

Colin M. Zarzycki

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RESEARCH INTERESTS Atmospheric dynamics, specifically tropical cyclones, mid-latitude severe weather, and lake effect snow. The relationship between anthropogenic emissions and the atmosphere, including pollutant emission and climate forcing. The aviation sector and the atmosphere, including atmospheric chemistry effects and aviation meteorology.

EDUCATION

- ◇ **University of Michigan**, Ann Arbor, MI, USA.
Ph.D. in Atmospheric Science, exp. May 2014
Adviser: Dr. Christiane Jablonowski. Focus: Tropical Cyclone Dynamics
GPA: 8.64/9.00
- ◇ **University of Illinois at Urbana-Champaign**, Urbana, IL, USA.
M.S. in Environmental Engineering, August 2010
Adviser: Dr. Tami C. Bond. Focus: Atmospheric chemistry and modeling
GPA: 3.93/4.00
Master's thesis: *Effects of incomplete combustion on atmospheric chemistry: Black carbon climate forcing and global carbon monoxide emissions.*
- ◇ **Cornell University**, Ithaca, NY, USA.
B.S. in Atmospheric Science, *Magna Cum Laude*, May 2008
GPA: 3.46/4.00; GPA in Field of Study: 3.75/4.00

PUBLICATIONS Tami C. Bond, **Colin Zarzycki**, Mark G. Flanner, and Dorothy M. Koch (2011), "Quantifying immediate radiative forcing by black carbon and organic matter with the Specific Forcing Pulse", *Atmos. Chem. Phys.*, 11, 1505-1525, doi:10.5194/acp-11-1505-2011.

Colin M. Zarzycki and Tami C. Bond (2010), "How much can the vertical distribution of black carbon affect its global direct radiative forcing?", *Geophys. Res. Lett.*, 37, L20807, doi:10.1029/2010GL044555.

WORK EXPERIENCE

- ◇ **Research Assistant**, University of Michigan (August 2010 – present)
Worked as research assistant in the Jablonowski Data Lab. Studied tropical cyclone dynamics.
- ◇ **Research Assistant**, University of Illinois at Urbana-Champaign (August 2008 – August 2010)
Worked as research assistant in the Bond Research Group.
 - Investigated the globally-averaged radiative forcing sensitivity of black carbon (BC) vertical distribution with respect to cloud fields. Modified existing Fortran code and wrote programs in Matlab to analyze large NetCDF files containing 3-D model output.
 - Compiled global carbon monoxide emission inventory using IEA fuel use data combined with literature-derived emission factors. Extensive literature review in addition to database development and maintenance.
- ◇ **Teaching Assistant**, Cornell University (January 2008 – May 2008)
EAS 134; Weather Analysis and Forecasting, weekly 2-hour lecture series taught by three undergraduate students. Independently prepared and delivered lectures regarding lake effect snow, supercells and tornados, and mesoscale convective systems (MCSs).

- ◇ **Research Assistant**, Hobart and William Smith Colleges (May 2007 – August 2007)
Studied rapid variations in ice cover on Lake Erie. Utilized daily ice concentration grids produced by GLERL and historical weather observations from the NCDC for a 30-year period (1973-2002) to develop a database of events of interest and studied correlations between noted events and atmospheric conditions.
- CONFERENCE PRESENTATIONS
 - ◇ **Colin Zarzycki***, Tami C. Bond. "How Much Can the Vertical Distribution of Black Carbon Affect its Global Direct Radiative Forcing?." *University of Michigan Engineering Graduate Symposium*, Ann Arbor, MI, November 2010 (poster)
 - ◇ **Colin Zarzycki***, Tami C. Bond. "The Contribution of Black Carbon Above Clouds to Global Average Forcing." *University of Illinois at Urbana-Champaign Environmental Engineering and Science Symposium*, Urbana, IL, April 2010 (talk)
 - ◇ **Colin Zarzycki***, Tami C. Bond. "The Contribution of Black Carbon Above Clouds to Global Average Forcing." *American Geophysical Union Fall Conference*, San Francisco, CA, December 2009 (poster)
 - ◇ **Colin Zarzycki***, Tami C. Bond. "A Multi-Model Assessment of Black Carbon Effects on High-Latitude Warming in the Arctic." *University of Illinois at Urbana-Champaign Environmental Engineering and Science Symposium*, Urbana, IL, April 2009 (talk)
 - ◇ **Colin Zarzycki***, Gena Renninger and Neil Laird. "Weather Conditions Associated with Rapid Variations in Lake Erie Ice Cover." *Annual Lake Effect Weather Conference*, Oswego, NY, October 2007 (talk)
- PROF. ORGANIZATIONS
 - ◇ *American Meteorological Society*, Member, Fall 2006 - present
 - ◇ *American Geophysical Union*, Member, Spring 2009 - present
 - ◇ *National Weather Association*, Member, Fall 2010 - present
- HONORS AND AWARDS
 - ◇ *University of Michigan College of Engineering Dean's Fellowship*, University of Michigan, August 2010 - May 2011
 - ◇ *Ivan Racheff Fellowship*, University of Illinois, August 2008 - June 2009
 - ◇ *Frank and Rosa Rhodes Scholarship*, Cornell University, October 2007
 - "Rewards and encourages one outstanding scholar annually from each of the seven undergraduate colleges."
 - ◇ *Dean's List*, College of Agricultural and Life Sciences, Cornell University, Spring 2006, Fall 2006, Spring 2007, Spring 2008
 - ◇ *National Merit Scholarship Letter of Commendation*, Spring 2004
 - ◇ *George Urda Award for Excellence in Science*, Torrington High School, Spring 2004
 - ◇ *Clarkson University Leadership Award*, Torrington High School, Spring 2003
- SKILLS
 - ◇ Programming languages: Matlab, Fortran, NCL, HTML, PHP, L^AT_EX
 - ◇ Operating Systems: Windows (7/XP/2000/NT/95), Mac (OS X), Linux (Ubuntu)
 - ◇ Statistics: SPSS, Matlab, Minitab, Microsoft Excel, Open Office Calc
 - ◇ Meteorological Data: WSR-88D radar, satellite, surface and upper air observations including METAR coding, numerical and statistical model output (WRF, MOS, etc.), historical climate data (NCDC, NCEP reanalysis), NetCDF
 - ◇ Graphics packages: GrADS, McIDAS, BUFKIT
 - ◇ Air Quality Models: EMFAC, MOBILE6, CALINE, MOVES, AERMOD, CMB8