

PROMOTION RECOMMENDATION
UNIVERSITY OF MICHIGAN
MEDICAL SCHOOL
DEPARTMENT OF INTERNAL MEDICINE
DEPARTMENT OF MICROBIOLOGY AND IMMUNOLOGY

Approved by the Regents
May 14, 2009

David Miller, M.D., Ph.D., assistant professor of internal medicine, Department of Internal Medicine, and assistant professor of microbiology and immunology, Department of Microbiology and Immunology, Medical School, is recommended for promotion to associate professor of internal medicine, with tenure, Department of Internal Medicine, and associate professor of microbiology and immunology, without tenure, Department of Microbiology and Immunology, Medical School.

Academic Degrees:

M.D.	1996	Mayo Medical School, Mayo Clinic and Foundation
Ph.D.	1996	Mayo Graduate School, Mayo Clinic and Foundation
B.S.	1989	University of Wisconsin-Madison

Professional Record:

2003-present	Assistant Professor of Internal Medicine and Assistant Professor of Microbiology and Immunology, University of Michigan
2000-2003	Clinical Instructor, Department of Medicine, University of Wisconsin

Summary of Evaluation:

Teaching: Dr. Miller has teaching effort inclusive of the laboratory, classroom and clinical setting instructing medical students, residents and fellows. Currently, Dr. Miller mentors four Ph.D. students, two postdoctoral fellows and two undergraduate students. In the past five years, he has mentored a total of twenty students at all levels. Dr. Miller has provided clinical instruction for approximately 42 medical and pharmacy students, residents, and fellows while serving as the attending physician on the Adult Inpatient Infectious Diseases Consultation Service at the University of Michigan Hospital. Within the classroom, Dr. Miller's instruction includes two years as the small group leader and two years as a virology lecturer for the first-year medical student Infectious Diseases/Microbiology Sequence course. He has also served on ten preliminary examination and eight doctoral thesis committees for Ph.D. students, in addition to the four graduate students currently in his laboratory. Dr. Miller has received numerous exceptional comments from students, residents, and fellows on his classroom and clinical teaching evaluations, and was honored with a Medical Student Award for Teaching Excellence in 2008, all of which further attest to his extraordinary teaching abilities. His annual classroom teaching evaluation scores were in the 4.6 to 4.8 range (1 to 5 scale), well above the average scores of 4.1 to 4.4 for other instructors in the course. His annual clinical teaching evaluation

scores were in the 4.6 to 4.7 range (1 to 5 scale), above both the departmental and division averages of 4.4 to 4.6. Furthermore, he received the highest “OUTSTANDING” rating from more than 70% of residents and fellows when compared to other University of Michigan attending faculty members.

Research: The focus of Dr. Miller’s laboratory research is the interface between eukaryotic hosts and viral pathogens, with an emphasis on both basic cellular and molecular mechanisms of virus replication and specific human pathogens, in particular those associated with inflammatory central nervous system diseases. This research focus takes advantage of his extensive training in the fields of immunology, virology, and neuroscience. Dr. Miller’s publication record is outstanding for a junior faculty member with 27 peer-reviewed publications, including 17 as first or senior author, and 34 total publications. His work has appeared in top-notch journals such as the *Journal of Immunology*, *Journal of Neuroscience*, *Journal of Virology*, and *PLoS Biology*. An ISI Web of Knowledge analysis of his peer-reviewed publications from 1991 to the present revealed a Hirsch index score (productivity measurement) of 18 and an average of 26 citations per manuscript, well above the average of 15 for the approximate 6,500 research manuscripts in the fields of immunology, virology, and neuroscience published during the same time period. Furthermore, his research work has been presented at ten national or international scientific meetings since his appointment as an assistant professor.

Dr. Miller has also successfully obtained extramural NIH-based support for his research program. This support includes a five-year R01 grant that was awarded less than two years after his appointment as an assistant professor, a three-year Career Development Award from the Region V Great Lakes Regional Center of Excellence (GLRCE) for Biodefense and Emerging Infectious Disease Research, and an exploratory two-year R21 grant. In addition, he has established collaborative projects within the University of Michigan such that he receives support as a co-investigator from two of Dr. Marc Hersenson’s R01 grants. Dr. Miller’s ability to obtain NIH-based extramural support is particularly impressive given the current research funding environment, and directly demonstrates the national recognition of his research program and the anticipation of a continued productive career in science.

Recent and Significant Publications:

Weeks SA and Miller DJ: The heat shock protein 70 co-chaperone *YDJ1* is required for membrane-specific Flock House virus RNA replication complex assembly and function in *Saccharomyces cerevisiae*. *J Virol* 82:2007-2012, 2008.

Castorena KM, Peltier DC, Peng W, and Miller DJ: Maturation-dependent responses of cultured human neuronal cells to western equine encephalitis virus infection and type I interferons. *Virology* 372:208-220, 2008.

