

PROMOTION RECOMMENDATION  
The University of Michigan  
College of Engineering

Allison L. Steiner, assistant professor of atmospheric, oceanic and space sciences, Department of Atmospheric, Oceanic and Space Sciences, College of Engineering, and assistant professor of Earth and environmental science, Department of Earth and Environmental Sciences, College of Literature, Science, and the Arts, is recommended for promotion to associate professor of atmospheric, oceanic and space sciences, with tenure, Department of Atmospheric, Oceanic and Space Sciences, College of Engineering, and associate professor of Earth and environmental science, without tenure, Department of Earth and Environmental Sciences, College of Literature, Science, and the Arts.

Academic Degrees:

Ph.D. 2003 Georgia Institute of Technology, Atmospheric Science, Atlanta, GA  
B.S. 1994 Johns Hopkins University, Chemical Engineering, Baltimore, MD

Professional Record:

2011-present Assistant Professor, Department of Earth and Environmental Sciences, University of Michigan  
2006-present Assistant Professor, Department of Atmospheric, Oceanic and Space Sciences, University of Michigan  
2003-2006 Post-doctoral Research Fellow, Department of Environmental Science, Policy and Management, University of California, Berkeley, CA  
2003 Visiting Scientist, Atmospheric Chemistry Division, National Center for Atmospheric Research, Boulder, CO  
1997-2003 Research Assistant, School of Earth and Atmospheric Sciences, Georgia Institute of Technology, Atlanta, GA

Summary of Evaluation:

Teaching: Professor Steiner's record of classroom teaching and mentoring and advising of undergraduates and graduate students is outstanding. The level of professional development undertaken through CRLT and national workshops is noteworthy and has clearly positively impacted her teaching effectiveness. Students note that the time and effort invested in teaching and mentoring is appreciated and has led to positive student learning outcomes. Professor Steiner currently advises three Ph.D. students. In addition, she has directed or is currently directing a number of undergraduate student projects. Since arriving at Michigan, she has developed two new courses; AOSS 605.007 (Regional Scale Climate: Downscaling Techniques and Applications) and AOSS 422 (Boundary Layer Meteorology). These courses play an important role in several of the atmospheric and climate science concentrations and degree programs.

Research: Professor Steiner's research is focused on the emerging field of climate – biosphere – atmospheric chemistry. The nature of this field is such that few individuals have the broad expertise to do it well because it involves the interplay between a multitude of different systems that all impact climate. She has established herself as one of the top researchers in this exciting and expanding field. Her research in regional climate modeling is well recognized by the community, as documented by the external evaluation letters, earning the NSF CAREER Award, a number of invited national and international presentations, and a strong citation record of 17 published papers. She has established herself as one of the top researchers in this exciting and expanding field. Having three Ph.D. students at different stages of

their academic careers (including the upcoming graduation of her first PhD student this academic year) confirms her ability to attract and fund a vibrant research group. Her leadership in developing an interdisciplinary research program involving colleagues from across the University of Michigan departments and colleges is noteworthy and a positive indicator of future success.

Recent and Significant Publications:

Tawfik, A.B. and A.L. Steiner, "The role of soil ice in land-atmosphere coupling over the United States: A soil moisture-precipitation winter feedback mechanism," *Journal of Geophysical Research Atmospheres*, 116, D02113, doi: 10.1029/2010JD014333, 2011.

Steiner, A.L., A.J. Davis, S. Sillman, R.C. Owen, A.M. Michalak and A.M. Fiore, "Observed suppression of ozone formation at extremely high temperatures due to chemical and biophysical feedbacks," *Proceedings of the National Academy of Sciences USA*, 107, 46, 19685-19690, doi:10.1073/pnas.1008336107, 2010.

Steiner, A.L., J.S. Pal, S.A. Rauscher, J.L. Bell, N.S. Diffenbaugh, A. Boone, L.C. Sloan and F. Giorgi, "Land surface coupling in regional climate simulations of the West African monsoon," *Climate Dynamics*, 33, 6, 869-892, doi: 10.1007/s00382-009-0543-6, 2009.

Steiner, A. L., S. Tonse, R.C. Cohen, A.H. Goldstein and R.A. Harley, "Influence of future climate and emissions on regional air quality in California," *Journal of Geophysical Research - Atmospheres* 111, D18303, doi: 10.1029/2005JD006935, 2006.

Steiner, A. L. and W.L. Chameides, "Aerosol-induced thermal effects increase modeled terrestrial photosynthesis and transpiration," *Tellus*, 57B, 404-411, 2005.

Service: Professor Steiner's department service contributions, especially her roles on the strategic planning and department chair search committees, are exceptional for a junior faculty member. At the college level, she has served as a member of the College of Engineering Nominating Committee. Co-founding the Earth Sciences Women's Network – a national peer-mentoring network with over 1200 members and a \$1M NSF Advance Award – has garnered a national reputation and recognition for enhancing diversity in the geosciences by NOAA, NASA, NSF and the White House. In 2010, she was elected co-chair of the Gordon Conference on Biogenic Hydrocarbons and the Atmosphere. The breadth of Professor Steiner's outreach efforts – working with a Detroit Public Middle school and work in Egypt through the UN-sponsored ICTP program, is exemplary.

External Reviewers:

Reviewer A: "Professor Steiner has built a strong and strengthening record of publications and research. She is well regarded by her peers both nationally and internationally."

Reviewer B: "For an emerging scientist, Dr. Steiner has been quite productive...Dr. Steiner has achieved the scholarly visibility that would be expected of an emerging atmospheric scientist."

Reviewer C: "The Steiner et al. paper on ozone (2010 PNAS) is a tour-de-force..."

Reviewer D: "Dr. Steiner's research has been of uniformly high quality and her recent work is beginning to have an important impact on the scientific community...She is well known and respected both nationally and internationally by the scientific community."

Reviewer E: "Allison's professional activities and national/international visibility exceed expectations by a wide margin for someone at this career stage."

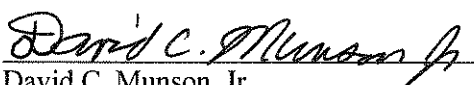
Reviewer F: "Professor Steiner clearly meets the requirements for someone being considered for promotion and tenure at a major research university...I believe that she is well poised for a very

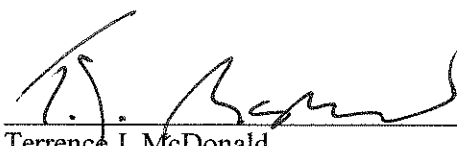
successful and lengthy research career in a very exciting and expanding area of research.”

Reviewer G: “...I would put her research on land-atmosphere interactions as among the best that has been produced in the past ten years or so.”

Reviewer H: “The quality of Allison’s work is first-class.”

Summary of Recommendation: Professor Steiner is one of the top junior atmospheric scientists in the world with a productive research program in the cutting edge field of climate –biosphere – atmospheric chemistry interactions. She is an excellent and conscientious teacher and mentor of undergraduates and graduate students. She is considered a collegial colleague within the department, and across colleges and schools and has a national reputation for her work in supporting women scientists. It is with the support of the College of Engineering Executive Committee that we recommend Allison L. Steiner for promotion to associate professor of atmospheric, oceanic and space sciences, with tenure, Department of Atmospheric, Oceanic and Space Sciences, College of Engineering, and associate professor of Earth and environmental science, without tenure, Department of Earth and Environmental Sciences, College of Literature, Science, and the Arts.

  
\_\_\_\_\_  
David C. Munson, Jr.  
Robert J. Vlasic Dean of Engineering  
College of Engineering

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

May 2012