BRIAN A. COLLE

PERSONAL

BORN: Seattle, Washington, 16 March 1969

ADDRESS: Stony Brook University - SUNY
Institute for Planetary and Terrestrial Atmospheres
School of Marine and Atmospheric Sciences
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EDUCATION

INSTITUTIONS ATTENDED	DATES ATTENDED From	To	DEGREE	DATE OF DEGREE	FIELD
Ohio University (Athens, OH)	1987.9	1991.6	B.S.	1991	Meteorology
University of Washington (Seattle, WA)	1991.9	1994.6	M.S.	1994	Atmospheric Sciences
University of Washington (Seattle, WA)	1994.6	1997.3	Ph.D.	1997	Atmospheric Sciences

THESIS TOPICS:

Masters: The Structural Evolution of Northerly Cold Surges East of the Rocky Mountains. Advisor: Clifford F. Mass

Doctoral: An Observational and Numerical Study of Windstorms Along the Western Side of the Washington Cascade Mountains. Advisor: Clifford F. Mass

Professional Experience

FULL-TIME TEACHING/RESEARCH INSTITUTION	ACADEMIC RANK & FIELD	FROM	TO
Director of the Institute for Terrestrial and Planetary Atmospheres		2014.9	present
Faculty Director for University Scholars Program		2011.9	present
North Carolina State University Department of Marine, Atmosphere, and Earth Sciences	Adjunct Professor	2015.3	present
School of Marine and Atmospheric Sciences Stony Brook University / SUNY	Professor Atmospheric Sciences	2010.9	present
School of Marine and Atmospheric Sciences Stony Brook University / SUNY	Associate Professor Atmospheric Sciences	2005.9	2010.8
School of Marine and Atmospheric Sciences Stony Brook University / SUNY	Assistant Professor Atmospheric Sciences	1999.9	2005.8

School of Marine and Atmospheric Sciences Stony Brook University / SUNY	Res. Asst. Professor Atmospheric Sciences	1999.3	1999.8
Department of Atmospheric Sciences, Univ. of Washington	Research Associate Atmospheric Sciences	1997.3	1999.3
Department of Atmospheric Sciences, Univ. of Washington	Research Assistant Atmospheric Sciences	1992.12	1997.3
Department of Atmospheric Sciences, Univ. of Washington	Teaching Assistant Atmospheric Sciences	1992.9	1992.12

Research Experience

Mesoscale and synoptic-scale analysis of observational and model data.

Numerical modeling of flow and precipitation around complex terrain.

Real-time numerical modeling and verification using WRF and MM5.

Coastal circulations and convection over Northeast U.S.

Observational and numerical studies of fronts and cyclones interacting with coastal orography.

Ground-based and airborne dual-Doppler radar analysis.

Evaluation and development of bulk ice microphysical parameterizations

Regional climate modeling

Field Program Participation:

2015 OLYMPEX (Olympex Precipitation Experiment) field campaign: Flight Scientist

2013-2015 IMPOWR (Improving the Mapping and Prediction of Offshore Wind Resources) field campaign (DOE sponsored): lead PI

2013 Doppler Radar for Education and Mesoscale Studies (DREAMS) June –July 2013 (lead PI, sponsored by the NSF/Center for Severe Storms Research).

2008 NOAA National Severe Storms Laboratory and Storm Prediction Center, Spring Experiment (Participant at Norman, OK, 5/26-5/30).

2004 SARJET Principal Investigator, SUNY- Stony Brook (flight scientist on King Air aircraft, prepared flight plans, ran MM5 operational for daily experiment)

2001 IMPROVE Flight Scientist, SUNY- Stony Brook (prepared flight plans, operated Doppler radar and cloud physics station on NOAA P3 aircraft)

2001 PACJET Project Scientist, SUNY- Stony Brook (prepared flight plans, operated Doppler radar and cloud physics station on NOAA P3 aircraft).

1995 COAST II Project Scientist, Department of Atmospheric Sciences, University of Washington (prepared weather briefings and operated Doppler radar and cloud physics station on NOAA P3 aircraft).

1993 Radar operator on NOAA WP-3D Orion aircraft during the Coastal Observations and Simulations with Topography (COAST, Pacific Northwest coast) Experiment

Professional Service Outside the University

Member of UCACN Model Advisory Committee (UMAC), 06/15-present.

Editor. American Meteor. Society, *Weather and Forecasting*, 03/07 – 05/2012.

Stony Brook Representative: APLU's Board on Oceans, Atmosphere, and Climate (BOAC), 04/15-present

Member for AMS Offshore Wind Power Committee, 05/10 – present.

UCAR Member Representative for Stony Brook University. 09/07-present

Member of Advisory Board for the Developmental Test Center of WRF model (06/05-08/08).

Reviewer for NSF proposals for Mesoscale and Physical Meteorology and Large-Scale Divisions, 2000-present.

AMS Mountain Meteorology Committee member, 05/09-12/2012.

Member for UCAR/Unidata Policy Committee, 09/08-12/11

Associate Editor: *Monthly Weather Review*, 1/02-12/03; 01/06-12/07

Associate Editor: *Weather and Forecasting*, 01/06-12/06

Instructor on Orographic Precipitation for COMET program, 03/2006, 12/06, 12/07, 10/09, 10/10, 10/11, 10/13, 11/14, and 11/15

Co-Organizer of 10th AMS Mesoscale Conference in Portland, OR, 6/03.

