

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

Deborah Levine, M.D., M.P.H., associate professor of internal medicine, with tenure, Department of Internal Medicine, and associate professor of neurology, without tenure, Department of Neurology, Medical School, is recommended for promotion to professor of internal medicine, with tenure, Department of Internal Medicine, and professor of neurology, without tenure, Department of Neurology, Medical School.

Academic Degrees:

M.P.H.	2005	Harvard University
M.D.	1996	Icahn School of Medicine, New York
B.A.	1992	Bowdoin College, Maine

Professional Record:

2017 - present	Associate Professor of Internal Medicine, with tenure, University of Michigan
2017 - present	Associate Professor of Neurology, without tenure, University of Michigan
2009 - 2017	Assistant Professor of Internal Medicine and Neurology, University of Michigan
2007 - 2009	Assistant Professor of Medicine, The Ohio State University
2007 - 2009	Adjunct Assistant Professor of Medicine, University of Alabama, Birmingham
2003 - 2007	Assistant Professor of Medicine, University of Alabama, Birmingham
2002 - 2007	Assistant Professor of Medicine, University of Alabama, Birmingham
2000 - 2002	Clinical Instructor, Department of Medicine, Tufts University

Summary of Evaluation:

Teaching: Dr. Levine is a devoted mentor and teacher who is an expert in the medical management of acute stroke patients and secondary stroke prevention. She teaches and mentor medical students, internal medicine residents, neurology residents, and vascular neurology fellows. Since 2016, she has served as the associate director to the Medical School Health Policy and Economics Path of Excellence, where she plays a critical role as a pathway advisor teaching health policy and economics to medical students. In 2020, Dr. Levine volunteered to serve as an inpatient medicine ward attending during the COVID-19 pandemic, teaching internal medicine residents clinical medicine. For the past 12 years, she has served as a faculty advisor for the Stroke Program Clinical Journal Club in the Department of Neurology at the University of Michigan. In this capacity, Dr. Levine teaches vascular neurology fellows the critical approach to medical literature and mentors fellows presenting articles at the monthly Stroke Journal Club.

Dr. Levine has been invited to give educational presentations on vascular cognitive impairment and stroke at national and international meetings. She gives updated lectures of the medical management of stroke patients on a regular basis to University of Michigan physicians. Most recently, she presented at the Society for Epidemiologic Research's Annual Meeting in

Minneapolis and the European Stroke Organisation Conference in Milan, Italy. In addition, she has been invited to present on post-stroke cognition at Oxford University in the United Kingdom during the 2021-2022 academic year. Dr. Levine has also served as an expert and author on vascular cognitive impairment and secondary stroke prevention on multiple education initiatives. In 2021, she served as Evidence Review Committee Vice Chair for the American Heart Association/American Stroke Association Guidelines for Second Prevention of Stroke Patients with Stroke and Transient Ischemic Attack.

Research: Dr. Levine has consistently contributed essential and influential research to the science of vascular cognitive impairment and has established a national and international reputation as an expert in the field. Her research aims to improve the prevention of stroke and dementia, impact public policy, and reduce health disparities. In 2018, she was appointed as the director of the Cognitive Health Services Research Program in the Department of Internal Medicine and the Institute of Healthcare Policy and Innovation. She has an outstanding track record of grant funding. Since her appointment as an associate professor, she has been continuously funded by the NIH. Her research has advanced the science of vascular cognitive impairment by improving the understanding of post-stroke cognitive impairment trajectory and predictors. Dr. Levine's research, published in *JAMA*, showed for the first time that stroke is associated with an acute decline in cognition and accelerated and persistent cognitive decline over several years. From this work, Dr. Levine received an NIH/NIA-funded R01(STROKE COG) grant, where she serves as the principal investigator studying the effects of vascular risk factors on risk of Alzheimer's disease and other related dementias after stroke. She also serves as the principal investigator on an additional R01, studying the effect of lower blood pressure over the life course on late-life cognition in Blacks, Hispanics, and Whites. Since 2020, Dr. Levine has served as the chair of the Cognitive Testing Workgroup of the International Society of Vascular Behavioural and Cognitive Disorder's Framework for Clinical Trials in Cerebral Small Vessel Disease. In recognition of her research contributions, she was elected to the American Society for Clinical Investigation in 2021. Dr. Levine currently has 106 peer reviewed publications, and has published in high-impact journals such as *JAMA*, *Stroke*, and the *Journal of General Internal Medicine*. Dr. Levine is an ad hoc reviewer for numerous journals, including the *European Journal of Neurology*, *Annals of Internal Medicine*, and the *Journal of Stroke and Cerebrovascular Diseases*.

Recent and Significant Publications:

Levine DA, Gross AL, Briceño EM, et al: Sex Differences in Cognitive Decline Among US Adults. *JAMA Netw Open*. 2021;4(2):e210169. PMID: 33630089.

