

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

Analisa DiFeo, Ph.D., associate professor of pathology, with tenure, Department of Pathology, and associate professor of obstetrics and gynecology, without tenure, Department of Obstetrics and Gynecology, Medical School, is recommended for promotion to professor of pathology, with tenure, Department of Pathology, and professor of obstetrics and gynecology, without tenure, Department of Obstetrics and Gynecology, Medical School.

Academic Degrees:

Ph.D.	2008	Icahn School of Medicine at Mount Sinai, New York, NY
B.S.	2001	State University of New York at Binghamton, Binghamton, NY

Professional Record:

2018-present	Associate Professor (with tenure), Department of Pathology, University of Michigan
2018-present	Associate Professor (without tenure), Department of Obstetrics and Gynecology, University of Michigan
2014-2018	Norma C. and Albert I. Geller Designated Professor in Ovarian Cancer Research, Case Western Reserve University School of Medicine, Cleveland, OH
2014-2018	Assistant Professor, Department of Genetics and Genome Sciences, Case Western Reserve University School of Medicine, Cleveland, OH
2012-2018	Assistant Professor, Division of General Medical Sciences (Oncology), Department of Medicine, Case Western Reserve University School of Medicine, Cleveland, OH

Summary of Evaluation:

Teaching: Dr. DiFeo has excelled as an educator in both the classroom and the laboratory and has made significant contributions to the Medical School's education mission. She is actively engaged in teaching and mentoring. Learners include clinical fellows, post-doctoral fellows, medical students, graduate students, undergraduate students, and high school students. She has served as a member of many dissertation committees. She has given lectures in graduate-level courses and several institutional symposia. She is currently a co-director of the Cancer Biology 800 (CANC BIO800) student seminar course, lecturer for the Cancer Biology Graduate Program (CANC BIO554), and past lecturer for the Introduction to Scientific Communications (PHARM502) course. Teaching evaluations are very good to excellent and trainees commented on her enthusiastic teaching style and the relevance of the material. She is a mentor for two National Institutes of Health (NIH) F31 recipients and the multi-principal investigator of a T32 training grant. Dr. DiFeo serves as the co-director of the Cancer Biology Training Program and is a member of the Hematology T32 Advisory Committee.

Research: Dr. DiFeo is an expert on the role of microRNAs in ovarian cancer pathogenesis, progression, and therapeutics. Her laboratory is focused on uncovering functional microRNA:mRNA pathways driving ovarian cancer chemotherapy resistance and disease recurrence. She uncovered that microRNA-181a is an oncoMIR wherein it is frequently overexpressed in recurrent, platinum-resistant high-grade serous ovarian cancer and correlates with a shorter time to recurrence and poor overall survival. Dr. DiFeo has flourished in her grant funding having acquired numerous grants in the past five years with current grants as the principal investigator totalling more than \$5.6M from funding sources such as the NIH and the Department of Defense (DoD), foundation and institutional grants. She is also the director of an NIH P30 grant for the Athymic Mouse Core. Her prior funding as principal investigator is also impressive and consistent, with primary funding from foundation and private sources. She has two active patents. She has authored 65 peer-reviewed manuscripts in high-impact journals such as *Nature Communications*, *Clinical Cancer Research*, and *JCI*. Dr. DiFeo has been invited on 23 occasions to present her work nationally and internationally including in Italy. She has received national recognition for her research accomplishments, including as an American Cancer Society ResearchHER ambassador (2022, 2023) and participant in the Association of American Cancer Institutes (AACI) and American Association for Cancer Research (AACR) Annual Hill Day in Washington, DC.

Recent and Significant Publications:

- Avelar RA, Armstrong AJ, Carvette G, Gupta R, Puleo N, Colina JA, Joseph P, Sobeck AM, O'Connor CM, Raines B, Gandhi A, Dziubinski ML, Ma DS, Resnick K, Singh S, Zanotti K, Nagel C, Waggoner S, Thomas DG, Skala SL, Zhang J, Narla G, DiFeo A, "Small-Molecule-Mediated Stabilization of PP2A Modulates the Homologous Recombination Pathway and Potentiates DNA Damage-Induced. Cell Death," *Mol Cancer Ther.* 22(5): 599-615, 05/2023. PM36788429/PMC10157366
- Belur Nagaraj A, Knarr M, Sekhar S, Connor RS, Joseph P, Kovalenko O, Fleming A, Surti A, Nurmammedov E, Beltrame L, Marchini S, Kahn M, DiFeo A, "The miR-181a-SFRP4 Axis Regulates Wnt Activation to Drive Stemness and Platinum Resistance in Ovarian Cancer," *Cancer Res.* 81(8): 2044-2055, 04/2021. PM33574092/PMC8137569
- Knarr M, Avelar RA, Sekhar SC, Kwiatkowski LJ, Dziubinski ML, McAnulty J, Skala S, Avril S, Drapkin R, DiFeo A, "miR-181a initiates and perpetuates oncogenic transformation through the regulation of innate immune signaling," *Nat Commun.* 11(1): 3231, 06/2020. PM32591511/PMC7320168
- Belur Nagaraj A, Kovalenko O, Avelar R, Joseph P, Brown A, Surti A, Mantilla S, DiFeo A, "Mitotic Exit Dysfunction through the Deregulation of APC/C Characterizes Cisplatin-Resistant State in Epithelial Ovarian Cancer," *Clin Cancer Res.* 24(18): 4588-4601, 09/2018. PM29653924/PMC6139058
- Nagaraj AB, Wang QQ, Joseph P, Zheng C, Chen Y, Kovalenko O, Singh S, Armstrong A, Resnick K, Zanotti K, Waggoner S, Xu R, DiFeo A, "Using a novel computational drug-repositioning approach (DrugPredict) to rapidly identify potent drug candidates for cancer treatment," *Oncogene.* 37(3): 403-414, 01/2018. PM28967908/PMC5799769

Service: Dr. DiFeo has made impressive ongoing service contributions in multiple capacities. Internationally, she is a standing member of grant review committees for high-level government and foundation research funding committees in the United Kingdom, France, Italy, and Belgium.

