

ERIC R. SNODGRASS

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Department of Atmospheric Sciences
University of Illinois Urbana-Champaign
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Education

MS Atmospheric Sciences

University of Illinois at Urbana-Champaign, December 2006

Thesis Title: "Synergizing High Resolution Satellite and Ground-Based Radar Data to Assess Trade Wind Cloud Precipitation"*

Thesis Advisors: Professors Larry Di Girolamo and Robert Rauber

BS Meteorology)

Western Illinois University, Macomb IL, May 2002 (cum laude)
Mathematics Minor

Consulting

Global Weather and Climate Logistics, LLC. and Agrible Inc. (Co-Founder)

- Provide of short term (< 14 day) and long term (14 day to 1 year) weather and climate forecasting for weather sensitive financial markets, corporations, agriculture, and the insurance and re-insurance industry.
- Focus on risk associated with land falling tropical cyclones, commodity crop yields, global and regional drought and flood, tornado and hail frequency and severe wind storm frequency.
- Expertise in both dynamical and statistical weather analysis and forecasting.
- Expertise in past weather analysis and forensic meteorology

Teaching Experience and Appointments

Dept. of Atmospheric Sciences, University of Illinois

Director of Undergraduate Studies August 2006 – Present

- Teach atmospheric science courses with special emphasis on utilizing current technology to examine weather conditions.
- Organize and coordinate multiple sections of general education courses in atmospheric sciences (2000-3500 students per year).
- Graduate TA Coordinator:
 - o Recruit, train and supervise graduate teaching assistants.
 - o Prepare and conduct TA orientation
 - o Manage and organize TA appointments
 - o Hire and manage Undergraduate TAs
- Advise all undergraduate majors and minors in atmospheric science
 - o Advise Approximately 120 students (majors/minors)
 - o Summer Orientation for Freshmen and Transfer Students
 - o Meet with all prospective students
 - Coordinate with campus visits (i.e., Orange and Blue Days)
 - o Coordinate Graduation Ceremonies
 - o Director of Recruitment
 - o Organize student conference attendance
 - o Organize and oversee student internships
 - o Coordinate with WCIA broadcast meteorology interns

Current Course Load:

ATMS 120 Severe and Hazardous Weather, August 2006 - Present

Description: This large survey course (1000-1800 students annually) was designed to introduce undergraduate students the most extreme manifestations of weather and climate by analyzing the physical, economic, historical and human impact of extreme weather events. Course satisfies the Illinois General Education Credit requirement for Natural Sciences and Technology and Quantitative Reasoning 2. Also taught as a Discover Course in the Fall and as a part of the Sustainable Living Learning Community (Fall 2012). This course has also been taught as a part of the OLLI (Osher Life-Long Learning Institute) Program (Spring 2013)

ATMS 100 Introduction to Meteorology, June 2008 – Present

(Also as a Grad Teaching Assistant, Aug 2002-May 2003; Aug 2004-Dec 2004)

Description: This large survey course (1000 students annually) was designed to introduce undergraduate students to basic atmospheric processes that influence the weather and climate. Course satisfies the Illinois General Education Credit requirement for Natural Sciences and Technology and Quantitative Reasoning 2

ATMS 201 General Meteorology, Spring 2009 – Present

Description: This course is designed to prepare atmospheric science majors for upper level course work in areas of atmospheric radiative transfer, thermodynamics, fluid dynamics and weather analysis/forecasting. The course work is heavy in problem solving and focuses on the physical and mathematical interpretation of the fundamental behavior of the atmospheric. 70 students annually

James Scholar Program, 2006 – Present

As a part of the College of Liberal Arts and Sciences James Scholar Program, I oversee and advise 40 - 90 students per semester through the completion of an honors project within my courses. These projects often take students into the community or local middle schools to teach about severe thunderstorms in the Midwest.

Blended Learning in Large Enrollment Classes, Spring 2008

In the Spring 2008 semester, I taught ATMS 120 as a hybrid course to approximately 100 students. A hybrid course is one where learning is divided or “blended” into both online and face-to-face learning. The students spent half of their time in guided learning of online materials that I developed and the other half of their time in a face-to-face hands-on classroom learning environment. This course design was the first of its kind in large enrollment atmospheric sciences courses.

ATMS 391 (315): Meteorological Instrumentation and Research Methods Fall 2012 - Present

Description: This elective course introduces students to latest technological advances in meteorological instrumentation. This courses features regular lab activities and an 8-week research project. Students in this class discover how modern instrumentation operates by using the instruments we discuss in class to collect and analyze their own data.

