

BRYAN GUARENTE

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(610) 883-6267 (Mobile)

Education:

M.S., Atmospheric Sciences

University of Illinois at Urbana-Champaign, August 2007

Graduate Advisors: Dr. Greg McFarquhar, Dr. Brian Jewett and Dr. Robert Rauber

B.S., Earth Sciences: Meteorology Track

University of Northern Colorado, December 2003

Teaching and Design Experience:

Instructional Designer, (The COMET Program, May 2008 - present)

Visiting Multimedia Technology Specialist, (University of Illinois, Aug. 2007 – May 2008)

Working in a team to develop content for the new interactive e-learning course *Intersections of Severe Weather, Climate and Society*. Responsible for creating and managing the course website using Flash, PHP and HTML. Constructing learner-centered, interdisciplinary modules and visualizations using Flash Actionscripting, ArcGIS, WRF (Weather Research and Forecasting) model, IDV, podcasts and vodcasts. Creating self-assessments using Blackboard/WebCT to check student understanding of module material.

Instructor (University of Illinois, summer 2007)

Lectured on basic scientific principles of atmospheric sciences to an audience of non-majors enrolled in the general education course *ATMS 100 - Introduction to Meteorology*. Developed daily hands-on laboratory exercises, weekly quizzes, exams and other course materials. Collaborated with University Educational Technology department to prototype new blogging assessment style. Supervised graduate teaching assistant and small-group laboratory sessions.

Teaching Assistant (University of Illinois, Aug. 2004 - May 2006)

ATMS 100: taught and supervised four weekly Hands-on, Minds-on laboratory sections consisting of 30 students each. Facilitated the use and discussion of worksheets and computer-based activities during lab. Prepared and updated lab materials, created and graded homework and quizzes, presented daily weather briefings during lecture, held weekly office hours and managed course website. Collaborated with multiple instructors and TAs to unify curriculum and assessments across the many sections of the course.

ATMS 120 (Severe and Hazardous Weather): assisted instructor with large-format lecture development, demonstrations, weather briefings and in-class activities. Aided in assessment and exam development. Maintained course website. Performed all grading. Held weekly office hours.

Website Developer (University of Illinois, summer 2005)

Redesigned *ATMS 100* website using modern graphics, styles, and HTML standards (using HTML and JavaScript)

Teaching Assistant (University of Northern Colorado, spring 2002)

References and list of coursework available upon request

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Taught and supervised weekly *Introduction to Ornithology* laboratory section. Prepared lab specimens, guided field trips, and tagged and organized museum ornithology collection.

Technical Skills:

Course Management Software: Blackboard/WebCT, Webboard

Computer Languages: HTML, Flash Actionscripting, PHP, JavaScript, Fortran 77/90, C/C++, MATLAB, NCAR Graphics

Computer Operating Systems: Windows OS (95, 2000, XP), Linux (Bash, Csh, Zsh, Tcsh)

Data Processing and Viewing Applications: ArcGIS 9.2, GEMPAK, GARP, Unidata IDV, Weather Research and Forecasting Model (WRF 2.0 and higher), National Instruments LabView, Read/Interpolate/Plot (RIP), SOLO II and WATADS radar packages, NCSA Queue and Mass Storage Systems, NCAR Mass Storage System.

Other Computer Applications: Microsoft Office Suite, Adobe Illustrator, Adobe Acrobat, CANVAS

Languages: Limited working proficiency of French (ILR or FSI scale)

Research and Field Experience:

Research Assistant (University of Illinois, May 2006-May 2007)

Thesis Title: *WRF Simulations of a Severe Squall Line: Comparisons against High-resolution Dual- and Quad- Doppler Radar Measurements from BAMEX*. Operated Weather Research and Forecasting (WRF) model using real data to initialize simulations of past mesoscale convective systems. Developed and programmed (in Fortran 77 and MATLAB) new statistical methods to compare WRF model output with in-situ microphysical and airborne Doppler radar observations. Presented work at numerous AMS conferences and NCAR/NWS workshops.

