Approved by the Regents
May 17, 2018

PROMOTION RECOMMENDATION
THE UNIVERSITY OF MICHIGAN
MEDICAL SCHOOL
DEPARTMENT OF RADIATION ONCOLOGY

Meredith Morgan, Ph.D., assistant professor of radiation oncology, Department of Radiation Oncology, Medical School, is recommended for promotion to associate professor of radiation oncology, with tenure, Department of Radiation Oncology, Medical School.

Academic Degrees:

Ph.D.	2002	West Virginia University
B.S.	1995	Fairmont State College, Fairmont, WV

Professional Record:

2013-present	Assistant Professor of Radiation Oncology, University of Michigan
2009-2013	Research Assistant Professor of Radiation Oncology, University of Michigan
2005-2009	Research Investigator, Department of Radiation Oncology, University of Michigan

Summary of Evaluation:

Teaching: As an assistant professor in the Department of Radiation Oncology, Dr. Morgan is actively involved in the education of residents, medical fellows, post-doctoral fellows, medical students, graduate students and undergraduate students. In terms of formal teaching commitments, she gives two to three lectures per year in the radiobiology course taught for residents in the Department of Radiation Oncology, covering topics such as cell cycle regulation, DNA damage response and repair, tumor growth kinetics, and radiation sensitivity. Dr. Morgan receives excellent evaluations from both the clinical and physics residents attending this course. She also teaches in an undergraduate radiation biology course instructing students in the Radiation Therapy Technology program as well as the Nuclear Engineering and Radiological Sciences program. Dr. Morgan participates in Cancer Biology 554, a graduate-level course for students in the Cancer Biology Program and is a member of the Cancer Biology Faculty within the PIBS (Program in Biomedical Sciences) graduate program. In addition to teaching in the classroom, she provides instruction in research. To date, Dr. Morgan has mentored one hematology-oncology fellow, six post-doctoral fellows, eight medical students, and numerous undergraduate students. She has just accepted a graduate student from the MSTP (Medical Scientist Training Program). In each of these cases, students/fellows have been successful under her mentorship, receiving authorships and advancing their academic careers. Notably, after spending a year and a half in Dr. Morgan's laboratory as an undergraduate, Jason Schreiber went on to be accepted to medical school. In addition, Matthew McMillan an M1 currently in the SBRP (Student Biomedical Research Program) received a T35 under Dr. Morgan's mentorship to support his summer research in her laboratory this year. Dr. Morgan is an author of the Radiation Therapy chapter in the 9th and 10th

(with the 11th pending) editions of *Cancer: Principles and Practice of Oncology* which serves as teaching tool for the broader biomedical oncology community.

Research: The major focus of Dr. Morgan's research is on developing molecularly targeted agents to improve chemoradiation therapy for locally advanced cancers. Her research is specifically focused on pancreatic cancer, DNA repair, DNA replication, the cell cycle, and radiosensitization. Dr. Morgan has concentrated a large part of her academic career on the preclinical development of agents which target the DNA damage response for sensitization of tumor cells to chemotherapy, radiation, and chemoradiation. Importantly, in 2014, Dr. Morgan's work on WEE1 inhibitors translated to a clinical trial in her department for patients with locally advanced pancreatic cancer. She has published over 20 articles directly related to this topic, 15 of which were in the last five years. This work is supported by her R01 as well as a research grant from AstraZeneca. Notably, in collaboration with Drs. Lawrence and Rehemtulla, Dr. Morgan's research combining inhibitors of the DNA damage response with chemoradiation was funded by a U01 from the National Cancer Institute which will emphasize the use of drugs within the CTEP (Cancer Therapy Evaluation Program) portfolio for sensitization of pancreatic cancers to chemoradiation. This substantial grant truly resulted from Dr. Morgan's leadership, and the bulk of the credit for it belongs to her.

Dr. Morgan's research has expanded in the last five years to include a new area of research on E3 ubiquitin ligases and DNA double-strand break repair. In collaboration with Dr. Yi Sun, Dr. Morgan discovered a novel function of the E3 ubiquitin ligase, FBXW7, in DNA double-strand break repair. The significance of this work is highlighted by its publication in *Molecular Cell* (2016). Consistent with her translational research goals, she is exploring two major strategies for leveraging these basic mechanistic findings clinically. First, she is leading research using the drug, pevonedistat, to pharmacologically inhibit FBXW7 and DNA repair. The merit of this project is evidenced by the favorable reviews of Dr. Morgan's R01 on the subject that scored in the 16th percentile on its first submission and was revised and re-submitted in July, 2017. Second, Dr. Morgan in collaboration with Drs. Cuneo, Leopold, and Hardiman is leading studies to assess the potential benefit of PARP inhibitor therapy in rectal cancers with FBXW7 mutations. This work is supported by a Research Grant from the University of Michigan Comprehensive Cancer Center. Dr. Morgan's excellence in research is illustrated by over 45 peer-reviewed publications in high-impact journals including *Cancer Research*, *Clinical Cancer Research*, *Molecular Cell*, and *Cancer Discovery*, with 23 of these publications in the last five years, 13 of which she is the corresponding author. Her research is supported by both an R01 and a U01 from the National Institutes of Health and is further supplemented by support from the UMCCC as well as research grants from AstraZeneca. She is the clear leader of the research funded through these mechanisms, and she has demonstrated her strong abilities as an independent investigator.

