

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

Kerri Pratt, associate professor of chemistry, with tenure, and associate professor of Earth and environmental sciences, without tenure, College of Literature, Science, and the Arts, is recommended for promotion to professor of chemistry, with tenure, and 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, San Diego, CA
M.S.	2006	University of California-San Diego, San Diego, CA
B.S.	2004	Penn State University, State College, PA

Professional Record:

2020-present	Associate Professor, Department of Chemistry, University of Michigan
2020-present	Associate Professor (courtesy), Department of Earth and Environmental Sciences, University of Michigan
2016-2019	Seyhan N. Ege Assistant Professor of Chemistry, University of Michigan
2013-2020	Assistant Professor, Department of Chemistry, University of Michigan
2013-2020	Assistant Professor (courtesy), Department of Earth and Environmental Sciences, University of Michigan
2010-2013	Post-doctoral Fellow, Purdue University
2009-2010	Post-doctoral Fellow, Pacific Northwest National Laboratory

Summary of Evaluation:

Teaching: Professor Pratt is a creative and effective teacher of undergraduate and graduate students. She has taught four different chemistry courses to students in a variety of disciplines. She has continued to innovate in her Authentic Research Experience in Snow Chemistry special section of the general chemistry lab. This class combines general chemistry concepts with environmental science research questions, and now includes a peer-revised manuscript writing component with graphical analysis to enhance student learning. She has also pioneered a collaborative project integrating authentic research with local and traditional knowledge in the introductory science classroom at Iliisaġvik College, the only tribal college in Alaska. This innovative non-classroom teaching combines research fieldwork with community relationship building. Her impressive twenty-two publications since her last promotion include several undergraduate co-authors, and two high-school student co-authors. She was awarded the LSA Class of 1923 Memorial Teaching Award for contributions to undergraduate education.

Research: Professor Pratt has gained national and international recognition in the fields of analytical chemistry and environmental chemistry. The goals of her research are to detect reactive compounds in aerosols—tiny solid or liquid particles suspended in air—both in real time and in their native atmospheric environments. She has recently uncovered a key link between road salt de-icing practices and air quality. Professor Pratt has published numerous papers in high-quality, high-impact journals that will continue to propel her work in understanding the chemical reactions that impact human health, climate, and the environment. Many external reviewers comment on her research leadership and the scientific depth of her scholarship. She has won many prestigious awards including a UM Faculty Recognition Award, the American Geophysical Union Atmospheric Science

Ascent Award, and the American Meteorological Society Henry G. Houghton Award. Recent and Significant Publications:

Kirpes, R.M., Bonanno, D., May, N.W., Fraund, M. Barget, A.J., Moffet, R.C., Ault, A.P., & Pratt, K. (2019). Wintertime Arctic sea spray aerosol composition controlled by sea ice lead microbiology. *ACS Central Science*, 5(11), 1760-1767.

McNamara, S.M., Kolesar, K.R., Wang, S., Kirpes, R.M., May, N.W., Gunsch, M.J., Cook, R.D., Fuentes, J.D., Hornbrook, R.S., Apel, E.C., China, S., Laskin, A., & Pratt, K. (2020). Observation of road salt aerosol driving inland wintertime atmospheric chlorine chemistry. *ACS Central Science*, 6(5), 684-694.

Wang, S., McNamara, S.M., Kolesar, K.R., May, N.W., Fuentes, J.D., Cook, R.D., Gunsch, M.J., Mattson, C.N., Hornbrook, R.S., Apel, E.C., & Pratt, K. (2020). Urban snowpack ClNO₂ production and fate: A one-dimensional modeling study. *ACS Earth and Space Chemistry*, 4(7), 1140-1148.

Kirpes, R.M., Lei, Z., Fraund, M., Gunsch, M.J., May, N.W., Barrett, T.E., Moffett, C.E., Schauer, A.J., Alexander, B., Upchurch, L.M., China, S., Quinn, P.K., Moffet, R.C., Laskin, A., Sheesley, R.J., Pratt, K., & Ault, A.P. (2022). Solid organic-coated ammonium sulfate particles at high relative humidity in the summertime Arctic atmosphere. *Proceedings of the National Academy of Sciences*, 119(14), e2104496119.