Castorena KM, Weeks SA, Stapleford KA, Cadwallader AM, and Miller DJ: A functional heat shock protein 90 chaperone is essential for efficient Flock House virus RNA polymerase synthesis in *Drosophila* cells. *J Virol* 81:8412-8420, 2007.

Kampmueller KM and Miller DJ: The cellular chaperone heat shock protein 90 facilitates Flock House virus RNA replication in *Drosophila* cells. *J Virol* 79(11):6827-6837, 2005.

Miller DJ, Schwartz MD, Dye BT, and Ahlquist P: Engineered retargeting of viral RNA replication complexes to an alternative intracellular membrane. *J Virology* 77:12193-12202, 2003.

Service: Dr. Miller has served on four different Department of Microbiology and Immunology committees, including the time-intensive Academic Awards & Promotions (AP&A) and Graduate Studies committees. He has also served on the Medical School Biosafety Level 3 (BSL3) Core and University of Michigan Institutional Biosafety committees since 2007, and actively participated in two faculty search committee. Dr. Miller has reviewed manuscripts for four scientific journals, and has reviewed grants for both the National Science Foundation and the University of Michigan OVPR Rare Diseases Grant program. Furthermore, he has been a member of both the American Society for Microbiology (ASM) and the American Society for Virology (ASV) since 2000, served on the ASV Membership Review committee in 2007, and assumed the chairmanship of that committee in July 2008 (term runs through 2011).

Professional Work: Dr. Miller has a 0.2 full-time equivalent (FTE) clinical appointment with his primary patient care responsibilities as an Infectious Diseases specialist at the University of Michigan Hospital and Clinics. He has served as the attending physician on the inpatient consultation service for 24 weeks in the past five years, where he provides advice and recommendations to both medical and surgical services on the management of hospitalized patients with diverse and often complicated infectious diseases. Dr. Miller also staffs the outpatient Infectious Diseases fellow clinic approximately once a month.

External Review:

Reviewer A: "...Dr. Miller is a well trained investigator [of his cohort] who has clearly established himself as a productive independent investigator with a solid track record of initial funding and publications. There is every reason to believe that he will continue on this path to success in future years and become a leader in medical virology."

Reviewer B: "...Dr. Miller is publishing high impact papers and the accelerating trend is an auspicious indicator that he is likely to continue on a productive trajectory....Dr. Miller has also been quite successful at obtaining independent grant support during a highly competitive funding era."

Reviewer C: "His work...has been published in excellent journals, including the *Journal of Virology* and *Virology*. He has been well funded by the NIH for these studies..."

Reviewer D: "Dr. Miller has established an impressive research program in molecular virology....Dr. Miller has published his independent papers primarily in *Journal of Virology* and *Virology*. These are the two premier virology journals and accepted papers must pass rigorous review."

Reviewer E: "Dr. Miller is one of the few Infectious Disease specialists of his generation who remains clinically active yet performs the caliber of basic research worthy of NIH funding and publication in the top tier journals. He no doubt serves as an excellent role model for the

Infectious Disease fellows training at the University of Michigan. I would be happy to recruit him to my own Division should the opportunity arise.”

Reviewer F: “...this country is very much in need of creative physician scientists [of his cohort] of his high caliber....I expect an outpouring of innovative work from his laboratory over the next several years.”

Reviewer G: “I don’t think there is a seminar that I give that I don’t mention his stunning result from retargeting flock house virus from the mitochondrial membrane to the ER....I would be thrilled to have him as a colleague...”

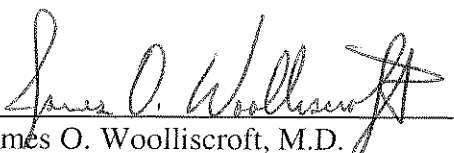
Reviewer H: “David Miller’s research is rigorous, thorough, and innovative. He is very well respected in the field. Dr. Miller’s papers are outstanding and worth reading. He typically gets laudatory reviews from even the toughest critics...He is smart, dedicated to high quality research, and possesses the tools and expertise to continue to make important contributions to biomedicine. I look forward to following his contributions in the years to come.”

Reviewer I: “Dr. Miller is making outstanding contributions in education at the University of Michigan. He is actively involved in teaching at the medical school and has a full slate of trainees within his laboratory program including undergraduate students, graduate students, and post-doctoral fellows....In addition, Dr. Miller is making outstanding contributions in terms of service both at the University of Michigan and nationally...”

Reviewer J: “...Dr. Miller is a sophisticated scientist who has contributed to the peer-reviewed literature in outstanding journals, for which he is well-funded from the National Institutes of Health.”

Summary of Recommendation:

Dr. David Miller is an accomplished molecular virologist whose research is rigorous and innovative with an impressive publication record and robust funding. He is making significant contributions to the educational system at the University of Michigan as well. I am pleased to recommend David Miller, M.D., Ph.D. for promotion to associate professor, with tenure, in the Department of Internal Medicine, and associate professor, without tenure, in the Department of Microbiology and Immunology.


James O. Woolliscroft, M.D.
Dean
Lyle C. Roll Professor of Medicine

May 2009