Recent and Significant Publications:

Engelke CG, Parsels LA, Qian Y, Zhang Q, Karnak D, Robertson JR, Tanska DM, Wei D, Davis MA, Parsels JD, Zhao L, Greenson JK, Lawrence TS, Maybaum J, Morgan MA: Sensitization of pancreatic cancer to chemoradiation by the Chk1 inhibitor MK8776. *Clin Cancer Res* 19:4412-4421, 2013.

Wei D, Parsels LA, Karnak D, Davis MA, Parsels JD, Marsh AC, Zhao L, Maybaum J, Lawrence TS, Sun Y, Morgan MA: Inhibition of protein phosphatase 2A radiosensitizes pancreatic cancers by modulating CDC25C/CDK1 and homologous recombination repair. *Clin Cancer Res* 19:4422-4432, 2013.

Karnak D, Engelke CG, Parsels LA, Kausar T, Wei D, Robertson JR, Marsh KB, Davis MA, Zhao L, Maybaum J, Lawrence TS, Morgan MA: Combined inhibition of wee1 and PARP1/2 for radiosensitization in pancreatic cancer. *Clin Cancer Res* 20:5085-5096, 2014.

Kausar T, Schreiber JS, Karnak D, Parsels LA, Parsels JD, Davis MA, Zhao L, Maybaum J, Lawrence TS, Morgan MA: Sensitization of pancreatic cancers to gemcitabine chemoradiation by WEE1 kinase inhibition depends on homologous recombination repair. *Neoplasia*. 17:757-766, 2015.

Zhang Q, Karnak D, Tan M, Lawrence TS, Morgan MA*, Sun Y*: FBXW7 facilitates nonhomologous end-joining via K63-linked polyubiquitylation of XRCC4. *Mol Cell* 61:419-433, 2016.

Service: At an institutional level, Dr. Morgan is a key contributor to the BMRC (Biomedical Research Council). Initiating her membership in 2016, Dr. Morgan's role has grown rapidly in the last year to her current position of vice chair, with agreement to become chair next year. She has been an active participant in numerous faculty search committees, the R01 boot camp program, and departmental committees such as the 'Improving Clinical Research Team.' Nationally, Dr. Morgan is an active member of several professional societies including the American Association for Cancer Research, American Society for Clinical Oncology, and Radiation Research Society. Within the American Association for Cancer Research, she is on the steering committee for the Radiation Science and Medicine working group, and also participates in Women in Cancer Research. She has been honored by various speaking opportunities within the American Association for Cancer Research including major symposia and educational sessions. Dr. Morgan is a regular reviewer for several journals including *Cancer Research* and *Clinical Cancer Research*. She provides service to the National Institutes of Health by participating in study sections such as her recent role on a U54 study section for the National Cancer Institute.

External Reviewers:

Reviewer A: "Dr. Morgan's work is vigorous and reproducible. Dr. Morgan's research is highly translational and is extremely well respected by the Pharmaceutical Industry…Dr. Morgan's research is also innovative and impactful in the area of basic science. Dr. Morgan has more than met the requirements for promotion to rank of Associate Professor with Tenure at my institution. In my opinion, Dr. Morgan is an outstanding academic cancer researcher and I commend her to you."

Reviewer B: "To evaluate Dr. Morgan's regard by her peers would only require a quick look at her numerous successful grants. If we [at our institution] were fortunate enough to be able to recruit Meredith to [our institution], her academic rank would be equivalent of an Associate Professor."

Reviewer C: "I believe all five of these creative scholarly publications are outstanding, each contributing a new finding, or was the first study to report, or formed a foundation, or provided a major future directive in our field. Physician scientists with a similar number of years' experience and accomplishment…are all Associate Professors at their respective institutions, and Dr. Morgan, based upon her accomplishments, can certainly be considered as accomplished as these peers."

Reviewer D: "Many of her publications have appeared in high impact journals such as Cancer Research, Clinical Cancer Research, Cancer Discovery and Molecular Cell. I feel comfortable in saying that Dr. Morgan's publication record and funding would garner her promotion and tenure at many schools."

Reviewer E: "I also note that she has been very successful in obtaining extramural funding, with five currently funded awards, including an R01 on which she is PI and two SPORE projects from the NIH. Overall, Dr. Morgan has produced an impressive body of work and has made important contributions to the field, establishing herself at the vanguard of probing DNA damage and repair pathways for modulating radiation response. Based on her scientific accomplishments and contributions, she would be very competitive for an Associate Professor level appointment at my institution."

Reviewer F: "My impression about the quality and quantity of work she has produced in her career so far is consistent with what you would expect for this level of promotion…Since her last promotion in 2013, she has published 21 papers, which is an excellent level of productivity… Dr. Morgan's standing in the field is recognized for contributions to enhancing the effects of radiation or chemoradiation…Overall, I think her body of work supports her promotion."

Summary of Recommendation:

Dr. Morgan has established herself as an innovative investigator. She is an outstanding researcher and a highly regarded teacher. Dr. Morgan has developed a national reputation in radiation oncology for her expertise in combining novel agents which target the DNA damage response with chemoradiation in pancreatic cancer. She is a true rising star who is driving science forward in innovative ways. I enthusiastically support Meredith Morgan, M.D. for promotion to associate professor of radiation oncology, with tenure, Department of Radiation Oncology, Medical School.

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

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