Research Assistant (Projects ANSWERS and Sub_ANSWERS, summers 2003 and 2006)

Tornadogenesis research funded by NSF, National Geographic and University of Northern Colorado. Constructed mobile mesonet data retrieval and quality control programs using LabView and Campbell Scientific dataloggers. Obtained thermodynamic and kinematic observations from rear-flank downdrafts using a suite of personally maintained mobile mesonet instruments.

Coop Weather Observer (University of Northern Colorado Station, 2002-2003)

Recorded daily weather observations of standard surface variables and reported standard variables to the NWS.

Selected Honors and Awards:

- Included on "Incomplete List of Teachers Ranked as Excellent" (fall 2005 - spring 2006)
- Atmospheric Sciences Department's "Ogura Student Teaching Award" Recipient (2006)
- Guest Lecturer for *ATMS 100*
- Invited Lecturer for Chicago Ornithological Society
- Sophomore Honor Society member, UNC (2001-2002)
- Award for High School Perfect Attendance (1996-2000)
- Member of National Champion High School Envirothon Team (2000)
- Eagle Scout (1997)

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Synergistic Activities:

- Beta tester for Compass Pilot (University's personalized Blackboard system) (Summer 2007)
- National Forecast Contest Participant (2006-2007)
- Visited the Scholarship of Teaching and Learning conference at University of Illinois (Spring 2006)
- Attended the Annual Faculty Retreat on Active Learning (Winter 2006)
- Completed teaching workshop with author and director of Center for Teaching Excellence at NYU: Ken Bain (Winter 2006)
- Mentored graduate and undergraduate students as they prepared daily weather briefings for *ATMS 403 – Weather and Forecasting* (2005-present)
- *Birdnotes* Listserve Administrator: Champaign County Audubon Society (2004-present)
- Volunteer weather discussion presenter throughout graduate school (2004-present)
- Web Coordinator for UNC Chapter of AMS (2002-2003)
- Member AMS (2002-present)
- Member of UNC Chapter of AMS (2001-2003)

Publications, Conference Proceedings and Presentations:

Guarente, B. A., B. F. Jewett, G. M. McFarquhar, and R. M. Rauber, 2007: WRF Simulations of a Severe Squall Line: Comparisons against High-resolution Dual- and Quad- Doppler Radar Measurements from BAMEX. M. S. Thesis. University of Illinois, Urbana, IL.

Guarente, B. A., B. F. Jewett, G. McFarquhar, R. M. Rauber, and D. P. Jorgensen, 2007: WRF simulations of a severe squall line: comparison against high-resolution BAMEX observations. 12th Conference on Mesoscale Processes, Waterville Valley, NH, Amer. Meteor. Soc.

Guarente, B. A., B. F. Jewett, G. M. McFarquhar, and R. M. Rauber, 2006: WRF Simulations of a Severe Squall Line: Comparison against High-resolution Microphysical, Thermodynamic and Kinematic Measurements from BAMEX. 12th Conference on Cloud Physics, Madison, WI, Amer. Meteor. Soc.

Guarente, B. A., 2006: Forecasting the Weather. Introduction to Meteorology Guest Lecture, Urbana, IL.

Guarente, B. A., 2006: Numerical Weather Prediction. Introduction to Meteorology Guest Lecture, Urbana, IL

Guarente, B. A., B. F. Jewett, R. M. Rauber, and G. M. McFarquhar, 2005: WRF Simulations of a Severe Squall Line: Comparisons against High Resolution BAMEX Observations. 11th Conf. on Mesoscale Processes, Albuquerque, NM, Amer. Meteor. Soc.

Guarente, B. A., 2005: The Effects of Weather on Bird Movements. Invited lecturer for Chicago Ornithological Society, Chicago, IL.

References and list of coursework available upon request