

PROMOTION RECOMMENDATION
UNIVERSITY OF MICHIGAN
MEDICAL SCHOOL
DEPARTMENT OF CELL AND DEVELOPMENTAL BIOLOGY

Diane C. Fingar, Ph.D., associate professor of cell and developmental biology, with tenure, Department of Cell and Developmental Biology, Medical School, is recommended for promotion to professor of cell and developmental biology, with tenure, Department of Cell and Developmental Biology, Medical School.

Academic Degrees:

Ph.D.	1995	Harvard Medical School, Boston, MA
A.B.	1989	Princeton University, Princeton, NJ

Professional Record:

2012-present	Associate Professor (with tenure), Department of Cell and Developmental Biology, University of Michigan
2004-2012	Assistant Professor (without tenure), Department of Cell and Developmental Biology, University of Michigan
2004-2004	Lecturer, Department of Cell and Developmental Biology, University of Michigan
2002-2004	Instructor, Department of Cell Biology, Harvard Medical School

Summary of Evaluation:

Teaching: Dr. Fingar has been extensively involved in both research mentorship and didactic teaching. She has lectured in the Cell and Developmental Biology (CDB) flagship course CDB530 Cell Biology since 2004 and was the course director from 2016 – 2021, as well as a lecturer for M1 Medical History (CDB501). Learners include junior faculty members, post-doctoral fellows, graduate students, undergraduate students, and research staff. She has served on numerous dissertation committees across campus including in Cellular and Molecular Biology, Molecular Integrative Physiology, and Cancer Biology. Her student evaluations range from good to very good. In 2019, she received the University of Michigan Endowment for the Basic Sciences Teaching Award.

Research: Dr. Fingar's research is on the control of cell metabolism, growth, proliferation, and survival, specifically focusing on the regulation and function of the mTOR signaling network where her lab has made several important contributions. She has a solid track record funding as the principal investigator and co-investigator from sources such as the National Institutes of Health (NIH), the American Heart Association, and the American Diabetes Association. Current funding includes two NIH R01's where she is the principal investigator. She has authored 42 peer-reviewed manuscripts in highly respected journals including the *EMBO Journal*, *Science Signaling*, and the *Journal of Biological Chemistry*. She was additionally invited to contribute to three review articles in *Seminars in Cell and Developmental Biology*, *Molecular Cell*, and the *Journal of Biological Chemistry* as a testament to her international reputation. She has delivered eight extramural invited presentations and 12 seminars nationally and internationally including in Canada and London.

Recent and Significant Publications:

- Bodur C, Kazyken D, Huang K, Tooley AS, Cho KW, Barnes TM, Lumeng CN, Myers MG, and Fingar DC, "TBK1-mTOR Signaling Attenuates Obesity-Linked Hyperglycemia and Insulin Resistance," *Diabetes*. 2022 Nov 1;71(11):2297-2312. doi: 10.2337/db22-0256. PMID: 35983955; PMCID: PMC9630091.
- Kazyken D, Lentz SI, and Fingar DC, "Alkaline intracellular pH (pHi) activates AMPK-mTORC2 signaling to promote cell survival during growth factor limitation," *J Biol Chem*. 2021 Oct;297(4):101100. doi: 10.1016/j.jbc.2021.101100. Epub 2021 Aug 19. PMID: 34418433; PMCID: PMC8479482.
- Tooley AS, Kazyken D, Bodur C, Gonzalez IE, and Fingar DC, "The innate immune kinase TBK1 directly increases mTORC2 activity and downstream signaling to Akt," *J Biol Chem*. 2021 Aug;297(2):100942. doi: 10.1016/j.jbc.2021.100942. Epub 2021 Jul 8. PMID: 34245780; PMCID: PMC8342794.
- Kazyken D, Magnuson B, Bodur C, Acosta-Jaquez HA, Zhang D, Tong X, Barnes TM, Steidl GK, Patterson NE, Althaim CH, Sharma N, Inoki K, Cartee GD, Bridges D, Yin L, Riddle SM, and Fingar DC, "AMPK directly activates mTORC2 to promote cell survival during acute energetic stress," *Sci Signal*. 2019 Jun 11;12(585):eaav3249. doi: 10.1126/scisignal.aav3249. PMID: 31186373; PMCID: PMC6935248.
- Bodur C, Kazyken D, Huang K, Ekim Ustunel B, Siroky KA, Tooley AS, Gonzalez IE, Foley DH, Acosta-Jaquez HA, Barnes TM, Steidl GK, Cho KW, Lumeng CN, Riddle SM, Myers MG Jr, and Fingar DC, "The IKK-related kinase TBK1 activates mTORC1 directly in response to growth factors and innate immune agonists," *EMBO J*. 2018 Jan 4;37(1):19-38. doi: 10.15252/embj.201696164. Epub 2017 Nov 17. PMID: 29150432; PMCID: PMC5753041.