AMS Mesoscale Processes Committee member, 1/00-1/03.

Session Chair, Workshop on Real-Time Modeling, Boulder, CO, 12/2003.

Session Chair, Mesoscale Processes, July 2001, 6/2003, 08/2005, 08/2007, 08/2009, 08/2011, 08/2013

Session Chair, 17^{th}-20^{th} Conferences on Numerical Weather Prediction, 7/05, 6/07, 01/09, 05/12.

Reviewer for the following journals: *Mon. Wea. Rev., Wea. Forecasting, J. Atmos.Sci., J. Appl. Met., J. Geo. Res., and Quart J. Roy. Met. Soc. ,*1995-present.

American Meteorological Society: Student member (1988-97), Full Member (1998-present).

Science judge for Shipley Ronal Invitational Science Fair for Long Island high school students (Spring of 2000, 2001, 2002, 2004, 2005, and 2006).

Research science mentor for high school students: Michael Charles, Valley Stream High School, 2000; Nick Ray, Sachem High School, 2002; Greg Mendoza and Jake Phillips, Rosilyn High School, 2003-2004. Amy Phelps, Rosilyn High School, 2005-2006, Jonathan Lewis, Ward Melville, 2005-2006. Chris Cluett, Port Jefferson, 2006-2007. Evan Goldaper (*INTEL Semi-finalist*), Smithtown, 2007-2008. Cory Walker, Plainview, 2007-2008. Karen Schaub, Commack, 2009-2010. Emily Schaefer, Kings Park, 2011-2012. Harrison Li (*Siemans and Intel Semi-Finalist, and Davidson $25K award*), 2012-2014, Samantha Zito, Bethpage High School, 2011-2013. Katherine Ratner and Denise Prussen, Merrick High School, 2013-2014.

Honors (awards, fellowships, honorary societies, honorary degrees, etc.)

2015: NASA Group Achievement Award "For exceeding all expectations for GPM operations, data processing, algorithm performance, science impact, and education and public outreach within one year after launch."

2007: AMS Editor's Award for the journal *Monthly Weather Review*

2000-2004: ONR Young Investigator Award

1991-present: Phi Beta Kappa National Honor Society

1991-1992: AMS Graduate/Industry Fellowship

1994-1998: Univ. of Wash Atmospheric Sciences Department forecast contest winner

1988-1991: Dean's Scholarship, Ohio University

1990: Golden Key National Honor Society

1991: Scalia Award for academic excellence (Geography Department, Ohio University)

Publications

93 Refereed Articles (H-index = 29)

Yang, K, R. Davidson, L. Nozick, B. Blanton, and B. A. Colle, 2016: Scenario-based hazard trees for depicting resolution of hurricane uncertainty over time. In press to *Natural Hazards Reviews.*

Archer, C.L., B.A. Colle, D. Veron, F. Veron, M. Sienkiewicz, 2016: On the predominance of unstable atmospheric conditions in the marine boundary layer offshore of the U.S. northeastern coast. In press to *J. Geophys. Res. Atmospheres*.

Molthan, A.L., B.A. Colle, D. Stark, and S.E. Yuter, 2016: Comparisons of modeled and observed reflectivity and fall speeds for snowfall of varied riming degree during winter storms on Long Island, NY. In press to *Mon. Wea. Rev.*

Li, H., and B. A. Colle, 2016: Future changes in warm season convective storm days over the Northeastern United States using CMIP5 predictions. *J. Climate*. **29**, 4327-4345.

Erickson, M.J., J.J. Charney, and B.A. Colle, 2016: Development of a fire weather index using meteorological observations in the northeast U.S. *J. Appl. Meteor. and Clim*. **55**, 389-402.

Colle, B.A., M. Sienkiewicz, C. Archer, D. Veron, F. Veron, J. Mak, and W. Kempton, 2016: Meteorological observations for U.S. East Coast offshore wind power: Improving the Mapping and Prediction of Offshore Wind Resources (IMPOWR). *Bull. Amer. Meteor. Soc*. doi: 10.1175/BAMS-D-14-00253.1.

Bratton, S.D., B.A. Colle, and R.E. Wilson, 2015: Synoptic flow patterns and decadal variations of wind-induced mixing over western Long Island Sound. *J. Geophys. Res.,***120**, 10784-10796. DOI: 10.1002/2015JD023080.

Ganetis, S.A, B.A. Colle, 2015: The thermodynamic and microphysical evolution of an intense snowband during the Northeast U.S. blizzard of 8-9 February 2013. *Mon. Wea. Rev*., **143**, 4104-4125.

Colle, B.A., M. Bowman, K. Roberts, H. Bowman, C. Flagg, J. Kuang, Y. Wng, E. Munsell, and F. Zhang, 2015: Exploring water level sensitivity for Metropolitan New York during Sandy (2012) using ensemble storm surge simulations. *J. Marine Science and Engineering*, **3**, 428-443.

Colle, B.A., J.E. Booth, and E. Chang, 2015: A review of historical and future changes of extratropical cyclones and associated impacts along the U.S. East Coast. *Current Climate Change Reports*, 1-19. DOI: 10.1007/s40641-015-0013-7.

