PROMOTION RECOMMENDATION
The University of Michigan
College of Literature, Science, and the Arts

Approved by the Regents
May 20, 2010

Joshua D. Berke, assistant professor of psychology, College of Literature, Science, and the Arts, is recommended for promotion to associate professor of psychology, with tenure, College of Literature, Science, and the Arts.

Academic Degrees:

Ph.D.	1998	Harvard University
M.A.	1991	University of Cambridge (Trinity College)
B.A.	1991	University of Cambridge (Trinity College)

Professional Record:

2004 – present	Assistant Professor, Department of Psychology, and Neuroscience Scholar, University of Michigan.
2000 – 2004	Research Assistant Professor, Department of Psychology, Boston University
1999 – 2000	Postdoctoral Fellow, Department of Psychology, Boston University
1998 – 1999	IRTA Postdoctoral Fellow, National Institute for Neurological Disorders and Stroke, Bethesda, MD

Summary of Evaluations:

Teaching – Professor Berke challenges students to think critically and to become problem solvers rather than compilers of facts. As a consequence, his courses are rigorous and intellectually stimulating. Student evaluations are positive at all levels and compare very favorably with other instructors in Psychology. He has mentored graduate students in his laboratory and is currently serving as chair or co-chair for three graduate students. His mentorship has led to publications for each of these students. He has also worked with a number of undergraduates in his laboratory and one project led to an honor's thesis student as first author on two papers. These students uniformly praise his dedication to their training and development as scientists.

Research – Professor Berke's research brings unparalleled sophistication in cellular and systems neuroscience methodology and theory to bear on essential psychological processes involved in learning, reward, and decision-making. This work has important implications for understanding both normal brain function as well as pathological brain function associated with drug addition, obsessive-compulsive disorder, and Tourette's syndrome. His research has been published in highly visible outlets, is well cited, and has been supported by both government and private funds.

Recent and Significant Publications:

"Selective activation of striatal fast spiking interneurons during choice execution," with G. J. Gage, et al., *Neuron*, revision accepted.

"Fast oscillations in cortical-striatal networks switch frequency following rewarding events and stimulant drugs," *European Journal of Neuroscience*, 30, 2009, pp. 848-859.

"Transient 23-30Hz oscillations in mouse hippocampus during exploration of novel environments," with V. Hetrick, et al., *Hippocampus*, 18, 20080, pp. 519-529.
"Oscillatory entrainment of striatal neurons in freely-moving rats," with M. Okatan, et al., *Neuron*, 43, 2004, pp. 883-896.

Service – Professor Berke's service contributions meet the expectations for his rank. His local contributions reflect participation in the governance and scholarly activity of three organizational units: the Biopsychology Area, the Department of Psychology, and the Neuroscience Program. In each of these units he has served on committees with considerable time commitments. He also organized or co-organized two local speaker series, and served on four additional standing or ad hoc committees. At the international level, Professor Berke's contributions have primarily taken the form of grant reviewing and manuscript reviewing.

External Reviews:
Reviewer (A)
"Joshua Berke is a remarkable…man who I have seen develop over the years into a scientist who is recognized as an international leader in his field. … He has made many fundamental findings relating to the physiological properties of neurons in the basal ganglia that have been published in high profile international journals. ...I strongly recommend him for the promotion."

Reviewer (B)
"Dr. Berke is an outstanding Neuroscientist who has made a major impact on our understanding of the neural circuits of the basal ganglia. ...[his] work has recently received a great deal of attention as evidenced by his success in obtaining competitive funds to support this research and receiving…many speaking invitations both at national and international meetings. There is no doubt that he will continue to make very important contributions to the field of Neuroscience."

Reviewer (C)
"Josh Berke has clearly established himself as an important contributor among researchers focused on the neural mechanisms of choice and decision making. … He has published articles in a range of high impact journals in the field… In addition to his excellent research credentials, Dr. Berke has the ability to present his work in a clear and engaging manner that clearly makes him an excellent teacher."

Reviewer (D)
"He is outstanding and in the top tier in his generation of investigators in this field. ... This is a complex and unfolding area of science. Our understanding is, at best, a work in progress. I was probably most influenced by his 2004 report in *Neuron* entitled, 'Oscillatory entrainment of striatal neurons in freely moving rats.' This article has been widely cited. His contribution in *The Journal of Neuroscience* to the Mini-symposium published earlier this month was fascinating for me to read. He is in distinguished company as a co-author of the report."

Reviewer (E)
"Josh is one of but a few [junior] behavioral neuroscientists studying basal ganglia pathways for behavioral sequencing and cognition who is thoughtful about the problems in the field and willing to acknowledge the limitations of the methods. …he is a critical thinker who sets high

standards not only for himself, but also for the field. …Berke's latest work on the selective activation of striatal fast spiking interneurons during choice execution represents some of the most exciting findings on this topic to date."

Reviewer (F)
"…Dr. Berke's contributions in both teaching and research easily warrant promotion to Associate Professor. … He is a rising star and is quickly becoming an internationally recognized leader in his field."

Reviewer (G)
"…I am very impressed by Dr Berke's knowledge of his field and his scientific accomplishments. … His research incorporates a rare combination of sophisticated and often novel analytic and engineering approaches in conjunction with a most impressive depth of understanding of the neurophysiology and molecular biology of the striatal neurons. Add to this his insight into behavioral aspects of studies of decision making and response to reward. This rare combination of skills, neurophysiological expertise and insight into mechanisms underlying memory and decision making would seem to be a remarkable asset for a well balanced Psychology Dept."

Reviewer (H)
"Dr Burke is one of the leading experts on learning and memory in general, and on striatum-based habit memory and its abnormalities in particular. … I think he is well-started on a career as a leader in his field and…I would jump at the chance to offer him tenure in my own Department."

Reviewer (I)
"Dr. Burke is in the very forefront of his field. ... Each of his papers is a must-read for every member of my laboratory, and I have read most of them several times myself."

Summary of Recommendation:
Professor Berke is a talented scientist and educator. He collaborates broadly with other scientists and is an excellent citizen. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Assistant Professor Joshua D. Berke be promoted to the rank of associate professor of psychology, with tenure, in the College of Literature, Science, and the Arts.

Terrence J. McDonald
Arthur F. Thurnau Professor,
Professor of History and Dean
College of Literature, Science, and the Arts

May 2010