

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

Laura Buttitta, associate professor of molecular, cellular, and developmental biology, with tenure, College of Literature, Science, and the Arts, is recommended for promotion to professor of molecular, cellular, and developmental biology, with tenure, College of Literature, Science, and the Arts.

Academic Degrees:

Ph.D.	2003	Johns Hopkins University
B.A.	1998	Bard College

Professional Record:

2021-present	Associate Chair for Research and Facilities, Department of Molecular, Cellular and Developmental Biology, University of Michigan
2017-present	Associate Professor, Department of Molecular, Cellular and Developmental Biology, University of Michigan
2011-2017	Assistant Professor, Department of Molecular, Cellular, and Developmental Biology, University of Michigan
2004- 2010	Post-doctoral Research Associate, Fred Hutchinson Cancer Research Center

Summary of Evaluation:

Teaching: Professor Buttitta has been an invaluable contributor to MCDB's educational mission on multiple levels. While in rank, she has taught in three courses, including the large enrollment course of Developmental Biology (BIO 205), which she helped convert from a three- to four-credit course. She also participated in the Large Course Initiative to make the course more inclusive. Her upper-level elective course (MCDB 440 – Cell Cycle Control and Cancer) is one of the most popular specialty courses in the MCDB curriculum. She has also led a graduate student/undergraduate journal club (MCDB 600 – Gene Regulation). By all accounts, her performance in these courses has been outstanding. In the laboratory, she has been a strong and supportive mentor for several graduate students and post-doctoral fellows, as well as numerous undergraduate researchers. Professor Buttitta has been involved in several important activities designed to make the STEM community at UM more inclusive, including her outreach activities for middle school girls with FEMMES (Females Excelling More in Math, Engineering, and Science), her mentoring of a high school student with the Aspinaut program, and her role as a faculty instructor and executive committee member for the Developing Future Biologists (DFB) program, which gives undergraduates from underserved institutions a week-long intensive research experience at UM. Professor Buttitta's dedication to education and outreach are exemplary.

Research: Professor Buttitta is a developmental biologist studying various aspects of cell cycle and cell division control in the fruit fly *Drosophila* as well as human cancer cell lines. While in rank, she has published important papers describing the mechanism by which chromosomal DNA is altered in cells that are reaching their final cell fates. Her laboratory has also reported on

the presence of fly brain cells containing multiple copies of genetic material, providing evidence that this is a protective mechanism during aging. She has collaborated with several labs to study cell cycle regulation in prostate cancer cells and is developing the fly accessory gland as a model system for studying this important cancer in *Drosophila*. Professor Buttitta has maintained a well-funded research program and routinely is invited to national and international meetings to describe her research.

Recent and Significant Publications:

Pulianmackal, A., Sun, D., Yumoto, K., Li, Z., Chen, Y.C., Patel, M., Wang, Y., Yoon, E., Pearson, A., Yang, Q., Taichman, R., Cackowski, F., & Buttitta, L. (2021). Monitoring spontaneous quiescence and asynchronous proliferation-quiescence decisions in prostate cancer cells. *Frontiers in Cell and Developmental Biology*, 9, 728663.

Nandakumar, S., Grushko, O., & Buttitta, L. (2020). Polyploidy in the adult *Drosophila* brain. *Elife*, 9, e54385.

Ma, Y., McKay, D.J., & Buttitta, L. (2019). Changes in chromatin accessibility ensure robust cell cycle exit in terminally differentiated cells. *PLoS Biology*, 17(9), e3000378.

Ma, Y., & Buttitta, L. (2017). Chromatin organization changes during the establishment and maintenance of the postmitotic state. *Epigenetics & Chromatin*, 10(1), 1-20.

Service: Professor Buttitta has an exceptional record of service within MCDB and at the university level. She has served on faculty search committees and the MCDB Graduate Studies committee. Since 2021, she has been the associate chair for research and facilities for MCDB, playing an important role in ensuring that all MCDB research faculty are able to carry out their research programs in an efficient manner. At the university-level, she has served on the Biological Sciences Scholars Program faculty search committee, and is currently the organizer for the Variations in Biology Seminar Series. Professor Buttitta is also currently serving on the steering committee of the Center for Cell Plasticity and Organ Design. She has also served on multiple grant panels, including the NIH. Her dedication and record of service is at the highest level for MCDB faculty.

External Reviewers:

Reviewer (A): “She also seems to be a great mentor with five students being awarded a Ph.D[.] degree and a current graduate student being awarded the NIH F31 pre-doctoral fellowship, all in addition to the other graduate students, postdocs and many undergraduate students she has mentored.”

Reviewer (B): “In the years since promotion to Associate Professor, Dr. Buttitta has continued to push the field forward. Her recent studies of chromatin changes in deeply/robustly quiescent cells has [sic] important implications for both developmental biology and cancer cell biology.”

Reviewer (C): “...the work of Dr. Buttitta...has always struck me as very well focused, with clearly stated and scientifically relevant biological questions followed by a rigorously and state of the art experimental approach.”

Reviewer (D): "...the work done both on permanent exit from the cell cycle and on endocycles is trailblazing. Importantly, Dr. Buttitta's work is characterized by extreme rigor and meticulous attention to detail."

Reviewer (E): "Dr. Buttitta has clearly established herself as an accomplished and highly regarded scientist, with an excellent record of productivity and contributions to the broader community. She is a leader in her field, and her research has led to significant advances in our understanding of cellular quiescence."

Reviewer (F): "Overall, it is great to have Dr. Buttitta as a colleague in the cell cycle field. She has unique expertise and leads the field on cell fate decision models in *Drosophila*, and her work is highly relevant to disease-related questions in humans."

Summary of Recommendation:

Professor Buttitta has made significant contributions to the field of cell cycle regulation, in both developmental and disease contexts. She has a well-funded research program and a proven ability to be a strong mentor for her trainees which include post-doctoral fellows, graduate students, undergraduates, and the occasional high school student. Professor Buttitta is a highly accomplished and innovative educator in the classroom, has contributed to several programs designed to make the life sciences more inclusive, and has also performed exceptional service for her home department and the wider university scientific community. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Associate Professor Laura Buttitta be promoted to the rank of professor of molecular, cellular, and developmental biology, with tenure, College of Literature, Science, and the Arts.



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May 2023