Roberts, K.J., B.A. Colle, N. Georgas, and S.B. Munch, 2015: A regression-based approach for cool-season storm surge predictions along the New York/New York Coast. *J. Appl. Meteor. and Clim.,* **54**, 1773-1791.

Layer, M. and B. A. Colle, 2015: Climatology and ensemble prediction of non-convective high wind events in the New York City Metropolitan Region. *Wea. Forecasting*, **30**, 270-294.

Lombardo, K., B.A. Colle, and Z. Zhang, 2015: Evaluation of historical and future precipitation over the eastern U.S. and western Atlantic storm track using CMIP5 models. *J. Climate,* **28***,* 451-467.

Wilson, R.E., S. Bratton, Jindong Wang, and B.A. Colle, 2015: Evidence for directional wind response in controlling inter-annual variations in duration and areal extent of summertime hypoxia in western Long Island Sound. *Estuaries and Coasts,* **38**, 1735-1743. DOI 10.1007/s12237-014-9914-2.

Picca, J.C., D.M. Schultz, B. A. Colle, S. Ganetis, D.R. Novak, and M. Sienkiewicz, 2014: The value of dual-polarization radar in diagnosing the complex microphysical evolution of an intense snowband. *Bull. Meteor. Soc., 95, 1825-1834.*

Li, H., and B.A. Colle, 2014: Multidecadal changes in the frequency and ambient conditions of warm season convective storms over the northeastern U.S. *J. Climate*, **27**, 7285-7300.

Colle, B.A., D. Stark, and S.E. Yuter, 2014: Surface microphysical observations within East coast winter storms on Long Island. *Mon. Wea. Rev,* **142**, 3126-3146.

Souders, M.B., B. A. Colle, E. K.-M., Chang, 2014: A description and evaluation of an automated approach for feature-based tracking of Rossby wave packets. *Mon. Wea. Rev.*, **142**, 3505-3527.

Souders, M.B., B. A. Colle, E. K.-M., Chang, 2014: The climatology and characteristics of Rossby wave packets using a feature-based tracking technique. *Mon. Wea. Rev.*, **142**, 3528-3548.

Archer, C. L.**,** B. A. Colle, L. Delle Monache, M. J. Dvorak, J. Lundquist, B. H. Bailey, P. Beaucage, M. J. Churchfield, A. C. Fitch, B. Kosovic, S. Lee, P. J. Moriarty, H. Simao, R. J. A. M. Stevens, D. Veron, J. Zackhttp, 2014: Meteorology for coastal/offshore wind energy in the United States: Recommendations and research needs for the next 10 years. *Bull. Amer. Meteor. Soc.,* **95***,* 515-519.

Wuebbles, D, G. Meehl, K. Hayhoe, T. Karl, K. Kunkel, B. Santer, M. Wehner, B. Colle, E. Fischer, R. Fu, A. Goodman, E. Janssen, V. Kharin, H. Lee, W. Li, L. Long, S. Olsen, Z. Pan, A. Seth, J. Sheffield, and L. Sun, 2014: CMIP5 climate model analyses: Climate Extremes in the United States. *Bull. Amer. Meteor. Soc.* **95***,* 571-583.

Maloney, E. D., S. J. Camargo, E. Chang, B. Colle, R. Fu, K. L. Geil, Q. Hu, X. Jiang, N. Johnson, K. B. Karnauskas, J. Kinter, B. Kirtman, S. Kumar, B. Langenbrunner, K. Lombardo, L. N. Long, A. Mariotti, J. E. Meyerson, K. C. Mo, J. D. Neelin, Z. Pan, R. Seager, Y. Serra, A. Seth, J. Sheffield, J. Stroeve, J. Thibeault, S.-P. Xie, C. Wang, B. Wyman, and M. Zhao, 2014: North American climate in CMIP5 experiments: Part III: Assessment of 21st Century projections. *J. Climate*, **27**, 2230-2270.

Sheffield, J., A. Barrett, B. Colle, R. Fu, K. L. Geil, Q. Hu, J. Kinter, S. Kumar, B. Langenbrunner, K. Lombardo, L. N. Long, E. Maloney, A. Mariotti, J. E. Meyerson, K. C. Mo, J. D. Neelin, Z. Pan, A. Ruiz-Barradas, Y. L. Serra, A. Seth, J. M. Thibeault, J. C. Stroeve, 2013: North American climate in CMIP5 experiments. Part I: Evaluation of 20th Century continental and regional climatology. *J. Climate*, **26**, 9247-9290.

He, J., M. Zhang, W. Lin, B. Colle, and A. Vogelmann, 2013: The WRF nested within the CESM: Simulations of a mid-latitude cyclone over the Southern Great Plains. *J Adv. in Modeling Earth Systems*. **5**, 611-622.

Lombardo, K, and B. A. Colle, 2013: Processes controlling the structure and longevity of two quasi-linear convective systems crossing the southern New England coast. *Mon. Wea. Rev.,* **141**, 3710–3734.

Zheng, M., K. Chang, and B.A. Colle, 2013: Ensemble sensitivity tools for assessing extratropical cyclone intensity and track predictability. *Wea. Forecasting,* **28**, 1133–1156.