ATMS 490: Guided Individual Study

Mentored students through independent research.

ATMS 492: Capstone Research

Coordinated senior research projects. Guide 3-5 projects per semester

Online Courses (Moodle Courses) taught Summer 2011, 2012 and 2013

ATMS 120 Online

Description: Same as above.

Awarded the 2012 “Best Online Course” from the University Professional Continuing Education Association (a national organization).

ENSU 310 Renewable and Alternative Energy: Developed Summer-Fall 2010

Description: Upon completion of this course, the students will have knowledge of the fundamental scientific principles behind the production and use of renewable and alternative energy sources. They will be well versed in the benefits and consequences of expanding the use of renewable and alternative energy at all levels of society (from the individual, to the small business, to governments and the world economy). Students will also discover how weather and climate impact the usage of these energy sources.

Severe Weather MOOC (Massive Open Online Course) Summer 2013 – Present

I am currently developing ATMS 120 into a MOOC to be taught through Coursera in Fall 2015. This course will have an anticipated enrollment of more than 50,000 students.

Committees/Academic Responsibilities

- **Chair – Provost Office Teaching Advancement Board**
- **Chair – LAS Recruitment and Yield Committee**
- **Member of the “Conversations on Educational Leadership” Committee**
- **Member of the UIUC Annual Faculty Retreat Planning Committee**
- **Provost Office’s Teaching Advancement Board Member (Fall 2012 – Present)**
- **Faculty Advisor for the Student Sustainability Committee (Fall 2012 – Present)**
- **Member of the LAS Open House Planning Committee (Spring 2013 – Present)**
- **SESE Graduation Speaker (May 2011, 2012, 2013, 2014)**
- **Member of the Provost Task Force on Improving Large Enrollment Courses at UIUC (Fall 2011 – Spring 2012)**
- **Member of the Online Education Symposium (Nov 2011)**
- **UIUC Public Engagement Proposal Reviewer (Fall 2011)**
- **Office of Sustainability (Illinois) Education Task Force**
- **Participated in the Education Committee as a part of the U of I Sustainability**
- **NASA INSPIRES proposal reviewer**
- **Graduate Student Recruiter at Annual AMS conference**
- **Assisted in Graduate Advising**
 - o **Eric Schneider, Coreen Giesler and Spencer Guerrero**
- **DAS Committees: Curriculum Development, Web Development News Letter and Awards**

Grants, Research Experience and Field Work

NSF Career Grant 2013-2018 – Funded Investigator

Total Award \$750,000

Science Education and Community Outreach Director

Over the next 5 years, I will be developing a suit of new learning modules in earth science that will be adopted by the Unit 4 and Unit 116 school districts in Champaign County. This work will engage local K-12 science educators with plans to expand to a state-wide program by 2018. This work will fund one summer month and multiple undergraduate and graduate students.

Graduate Research Assistant, Dept. of Atmospheric Sciences, Univ. of Illinois

May 2003-Aug 2004; Jan 2005-August 2006

Summary: To assess the role of trade wind shallow convective precipitation in global water and energy budgets, I collocated high resolution satellite data and ground based dual-polarization radar data. This technique allowed me to develop relationships between trade wind clouds as observed from space and their precipitation as derived from ground based radar.

Current Status: Published in the *Journal of Applied Meteorology and Climatology* 2009

Field Campaign Involvement

RICO (Rain In Cumulus over the Ocean) Nov 2004-Jan 2005

Responsibilities: Pre-fieldwork included coordinating radar operations with satellite overpass times. During the field campaign, I actively participated in science meetings, flight planning,

rawinsonde launchings and forecasting. I also served as radar coordinator for the S-POLKa radar where I managed radar operations during research flights.

BAMEX (Bow Echo And MCV Experiment) June 2003-July 2003

Responsibilities: I served in the field with the Mobile Integrated Profiling System (MIPS) chasing and sampling bow echoes and MCVs during intensive operation periods.

