic Degrees:

Ph.D.	2012	University of California, San Francisco
B.S.	2005	University of Michigan

Professional Record:

2017 – Present	Assistant Professor, Department of Molecular, Cellular and Developmental Biology, University of Michigan
2013 – 2017	Post-doctoral Fellow, Rockefeller University

Summary of Evaluation:

Teaching: Professor Clowney is a passionate educator who has made several contributions to the teaching missions of Molecular, Cellular and Developmental Biology (MCDB). Since joining the UM faculty, she has taught in five MCDB courses, including the large enrollment upper-level course “Brain Development, Plasticity, and Circuits” (MCDB 422). Professor Clowney created two new upper-level courses, “Cellular Diversity in the Immune and Nervous Systems” (MCDB 421) and “Cellular Diversity” (MCDB 464), the latter of which she has adapted to fulfill the LSA upper-level writing requirement. She has also taught in two graduate-level MCDB courses (“Sexually Dimorphic Neural Circuits” [MCDB 600] and “Experimental Models in MCDB” [MCDB 614]) and been a recurring guest lecturer in two courses serving the interdepartmental Neuroscience Graduate Program (“Neural Development” [NGP 612] and “Sensory Systems” [NGP 614]). In her own research laboratory, Professor Clowney has been a superlative mentor, as evidenced by her trainees receiving prestigious fellowships, two HHMI Hanna Gray post-doctoral fellows as well as graduate students receiving the Weintraub Award and NIH pre-doctoral fellowships. The breadth and quality of Professor Clowney’s contributions to MCDB’s and the university’s educational missions at this point in her career are almost without peer.

Research: Professor Clowney is a developmental geneticist using the fruit fly *Drosophila melanogaster* as a model. Her diverse research program includes projects designed to understand how development wiring of the brain supports associated learning, as well as the molecular mechanisms underlying sexual behavior in male and female flies. In addition, she has a computational component examining how the organization of gene families in mammalian genomes influence their evolution and function. These projects combine elegant genetics and genomics, along with cutting-edge imaging techniques and computational analysis. In her short time here at the University of Michigan, Professor Clowney has established a world-class research program that is supported by multiple federal and private funding agencies, including the prestigious Rita Allen Scholar Award, the Pew Biomedical Scholar Award, and the

McKnight Scholar Award. Her creativity in several areas, combined with her extraordinary ability to obtain funding and her talented group of trainees, indicate that her career is on a steep upward trajectory.

#### Recent and Significant Publications:

Brovkina, M.V., Chapman, M.A., Holding, M.A., and Clowney, E.J. (2023). Emergence and influence of sequence bias in evolutionarily malleable, mammalian tandem arrays. *BMC Biology*, 21(1), 179. Doi: 10.1186/s12915-023-01673-4.

Ahmed, M., Rajagopalan, A.E., Pan, Y., Li, Y., Williams, D.L., Pedersen, E.A., Thakral, M., Previero, A., Close, K.C., Christoforou, C.P., Cai, D., Turner, G.C., and Clowney, E.J. (2023). Input density tunes Kenyon cell sensory responses in the *Drosophila* mushroom body. *Current Biology*, 33(13), 2742-2760. Doi: 10.1016/j.cub.2023.05.064.

Brovkina, M.V., Duffié, R., Burtis, A.E.C., and Clowney, E.J. (2021). Fruitless decommissions regulatory elements to implement cell-type-specific neuronal masculinization. *PLOS Genetics*, 17(2), e1009338. Doi: 10.1371/journal.pgen.1009338.

Elkahlah, N.A., Rogow, J.A., Ahmed, M., and Clowney, E.J. (2020). Presynaptic Developmental Plasticity Allows Robust Sparse Wiring of the *Drosophila* Mushroom Body. *eLife*, 9, e52278. Doi: 10.7554/eLife.52278.

Service: Professor Clowney's record of service at multiple levels is exemplary. Within MCDB, she has served on graduate admissions for multiple years, and has served on two faculty search committees. By all accounts, her service on these committees was energetic and of outstanding quality. At the university level, she has served on multiple committees, including the Cell and Molecular Biology Graduate Program admissions committee (three times), and she is a member of the Neuroscience Graduate Program Executive committee and associate director of the Kavli Neuroscience Innovators. At the national/international level, she has served on the Rita Allen Scholars and Pew Scholars selection committees, been a session chair at a Cold Spring Harbor conference, and co-organized a meeting on Lineages, Circuits and Complex Behaviors. Professor Clowney reviews manuscripts for numerous scientific journals, and has served on several grant panels for the NIH and NSF.

#### External Reviewers:

Reviewer (A): "In sum, [Professor Clowney] is an absolute star. She excels in research, has been wildly successful securing external support for her work, is a devoted and outstanding mentor, and is an innovative and inspiring teacher."

Reviewer (B): "The quality and depth of Dr. Clowney's work has been extensively acknowledged by her peers in the neuroscience community, and she is widely viewed as a future leader in the field."

Reviewer (C): "[Professor Clowney] is an exceptional young scientist who has demonstrated her highly original way to approach problems, her great skills, her breadth and her ability to identify and solve difficult questions through the development of new tools, but also through brilliant ideas and approaches."

Reviewer (D): “[Professor Clowney’s] national and international impact can be measured by her speaker invitations. These include UCSD, Columbia, Harvard, Utah, Duke, and Johns Hopkins. Similarly she has a strong record of invited conference talks at Janelia Research Campus, COSYNE, Cold Spring Harbor, the Santa Cruz Developmental Biology Meeting, and others.”

Reviewer (E): “In summary, Dr. E. Josephine Clowney is a very talented scientist who I believe is a rising star in the field of circuit development. She is asking exactly the right questions on the cutting edge of this field. There is every reason to believe that her career trajectory will continue to be upward, and her discoveries will continue to offer valuable insights.”

Reviewer (F): “...[Professor Clowney’s] smart research choices and insightful early contributions suggest that she is going to be a thought leader in neuroscience.”

Summary of Recommendation:

Professor Clowney is a leader in the areas of neuronal circuitry controlling innate and learned behaviors, as well as an innovative contributor to the area of gene regulation. Her intellectual creativity, combined with her exceptional talent at obtaining funding, and her ability to mentor a diverse group of trainees, ensures that her laboratory will make foundational discoveries in the future. Her research abilities are matched by her dedication to undergraduate and graduate education and her generosity extends to multiple areas of service at the departmental, university, and international levels. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Assistant Professor Eleanor J. Clowney be promoted to the rank of associate professor of molecular, cellular, and developmental biology, with tenure, College of Literature, Science, and the Arts.



Anne Curzan, Dean  
Geneva Smitherman Collegiate Professor of  
English Language and Literature, Linguistics,  
and Education  
Arthur F. Thurnau Professor  
College of Literature, Science, and the Arts

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