Service: Dr. Fingar performs service at both the international and national levels. Internationally, she has been an ad hoc grant reviewer for several study sections including the Biotechnology and Biological Sciences Research Council and the Motor Neurone Disease Association. Nationally, she is an editorial board member for the *Journal of Biological Chemistry*, and an ad hoc reviewer for many journals including *Nature Communications*, *Molecular Cell*, and *Developmental Cell*. Dr. Fingar has reviewed abstracts for the American Diabetes Association's annual meeting on three occasions. She was a standing member of the NIH study section Cell Signaling and Regulatory Systems from 2017-2022 and has served as an ad hoc reviewer on more than ten other study sections. Institutionally, she has been a member of the CDB Graduate Admissions Committee since 2012 and she chaired it from 2012-2015. In 2022, she became the chair of the CDB Graduate Program. In addition, she has served on the CDB Executive Committee, the Awards Committee, and the Graduate Program Committee.

External Reviewers:

Reviewer A: "Diane's standing in the field is indicated by her extensive service on NIH study sections, including as a standing member of Cell Signaling and Regulatory Systems from 2017-2022. She is on the editorial board of the JBC, and reviews for all the major journals. She has been invited to speak at multiple FASEB and ADA meetings, and she has given seminars across the United States and Canada."

Reviewer B: "She is clearly a leader in the mTOR field and the expert on mTOR phosphorylation. While the literature is filled with 'me-too' papers in the mTOR field, Dr. Fingar is a pathfinder. In addition, she has numerous publications from collaborations, which in my opinion is another measure of her scientific stature and her contribution to the university's research mission. Not surprisingly, she has been continuously funded by the NIH. Her service as a regular member of an NIH study

section and as a frequent reviewer for international funding agencies also attests to her national and international recognition.”

Reviewer C: “...her recent productivity, particularly in the last five years, is very strong with many senior author papers published in high quality journals. Her recent work elucidating the functional relationship between TBK1 and mTORC2, as well as AMPK-mTORC2, are very exciting and already have a significant impact [on] the mTOR field.”

Reviewer D: “Diane also has substantial teaching, mentoring activities, and community service. She currently teaches a Cell Biology course and previously served as course director for this course (2016-2021). She has mentored three post-doctoral fellows, two research associates/faculty, six research staff, served as Ph.D. advisor to four graduate students, and mentored several graduate and undergraduate students. She has served as a dissertation committee member to numerous students from the university. She currently serves on the Graduate Admissions and Program Committees as well as the CDB Executive Committee. Thus, Diane has demonstrated dedication to teaching and university service, as well as the necessary leadership and mentorship to train talented [junior] scientists.”

Reviewer E: “Dr. Fingar has emerged as a visible leader in his field, having made fundamental contributions that have both changed fields and establishing new ones...Dr. Fingar sits squarely atop of this list, and I would place her in the top 2% of similar academic scientists in her and at this stage of their careers...”

Summary of Recommendation:

Dr. Fingar has emerged as a visible leader in her field, having made fundamental contributions that have both changed fields and established new ones. Dr. Fingar has achieved a consistent record of exceptional scholarship supported by external funding, she is an outstanding teacher and mentor with a strong service record. I am pleased to recommend Diane C. Fingar, Ph.D. for promotion to professor of cell and developmental biology, with tenure, Department of Cell and Developmental Biology, Medical School.



Marschall S. Runge, M.D., PhD
Executive Vice President for Medical Affairs
Dean, Medical School

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