Recent Presentations

TEDEX Presenter on Environmental Sustainability (April 2015)

Invited Speaker for Northwest Farm Credit Services Annual Shareholder's Symposium (Feb 2015)

Invited Speaker for the Principal Scholar's (Fall 2014)

Invited Speaker for the LAS Teaching Academy (Fall 2014)

Invited Speaker at the Annual Meeting of the American Meteorological Society: "Conversations with Professionals" (Spring 2014)

Numerous Talks during 2013-14 for the Illinois Master Naturalists, Illinois Gardeners and Illinois Extension

Invited Speaker at the Illinois New Teacher Collaborative Beginning Teacher STEM Conf. (2013, 2014)

EMCEE and Panel Moderator for the SESE funded viewing of "Chasing Ice" (Fall 2013)

Invited Speaker at the Fall Meeting for the Central Illinois Master Naturalists (Fall 2013)

Invited Speaker at the College of ACES Teaching Seminar (Fall 2013)

Invited Speaker for the Business Teaching Academy (Fall 2013)

Invited Speaker for the Intensive English Institute (Fall 2013)

Invited Speaker at the College of Law (Spring 2013, 2014, 2015 – Climate Change Talk)

Invited Panelist for CNET (Spring 2013 – Higher Education)

Invited Presenter for the Chancellor's Video Project (Spring 2013)

Invited Speaker at the Illini Club (Spring 2013 – Climate Change Talk)

Invited Speaker for the LAS Admitted Student Day (Spring 2013)

Invited Speaker for the LAS Faculty Showcase Event (Spring 2013)

Invited Speaker at the 2013 Illinois Faculty Retreat (Feb 2013)

Publications

Conference Preprints

Snodgrass, Eric, Larry Di Girolamo, Robert Rauber and Guangyu Zhao, 2005: *Synergizing high resolution EOS-Terra satellite data and S-POLKA radar reflectivity to assess trade wind cumuli precipitation*. Proc. 11th AMS Conf. Mesoscale Processes and 32nd Conf. on Radar Meteor., October 2005. Albuquerque, NM. Poster JP3J.2

Genkova, I., G. Zhao, G. Seiz, **E. Snodgrass**, M. Colon, L. Di Girolamo, R. Rauber, 2005: Validation of trade wind cumulus cloud properties produced by meteorological satellites. SPIE International Symp. Remote Sens., Bruges, Belgium, September 2005

Genkova, I., M. Wilson, Y. Yang, G. Zhao, B. Chapman, **E. Snodgrass**, D. Mazzoni, L. Di Girolamo, 2005: The synergy of the MISR cloud masks for a global cloud climatology. SPIE International Symp. Remote Sens., Bruges, Belgium, September 2005

Refereed Publications

Genkova, I., G. Seiz, G. Zhao, **E. Snodgrass**, and L. Di Girolamo (2006): A comparison of cloud top heights derived from Terra instruments for trade wind cumulus clouds. *RSE Special Issue on MISR*

Rauber, R.M., B. Stevens, H.T. Ochs, C. Knight, B.A. Albrecht, A.M. Blyth, C.W. Fairall, J.B. Jensen, S.G. Lasher-Trapp, O.L. Mayol-Bracero, G. Vali, J.R. Anderson, B.A. Baker, A.R. Bandy, E. Burnet, J.L.

Brenguier, W.A. Brewer, P.R.A. Brown, P. Chuang, W.R. Cotton, L. Di Girolamo, B. Geerts, H. Gerber, S. Göke, L. Gomes, B.G. Heikes, J.G. Hudson, P. Kollias, R.P. Lawson, S.K. Krueger, D.H. Lenschow, L. Nuijens, D.W. O'Sullivan, R.A. Rilling, D.C. Rogers, A.P. Siebesma, **E. Snodgrass**, J.L. Stith, D.C. Thornton, S. Tucker, C.H. Twohy, and P. Zuidema, 2007: Rain in Shallow Cumulus Over the Ocean: The RICO Campaign. *Bull. Amer. Meteor. Soc.*, **88**, 1912–1928.

Rauber, R.M., B. Stevens, J. Davison, S. Göke, O.L. Mayol-Bracero, D. Rogers, P. Zuidema, H.T. Ochs, C. Knight, J. Jensen, S. Bereznicki, S. Bordoni, H. Caro-Gautier, M. Colón-Robles, M. Deliz, S. Donaher, V. Ghate, E. Grzeszczak, C. Henry, A. Marie Hertel, I. Jo, M. Kruk, J. Lowenstein, J. Malley, B. Medeiros, Y. Méndez-Lopez, S. Mishra, F. Morales-García, L.A. Nuijens, D. O'Donnell, D.L. Ortiz-Montalvo, K. Rasmussen, E. Riepe, S. Scalia, E. Serpetzoglou, H. Shen, M. Siedsma, J. Small, E. Snodgrass, P. Trivej, and J. Zawislak, 2007: In the Driver's Seat: Rico and Education. *Bull. Amer. Meteor. Soc.*, **88**, 1929–1937.

