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LANCE BOSART'S 20 YEARS OF CONTRIBUTIONS TO OPERATIONAL RESEARCH PART II: IMPACTS IN THE OPERATIONAL FORECASTING COMMUNITY AND BEYOND

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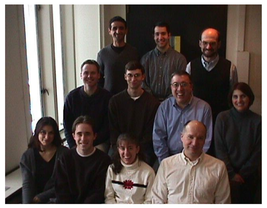
University at Albany, Albany, NY

Lance/UAlbany faculty and Graduate Students circa 2001



Lance with UAlbany Alumni - AMS WAF Conference Washington D.C. 2005

Northeast Regional Operational Workshop (NROW) 2000-2016 – Albany, NY

Lance and generations of his students at the UAlbany DAES 50th anniversary reunion - 2010

COMET supported Research

Year	COMET Project	Collaborators with Lance
1991	Intermountain Cyclogenesis	Lawrence Dunn - NWS SLC
1995	Wind Channeling and Severe Weather	Warren R. Snyder – NWS ALY
1996	15 July 1995 Super Derecho	Kenneth D. LaPenta – NWS ALY
1997	Meso-Eta simulations for heavy rain	Eric Rogers – NCEP EMC
1998	Elevation dependence/CSI in 1 April 1997 snowstorm	Thomas Janus - NWS ALY
1998	Precipitation study using 10 Km Meso-Eta and Kain-Fritch parameterization scheme	Norman (Wes) Junker - NCEP WPC
1999	Forecast and warning criteria for severe thunderstorms and tornadoes in the northeast	Kenneth D. LaPenta – NWS ALY
2000	CO-OP station and verification study	Mike Cempa, Tom Wasula, Joseph P. Villani - NWS ALY
2003	Cool season severe weather in the southeastern U.S.	Russel Schneider – SPC/NSSL
2003	Cool season severe weather in the SE US	Geoffrey Manikin – SPC/EMC/JAX
2007	Upper level disturbances and impact on MCCs over the southwestern U.S.	Russel Schneider - NCEP SPC
2007	W US warm season convection - westward/southwestward-propagating upper disturbances	Weiss/Schneider – NCEP SPC
2009	Transient upper-level disturbances and their impact on warm weather season mesoscale convective systems over the Southwestern United States	Steve Weiss, John Racy, Erik Pytlak, Russel Schneider - NWS TUC
2015	Severe convective storms in complex terrain	Thomas A. Wasula, Brian J. Frugis, Luigi F. Meccariello - NWS ALY

Southeastern U.S. severe weather study – Schneider (2004)

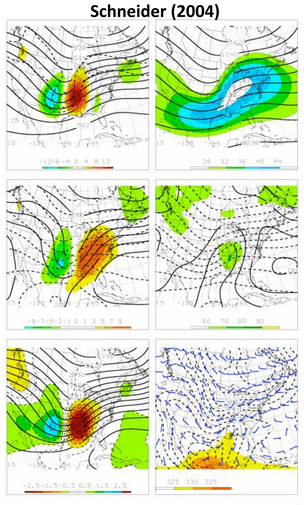
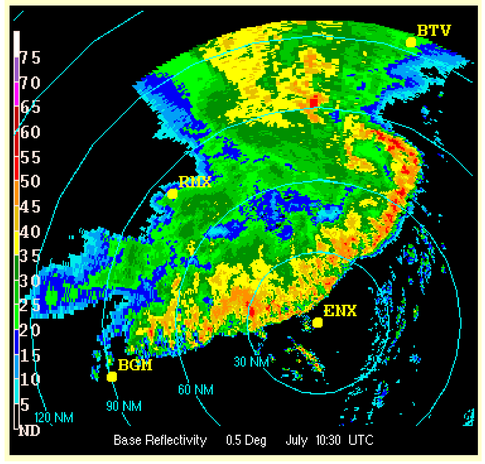


Fig. 3: 0000-0600 UTC tornado-relative composite a) 500 hPa height (dam, solid), absolute vorticity (x 10^5 s^{-1}, dashed), and vorticity advection (x 10^{10} s^{-2}, shaded), b) 200 hPa height (dam, solid) and isotachs (m s^{-1}, shaded), c) 850 hPa height (m, solid), temperature (°C, dashed) and temperature advection (x 10^{-4} °C s^{-1}, shaded), d) 1000 hPa height (m, solid), 1000-500 hPa thickness (dam, shaded), and 700 hPa relative humidity (%, shaded), e) 700 hPa height (m, solid) and vertical motion (x 10^{-3} hPa s^{-1}, shaded), and f) 850 hPa θe (K, shaded), winds (barbs, kt), and 850-500 hPa lapse rate (°C, dashed).