Colle, B.A., Z. Zhang, K. Lombardo, P. Liu, E. Chang, and M. Zhang, 2013: Historical evaluation and future prediction in eastern North America and western Atlantic extratropical cyclones in the CMIP5 models during the cool season. *J. Climate,* **26**, 6882–6903.

Stark, D., S.E. Yuter, and B.A. Colle, 2013: Observed microphysical evolution for two East coast winter storms and the associated snow bands. *Mon. Wea. Rev.,* **141**, 2037–2057.

Renfro, A., K. Cochran, and B. Colle, 2013: Atmospheric fluxes of 7Be and 210Pb on monthly time-scales and during rainfall events at Stony Brook, New York (USA). *J. Environ. Radioact.., **116,** 114-123.*

Lin, Y., B. A. Colle, and S. Yuter, 2013: Impact of moisture flux and freezing level on simulated orographic precipitation errors over the Pacific Northwest. *J. of Hydrometeor.,* **14**, 140-152.

Pollina, J., B. A. Colle, and J. Charney, 2013: Climatology and meteorological evolution of major wildfire events over the Northeast U.S. *Wea. Forecasting*, **28**, 175–193.

Colle, B. A., K. A. Lombardo, J. Tongue, W. Goodman, and N. Vaz, 2012: Tornadoes in the New York Metropolitan Region: Climatology and multiscale analysis of two events. *Wea. Forecasting*, **27**, 1326-1348.

Lombardo, K, and B. A. Colle, 2012: Ambient conditions associated with the maintenance and decay of quasi-linear convective systems crossing the northeastern U.S. coast. *Mon. Wea. Rev., **140**, 3805-3819.*

Erickson, M.E., B. A. Colle, and J. Charney, 2012: Impact of bias correction type and conditional training on Bayesian model averaging over the northeast United States. *Wea. Forecasting*, **27**, 1449-1469.

Molthan, A., and B.A. Colle, 2012: Comparison of single and double moment microphysics schemes in the simulation of a synoptic-scale snowfall event. *Mon. Wea. Rev.*, **140**, 2982-3002.

Novak, D. and B. A. Colle, 2012: Diagnosing snowband predictability using a multi-model ensemble system.. Sin *Wea. Forecasting*, **27**, 565-585.

DiLiberto, T., B. A. Colle, N. Georgas, A. Blumberg, and A. Taylor, 2011: Verification of a multiple model storm surge ensemble for the New York Metropolitan Region., *Wea. Forecasting*. **26**, 922-939.

Lombardo K., and B. A. Colle, 2011: Convective storm structures and ambient conditions associated with severe weather over the Northeast U.S. *Wea. Forecasting*., **26**, 940-956.

Colle, B. A., and M. E. Charles, 2011: Spatial distribution and evolution of extratropical cyclone errors over North America and adjacent oceans in the NCEP Global Forecast System model. *Wea. Forecasting,* **26**, 129-149.

Yuter, S. E., J. Payne, D. Stark, B. A. Colle, and J. Crouch, 2011: Observational sensitivity study of the temporal and spatial patterns of orographic precipitation for winter storms near Portland, Oregon. *J. Hydrometeor*, **12**, 329-351.

Lin, Y., L. Donner, and B. A. Colle, 2011: Parameterization of riming degree and its impact on ice fall speed using ARM data, *Mon. Wea. Rev.*, **139,** 1013–1035.

Lin, Y., and B. A., Colle, 2011: A new bulk microphysical scheme that includes varying degree of riming and particle habits., *Mon. Wea. Rev.,* **139**, 1036-1047.

Murray, J., and B. Colle, 2011: A climatology of convective storms over the Northeast United States. *Mon. Wea. Rev.,* **139**, 992-1012.

Lombardo, K., and B. A. Colle, 2010: A climatology of convective structures over the Northeast U.S. and the associated ambient conditions. *Mon. Wea. Rev,* **138**, 4456–4474.

Colle, B. A., and D. Novak, 2010: New York Bight jet: Climatology and dynamical evolution. *Mon. Wea. Rev.*,**138,** 2385-2404

Novak, D., and B. A. Colle, 2010: Climatology and composite analysis of mesoscale precipitation band formation in the comma head of mid-latitude cyclones., *Mon. Wea. Rev.* **138**, 2354-2374.

Willett, K., F. Pimenta, D. Veron, and B. Colle, 2010: Electric power from offshore wind via synoptic-scale interconnection. *Proceedings of the National Academy of Sciences*, doi:10.1073/pnas.0909075107.

Colle, B. A., K. Rojowsky, and F. Buonaiuto, 2010: New York City storm surges: Climatology and analysis of the wind and cyclone evolution. *J. Appl. Meteor. and Climatology,* **49**, 85-100.

Charles, M., and B. A. Colle, 2009: Verification of extratropical cyclones within cyclones within NCEP forecast models using an automated tracking algorithm: Part 1: Comparison of the GFS and NAM models., *Wea. Forecasting*, **24**, 1173-1190.

Charles, M., and B. A. Colle, 2009: Verification of extratropical cyclones within cyclones within NCEP forecast models using an automated tracking algorithm: Part 2: Evaluation of the Short-Range Ensemble Forecast (SREF) system, *Wea. Forecasting*, **24**, 1191-1214

Novak, D., B. A. Colle, and R. McTaggart-Cowan, 2009: The role of moist processes in the formation and evolution of mesoscale snowbands within the comma-head of Northeast U.S. cyclones. *Mon. Wea. Rev.,* **137**, 2662-2686.

