

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

Kerri Pratt, assistant professor of chemistry, and assistant professor of Earth and environmental sciences, College of Literature, Science, and the Arts, is recommended for promotion to associate professor of chemistry, with tenure, and associate professor of Earth and environmental sciences, without tenure, College of Literature, Science, and the Arts.

Academic Degrees:

Ph.D.	2009	University of California-San Diego
B.S.	2004	Pennsylvania State University

Professional Record:

2013 – present	Assistant Professor, Department of Chemistry and Department of Earth and Environmental Sciences, University of Michigan, Ann Arbor, MI
2009-2010	Post-doctoral Scholar, Pacific Northwest National Lab, Batelle, WA
2010-2013	Post-doctoral Scholar, Purdue University, West Lafayette, IN

Summary of Evaluations:

Teaching – Professor Pratt has successfully taught undergraduate lectures and labs that are required for chemistry majors and a graduate course. Her student evaluations are at or above what other faculty have achieved for the same courses. Her thoughtfulness and experimentation with new approaches have enabled her to connect with students regardless of level. She developed an innovative “Authentic Research Connection” laboratory course focused on collecting novel data for a snow chemistry research project, while still incorporating the skill and concept development expected for this laboratory class. Professor Pratt has been a successful mentor to over 35 students, including 29 undergraduate students in a research laboratory setting. Her work with undergraduates is notable in that eleven students have been co-authors on publications. She is able to attract students to her group and mentor them to complete their Ph.D. Overall, she is a highly valuable asset to the department’s teaching mission.

Research – Professor Pratt has become well-recognized for her development and application of methods to measure halogen chemistry in the Arctic and mid-latitudes. Her group has overcome the challenges associated with measuring trace level halogenated molecules and atoms in harsh conditions. Professor Pratt’s successful navigation of these challenges has enabled her to make unprecedented measurements. For example, she has been able to measure production of Br and I<sub>2</sub> from sunlight, which in turn enabled her elucidation of chemical cycles that have implications for changes in mercury availability and air quality. She was also able to show for the first time that road salt contributes to halogen chemistry in the mid-latitudes. These applications demonstrate the exciting potential of her novel methods to understand the chemistry of an environment that is experiencing rapid climate change. Her research has been supported by a broad array of funding agencies including NSF, NOAA, NASA, and the DOE.

### Recent and Significant Publications:

- “Direct detection of tropospheric atomic bromine leading to mercury and ozone depletion,” with S. P. Wang, et al., *Proceedings of the National Academy of Sciences*, 116(29), 2019, pp. 14479-84.
- “Springtime nitrogen oxide-influenced chlorine chemistry in the coastal Arctic,” with S. M. *Environmental Science & Technology*,(14), 2019, pp: 8057-67.
- “Molecular halogens above the Arctic snowpack: Emissions, diurnal variations, and recycling mechanisms,” with S. P. Wang, *Journal of Geophysical Research: Atmospheres*, 122(21), 2017, pp: 11991-12007.
- “Active molecular iodine photochemistry in the Arctic,” with A. R. W. Raso, et al., *Proceedings of the National Academy of Sciences*, 114(38), 2017, pp, 10053-58.

Service – Professor Pratt has provided valuable service at all levels. She has served on important and time-consuming committees for the Department of Chemistry and also served on an LSA committee that oversees the Instrument Shops. These commitments reflect her dedication and the high level of trust the department has in her. She also participated in several outreach activities with FEMMES (Females Excelling More in Math, Engineering, and Science), an outreach program for middle school girls, and DRISE, an outreach program for Detroit High School students among others. Professor Pratt was involved in external service for a variety of organizations that planned priorities for environmental research. These include the International Arctic Systems for Observing the Atmosphere Aerosol Working Group, and Air Pollution in the Arctic: Climate, Environment, and Societies steering committee. These activities show her growing reputation in the scientific community. This level of service is exceptional.

### External Reviewers:

#### Reviewer (A)

“Kerri is as complete a faculty member as one could want. Her research is absolutely first class...she is an outstanding mentor of students at both the graduate and undergraduate levels...and she is committed to outreach especially with underrepresented groups. Simply put, Kerri Pratt is in my opinion the top academic atmospheric chemist at a comparable stage.”

#### Reviewer (B)

“In my judgement, the quality and quantity of Prof. Pratt’s research is outstanding. She has carved out a very productive niche in atmospheric chemistry, namely the effect of halogens on heterogeneous reactions taking place in the Arctic. Her work on bromine atoms is strikingly original... In terms of her relative standing among untenured atmospheric chemists, I would rate Prof. Pratt to be at the very top.”

#### Reviewer (C)

“I find Professor Pratt’s work to be high quality and highly relevant. There are many fine aerosol scientists in her peer group, but she is one of the few who have combined their understanding of aerosols with an understanding of gas-phase chemistry. In the subdiscipline of Arctic atmospheric halogen chemistry, I believe that Professor Pratt is the best scientist in the world.”

Reviewer (D)

“Prof. Pratt is the leading atmospheric chemist focusing on fieldwork of her generation. She is also one of the most influential scientists working on Arctic atmospheric chemistry today, at any career stage.”

Reviewer (E)

“Kerri is well on her way to becoming an established atmospheric chemistry researcher, one who will push our field forward for decades to come.”

Reviewer (F)

“She is [a] corresponding author on a really intriguing paper to PNAS, in which her group present data indicating they have measured bromine atoms in air. This is a first in terms of atomic halogen detection in the troposphere, and a scientific coup!”

Reviewer (G)

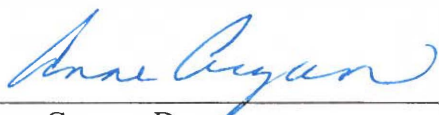
“...I am enormously impressed with Kerri’s diverse accomplishments. ...Kerri is the most impactful chemist [in her cohort] today dedicated to understanding Arctic and cold weather chemistry from a molecular viewpoint. She has become a master at creating, organizing, funding, and carrying out extremely difficult measurements, which ultimately lead to coherent pictures of Arctic snow and ice chemistry.”

Reviewer (H)

“It is difficult not to see her work as a public service mission. Are there any more productive, more dedicated scientists anywhere than Kerri Pratt? I think not. ... Her work on halogen/ice chemistry in the arctic is outstanding.”

Summary of Recommendation:

Professor Pratt has developed a creative and important research program for measuring chemicals, especially halogens, in Polar and other environments with implications for understanding the changing chemical environment. She has performed innovative teaching and substantial service. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Assistant Professor Kerri Pratt be promoted to the rank of associate professor of chemistry, with tenure, and associate professor of Earth and environmental sciences, without tenure, College of Literature, Science, and the Arts.



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Anne Curzan, Dean

Geneva Smitherman Collegiate Professor of  
English Language and Literature, Linguistics,  
and Education  
Arthur F. Thurnau Professor  
College of Literature, Science, and the Arts

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