

PROMOTION RECOMMENDATION
THE UNIVERSITY OF MICHIGAN
MEDICAL SCHOOL
DEPARTMENT OF OBSTETRICS AND GYNECOLOGY

Karen McLean, M.D., Ph.D., assistant professor of obstetrics and gynecology, Department of Obstetrics and Gynecology, Medical School, is recommended for promotion to associate professor of obstetrics and gynecology, with tenure, Department of Obstetrics and Gynecology, Medical School.

Academic Degrees:

PhD	2004	University of Michigan
M.D.	2004	University of Michigan
B.S.	1995	University of Michigan

Professional Record:

2014-Present	Assistant Professor of Obstetrics and Gynecology, University of Michigan
2011-2013	Clinical Lecturer of Obstetrics and Gynecology, University of Michigan

Summary of Evaluation:

Teaching: Dr. McLean has a strong investment in teaching and weaves the education of trainees in her lab, residents and fellows in the operating room, and medical students in the clinic into her research and clinical care in the Department of Obstetrics and Gynecology. She is a stellar mentor on both the clinical care and research side, successfully providing mentees the opportunity to publish, submit abstracts, present at national meetings, and secure academic positions consistent with their career goals. Of her nine research mentees, eight are in academia. Dr. McLean was instrumental in developing and implementing a new gynecologic oncology curriculum for medical students rotating on their Ob/Gyn clerkship. She lectures to residents as part of their core curriculum and supervises and teaches gynecologic oncology fellows regularly during patient care activities. Dr. McLean was the recipient of a Clinical Teacher's IMPACT award for the flipped classroom for medical students in 2015 and received a Token of Appreciation of Medical Students Award in 2017.

Research: Dr. McLean is a physician scientist, with a translational science laboratory, performing bench research on the pathogenesis of ovarian cancer with the goal of identifying new approaches for ovarian cancer treatment. The primary areas of her study are tumor microenvironment signaling and the impact of DNA damage repair defects on immunotherapy efficacy. Dr. McLean has had continuous grant funding since 2011, starting with a K12 Women's Reproductive Health Research Career

Development award, followed by her role as the principal investigator on a \$1.12 million very competitive grant from the Department of Defense Ovarian Cancer Academy and as the principal investigator on a \$1.78 million R01 grant through the National Cancer Institute. She also has foundation and philanthropic support for her research and was appointed as a Taubman Emerging Scholar in 2017.

Dr. McLean has published 45 peer-reviewed articles, with 18 as first or last author, and 29 publications in current rank. Through the Ovarian Cancer Initiative (OCI) and Gynecologic Oncology Biorepository's biobank of clinical specimen mouse models, Dr. McLean's work with the Michigan Ovarian Cancer Science and Innovation Consortium (MOSAIC) has resulted in several projects, publications, and grants. Her projects have included collaboration with researchers in the Department of Surgery, College of Engineering, School of Public Health, College of Pharmacy, and Michigan State University.

Recent and Significant Publications:

McLean K, Tan L, Bolland DE, Coffman LG, Peterson LF, Talpaz M, Neamati N, Buckanovich RJ: Leukemia inhibitory factor functions in parallel with interleukin-6 to promote ovarian cancer growth. *Oncogene* 38(9): 1576-1584, 2018. PM30305729

Hacker KE, Bolland DE, Tan L, Saha AK, Niknafs YS, Markovitz DM, McLean K: The DEK Oncoprotein Functions in Ovarian Cancer Growth and Survival. *Neoplasia* 20(12): 1209-1218, 2018. PM30412857 /PMC6226625

Raghavan S, Mehta P, Ward MR, Bregenzler ME, Fleck EMA, Tan L, McLean K, Buckanovich RJ, Mehta G: Personalized Medicine-Based Approach to Model Patterns of Chemoresistance and Tumor Recurrence Using Ovarian Cancer Stem Cell Spheroids. *Clinical Cancer Research* 23(22): 6934-6945, 2017. PM28814433

Stasenko M, Plegue M, Sciallis AP, McLean K: Clinical response to antiestrogen therapy in platinum resistant ovarian cancer patients and the role of tumor estrogen receptor expression status. *International Journal of Gynecologic Cancer* 25(2): 222-8, 2015. PM25500503

Burgos-Ojeda D, Wu R, McLean K, Chen YC, Talpaz M, Yoon E, Cho KR, Buckanovich RJ: CD24+ Ovarian Cancer Cells are Enriched for Cancer Initiating Cells and Dependent on JAK2 Signaling for Growth and Metastasis. *Molecular Cancer Therapeutics* 14: 1717-27, 2015. PM25969154/PMC4496272

