

PROMOTION RECOMMENDATION
THE UNIVERSITY OF MICHIGAN
MEDICAL SCHOOL
DEPARTMENT OF DERMATOLOGY
DEPARTMENT OF CELL AND DEVELOPMENTAL BIOLOGY

Sunny Y. Wong, Ph.D., assistant professor of dermatology, Department of Dermatology and assistant professor of cell and developmental biology, Department of Cell and Developmental Biology, Medical School, is recommended for promotion to associate professor of dermatology, with tenure, Department of Dermatology, and associate professor of cell and developmental biology, without tenure, Department of Cell and Developmental Biology, Medical School.

Academic Degrees:

Ph.D.	2007	Massachusetts Institute of Technology
B.A.	2000	Cornell University

Professional Record:

2011-present	Assistant Professor of Dermatology, University of Michigan
2011-present	Assistant Professor of Cell and Developmental Biology, University of Michigan

Summary of Evaluation

Teaching: Dr. Wong is an outstanding teacher and mentor. He provides research mentoring and basic science instruction in the laboratory setting, one-to-one interactions, and in the classroom. Since joining the faculty at Michigan, Dr. Wong has provided mentoring and training to seven graduate students, including serving as thesis mentor to three, three post-doctoral fellows, one medical student, and five undergraduate students. He has earned a reputation as a careful, insightful and rigorous mentor. In addition, Dr. Wong provides training and mentoring to research technicians in his lab, two of whom have since gone on to pursue graduate studies in research. He is an active faculty member of the Cellular and Molecular Biology Program and delivers lectures and small group discussions for graduate student courses, including: Developmental Genetics (CDB580/581), Stem Cells and Regenerative Biology (CDB582/583), and an Introduction to Scientific Communication “grant writing” (PHARM502). He is a lucid and engaging teacher with an interactive teaching style, which stimulates critical thinking through questions and discussion. Dr. Wong has provided intermittent teaching in other graduate courses (PIBS503, CDB530, CDB850, CMB801) and has also lectured in the Department of Dermatology research and teaching conferences. Dr. Wong was honored with the Cellular and Molecular Biology Program Service Award in recognition of his contributions to the PHARM502 grant writing course. This course guides Ph.D. students through the logic and actual process of preparing an individual NIH fellowship application. His impact on graduate student training is also evidenced by his service on 12 dissertation committees. This extensive service is a marker of his excellence in the eyes of both the graduate students and their mentors, and offers recognition of his contributions to the training of developing scientists.

Research: Dr. Wong has developed a national and international reputation as an innovative developmental and cancer biologist who has made fundamental contributions to our understanding of

hair follicle biology and basal cell carcinoma tumorigenesis. His groundbreaking work is heavily invested in the creation and use of sophisticated transgenic mouse models to address key questions in skin and cancer biology. Dr. Wong has elucidated fundamental processes of cell differentiation in hair follicle development and renewal, and has yielded profound insights with import to the field of regenerative medicine. In early work completed at Michigan, Dr. Wong was first to identify and characterize K79, a keratin that is one of the earliest markers of terminal differentiation in hair follicle development and renewal. This pivotal work resulted in Dr. Wong's proposal of a novel mechanism for how hair follicle pores develop in the skin, which has translational relevance to human acne and other cystic diseases in the skin.

In describing a new model for basal cell carcinoma (BCC), Dr. Wong identified those stem cells in the skin that are most susceptible to forming BCC. His group was one of the first to reveal sensory nerves as key components of the tumor microenvironment, and was first to suggest mechanosensing epithelia in the skin as possible "hot spots" for tumor formation. In recent work, Dr. Wong's lab has investigated signaling pathways responsible for persistence of BCC tumor cells despite drug treatment. This recently published study provided mechanistic insight into why some BCC cells fail to respond to treatment and may lead to new treatment approaches for patients with inoperable BCC. Dr. Wong is the principal investigator of an NIH R01 grant, an American Cancer Society grant, and a foundation grant. He has a strong history of funding for his research. He has published 16 peer-reviewed articles in high impact scientific journals, including *Cell Stem Cell*, *Cancer Cell*, *Cell Reports* and *Cancer Research*. He regularly presents his work at national and international scientific meetings, including the Society for Investigative Dermatology, International Skin Carcinogenesis Conference, and Gordon Research Conferences. He provides active peer-review service for numerous top journals and is on the editorial review board of *Experimental Dermatology*. In addition, he has provided scientific grant review for the Israel Science Foundation and as an ad hoc member of the NIH ACTS study section. He was recently named a member of Pfizer's Scientific Advisory Panel.

Recent and Significant Publications:

Eberl M, Mangelberger D, Swanson JB, Verhaegen ME, Harms PW, Frohm ML, Dlugosz AA, Wong SY: Tumor architecture and Notch signaling modulate drug response in basal cell carcinoma. *Cancer Cell* 33(2): 229-243.e4, 2018.

Mesler AL, Veniaminova NA, Lull MV, Wong SY: Hair follicle terminal differentiation is orchestrated by distinct early and late matrix progenitors. *Cell Rep* 19(4): 809-821, 2017.

Vagnozzi AN, Reiter JF, Wong SY: Hair follicle and interfollicular epidermal stem cells make varying contributions to wound regeneration. *Cell Cycle* 14(21): 3408-3417, 2015.

Peterson SC, Eberl M, Vagnozzi AN, Belkadi A, Veniaminova NA, Verhaegen ME, Bichakjian CK, Ward NL, Dlugosz AA, Wong SY: Basal cell carcinoma preferentially arises from stem cells within hair follicle and mechanosensory niches. *Cell Stem Cell* 16(4): 400-412, 2015.