Levine DA, Gross AL, Briceño EM, et al: Association Between Blood Pressure and Later-Life Cognition Among Black and White Individuals. *JAMA Neurol*. 2020; 77(7):810-819. PMID: 32282019.

Levine DA, Galecki AT, Langa KM, Unverzagt FW, Kabeto MU, Giordani B, Cushman M, McClure LA, Safford MM, Wadley VG: Blood Pressure and Cognitive Decline over 8 Years in Middle-Aged and Older Black and White Americans. *Hypertension*. 2019;73(2):310-318. PubMed PMID: 30624986.

Levine DA, Wadley VG, Langa KM, Unverzagt FW, Kabeto MU, Giordani B, Howard G, Howard VJ, Cushman M, Judd SE, Galecki AT: Risk Factors for Poststroke Cognitive Decline: The REGARDS Study (Reasons for Geographic And Racial Differences in Stroke). *Stroke*, 2018;49(4):987-994. PubMed PMID: 29581343.

Levine DA, Burke JF, Shannon CF, Reale BK, Chen LM: Association of Medication Nonadherence Among Adult Survivors of Stroke After Implementation of the US Affordable Care Act. *JAMA Neurol*. 2018;75(12):1538-1541. PMID: 30167647.

Service: Dr. Levine provides excellent patient care at the University of Michigan and unique, specialized clinical care to patients with acute stroke. In 2010, she founded the General Medicine Post-stroke Clinic to improve the care of acute stroke patients by addressing transitional needs, controlling risk factors, and identifying barriers such as treatment adherence and vascular cognitive impairment. This clinic continues to be the only one of its type in the United States and Dr. Levine is the only provider in this clinic. Additionally, she serves as the associate director of the Medical School Health Policy and Economics Path of Excellence and as the director of the Cognitive Health Services Research Program. She has served on multiple committees institutionally and is currently a member of the Michigan Predictive Activity and Clinical Trajectories Study Data Safety and Monitoring Board. Due to her expertise in her field, she has been asked to be a reviewer multiple years in a row for the National Institutes of Health/National Institute of Neurological Disorders and Stroke grant.

External Reviewers:

Reviewer A: “She has truly been productive with regards to funding and publications for her current research platform of post-stroke cognition and mild cognitive impairment, and her work is meaningful for providers and patients...She has had an incredibly productive 5 years since she was promoted to Associate Professor, with nearly half of her papers published during this time (54 to 106). The scholarly publications that I find outstanding include the paper describing sex differences in cognitive discipline published in JAMA Network Open in 2021...From my perspective, she is a clear leader in the field compared to other researchers at her level, based on publications and grant funding.”

Reviewer B: “Dr. Levine’s research is novel in terms of both its content and approach. Her methods bring a novel public health perspective to our understanding of stroke prevention and outcomes. Her methods have yielded some of the best nationally representative data about risk factors for stroke and outcomes for stroke. Her studies are actionable and provide crucial guideposts for public health and systemwide interventions.”

Reviewer C: “Dr. Levine’s scholarly work is impressive. She has identified a critically important general area, and has admirable focus on issues of stroke and cognition in older adults...Her grant funding is also impressive, and again shows a diversity of roles from PI to co-I on many currently funded projects, including PI on multiple R01-sized projects...Dr. Levine’s publications are of a very high level of quality. They are in top notch journals. Several of these combine data across multiple different studies, each of which requires considerable start-up costs to be able to navigate towards important unique contributions to the literature...Dr. Levine stands out in her peer group as a leader and exemplar of many things that are good in academic general and internal medicine.”

Reviewer D: “Her work is high impact and high quality. She is a successful researcher who had made an impact on the field at every stage of her career. Her work identified important gaps in care for stroke survivors including inadequate access to medications.”

Reviewer E: “Dr. Levine’s seminal contribution is the discovery that stroke accelerates the long-term development and progression of cognitive impairment...Levine’s landmark 2015 JAMA paper changed the paradigm: stroke survivors have long-term, accelerated, persistent declines in cognition, even after controlling for survivors’ pre-stroke trajectories and their acute decline in cognition immediately after the stroke. This new information on post-stroke Vascular Cognitive Impairment (VCI) changed clinical practice, research priorities, and policies. Clinical guidelines now recommend that clinicians monitor stroke survivors long-term for VCI. Scientific agencies and leading organizations now support studies on post-stroke VCI...She is, in my view, the leading physician-investigator in the field.”

Summary of Recommendation:

Dr. Levine is an innovative, generative, and collaborative faculty member. She has focused her research on vascular cognitive impairment teaching and program development and has garnered a national and international reputation as a leading expert in the field. She is also a brilliant scholar who has set a new standard for the trajectory and risk factors of cognitive decline after stroke. I am pleased to recommend Deborah A. Levine, M.D., M.P.H. for promotion to professor of internal medicine, with tenure, Department of Internal Medicine, and professor of neurology, without tenure, Department of Neurology, Medical School.



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

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