Lin, Y., and B. A. Colle, 2009: Observed and Simulated Cloud Microphysics over the Oregon Cascades during the 4-5 December IMPROVE-2 IOP, *Mon. Wea. Rev.,* **137**, 1372-1392.

Olson, J. B., and B. A. Colle, 2009: Three-dimensional Idealized Simulations of Barrier Jets Along the Southeastern Coast of Alaska. *Mon. Wea. Rev.*, **137**, 391-413.

Colle B. A., Lin Y., Medina S., Smull B., 2008: Orographic modification of convection and flow kinematics by the Oregon coastal range and Cascades during IMPROVE-2. *Mon. Wea. Rev.*, **136**, 3894-3916.

Colle, B.A., Buonaiuto, F., Bowman, M.J., Wilson, R.E., Flood, R., Hunter, R., Mintz, A., Hill, D., 2008. New York City's vulnerability to coastal flooding. *Bull. Amer. Met. Soc.* **89**, 829–841.

Novak, D. and B. A. Colle, and S. Yuter, 2008: High resolution observations and model simulations of the life cycle of an intense mesoscale snowband., *Mon. Wea. Rev.*, **136**, 1433–1456.

Colle, B. A., 2008: Two-dimensional idealized simulations of the impact of multiple windward ridges on orographic precipitation, *J. Atmos. Sci.* **65**, 509–523.

Olson, J., B. Colle**,** N. Bond, and N. Winstead, 2007: A comparison of two barrier jet events along the southeast Alaskan coast during the SARJET experiment. *Mon. Wea. Rev.,* **135**, 3642–3663.

Olson, J. B., and B. A. Colle, 2007: A Modified approach to initialize an idealized extra-tropical cyclone within a mesoscale model. *Mon. Wea. Rev.,* **135**, 1614-1624.

Jones, M., B. A. Colle, and J. Tongue, 2007: Evaluation of a short-range ensemble forecast system over the Northeast U.S., *Wea. Forecasting*, **22**, 36-55.

Colle, B. A., and S. E., Yuter, 2007: The Impact of Coastal Boundaries and Small Hills on the Precipitation Distribution Across Southern Connecticut and Long Island, NY. *Mon. Wea. Rev,* **135**, 933-954.

Winstead, N. S., B. A. Colle, N. Bond, G. Young, J. Olson, K. Loescher, F. Monaldo, D. Thompson, and W. Pichel, 2006: Barrier Jets: Combining SAR Remote Sensing, Field Observations and Models to Better Understand Coastal Flows in the Gulf of Alaska. *Bull. Amer. Meteor. Soc.,* **87**, 787-800.

Novak, D. and B. A. Colle, 2006: Observations of Multiple Sea Breeze Boundaries during an Unseasonably Warm Day in Metropolitan New York City, *Bull. Amer. Meteor. Soc.,* **87**,169-174.

Loescher, K. A., G. S. Young, B. A. Colle, and N. S. Winstead, 2006: Climatology of barrier jets along the Alaskan coast, Part I: Spatial and temporal distributions. *Mon. Wea. Rev.,* **134**, 437-453.

Colle, B. A., K. A. Loescher, G. S. Young, N. S. Winstead, 2006: Climatology of barrier jets along the Alaskan coast, Part II: Large-scale and sounding composites. *Mon. Wea. Rev.***,** **134**, 454-477.

Colle, B. A., J. B., Wolfe, W. J. Steenburgh, D. E. Kingsmill, J. A. Cox., and J. C. Shafer, 2005: High resolution simulations and microphysical validation of an orographic precipitation event over the Wasatch Mountains during IPEX IOP3. *Mon. Wea. Rev.*, **133**, 2947-2971.

Garvert, M., B. A. Colle, and C. F. Mass, 2005: The 13-14 December IMPROVE event: Part I, Synoptic and mesoscale comparison of the observed structures with a mesoscale model simulation. *J. Atmos. Sci.*, **62**, 3474-3492.

Garvert, M., C. Woods, B. A. Colle, M. Stoelinga, P. V. Hobbs, and C. F. Mass, 2005: The 13-14 December IMPROVE event: Part II, Evaluation of the cloud and precipitation structures in the MM5, *J. Atmos. Sci.*, **62**, 3520-3534.

Colle, B. A., M. Garvert, J. Wolfe, and C. F. Mass, 2005: The 13-14 December IMPROVE event: Part III, Microphysical budgets and sensitivities for the 13-14 December IMPROVE event. *J. Atmos. Sci.*, **62**, 3535-3558.

Cox, J.A., W.J. Steenburgh, D.E. Kingsmill, Jason and B.A. Colle, 2005: Kinematic structure of a Wasatch mountain winter storm during IPEX IOP3, *Mon. Wea. Rev.,* **133**, 521-544.

Colle, B. A, and Y. Zeng, 2004: Bulk microphysical sensitivities within the MM5 for orographic precipitation: Part I, the Sierra 1986 event. *Mon. Wea. Rev.,* **132**, 2780-2801.