Nationally, she is a co-founder of the Young Scientist Foundation, serves on its scientific advisory board, is the ambassador for the American Cancer Society ResearchHERs, and is on the scientific advisory board of another national organization, Colleen's Dream. She has provided substantial peer review of grant proposals as a standing member for the NIH, DoD, and the American Cancer Society. She is the associate editor of *Gynecological Oncology Frontiers in Oncology*, is on the editorial board of the American Cancer Society, and has contributed as an ad hoc journal reviewer for numerous scientific journals including. Regionally, Dr. DiFeo is a board member of the Michigan Ovarian Cancer Alliance Board of Trustees. Institutionally, she is a grant reviewer for the Rogel Cancer Center post-doctoral fellowship program. Dr. DiFeo serves on countless committees for the institution and department, including as the diversity ambassador for Pathology's Program in Biomedical Sciences (PIBS), member of the PIBS Inclusive Committee, co-director of the Cancer Biology Training Program, a member of the Wellness Committee, and member of the Medical Affairs Advisory Committee for Pathology, along with multiple committees focused on education and training.

#### External Reviewers:

Reviewer A: "...Dr. DiFeo has been highly productive and extremely successful in terms of funding. She recently obtained a renewal on her NCI R01 focused on miR-181a as a mediator of oncogenesis and WNT signaling... Over the last few years she was the recipient of a SPARC/Sun Pharma grant, a Forbes Institute for Cancer Discovery Grant, and several training grants including a NCI T32 on Cancer Biology. She was the 2022-2023 ResearchHER Ambassador for the American Cancer Society, which helps provide visibility to female cancer researchers working on women's health and women's cancers."

Reviewer B: "Equally impressive is Analisa's remarkable commitment to her scientific communities at both local and national levels. She actively serves on numerous panels, advocates for cancer funding and research, and is an excellent mentor. It is apparent from her consistent mentorship and support that she attracts talented trainees, drawn to her intelligence, energy, and nurturing disposition, creating an ideal training environment. Furthermore, her appointment as Chair of the Medical Affairs Advisory Committee at U. Michigan speaks volumes about her high standing among her peers at your institution, as well as her inherent leadership skills and strong values."

Reviewer C: "She has written several articles, many of which have been published in prestigious publications, and she has also been able to get various other grants and awards, such as those from the National Institutes of Health (NCI) [sic], the Department of Defense (DoD), internal funds, foundation grants, and sponsored research partnerships with corporate sponsors...[she] is a standout research investigator who is breaking new ground in the treatment and diagnosis of gynecological tumors, and she is also a highly involved and enthusiastic mentor of [junior] scientists. Therefore, I would put her in the top 10% of ovarian cancer scientists in the field."

Reviewer D: "Dr. DiFeo has a very impressive track record as a mentor at all levels: clinical fellows, graduate students (including rotation students), medical students, postdoctoral fellows, undergraduates, and high school students. She is training and mentoring investigators pursuing mechanistic, translational, and clinical research and [is] a highly sought after mentor for the next


generation of scientists. Furthermore, Dr. DiFeo is a ResearchHER American Cancer Society Ambassador, giving back to ACS and the research community. Dr. DiFeo clearly gives back to her institution and her profession.”

Reviewer E: “Dr. DiFeo’s dedication to patient-focused research is genuinely commendable. Through her tireless efforts, she has fostered collaborations with clinicians, culminating in the establishment of a well-integrated research program. This initiative has led to the development of an extensive repository of gynecologic tumors, including over 500 advanced-stage uterine and ovarian tumors, as well as numerous patient-derived cell lines, organoids, and xenografts (PDX). This invaluable resource, one of the largest in the field, has empowered Dr. DiFeo and her collaborators to tackle the most challenging scientific questions.”

Reviewer F: “...Dr. DiFeo is actively sought out as a reviewer of scientific manuscripts and grants which is a strong indication that her peers value her efforts and view her as a leading expert in the field. Dr. DiFeo has also presented her work at several international and national meetings. Thus, her service to the scientific community is extensive.”

Summary of Recommendations:

Dr. DiFeo is a world-renowned ovarian cancer researcher who is internationally renowned for her work on ovarian cancer, which has resulted in significant discoveries both in terms of pathogenesis and therapeutics. She has an exemplary publication record and an excellent track record in obtaining continued external funding for her research. She continues to be highly productive with excellence in teaching, mentorship, as well as service. I am pleased to recommend Analisa DiFeo, Ph.D. for promotion to professor of pathology, with tenure, Department of Pathology, and professor of obstetrics and gynecology, without tenure, Department of Obstetrics and Gynecology, Medical School.



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

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