Service: Dr. McLean maintains a very active clinical practice as a member of the Division of Gynecologic Oncology. She is the lead for the University of Michigan's OCI which has greatly expanded clinical trial options and patient support resources. She also heads up the Gynecologic Oncology Biorepository within OCI. Dr. McLean was on the American Society of Clinical Oncology Scientific

Program Committee from 2016-2019 and joined the National Comprehensive Cancer Network Ovarian Cancer Guidelines Committee in 2019. She is an ad hoc reviewer for 14 journals and has given numerous expert presentations both regionally and nationally on her laboratory research including the Ovarian Cancer National Conference Dartmouth-Hitchcock Medical Central Grand Rounds in 2019.

External Reviewers:

Reviewer A: “Karen’s contributions in our field have only just begun. She has a track record of independent funding in clinically important areas that have the potential to improve survival for women with gynecologic malignancies. Her research is of high quality and quantity (and) exceeds expectations. Her exploration on the DEK oncoprotein and its function in ovarian cancer growth and survival is outstanding and included a comprehensive evaluation of DEK based on robust in vitro and in vivo experiments...Her CV is a testament to her dedication to basic science and translational research and teaching. Dr. McLean’s academic productivity is on a strong trajectory, outpacing her peers with regard to research, service, and teaching.”

Reviewer B: “Dr. McLean [sic] core strengths are her research and scholarly activity in the pathophysiology and treatment of ovarian cancer...This creative contribution to the field suggests a novel approach for targeting this DNA damage repair pathway as an immunotherapy sensitizer for treating ovarian cancer, the deadliest gynecologic malignancy. This work also forms the basis of her independent research and a promising score on a new R01...Dr. McLean has successfully attained extramural funding, including a K12 Women’s Reproductive Health Research Career Development Award. She is also the recipient of a highly competitive Department of Defense Academy Award to study the tumor microenvironment in ovarian cancer.”

Reviewer C: “Her main accomplishment is her contribution to our understanding of the role of stem cells and the tumor microenvironment in ovarian cancer disease progression and treatment resistance, which enabled her to describe a novel inhibitor against stem cells and other druggable targets...Dr. McLean has received significant funding, including a recent RO1 grant, demonstrating that she can sustain a translational research program.”

Reviewer D: “...she has published an exceptional number of well-recognized journal articles in high impact, and some specialty journals, in addition to several book chapters. Much of this work has been focused on ovarian cancer – where she has already made several significant scholarly contributions...I consider her a leader in the field... I have been particularly impressed by her ability to work effectively with her peers toward the goals of various team science projects...she is also an excellent ambassador for the field – working effectively with patient advocates, as well as other scientists across disciplines.”

Reviewer E: “Dr. McLean has been exceptionally productive. Both the quality and quantity of Dr. McLean’s research works are impressive...Of Dr. McLean’s scholarly contributions, several have direct bearing on my own research and influenced my thinking...Dr. McLean has been highly successful obtaining significant funding for her research program, which is currently supported by four extramural grants. This is highly commendable...She serves as PI on the prestigious DOD OCA Award...OCA awards are exceptional and highly competitive, aimed at recruiting and supporting the most talented [junior] scientists in the field such as Dr. McLean.”

Reviewer F: “...she stands out among her peers for her research and scholarly achievements, dedication to education, and service in the field of Gynecologic Oncology...Dr. McLean is dedicated to conducting and supporting research to improve outcomes for women with gynecologic cancer, with an emphasis on the pathogenesis and treatment of ovarian cancer...I was impressed by her research trajectory. Her translational research is contributing to our understanding of ovarian cancer pathogenesis and improving hormonal therapy treatment outcomes...Her mentorship has yielded productive scholarship, co-authoring multiple published manuscripts and abstracts with her mentees. I was impressed by the multi-disciplinary professions represented by the doctoral students she advises...Dr. McLean has clearly demonstrated excellence in the areas outlined in your promotion criteria.”

Summary of Recommendation:

Dr. McLean is an exceptional physician scientist who is leading cutting edge research on ovarian cancer. She is an outstanding educator and provides important service in her field. I am pleased to recommend Karen McLean, M.D., Ph.D. for promotion to associate professor of obstetrics and gynecology, with tenure, Department of Obstetrics and Gynecology, Medical School.



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

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