

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

Christopher J. Poulsen, associate professor of Earth and environmental sciences, with tenure, College of Literature, Science, and the Arts, and associate professor of atmospheric, oceanic and space sciences, without tenure, College of Engineering, is recommended for promotion to professor of Earth and environmental sciences, with tenure, College of Literature, Science, and the Arts, and professor of atmospheric, oceanic and space sciences, without tenure, College of Engineering.

Academic Degrees:

Ph.D.	1999	Pennsylvania State University
B.A.	1994	Carleton College

Professional Record:

2010 – present	Faculty Associate, Program in the Environment, University of Michigan
2011 – present	Associate Professor, Department of Earth and Environmental Sciences, University of Michigan
2007 – 2011	Associate Professor, Department of Geology, University of Michigan
2007 – present	Associate Professor, Department of Atmospheric, Oceanic and Space Sciences, University of Michigan
2005 – 2007	Assistant Professor, Department of Atmospheric, Oceanic and Space Sciences, University of Michigan
2003 – 2007	Assistant Professor, Department of Geology, University of Michigan
2000 – 2003	Assistant Professor, Department of Earth Sciences, University of Southern California
1999 – 2000	Research Associate, Department of Geophysics, University of Chicago

Summary of Evaluation:

Teaching – Professor Poulsen is a dedicated instructor and award winning teacher who has developed a diverse suite of course offerings that includes introductory classes for non-majors (in the classroom and in the field) and upper-level undergraduate classes for concentrators. His broad course portfolio enhances the teaching missions of other programs as well, including the Department of Atmospheric, Oceanic and Space Sciences and the Program in the Environment. Student evaluations of his performance as a teacher are among the highest in the department.

Research – Professor Poulsen is a paleoclimatologist and expert in global climate modeling. He investigates geological and biological events in Earth's history by recreating them using atmospheric and oceanic computer models. He is best known for his modeling of extreme climate events that occurred tens to hundreds of millions of years ago and are recorded in the geological record. In recent years, he has combined modeling with data collection in the field. Professor Poulsen has published 27 papers since his promotion to associate professor and nearly all have been in the leading journals in his field. His recent publications in *Science* and *Nature Geosciences* are seen as particularly insightful and potentially paradigm shifting.

#### Recent and Significant Publications:

- “Terminating the last interglacial: the role of ice sheet-climate feedbacks in a GCM asynchronously coupled to an ice sheet model,” with A. Herrington, *Journal of Climate*, (25), 2012, pp. 1871-1882.
- “Climate change imprinting on stable isotopic compositions of high-elevation meteoric water,” with M. L. Jeffery, *Geology*, 39, 2011, pp. 395-598.
- “Influence of high-latitude vegetation feedbacks on late Paleozoic glacial cycles,” with D. E. Horton and D. Pollard, *Nature Geosciences*, 2010, doi:10.1038/ngeo922.
- “Onset of convective rainfall during gradual late Miocene rise of the central Andes,” with T. A. Ehlers and N. Insel, *Science*, 2010, doi:10.1126/science.1185078.

Service – Professor Poulsen has served on important committees in his department. Within the university, he was elected to the Senate Assembly. He has served on a National Science Foundation panel and was an invited participant in a workshop. He has served on various committees of the American Geophysical Union.

#### External Reviewers:

##### Reviewer (A)

“...Chris has had steady funding from the National Science Foundation and a strong history [of] publication. ...his publications are of a high quality and address fundamental problems in the geosciences, climate, and in paleoclimatology and paleoceanography specifically. ...the breadth of Chris’s [sic] research is also noteworthy – and his breadth of interests and contributions has been the hallmark of his career for more than 20 years. In my mind, this makes Chris a major force in his field.”

##### Reviewer (B)

“...Dr. Poulsen is to be commended for his steady production of successful graduate students. His research success is reflected in a strong record of funding, mostly from the NSF, and in a steady stream of invited lectures at universities. He is definitely visible at national and international levels.”

##### Reviewer (C)

“There is a coherent theme running through his research, allowing him to apply concepts and methodologies to a variety of problems, providing clear context and training opportunities for his graduate students, and equally importantly informing his teaching at a variety of levels.”

##### Reviewer (D)

“Dr. Poulsen has grown tremendously in his research... He has expanded into new and growing areas of linking climate with Earth’s uplift history and with ice sheets. Modeling of isotopes and ice sheets are becoming important and versatile additions to his toolbox. ...”

##### Reviewer (E):

“Chris is clearly THE leading climate modeler at the present dealing with deep time. He not only attempts to use state-of-the-art models to better understand past climates and sensitivity to past forcing, but also consistently uses the results of the deep time constraints to show how the application of the models inform our understanding of the present and also the deficits of the

models themselves. This interplay, between what the models and deep time data, is a vastly underused resource, which Dr. Poulson [sic] elegantly explores with virtually all of his papers.”

Reviewer (F)

“He has established himself as a paleoclimate modeler of the first rank, and is one of the handful of names worldwide that come to mind when one thinks of modelers who command a sufficient understanding of the proxy record to make real progress putting models and data together. ... The 2010 Science paper on climate effects of the Andes during the Miocene was superb, and can be considered a breakthrough in the interpretation of the oxygen isotope record for this period.”

Reviewer (G):

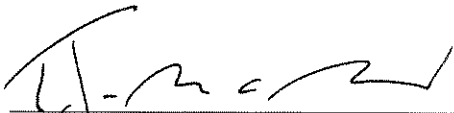
“...the work Chris has published since 2006 has made him a national and an international leader in this field. All of his papers attack classical problems...in innovative ways, show an awareness of new advances in both the models and the ground-truth observations, and also a full awareness (skepticism) of the limits of both.”

Reviewer (H):

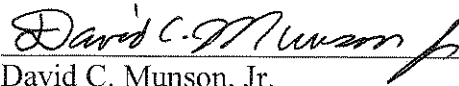
“In particular, his J. Climate paper (2012) is a beautifully clear and described study on the interactions between ice sheet growth and the atmosphere. It shows, in a very detailed way, the mechanisms responsible for the rapid growth of the ice sheets. This paper is likely to be widely quoted in the future.”

Summary of Recommendation:

Professor Poulsen has a very successful research program. He is an outstanding teacher at all levels and provides excellent service to his department and his discipline. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Associate Professor Christopher J. Poulsen be promoted to the rank of professor of Earth and environmental sciences, with tenure, College of Literature, Science, and the Arts, and professor of atmospheric, oceanic and space science, without tenure, College of Engineering.



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



David C. Munson, Jr.  
Robert J. Vlastic Dean of Engineering  
College of Engineering

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