

# Barron Halton Henderson

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## OBJECTIVE

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Use diagnostic model evaluation techniques to advance air quality model practice and underlying science.

## EDUCATION

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**Ph.D., University of North Carolina**, Environmental Science and Engineering Chapel Hill, NC *in progress*

**M.S., University of North Carolina**, Environmental Science and Engineering Chapel Hill, NC 1/06-5/08

**Thesis title:** The Influence of Model Resolution on Ozone from Industrial VOC Releases

**Awards:** 2008 Environmental Sciences Achievement Award

**B.A., Austin College**, Biology (Environmental Studies minor); GPA: 3.34 Sherman, TX 8/97-5/01

**Awards:** Austin College Academic Scholarship; Delta Phi Alpha (German National Honor Society); Austin College Dean's List; 1997 Southwestern Premier League Scholarship

## EXPERIENCE & RELEVANT EMPLOYMENT

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**Environmental Protection Agency**, ORISE Fellow Research Triangle Park, NC 06/08-present

- Developing diagnostic model evaluation tools for comparing multiple chemical transport models and chemical mechanisms
- Investigate model under-prediction of NO<sub>y</sub> in the free troposphere

**University of North Carolina**, Research Assistant Chapel Hill, NC 1/06-present

- Addressing the need for evaluation of air quality predictions from multiple models (i.e. CAMx and CMAQ) using different chemical mechanisms (i.e. CB05 and SAPRAC)
- Developing air quality model post-processing applications for performance and diagnostic evaluation of CAMx, CMAQ, and WRF-Chem
- Research Projects: HARC 60, 87, and 97; UNC-CIRA NASA ROSES

**National Center for Atmospheric Research**, Advanced Science Program Boulder, CO 6/07-present

- Integrate Process Analysis within the WRF-Chem framework
- Develop chemical analysis tools for CBMZ chemical mechanism.
- Supervisors: Mary Barth and Christine Wiedinmyer

**University of North Carolina**, Programmer Chapel Hill, NC 8/05-1/06

- Developing Python applications and scripts for the analysis of Air Quality Models

**Woodard & Curran**, Environmental Software Developer Portland, ME 8/02-1/06

- Software development: web-based GIS applications; financial modeling for environmental litigation; design and administration of SQL server databases and applications; integration of legacy into corporate email notification systems; corporate air inventory; on-line environmental training system.
- Managed data entry teams coding financial documents for litigation
- Awarded "Applause, Applause" for Process Improvement; Five "High Five" Awards

**Cedar Creek Natural History Area**, Research Intern Bethel, MN 5/00-8/00

- Collected data for studies on biodiversity and insect herbivory at Long Term Ecological Research site
- Independent Research: "Mycorrhizal Percent Infection and the Effect on Relative Species Success"

**EPA – Passive Ozone Network of Dallas**, Independent Contractor Sherman, TX 5/99-8/99

- Prepared sampling site; collected, labeled and shipped ozone samples

## OTHER EMPLOYMENT HISTORY

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<b>Valcom</b> , Technician Level II	Portland, ME	2/02-8/02
▪ PC Server, Laptop, and Desktop repair and maintenance; network support; site-wide PC deployment		
<b>Banknorth Marketing Dept</b> , Temporary Data Analyst	Portland, ME	9/01-12/01
▪ Automation of legacy data; InfoMap thematic map production		
<b>Internet Texoma</b> , Internet Technician	Sherman, TX	8/99-5/01
▪ Trouble-shooting, configuration and general technical support		

## JOURNAL PUBLICATIONS

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Vizuete W., Kioumourtzoglou M., Jeffries H., Henderson B., “Effects of radical source strengths on ozone formation in models for Houston, Texas” In Review *Atmospheric Environment*, (2007)

## TECHNICAL REPORTS

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Vizuete, W., Jeffries, H., Christoph, E., Henderson, B., Parikh, H., Valencia, A., “Multi-resolution simulation and analysis of TexAQS II Air Pollution Events Project H87” Houston Advanced Research Center (HARC), 2008.

Vizuete, W., Jeffries, H., Biton, L., Henderson, B., Kioumourtzoglou, M., “Regional Transport Modeling for East Texas Project H60” Houston Advanced Research Center (HARC), 2006.

## PRESENTATIONS

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“Emission Event Investigation With a Detailed Plume Tracking Process Analysis Tool” presented at A&MWA 100th Annual Conference and Exhibition, B. Henderson, W. Vizuete, H. Jeffries, and B. Kim, (June 2007).

“Emission Event Investigation With a Detailed Plume Tracking Process Analysis Tool” poster at Annual AGU Fall Meeting, B. Henderson, M.-A. Kioumourtzoglou, B.-U. Kim, W. Vizuete and H. E. Jeffries, (December 2006).

“Feature Tracking Process Analysis” presented at Annual CMAS Models-3 Users’ Conference, B. Henderson, W. Vizuete, and H. Jeffries, (October 2006).

## PROFESSIONAL MEMBERSHIPS

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- American Geophysical Union

## SKILLS AND TRAINING

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<b>Programming languages:</b>	Python, Fortran, ASP (JScript and VBScript), Visual Basic, Javascript, Java, SmallTalk, Pascal, T-SQL, HTML/CSS, LaTeX
<b>Database systems:</b>	MS SQL Server, Access, MySQL, SQLLite
<b>GIS Systems:</b>	ArcGIS, MapPoint, GDAL, InfoMap

**Certifications:** A+ Hardware and Software Certified; LAN design and implementation  
**Languages:** Conversational German  
**Computer Administration:** Network and server administrator (01/06-present); computational cluster  
**Operating Systems:** Window 3.1,95,98,NT,2000,XP; Mac OS X; Linux (Red Hat, Ubuntu, SuSE, Debian)