Colle, B. A. and Y. Zeng, 2004: Bulk microphysical sensitivities within the MM5 for orographic precipitation: Part II, Impact of barrier width and freezing level. *Mon. Wea. Rev.*, **132**, 2802-2815.

Roebber, P.J., D. M. Schultz, B. A. Colle, and D. J. Stensrud, 2004: Towards improved prediction: High resolution and ensemble modeling in operations. *Wea. Forecasting,* **19**, 936-949.

Colle, B. A., 2004: Sensitivity of orographic precipitation to changing ambient conditions and terrain geometries: An idealized modeling perspective. *J. Atmos. Sci.,* **61**, 588-606.

Colle, B. A., 2003: Numerical simulations of the extratropical transition of Floyd (1999): Structural evolution and responsible mechanisms for the heavy rainfall over the Northeast U.S. *Mon. Wea. Rev.,* **131**, 2905-2926.

Stoelinga, M., P.V. Hobbs, C.F. Mass, J.D. Locatelli, B. A. Colle, and co-authors, 2003: Improvement of microphysical parameterizations through observational verification experiments (IMPROVE). *Bull. Amer. Meteor. Soc.,* **84**, 1807-1826.

Colle, B.A., J. B. Olson, and J. S. Tongue, 2003: Multi-season verification of the MM5: Part I, Comparison with the Eta over the Central and Eastern U.S. and impact of MM5 resolution. *Wea. Forecasting*, **18**, 431-457.

Colle, B.A., J. B. Olson, and J. S. Tongue, 2003: Multi-season verification of the MM5: Part II, Evaluation of high resolution precipitation forecasts over the Northeast U.S. *Wea. Forecasting*, **18**, 458-480.

Colle, B.A., B.F. Smull, and M-J. Yang, 2002: Numerical simulations of a landfalling cold front observed during COAST: Rapid evolution and responsible mechanisms. *Mon. Wea. Rev.* **130**, 1945-1966.

Mass, C.F., D. Ovens, K. Westrick., and B. A. Colle, 2002: Does increasing resolution produce better forecasts? The results of two years of real-time numerical weather prediction over the Pacific Northwest. *Bull. Amer. Meteor. Soc.,* **83,** 407-430.

Colle, B.A., C.F. Mass, and D. Ovens, 2001: Evaluation of the timing and strength of MM5 and Eta surface trough passages over the eastern Pacific. *Wea. Forecasting*, **16**, 553-572.

Colle, B.A., C.F. Mass, and K.W. Westrick, 2000: MM5 precipitation verification over the Pacific Northwest during the1997-1999 cool seasons, *Wea. Forecasting,* **15***,* 730-744.

Colle, B. A., and C. F. Mass, 2000: High resolution observations and numerical simulations of easterly gap flow through the Strait of Juan de Fuca on 9-10 December 1995. *Mon. Wea. Rev.,* **128**, 2398-2422.

Doyle, J. D., D. R. Durran, C. Chen, B. A. Colle, M. Georgelin, V. Grubisic, W. R. Hsu, C. Y. Huang, D. Landau, Y. L. Lin, G. S. Poulos, W. Y. Sun, D. B. Weber, M. G. Wurtele, and M. Xue, 2000: An intercomparison of model predicted wave breaking for the 11 January 1972 Boulder windstorm. *Mon. Wea. Rev.*, **128**, 901-914.

Colle, B. A., and C. F. Mass, 2000: The 5-9 February 1996 flooding event over the Pacific Northwest: Sensitivity studies and evaluation of the MM5 precipitation forecasts. *Mon. Wea. Rev.*, **128**, 593-617.

Westrick, K. J., C. F. Mass, and B. A. Colle, 1999: The limitations of the WSR-88D radar network for quantitative Precipitation measurement over the coastal western United States. *Bull. Amer. Meteor. Soc.,* **80**, 2289-2298.

Colle, B. A., C. F. Mass, and B. F. Smull, 1999: An observational and numerical study of a cold front interacting with the Olympic Mountains during COAST IOP 5. *Mon. Wea. Rev.,* **127***,* 1310-1334.

Colle, B. A., K. J. Westrick, and C. F. Mass, 1999: Evaluation of MM5 and Eta-10 precipitation forecasts over the Pacific Northwest during the cool season. *Wea. Forecasting*, **14**, 137-154.

Steenburgh, W. J., D. M. Schultz, and B. A. Colle, 1998: The structure and evolution of gap outflow over the Gulf of Tehuantepec. *Mon. Wea. Rev.,* **126**, 2673-2691.

Colle, B. A., and C. F. Mass, 1998: Windstorms along the western side of the Washington Cascade Mountains, Part I: An observational and modeling study of the 12 February 1995 event. *Mon. Wea. Rev.,* **126**, 28-52.

Colle, B. A., and C. F. Mass, 1998: Windstorms along the western side of the Washington Cascade Mountains, Part II: Characteristics of past events and three-dimensional idealized simulations. *Mon. Wea. Rev.,* **126**, 53-71.

Bond, N. A., C. F. Mass, B. F. Smull, R. A. Houze, M.-J. Yang, B. A. Colle, S. A. Braun, M. A. Shapiro, B. R. Colman, P. J. Neiman, J. E. Overland, W. D. Neff, and J. D. Doyle, 1997: The coastal observation and simulation with topography (COAST) experiment. *Bull. Amer. Meteor. Soc.,* **78**, 1941-1955.

