Approved by the Regents May 15, 2014

PROMOTION RECOMMENDATION
UNIVERSITY OF MICHIGAN
MEDICAL SCHOOL
DEPARTMENT OF PATHOLOGY

Andrew P. Lieberman, M.D., Ph.D., associate professor of pathology, with tenure, Department of Pathology, Medical School, is recommended for promotion to professor of pathology, with tenure, Department of Pathology, Medical School.

Academic Degrees:

M.D., Ph.D.	1993	University of Maryland
B.S.	1985	Duke University

Professional Record:

2008-present	Associate Professor of Pathology, University of Michigan
2001–2008	Assistant Professor of Pathology, University of Michigan

Summary of Evaluation:

Teaching: Dr. Lieberman has a strong commitment to the educational activities in the Department of Pathology and in the Medical School. For medical students, he gives two lectures per year on neurodegenerative diseases and brain tumors and serves as a neuropathology laboratory instructor. For graduate students, he delivers about three lectures per year in the Neuroscience and Molecular Cellular Pathology Program and he has taught a section on neuropathology for graduate students in the Histopathologic Basis of Disease course. For residents, he teaches an evening pathology course for four sessions each year. He has also recently received accreditation for a two-year neuropathology fellowship in the Department of Pathology, which he will direct. He has served on numerous preliminary examination and thesis committees. In the laboratory, he has mentored numerous undergraduate students and Ph.D. students with emphasis on translational research. Finally, for residents and fellows, he has run a brain cutting conference for approximately 20 hours per year and instructs rotating pathology residents in diagnostic surgical neuropathology for about four months a year. He is regarded as a superb teacher in all of these settings, and this year, was the recipient of a token of appreciation award from medical students in recognition of his outstanding educational efforts.

Research: Dr. Lieberman's research has centered on the genetic basis of neurodegenerative diseases including a newly appreciated set of disorders caused by CAG/glutamine tract expansions, including Kennedy disease. His laboratory is focused on two questions: which cell types drive pathogenesis and can we stimulate endogenous quality control pathways to rid cells of the toxic protein? These questions have been addressed using gene targeting to generate a knock-in mouse model which he has shared with investigators in the U.S. and Europe. He has also developed a model of protein triage that explains how cells target the mutant androgen receptor to the proteasome for degradation. His laboratory also studies a lysosomal storage disorder that causes neurodegeneration in children, Niemann-Pick type C. His research has been consistently well-funded from external sources. Currently, he is the principal investigator on four NIH grants, including two R01's, a R21, and a

R03. He has been invited to present his work at numerous institutions and conferences including the Lysosomal Disease Network World Symposium, the McKnight Conference on Neuroscience, the National Niemann-Pick Foundation, the Kennedy Disease Conference and Educational Symposium, and a Gordon Conference during which he gave two presentations in June of 2013. His work has consistently been published in high-quality, peer-reviewed journals, including *Neurobiology*, *Journal of Biological Chemistry*, and *Human Molecular Genetics.* Since his promotion to associate professor in 2008, he has been a co-author on 41 publications, with senior authorship on 12 and first authorship on one. In addition, he was elected to the American Society for Clinical Investigation in 2009 and the University of Michigan Medical School League of Research Excellence in 2011.

Recent and Significant Publications:

Elrick MJ, Pacheco CD, Yu T, Dadgar N, Shakkottai VG, Ware C, Paulson HL, Lieberman AP: Conditional Niemann-Pick C mice demonstrate cell autonomous Purkinje cell neurodegeneration. *Hum Mol Genet* 19:837-847, 2010.

Yu Z, Wang AM, Adachi H, Katsuno M, Sobue G, Yue Z, Robins DM, Lieberman AP: Macroautophagy is regulated by the UPR-mediator CHOP and accentuates the phenotype of SBMA mice. *PLOS Genetics* 7:e1002321, 2011.

