

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

Grace Y. Chen, M.D., Ph.D., associate professor of internal medicine, with tenure, Department of Internal Medicine, Medical School, is recommended for promotion to 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 University
A.B.	1993	Harvard University

Professional Record:

2017 - present	Associate Professor of Internal Medicine, with tenure, University of Michigan
2010 - 2017	Assistant Professor of Internal Medicine, University of Michigan
2009 - 2009	Clinical Lecturer of Internal Medicine, University of Michigan

Summary of Evaluation:

Teaching: Dr. Chen's teaching reflects the breadth of her work as a physician scientist and clinician. It ranges from supervising and mentoring undergraduate and medical students and post-doctoral fellows in their research interests, to clinical teaching while serving as the inpatient oncology attending or oncology consult attending. She has mentored eight undergraduate and one graduate student. She trains students in experimental techniques established in her laboratory, and in critical thinking. Under her guidance and supervision, residents and fellows have gained confidence in their autonomy and clinical decision-making which has led them to their own successful careers. Dr. Chen has served on the dissertation committees of six graduate students and is frequently invited to give talks at institutions and international conferences. Additionally, she is involved in the Immunology Graduate Program, and is given opportunities to teach and evaluate graduate students.

Research: Dr. Chen's research focuses on identifying 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 has resulted in several funded grants from the National Institutes of Health, National Cancer Institute, Department of Defense, Department of Agriculture, and American Cancer Society. Her studies have led to new fundamental knowledge of how the gut microbiota drives the development of colitis-associated tumorigenesis. She has authored 45 peer-reviewed publications that have been published in top-tier journals, including *Nature Microbiology*, *Cell Reports* and *Cancer Research*. Dr. Chen's work has been presented both nationally and internationally, 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:

Han, K, Nam, J, Xu, J, Sun, X, Huang, X, Animasahun, O, Achreja, A, Jeon, JH, Pursley, B, Kamada, N, Chen, GY, Nagrath, D, Moon, JJ: Generation of systemic antitumour immunity via the in situ modulation of the gut microbiome by an orally administered inulin gel *Nature Biomedical Engineering* doi: 10.1038/s41551-021-00749-2(Online ahead of print.): 2021.PM34168321

Yu AI, Zhao L, Eaton KA, Ho S, Chen J, Poe S, Becker J, Gonzales A, McKinstry D, Hasso M, MendozaCastrejon J, Whitfield J, Koumpouras C, Schloss PD, Martens EC, and Chen GY: Gut microbiota modulate CD8 T cell responses to influence colitis-associated tumorigenesis *Cell Reports* 31(1): 107471, 2020. PM32268087/PMC7934571

Toubai T, Fujiwara H, Rossi C, Riwes M, Tamaki H, Zajac C, Liu C, Mathew AV, Byun J, Oravec-Wilson K, Matsuda I, Sun Y, Peltier D, Wu J, Chen J, Seregin SS, Henig S, Kim S, Brabbs S, Pennathur S, Chen GY, Pavan R: Host NLRP6 exacerbates graft-versus-host disease independent of gut microbial composition. *Nat Microbiol*4(5): 800-812, 2019. PM30858572/PMC6689241

Hara H, Seregin SS, Yang D, Fukase K, Chamaillard M, Alnemri ES, Inohara N, Chen GY, Nunez G: The NLRP6 inflammasome recognizes lipoteichoic acid and regulates Grampositive pathogen infection. *Cell* 175(6): 1651-1664, 2018. PM30392956/PMC6294477

Seregin SS, Golovchenko N, Schaf B, Chen J, Pudlo NA, Mitchell J, Baxter NT, Zhao L, SchlossPD, Martens EC, Eaton KA, Chen GY: NLRP6 Protects Il10^{-/-} Mice from Colitis by Limiting Colonization of Akkermansia muciniphila. *Cell Reports* 19(10): 2174, 2017. PM28445725/PMC5528001

