

PROMOTION RECOMMENDATION  
THE UNIVERSITY OF MICHIGAN  
MEDICAL SCHOOL  
DEPARTMENT OF INTERNAL MEDICINE

Grace Y. Chen, M.D., Ph.D., assistant professor of internal medicine, Department of Internal Medicine, Medical School, is recommended for promotion to associate professor of internal medicine, with tenure, Department of Internal Medicine, Medical School.

Academic Degrees:

M.D.	2001	University of Michigan
Ph.D.	1999	Stony Brook School of Medicine, Stony Brook, NY
A.B.	1993	Harvard University

Professional Record:

2010-present	Assistant Professor of Internal Medicine, University of Michigan
2009-2009	Clinical Lecturer, Department of Internal Medicine, University of Michigan

Summary of Evaluation:

Teaching: Dr. Chen believes that her most important teaching contribution is mentoring research trainees in her laboratory as well as the clinical instruction she imparts while serving as the inpatient oncology attending or oncology consult attending. Dr. Chen has trained undergraduate students, graduate students, and post-doctoral fellows not only in experimental techniques established in her laboratory, but also in critical thinking. Under her guidance and supervision, residents and fellows have gained confidence in their autonomy and clinical decision-making. Additionally, Dr. Chen is involved in the immunology graduate program, giving her opportunities to teach and evaluate the graduate students.

Research: Dr. Chen's long-term research goal is to identify microbial-based biomarkers for the early detection of colon cancer or novel colon cancer chemoprevention strategies by modulating the gut microbiota or the host immune receptors that sense them. Her work in these areas resulted in funding by the American Cancer Society (Research Scholar Grant) and the National Cancer Institute (R01) as well as publications in *Cancer Research* and *Immunology*, which have been cited over 100 times, respectively. Since her appointment as an assistant professor in 2010, Dr. Chen has published 19 peer-reviewed publications, nine as first or senior author. Further, her work has highlighted the importance of the gut microbiota in protecting the host against the development of colon cancer, which was published in *Cancer Research*. This study served as the foundation for current research to identify specific bacterial populations that can affect disease susceptibility which was initially supported by pilot funding from the GI SPORE and subsequently with R21 funding by NCI. Dr. Chen's work has been presented both internationally and nationally, including invited talks at the Keystone Symposium in Dublin,

Ireland, the GI Cancer SPORE workshop at the National Cancer Institute as well as at St. Jude's Children Hospital, and the Duke Cancer Institute.

#### Recent and Significant Publications:

Chen GY, Liu M, Wang F, Bertin J, Núñez G: A functional role for Nlrp6 in intestinal inflammation and tumorigenesis. *J Immunol* 186:7187-7194, 2011.

Zackular JP, Baxter NT, Iverson KD, Sadler WD, Petrosino JF, Chen GY\*, Schloss PD: The gut microbiome modulates colon tumorigenesis. *MBio* 4:e00692-713, 2013. \*co-corresponding author.

Zhan Y, Chen PJ, Sadler WD, Wang F, Poe S, Núñez G, Eaton KA, Chen GY: Gut microbiota protects against gastrointestinal tumorigenesis caused by epithelial injury. *Cancer Res* 73:7199-7210, 2013.

Zhan Y, Seregin SS, Chen J, Chen GY: Nod1 limits colitis-associated tumorigenesis by regulating IFN- $\gamma$  production. *J Immunol* 196:5121-5129, 2016.

Seregin SS, Golovchenko N, Schaf B, Chen J, Eaton KA, Chen GY: NLRP6 function in inflammatory monocytes reduces susceptibility to chemically induced intestinal injury. *Mucosal Immunol* doi: 10.1038/mi.2016.55, Jun 29, 2016. [Epub ahead of print]

Service: Dr. Chen was asked to serve as an ad hoc reviewer in nine different study sections in the past two years. She was also recently invited by the American Cancer Society to serve as a peer reviewer for the Microbial Pathogenesis and Cancer Committee in June 2016 and will be participating again in January 2017. She has reviewed manuscripts for 15 journals including *Journal of Clinical Investigation*, *PLoS One*, *Cancer Research*, *PNAS*, and *Mucosal Immunology*. On the institutional level, Dr. Chen serves as a board member for the IRBMED and as a member of the Cancer Research Committee. Approximately 20% of Dr. Chen's effort is devoted to patient care specializing in the treatment of patients with gastrointestinal cancers and participating in the Multidisciplinary Colorectal Cancer Clinical at the University of Michigan Cancer Center. She spends at least four weeks each year either as an inpatient oncology attending at the University of Michigan Hospital or as an oncology consultant at both the University of Michigan and the Ann Arbor VA.

#### External Reviewers:

Reviewer A: "In 2008 Dr. Chen was awarded a K08 grant, which allowed her to beginning [sic] her independent research career. She has since received several other grants as principal investigator or co-investigator and she is currently funded through 2018 as the principal investigator of one R01 and two R21 grants. Considering the difficult funding environment, Dr. Chen has a good track record of funding."

Reviewer B: "Dr. Chen is truly in a class of her own. Of the medical oncologist physician-scientists that run federally-funded labs and continue to regularly produce high-impact papers,

Dr. Chen easily ranks in the top 3... Given Dr. Chen's outstanding record from college to the present, I am sure she would be considered for promotion and tenure at my institution and at all elite institutions across the globe."

Reviewer C: "In addition to being a direct major contributor to an emerging research field, D[r]. Chen has shaped the course of biomedical research by her extensive service as an NIH grant reviewer... I can absolutely assure you that she is highly respected and influential on these panels for her insightful reviews and the key questions she asks when proposal[s] are discussed."

Reviewer D: "...Dr. Chen is a well-rounded investigator with strong commitment to the academic life. I firmly believe that the scientific contribution and the impact of Dr. Chen's work to innate signaling, microbes and intestinal host responses is undeniable and that the scientific community will benefit from her work for many years to come. In my opinion, Dr. Chen is a key member of our research community and her scientific contribution is important for the advancement of science worldwide."

Reviewer E: "Dr. Chen's research has provided seminal insights into the mechanism by which the gut microbiota affect colon carcinogenesis. In particular, she demonstrated that the gut microbiota induce tissue reparative factors that limit epithelial damage that can lead to chronic inflammation and cancer... I think that Dr. Chen is an outstanding scholar and an excellent representative of your institution. I would not hesitate to recommend Dr. Chen for tenure if she were a faculty member at my institution based on her strong publication record, number of invited seminar presentations at outside institutions, success at obtaining research funding, and multiple times she has served on study sections. She is an outstanding scientist and is worthy of continued support. I am confident that Dr. Chen will expand her success with a world-class research program, and I give her my highest recommendation."

Summary of Recommendation:

Dr. Chen is regarded as a rising expert in the field of mucosal immunity. Her track record of funding and publications is commendable as is her commitment to teaching and clinical care. She is on a trajectory to become an international expert in her field and it is for these reasons that I recommend Grace Y. Chen, M.D., Ph.D. for promotion to associate professor of internal medicine, with tenure, Department of Internal Medicine, 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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