Yu T, Chung C, Shen D, Xu H, Lieberman AP: Ryanodine receptor antagonists adapt NPC1 proteostasis to ameliorate lipid storage in Niemann-Pick type C disease fibroblasts. *Hum Mol Genet* 21:3205-3214, 2012.

Elrick MJ, Yu T, Chung C, Lieberman AP: Impaired proteolysis underlies autophagic dysfunction in Niemann-Pick type C disease. *Hum Mol Genet* 21:4876-4887, 2012.

Wang AM, Miyata Y, Klinedinst S, Peng HM, Chua JP, Komiyama T, Li X, Morishima Y, Merry DE, Pratt WB, Osawa Y, Collins CA, Gestwicki JE, Lieberman AP: Activation of Hsp70 reduces neurotoxicity by promoting polyglutamine protein degradation. *Nat Chem Biol* 9:112-118, 2013. (Highlighted in *Nature Chemical Biology* press release Feb 2013; *Nature Structural & Molecular Biology, Nature Reviews Drug Discovery*)

Service: Dr. Lieberman has made numerous contributions to his profession. He has been a reviewer of grants for the NIH including participation in study sections; international grants including some for the Wellcome Trust in the UK, and for various components of the University of Michigan. He currently serves on two editorial boards, the *Journal of Neuropathology and Experimental Neurology* and the *Journal of Biological Chemistry*, and he has been an ad hoc reviewer for numerous journals. He has been a committee member or review board member for the Kennedy Disease Association, the American Federation for Aging Research, the National Niemann-Pick Disease Foundation and the American Association of Neuropathology. He has also served on numerous committees within the Department of Pathology and the Medical School at the University of Michigan. Dr. Lieberman has been the director of neuropathology since May of 2010. In this capacity, he is responsible for the administration of the neuropathology program and for diagnostic work including autopsy brain cutting and surgical neuropathology. He is regarded as a superb diagnostician with a great fund of diagnostic knowledge.

External Reviewers:

Reviewer A: "...Andrew is an excellent example of physician-scientist who is able to combine clinical expertise with cutting-edge research....Almost as impressive as Andrew's scientific accomplishments are his drive and energy in obtaining extramural research funding. His laboratory is supported by two recently funded R01 grants, one for SBMA and another one for NPCI. In addition, he has been able to obtain funding from multiple foundations, including MDA and the prestigious McKnight Foundation."

Reviewer B: "Dr. Lieberman's work is thoughtful, careful and of high impact....He is clearly an integrated and important member of the training environment at Michigan....Dr. Lieberman is an outstanding neuroscientist, teacher and scholar."

Reviewer C: "Dr. Lieberman is a creative and insightful scientist who has made important contributions to our understanding of the pathogenesis of neurodegenerative diseases."

Reviewer D: "I rank Dr. Lieberman at the highest level compared with his peers....His research is recognized internationally. He has published a large number of papers in high impact journals, mostly as first or senior author. It is noteworthy that his publication record has been even stronger over the past 5 years than previously, an important indicator of his future success....He is an outstanding and energetic researcher with an international reputation and I have no doubt that he will continue to be highly productive."

Reviewer E: "His background uniquely positioned him and he is now a world-renowned investigator in trinucleotide repeat neurodegenerative diseases....I would rank Dr. Lieberman among the top of his peers. He is an internationally recognized physician scientist with a productive and well-funded laboratory. His experimental foundation will serve him and the University for many years to come."

Summary of Recommendation:

Andrew P. Lieberman, M.D., Ph.D. is an internationally renowned scientist who has made numerous contributions to the study of neurodegenerative disorders, including glutamine expansion diseases and storage diseases. He has made a number of seminal discoveries which have been published in important journals. In addition, he has been highly praised for his extensive educational contributions to the teaching of medical students, undergraduate and graduate students, pathology residents and fellows. I am pleased to recommend Andrew P. Lieberman, M.D., Ph.D. for promotion to professor of pathology, with tenure, Department of Pathology, Medical School.

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

May 2014