

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

Approved by the Regents  
May 14, 2009

Jonathan B. Demb, assistant professor of molecular, cellular, and developmental biology, College of Literature, Science, and the Arts, and assistant professor of ophthalmology and visual sciences, Medical School, is recommended for promotion to associate professor of molecular, cellular, and developmental biology, with tenure, College of Literature, Science, and the Arts, and associate professor of ophthalmology and visual sciences, with tenure, Medical School.

Academic Degrees:

1997	Ph.D.	Stanford University
1993	B.A.	Boston University

Professional Record:

2003 – present	Assistant Professor, Department of Molecular, Cellular and Developmental Biology and Department of Ophthalmology and Visual Sciences, University of Michigan
2002 – 2003	Research Associate, Department of Neuroscience, University of Pennsylvania School of Medicine
1997 – 2002	Postdoctoral Fellow, Department of Neuroscience, University of Pennsylvania School of Medicine

Summary of Evaluation:

Teaching – Professor Demb is a dedicated and skillful teacher in the classroom and in the laboratory. He has been an active participant in neuroscience education and helped develop the curriculum for the new neuroscience concentration. Student evaluations are very strong and his ratings compare quite favorably with more senior faculty. Letters from students attest to his mentoring skills and his commitment to their success. His generosity can be seen in his bibliography where trainees are often in the first authorship position.

Research – Professor Demb’s consistent output of high quality work has given him a well-deserved national and international reputation that has led to collaborations with the best minds in neuroscience. His research has made great strides in clarifying the function of the neuronal mechanisms in the mammalian retina. He has devised ways to record electrophysiological signals and in so doing has created an important new field of retinal research. Seven of the eleven papers he published since 2003 are in the two most prestigious journals in his field – the *Journal of Neuroscience* and *Neuron*.

Recent and Significant Publications:

“Disinhibition combines with excitation to extend the operating range of the OFF visual pathway in daylight.,” with M. B. Manookin, et al., *Journal of Neuroscience*, 28, 2008, pp. 4136-4150 (highlighted as a “This Week in the Journal” selection).

“Cellular basis for contrast gain control over the receptive field center of mammalian retinal ganglion cells,” with D. L. Beaudoin and B. G. Borghuis, *Journal of Neuroscience*, 27, 2007, pp. 2636-2645.

“Presynaptic mechanism for slow contrast adaptation in mammalian retinal ganglion cells,” with M. B. Manookin, *Neuron*, 50, 2006, pp. 453-464.

“Contrast adaptation in subthreshold and spiking responses of mammalian Y-type retinal ganglion cells,” with K. A. Zaghoul and K. Boahen, *Journal of Neuroscience*, 25, 2005, pp. 860-868.

Service – Professor Demb’s major committee assignment in the Department of Molecular, Cellular, and Developmental Biology has been the Seminar Committee (2005-2008). During this period the Seminar series became a vital and important component of the academic life of the department. As a member of the Steering Committee for the Program in Neuroscience, he also served an important role in the formulation of the Undergraduate Neuroscience Concentration. This concentration quickly became one of the most popular in the College. He also served as director of the Electronics and Computer Core in the Department of Ophthalmology and Visual Science, and chaired a faculty search committee last year that successfully hired a promising visual neuroscientist.

External Reviewers:

Reviewer (A)

“Dr. Demb’s laboratory has produced some of the finest work in the elucidation of the biological underpinnings of contrast gain control in the retina. ... He ranks at the very top of the field...”

Reviewer (B)

“Jonathan is clearly a leader in the field of retinal neurobiology and visual processing.”

Reviewer (C)

“Dr. Demb’s studies of contrast adaptation in the retina constitute a major contribution to the field. ...[he] is an accomplished and productive scientist who is clearly among the emerging leaders in the field of Visual Neuroscience.”

Reviewer (D)

“...Jonathan has now taken a solid place as one of the 5-10 leaders [of their generation] worldwide. Not only is this good for Jonathan, it is good for the field.”

Reviewer (E)

“...Demb is an outstanding scientist [of his generation] who clearly deserves the promotion you are considering. In fact, I think his CV is one of the strongest at his career stage I can recall having seen in recent years.”

Reviewer (F)

“... Jon has exploited [electrophysiological methods] to gain insights regarding retinal mechanisms, especially for the phenomenon of contrast adaptation. He is very well recognized internationally among scientists [of his generation] in visual neuroscience.”

Reviewer (G)

“He has made solid, lasting contributions to our understanding of signaling in the retina... Jon’s work is meticulous and has helped set a standard to judge other related work. ... I have every reason to believe that Jon will continue to make important contributions to our understanding of retinal function, and I look forward to hearing about his future findings.”

Reviewer (H)

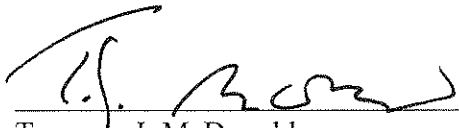
“To read his publication[s] is a must for everybody in my department and we are all impressed by the quality of his work. ... He is a scientist driven by questions and not so much by methods.”

Reviewer (I)

“His papers are among the most insightful and groundbreaking in our field, and he has executed the work at the highest level of sophistication and analysis. ... Jon’s work is the very best in our field.”

Summary of Recommendation:

Professor Demb is a recognized leader in computational neuroscience. He is a superb teacher and his service contributions are valued within the university and at the national level. The Executive Committees of the College of Literature, Science, and the Arts and the Medical School, and we recommend that Assistant Professor Jonathan B. Demb be promoted to associate professor of molecular, cellular, and developmental biology, with tenure, in the College of Literature, Science, and the Arts, and associate professor of ophthalmology and visual sciences, with tenure, in the Medical School.



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



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James O. Woolliscroft, M.D.  
Dean, Medical School

May 2009