Veniaminova NA, Vagnozzi AN, Kopinke D, Do TT, Murtaugh LC, Maillard I, Dlugosz AA, Reiter JF, Wong SY: Keratin 79 identifies a novel population of migratory epithelial cells that initiates hair canal morphogenesis and regeneration. *Development* 140(24): 4870-80, 2013.

Service: Dr. Wong provides peer review service for 16 journals and serves on the editorial board for *Experimental Dermatology*. He also has provided scientific review service for various external

organizations, including the NIH and Israel Science Foundation. At the local level, Dr. Wong is highly engaged in institutional service as a member of the admission and graduate committees of the Department of Cell and Developmental Biology and also the Cellular and Molecular Biology Program. Additionally, he serves as a member of the internal advisory and seminar committees for the Center for Organogenesis. Dr. Wong has been a key contributor to the Center for Organogenesis seminar committee, including his initiation of the Organogenesis Career Development Program. This new trainee-oriented series will enhance the Center for Organogenesis T32 training grant, bringing visiting experts to interact with T32 trainees. Likewise, Dr. Wong played a key role in organizing the Cellular and Molecular Biology program's retreats from 2013 to 2015.

External Reviewers:

Reviewer A: "...Dr Wong has made several outstanding contributions to our current understanding of skin biology, ranging from developmental processes...to the genetic and molecular control of non-melanoma skin cancer. ... The excellent quality of Dr Wong's scientific contributions to the research community is very well reflected by the high percentage of his publications in very good to top-ranked journals...he has also successfully and continuously secured substantial funding for his work, which-together with his scientific contributions - places Dr Wong and his group among the leaders in the field of Hedgehog signaling in skin cancer...Dr Wong's scientific achievements would without doubt fully meet the requirements for a promotion to the rank of tenured Associate Professor at our department."

Reviewer B: "... In terms of quantity and the venues of publications—top journals in the field — Dr. Wong's scholarly record is impressive...Dr. Wong's contribution to Hedgehog signaling in basal cell carcinoma and to hair follicle morphogenesis are widely recognized...he is a very creative scientist...Dr. Wong pushes innovation in his research program...he pursues his stories to a great depth; his papers are data-rich...outstanding examples of the power of mouse genetics...one of the driving forces in his program, namely to publish biologically relevant work by using whole animal models...I am a member of my school's Council of Academic Personnel... I have, therefore, reviewed a large number of promotion files and can unequivocally state that Dr. Wong's would be a slam dunk case for tenure at my University...I have no reservations in recommending tenure for Dr. Wong."

Reviewer C: "...Dr. Wong's impressive talent in combining multidisciplinary approaches has resulted in a highly innovative line of research addressing fundamental questions within skin and cancer research. I strongly believe that Dr. Wong is a highly qualified, open minded and ambitious scientist with a very commendable track record and is an excellent candidate for receiving Associate Professor position. ... Researchers of Dr. Wong's caliber is a treasure for any academic institution."

Reviewer D: "... He is well focused and thoughtful, and can dig deeper to see new perspective and make new discoveries. ...I have great impression on Dr. Wong and consider his scholarly research, and creative contributions to be among the top of his peers in our field. His work has made strong impact on dermatology / skin biology research field. Therefore, I highly support him to be a tenured associate player and expect him to be a major player in our field."

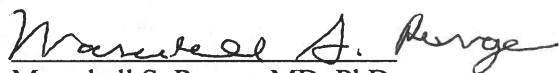
Reviewer E: "...Dr. Wong has continued to be exceptionally productive, excelling in his field and making major contributions to our understanding of the mechanisms of hair follicle development and regenerative growth, wound healing, and skin cancer. His work is characterized by its innovative nature, close attention to detail, and highly rigorous and critical approach...there is abundant evidence that Dr. Wong will continue to make outstanding contributions to research in skin stem cell and cancer biology. He has established a national reputation as an exceptional scientist, and his work is on an

upward trajectory with increasing numbers of publications in the highest impact journals. Dr. Wong's accomplishments place him at the forefront of his peer group working in skin and cancer biology, and on a par with many scientists who have achieved the rank of tenured Associate Professor at competing institutions...Dr. Wong would be easily promoted to Associate Professor with tenure at [my institution].”

Reviewer F: “...Overall the scholarly impact is excellent...I believe that Dr Wong is having a significant impact in the field and his career is on a positive trajectory...Dr. Wong has an excellent standing compared to his peers at similar stages of their career. It is worth pointing out that only a tiny percentage of cancer researchers would over the span of their entire careers have a paper as senior author in Cancer Cell, or similar, and Dr Wong has at least two from his time at U-M.”

Summary of Recommendation:

Dr. Wong's academic and scholarly achievements have been continuous and highly impactful. He has achieved national and international standing as an insightful and highly creative scientist. His career is on an upward trajectory and he is certain to continue to make translationally-relevant fundamental contributions to medical science, and to contribute enthusiastically to the training and development of the next generation of scientific leaders. For these reasons, I am pleased to recommend Sunny Y. Wong, Ph.D. for promotion to associate professor of dermatology, with tenure, Department of Dermatology, and associate professor of cell and developmental biology, without tenure, Department of Cell and Developmental Biology, Medical School.



Marschall S. Runge, MD, PhD
Executive Vice President for Medical Affairs
Dean, Medical School

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