15 July 1995 derecho study – LaPenta et al. (1997)



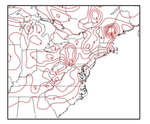
Radar data makes very clear that the "wall of wind" (WOW) associated with the derecho behaves as a density current (with an elevated head) as it sweeps across the Adirondacks. The WOW is noteworthy for sustained winds in the 20-40 m s^{-1} range in a 20-35 km wide band that lasted for 10-20 minutes. The radar observations also suggest that new convection formed and remained quasi stationary along the upslope regions of the western Adirondacks prior to the arrival of the derecho. The mountain-induced convection was then absorbed into the leading edge of the bow echo marking the derecho.

CSTAR supported Research

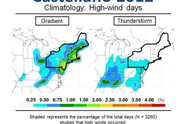
Year	Graduate Student	CSTAR Thesis Topic
2002	David Groenert	Cool season anomaly indices
2003	David Novak	Banded precipitation
2003	Brandon A. Smith	Upper cut-off lows
2004	David DeLuca	TC precipitation
2004	Anthony Fracasso	Cold season upper cut-off precipitation
2004	Jessica S. Najuch	Warm season upper cut-off precipitation
2005	Heather Archambault	Cool-season regime transition
2005	Alicia C. Wasula	Cool season tornadoes
2006	Keith R. Wagner	Cool season precipitation
2006	Matthew D. Greenstein	Mesoscale structure of northeast winter storms
2007	Matthew R. Cote	TC predecessor events
2007	Jared R. Klein	TC mesoscale precipitation structure
2008	Michael E. Augustyniak	Hudson-Mohawk convergence
2008	Patrick H. Wilson	Lake/Sea breeze severe weather
2009	Matthew A. Scalora	Warm season upper cut-off precipitation
2010	Jonas V. Asuma	Cool season high wind
2010	Benjamin J. Moore	TC predecessor events
2010	Melissa D. Payer	Cold season upper cut-off precipitation
2012	Matthew S. Potter	Inland TC jet interactions
2012	Daniel B. Thompson	Appalachian lee troughs and severe weather
2012	Matthew C. Castellano	Ice storms
2014	Jaymes S. Kenyon	Snow bands in winter storms
2014	Kyle J. Meier	Thunder snow
2014	Adrian N. Mitchell	Cyclones and upper-level easterly wind anomalies
2015	Matthew T. Vaughn	Low predictive severe weather

CSTAR Winter Weather Studies

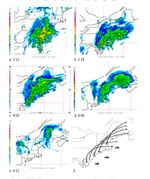
Asuma 2010



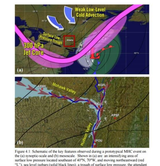
Castellano 2012



Novak 2003

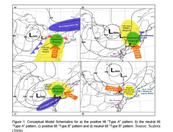


Augustyniak 2008

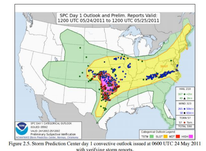


CSTAR Severe Weather Studies

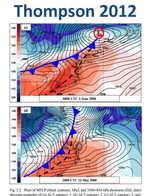
Scalora 2009



Vaughn 2015

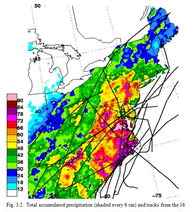


Thompson 2012

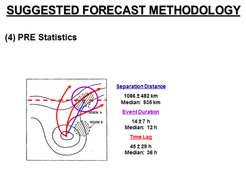


CSTAR Tropical Weather Studies

Klein 2007

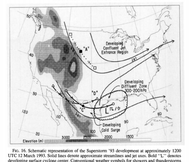


Cote 2007

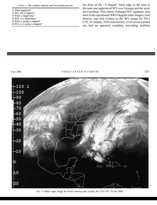


A few of Lance's operational forecasting publications

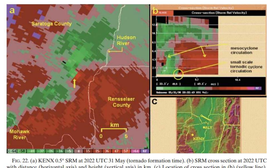
1993 Superstorm – Bosart et al. (1996)



Whither the Weather and Forecast Analysis Process? – Bosart (2003)



1998 Mechanicville, NY tornado - LaPenta, Bosart, Galarneau and Dickenson (2005)



UAlbany Map E-mail forum – 600+ members from science, research and operations