Colle, B. A., and C. F. Mass, 1996: An observational and modeling study of the interaction of low-level

southwesterly flow with the Olympic Mountains during COAST IOP 4. *Mon. Wea. Rev.*, **124**, 2152-2175.

Colle, B. A., and C. F. Mass, 1995: Structural evolution of northerly cold surges along the eastern side of the Rocky Mountains. *Mon. Wea. Rev.,* **123***,* 2577-2610.

Articles In Review

Yi, W., L. Noziak, R. Davidson, B. Blanton, and B.A. Colle, 2016: Optimization of the Issuance of Evacuation Orders under Evolving Hurricane Conditions. Submitted to *Transportation Research Part B*.

Colle, B.A., A. Neager, and A. Molthan, 2016: Structure and evolution of a warm frontal precipitation band during the GPM cold season precipitation experiment (GCPEx). In revision for *Mon. Wea. Rev.*

Roberts, K.J., B.A. Colle, and N. Korfe, 2016: Impact of future changes in extratropical cyclones on coastal flooding at The Battery, NYC. In revision for *J. Appl. Meteor. Climo.*

Zheng, M., E. Chang, B.A. Colle, Y. Luo, and Y. Zhu: 2016: Applying Fuzzy Clustering to a Multi-Model Ensemble for U.S. East Coast Winter Storms: Scenario Identification and Forecast Verification. Submitted to *Wea. Forecasting.*

Book Section

Colle, B.A., 2014. Cold Air Damming. In: Gerald R. North (editor-in-chief), John Pyle and Fuqing Zhang (editors). Encyclopedia of Atmospheric Sciences, 2nd edition, Vol 4, pp. 62–68.

Hodrefe, C, P. Doraiswamy, B. Colle, K. Demerjian, W. Hao, M. Erickson, M. Souders, and J-Y Ku, 2014: Meteorology, Emissions, and Grid Resolution: Effects on Discrete and Probabilistic Model Performance. In: D. Steyn, P. Builtjes, R. Timmermans (eds.): Air Pollution and Modeling and Its Application XXII, NARA Science for Peace and Security Series C: Environmental Security, 493-497. Springer Netherlands.

Bowman, M. J., B. A. Colle, and H. Bowman, 2011: "Storm surge modeling for the New York City Region, Chapter 5 in *Coastal Adaptation and Flood Risk in Coastal Cities*., pg. 76-95. Earthscan Publishing.

Colle, B.A., R.B. Smith, and D. Wesley, 2012: Theory, Observations, and Predictions of Orographic Precipitation. In: Chow, F.K., De Wekker, S.F.J., and B.J. Snyder (eds.): Mountain Weather Research and Forecasting: Recent Progress and Current Challenges, 291-344. Berlin: Springer.

Bowman, M.J., D. Hill, F. Buonaiuto, B. Colle, R. Flood, R. Wilson, R. Hunter and J. Wang, 2008. Threats and Responses Associated with Rapid Climate Change in Metropolitan New York. In "Sudden and Disruptive Climate Change", M. MacCracken, F. Moore and J.C. Topping (eds). Earthscan, London, pp. 327.

Colle, B.A., 2002: Cold air damming. *Encyclopedia of Atmospheric Sciences*. Academic Press, San Diego, CA, 504-509.

Presentations and Seminars (since 2001)

Date Title& Place

06/16 "Comparison of Simulated Orographic Precipitation Structures Using Different Microphysical Schemes With OLYMPEX Field Program Observations" 17th Conference Mountain Meteorology, AMS, Burlington, VT, 26 June 1 July 2016.

11/15 "Applying Fuzzy Clustering Analysis to Assess Uncertainty and Ensemble System Performance for Cool Season High-Impact Weather" NROW XVI, Albany, NY 4-5 November 2015.

08/15 "Structural Evolution of a Warm Frontal Precipitation Band During GCPEx" 16th Mesoscale Conference, Boston, MA. 2-6 August 2015.

06/15 "Using Downscaling Approaches to Investigate Future Changes in Winter Storms and Associated Impacts over the Northeast U.S", AMS Weather Analysis and Forecasting Conference, Chicago, IL, 29 June 3 July 2015.

03/15 "How will winter storms over the Northeast U.S. change during the 21st Century?" 40th Northeast Storms Conference. Saratoga Springs, NY, 6-8 March 2015.

12/14 "Future predictions of East coast winter storms" American Geophysical Union, San Francisco, CA. 15-19 December 2014.

11/14 "Stony Brook CSTAR Update: Utilizing ensembles more in operations", NROWXIV, Albany, NY. 12-13 November 2014.

11/14 "Orographic Precipitation" Invited Presentation at COMET Winter Weather Class, Boulder, CO. 4 November 2014.

04/14 "Tracking Rossby Wave Packets: Climatology and Relationship to Predictability" University of Wisconsin, Madison, Department of Atmospheric and Oceanic Sciences Colloquium"

12/13 "Relationship of Rossby Wave Packets with Medium Range Forecast Errors." National Weather Service Northeast Regional Operational Workshop. Albany, NY, December 10-11, 2013.