Rauber, R.M., B. Stevens, H.T. Ochs, C. Knight, B.A. Albrecht, A.M. Blyth, C.W. Fairall, J.B. Jensen, S.G. Lasher-Trapp, O.L. Mayol-Bracero, G. Vali, J.R. Anderson, B.A. Baker, A.R. Bandy, E. Burnet, J.L. Brenguier, W.A. Brewer, P.R.A. Brown, P. Chuang, W.R. Cotton, L. Di Girolamo, B. Geerts, H. Gerber, S. Göke, L. Gomes, B.G. Heikes, J.G. Hudson, P. Kollias, R.P. Lawson, S.K. Krueger, D.H. Lenschow, L. Nuijens, D.W. O'Sullivan, R.A. Rilling, D.C. Rogers, A.P. Siebesma, **E. Snodgrass**, J.L. Stith, D.C. Thornton, S. Tucker, C.H. Twohy, and P. Zuidema, 2007: A Supplement to Rain in Shallow Cumulus Over the Ocean: The RICO Campaign. *Bull. Amer. Meteor. Soc.*, **88**, S12–S18.

Snodgrass, E.R., L. Di Girolamo, and R.M. Rauber, 2009: Precipitation Characteristics of Trade Wind Clouds during RICO Derived from Radar, Satellite, and Aircraft Measurements. *J. Appl. Meteor. Climatol.*, **48**, 464–483.

Awards, Honors and Recognitions

University of Illinois at Urbana-Champaign

Awarded the 2012 “Best Online Course” from the University Professional Continuing Education Association (a national organization). (Feb 2012)

Campus Teaching Excellence Award in Undergraduate Teaching (Feb 2012)

College of Liberal Arts and Science Teaching Excellence Award (Feb 2012)

“Jock Jams” Judge 2012 (had to put this in here, it was quite an honor to be selected)

Delta Sigma Omicron 2011 Distinguished Teaching Award

Illinois Student Senate Teaching Excellence Award 2010-2011

Featured in numerous Daily Illini interviews focusing primarily on severe weather, climate change and environmental sustainability.

Featured in the UI News (May 2011) for work with DRES to make our courses more accessible.

Featured in the Illinois Alumni magazine for storm chasing and severe weather education

Recognized as an “Outstanding Educator” by the men of Phi Kappa Psi (2007)

Selected as Alpha Lambda Delta “Outstanding Teacher of Freshmen” (2008)

Incomplete List of Teachers Ranked as Excellent By Their Students

Spring 2006, 2007, 2008, 2009*, 2010*, 2011*, 2012*, 2013* Fall 2003, 2004*, 2006, 2007, 2008*, 2009*, 2010*, 2011*, 2012*, 2013* . Summer 2011*, 2012*, 2013* (*Ranked as Outstanding)

Western Illinois University

Dept. of Geography Student Scholar 2002

Member Phi Eta Sigma, Phi Kappa Phi and Kappa Mu Epsilon Honor Societies

Scholastic Outreach

- EnLiST/BTW Science Professional Development program Summer 2013

- Invited presenter/content expert for the UNITE Program in Chicago (June 2012)

- Invited participant by the Provost task force on improving large enrollment freshmen courses (Sept 2011-Mar 2012)

- Co-authored the open source book on Environmental Sustainability funded by the state of Illinois and coordinated by Rob Kanter (Summer 2011)

- Featured on the U of I admission website. (July 2011)

- Coordinated with Unit 4 Schools in Champaign to develop high school earth science curriculum through the ENLiST program (June 2011)
- Illinois State Science Olympiad Event Supervisor for Remote Sensing 2007-2013 (both regional and state competitions)
- Participated in the Education Committee as a part of the U of I Sustainability Office – worked closely with Steve Sonka (Spring 2010)

Relevant Course Work on Education

University of Illinois at Urbana-Champaign

ATMS 573: Teaching Higher Education in Earth and Environmental Sciences.

Western Illinois University

EIS 201: Educational Psychology – Human Growth and Development.

EIS 301: Educational Psychology – Learning and Instruction.

(<http://www.wiu.edu/catalog/programs/eis.shtml>)

Technical Skills

Python, ArcGIS (Full Software Suite), FORTRAN77/90, UNIX, C-Shell Scripting, Windows 9x/2000/XP, OSX, Canvas, Compass, HTML, Microsoft Office (Access, Excel, PowerPoint, and Word), SOLOII, GARP, Transform, Noesys, IDV, NCPlot, HEG, Turbine Video Encoder, ULEAD, Flash, i-movie, and several software packages for digital image manipulation.

Professional Membership

American Geophysical Union

American Meteorological Society