Alex J. DeCaria, Ph.D.
Lancaster, PA

EDUCATION

Ph.D. Meteorology 2000
University of Maryland, College Park, MD

M.S. Meteorology and Physical Oceanography 1992
Naval Postgraduate School, Monterey, CA

B.S. Meteorology (physics minor) 1985
University of Utah, Salt Lake City, UT

TEACHING AND WORK EXPERIENCE

Eastern Mennonite University, Lancaster, PA; Leadership and Organizational Management (Aviation Concentration)
Adjunct Faculty, 2025 – present

Millersville University, Millersville, PA; Earth Sciences/Meteorology
Emeritus Professor, 2023 – present
Professor, 2011 – 2023
Associate Professor, 2005 – 2011
Assistant Professor, 2000 – 2005

Graduate Student, University of Maryland, College Park, MD, 1996 – 2000

Officer, United States Navy (Rank of Lieutenant Commander) 1985 – 1996

PUBLICATIONS

Python Programming and Visualization for Scientists (2ed), **A.J. DeCaria** and **G.W. Petty**, Sundog Publishing, 346 pp., 2021

Python Programming and Visualization for Scientists, **A.J. DeCaria**, Sundog Publishing, 270 pp., 2016

A First Course in Atmospheric Numerical Modeling, **A.J. DeCaria** and G.E. Van Knowe, Sundog Publishing, 320 pp., 2014

"Momentum advection and the gradient of a vector field: A discussion of standard notation," **A.J. DeCaria** and T.D. Sikora, *J. Atmos. Sci.*, **67**, 1287-1291, 2010

"Production of lightning NOx and its vertical distribution calculated from 3-D cloud-scale chemical transport model simulations," L. Ott, K. Pickering, G. Stenchikov, D. Allen, **A. DeCaria**, B. Ridley, R.-F. Lin, S. Lang, W.-K. Tao, *J. Geophys. Res*., **115**, D4, doi:10.1029/2009JD011880, 2010

"The Carnot cycle and area-specific work equivalence on a skew *T*-log *p* diagram," **A.J. DeCaria**, *Mon. Wea. Rev.*, **136**, 4010-4012, 2008

"Relating static energy to potential temperature: A caution," **A.J. DeCaria**, *J. Atmos. Sci.*, **64**, 1410–1412., 2007

"Lightning-generated NO_X and its Impact on Tropospheric Ozone Production: A 3-D Modeling Study of a STERAO-A Thunderstorm," **A.J. DeCaria**, K.E. Pickering, G.L. Stenchikov, and L.E. Ott, *J. Geophys. Res.*, **110**, D14303, doi:10.1029/2004JD005556, 2005

"Simulation of the fine structure of the July 12, 1996 STERAO-A storm accounting for effects of terrain and interaction with mesoscale flow," G. Stenchikov, K. Pickering, **A. DeCaria**, W.-K Tao, J. Scala, L. Ott, D. Bartels, and T. Matejka, *J. Geophys. Res.*, **110**, D14304, doi:10.1029/2004JD005582, 2005

"Trace gas transport and scavenging in PEM-Tropics B South Pacific Convergence Zone convection," Pickering, K.E., A. M. Thompson, H. Kim, **A.J. DeCaria**, L. Pfister, T.L. Kucsera, J.C. Witte, M. A. Avery, D.R. Blake, J.H. Crawford, B.G. Heikes, G.W. Sachse, S.T. Sandholm, and R.W. Talbot, *J. Geophys. Res.* **106**, 32,591-32,602, 2001.

"A cloud-scale model study of lightning-generated NOx in an individual thunderstorm during STERAO-A," **A.J. DeCaria**, K.E. Pickering, G.L. Stenchikov, J.R. Scala, J.L. Stith, J.E. Dye, B.A. Ridley, and P. Laroche, *J. Geophys. Res.*, **105**, 11,601-11,616, 2000.

"A self-affine multi-fractal wave/turbulence discrimination method using data from single point fast response sensors in a nocturnal atmospheric boundary layer," R.F. Kamada and **A.J. DeCaria**, Naval Postgraduate School Technical Report (NPS-PH-92-008), 1991.

SIGNIFICANT PROFESSIONAL COMMITTEES AND ACTIVITIES

- Member, National Assessment of Education Progress (NAEP) Science Standing Committee, 2008 – present

- American Meteorological Society Committee of Judges for Undergraduate Awards, 2019 – 2022

- Questions writer and reviewer for Praxis examinations, various times since 2006