Service: Professor Pratt has made outstanding national and international service contributions to the fields of analytical and atmospheric chemistry, including serving on three editorial boards for the American Chemical Society, an advisory committee at the Pacific Northwest National Laboratory, and three international steering committees for environmental chemistry programs. At UM, she has made notable contributions to the faculty search and curriculum committees.

External Reviewers:

Reviewer (A): “My impression is of a creative and productive researcher producing work of the highest quality and making a very strong impact in her field. It is noteworthy and commendable that she has managed to produced [sic] sustained and high quality research outputs during the pandemic, apparently aided by new analyses of previously collected field data...Professor Pratt is clearly a committed member of her discipline with a sustained and impressive profile of contributions.”

Reviewer (B): “I am particularly impressed by her much more recent studies of urban snowpack chemistry...a subject I have long thought to be vastly underexplored. Road salt application in continental (but sub-Arctic) cities is common in winter; conditions are very ripe for a rich heterogeneous chemistry involving nitrogen oxides (formed in anthropogenic combustion processes, such as driving and electricity production) and salty snow. Kudos to [Professor Pratt] for being the first to really establish such chemistry as (a) real, and (b) potentially important to urban air quality in wintertime.”

Reviewer (C): “Professor Pratt has established herself as one of the world’s experts on halogen chemistry in the troposphere, particularly in cold climates. Her work is creative, of high quality and is definitely having a significant impact on our field. Especially given COVID and the impact it has had on field campaigns especially, her productivity is actually quite remarkable.”

Reviewer (D): “I think Prof. Pratt is currently one of the driving forces of frontline atmospheric research with an emphasis on multiphase processes, i.e. processes not only involving gases, but also aerosol particles, clouds and fog. Her research focuses on understanding processes of relevance for the Arctic, which is a center of current climate change and is very much shrouded in uncertainty with

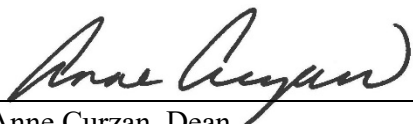
regard to its atmospheric chemistry. In this field, I rate Prof. Pratt as one of the leaders in Arctic atmospheric research and rate the quality of her work as excellent...I think the scholarly impact of Prof. Pratt's excellent work is strong, significant and on the rise with the best and promising potential to become firmly established as one of, if not the scientific world leader in atmospheric chemistry research of relevance for the Arctic."

Reviewer (E): "Atmospheric science is (or should be) fundamentally an observationally driven subject, with the coupling to models of varying sophistication and scale providing important analyses and diagnoses, and ultimately providing the means for quantifying the large scale/long term impacts, both environmental and societal. High quality and relevant observations provide the underpinning scientific basis for this process, and this is where Professor Pratt's work is so impressive...By any metric, and particularly given the demanding nature of field work in atmospheric science, Professor [P]ratt's portfolio represents a commendable body of extremely high quality work."

Reviewer (F): "[Professor Pratt] has been a true star in the field of atmospheric chemistry since her days as a graduate student. Her 2009 paper 'In situ detection of biological particles in cloud ice-crystals' (Nature Geosci. 2(6), 398), describing the results of an aircraft-based field study categorizing aerosols which had nucleated cloud ice particles using a single particle aerosol mass spectrometer cracked the field open, shattering previous assumptions regarding the types of aerosols which were likely to nucleate ice particles in clouds."

Summary of Recommendation:

Professor Pratt is a nationally and internationally renowned scholar in the areas of analytical and environmental chemistry. She is a dedicated scholar who excels in teaching and service. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Associate Professor Kerri Pratt be promoted to the rank of professor of chemistry, with tenure, and professor of Earth and environmental sciences, without tenure, College of Literature, Science, and the Arts.



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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