Service: Institutionally, Dr. Chen is a long-standing member of the C1 Oncology Medical School Institutional Review Board (IRBMED) and Cancer Center Cancer Research Committee (CRC). She also serves as a regular member on the NIH Innate Immunity and Inflammation Study Section, Veteran's Affairs Oncology C Review Panel, and American Cancer Society Peer Review Committee. In addition, she serves as an ad hoc member in multiple NIH study sections and is currently an associate editor for the *Journal of Immunology* and *Frontiers in Cellular and Infection Microbiology*. Dr. Chen is an ad hoc journal reviewer for 27 journals, including the *Journal of Clinical Investigation*, *PLoS One*, and *Cancer Research*. She provides care specializing in the treatment of patients with gastrointestinal cancers and participates in the Multidisciplinary Colorectal Cancer Clinical at the Rogel 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 Veterans Affairs Ann Arbor Healthcare System.

External Reviewers:

Reviewer A: "Dr. Chen is an accomplished investigator who has made significant contributions to our understanding of the innate immune receptor NLRP6, which senses microbial and cellular damage signals...she always conducted herself in the most professional manner and as a fair and thoughtful reviewer, whose opinion is highly respected by other panel members...In summary, Dr. Chen has a track record of quality research, scholarly, teaching and service, and she has achieved the level of national and international reputation expected from full Professors in top universities. Therefore, I enthusiastically support her promotion to the rank of Professor at the University of Michigan."

Reviewer B: "I fully appreciate that Grace has benefitted from the outstanding group of investigators who surround her at U of M, including her mentor Dr. Nunez. But there is no doubt in my mind that it is Grace who has driven the central thread in this work of NLRP6, gut microbiota, and cancer. Like her publications, Grace's funded grants reflect her innovative leadership in cancer/innate immunity/microbiota and her collaborative collegial nature in working with others...I am confident her trajectory will continue to rise and attract a steady flow of funding. Thus, I judge Dr. Chen's scholarship to be outstanding and submit it would very much be in your interests to promote her and retain her at U. Michigan."

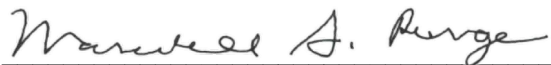
Reviewer C: “Dr. Chen has clearly demonstrated her research strength in an area of high clinical importance. It is important to note that at a time when NIH pay lines are receding, Dr. Chen is doing very well maintaining multiple ROIs and other federal grants...The quality and quantity of her scientific work and her grant funding portfolio clearly demonstrates that she is ready to be promoted to full Professor. Based on my evaluation, in conjunction with the faculty promotion criteria for University of Michigan that I have been provided, Dr. Chen’s academic record definitely warrants promotion to Full Professor. I strongly support her application without any reservations.”

Reviewer D: “Dr. Chen’s research has made significant advances in our understanding of the functional importance of Nod-like receptor (NLR) signaling as well as the role of the gut microbiota in promoting intestinal health and disease...her work has provided insight into mechanisms by which NLRs and the gut microbiome can affect intestinal homeostasis and susceptibility to inflammation and tumorigenesis that is of significant interest both scientifically and clinically...As physician scientists are becoming an endangered profession, I support her promotion as requested.”

Reviewer E: “Dr. Chen has worked tirelessly to establish herself at the forefront of the gut microbiota field by pursuing critical questions related to the role of host innate immune receptors (NLRP6) in the regulation of gut microbes and inflammation in the gastrointestinal tract, which has significant impact on colorectal cancer pathogenesis...there is no question in my mind that Dr. Chen is a superb physician scientist and mentor who will continue to be successful and advance the field with her research and training efforts. Based on all the aforementioned facts, and without any reservations whatsoever, I am urging you and the members of the Promotion and Tenure Committee to support Dr. Chen’s promotion to Professor with tenure in the Department of Internal Medicine.”

Summary of Recommendation:

Dr. Chen is internationally recognized as an 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. I am pleased to recommend the promotion of Grace Y. Chen, M.D., Ph.D. to professor of internal medicine, with tenure, Department of Internal Medicine, Medical School.



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

May 2022