09/13 "Rossby Wave Packet Climatology and the Impact of Hemispheric Flow Patterns and ENSO" 16th Cyclone Workshop, Sainte-Adele, Canada, 22-26 September 2013.

08/13 "Microphysical Evolution Within the Comma head of Extratropical Storms," 15th Conference on Mesoscale Processes, AMS, Portland, OR, 7-10 August 2013.

06/13 "Using Atmospheric Models and Ensembles on a Variety of Time and Spatial Scales to Improve Predictions of Sandy, Storm Surge, and Future Changes of Coastal Storms." North Atlantic Coast Comprehensive Study Numerical Engineering Modeling of Future Scenarios Meeting. NYU-Poly, 21 June 2013.

03/13 "A Spatial Climatology and Long-Term Trends of Convective Storms over the Northeast U.S." Workshop on Future Trends of Severe Convective Storms. Lamont Dohert Earth Observatory. 14-15 March 2013.

03/13 "Field Observations and Modeling of Microphysics Within Winter Storms Over Long Island," Rutland, VT, 8-9 March 2013.

01/13 MAPP Webinar Series: Future Predictions of Eastern North American and Western Atlantic Extratropical Cyclones in the CMIP5 Models During the Cool Season. 15 January 2013.

05/12 "Evaluation of CMIP5 models and regional climate ensembles for historical western Atlantic winter storms and their future predictions." Canadian Meteorological and Oceanography Society, Regional Climate Modeling. Montreal, Canada, 28 May to 1 June 2012.

05/12 "Development of a Real-time Ensemble Sensitivity Tool to Assess the Predictability of High Impact Weather during the Cool Season." 21st AMS Conference on Weather and Forecasting. Montreal, CA, 28 May to 1 June 2012.

03/12 "Evaluation of 20th Century Simulations of Western Atlantic Winter Storms in Several CMIP5 Models and other Regional Climate Ensembles" CMIP5 Workshop, Honolulu, HI, 27-29 March 2012.

02/12 Research and Innovation Transition Team (RITT). "Assessing the Predictability of High-Impact Events and Why There is Limited Use of Ensembles in NWS Operations" Available online at http://www.nws.noaa.gov/mdl/RITT/forum/RITT_forum.php

11/11 MAPP Webinar Series: Prediction, Validation, and Calibration of Coastal Storms and Associated High Impact Weather in Ensemble Regional Climate Simulations over the northeast U.S. Available at: http://www.climate.noaa.gov/index.jsp?pg=./cpo_pa/mapp/webcasts/webcast11-08-11.html

11/11 "Development of a Real-time Ensemble Sensitivity Tool to Assess the Predictability of High Impact Weather during the Cool Season." National Weather Service Northeast Regional Operational Workshop. Albany, NY, November 3-4, 2011.

08/11 ……"Microphysical evolution during snow band events over the Northeast U.S., AMS 14th Mesoscale Processes, Los Angles, CA, 31 July to 4 August 2011.

04/11 "Orographic Precipitation: Recent Advances and Forecast Challenges", TAOS Seminar, Stony Brook University, 13 April 2011.

01/11 "A new bulk microphysical scheme that includes riming intensity and temperature dependent ice characteristics." AMS 20th Conference on Numerical Weather Prediction. Seattle, WA.

01/11 "Convective storm evolution and frequency around coastal southern New England" AMS 20th Conference on Numerical Weather Prediction. Seattle, WA.

11/10 "Predictability of high impact weather during the cool season over the eastern U.S." National Weather Service Northeast Regional Operational Workshop. Albany, NY, November 3-4, 2010.

08/10..... "Impact of riming on orographic precipitation." 14th Conference on Mountain Meteorology. Lake Tahoe, CA.

07/10 "Quantitative Precipitation Forecasting over the Eastern U.S.: From Ensemble Verification to a Better Understanding of Winter Storm Microphysics and Predictability", Hydrological Prediction Center, Camp Springs, MD, 29 July.

11/09 "Climatology of storm surges in the New York Metropolitan Region, National Weather Service Northeast Regional Operational Workshop. Albany, NY, November 2-3, 2009.

08/09 "Climatology and dynamical evolution of a warm-season coastal jet in the New York Bight region." AMS 13th Conference on Mesoscale Processees. Salt Lake City, UT.

06/09 "Medium-range extratropical cyclone errors and their origin in the NCEP GFS model" AMS 19th Conference on Numerical Weather Prediction. Omaha, NE.

05/09 "Climatology and prediction of storm surges along the Long Island south shore." Amagansett, Long Island.

05/09 "Mesoscale Precipitation Bands over the Northeast U.S." Colloquium, Rutgers University.

04/09 "Mesoscale Precipitation Bands over the Northeast U.S." Colloquium, University of Illinois.

03/09 "Climatology and simulation of NYC storm surges. Invited for Against the Deluge: Storm Surge Barriers to Protect New York City. American Society of Civil Engineers. Brooklyn, NY.

02/09 "Storm surge" Invited for Cat 3 Hurricane in the Northeast: Willis/Princeton Insurers' Summit. Princeton, NJ.

02/09 "Microclimates " Invited for ESS 590 course, Stony Brook.

01/09 "Severe convection in the NYC region" AMS Symposium on Urban Meteorology. AMS annual meeting. Phoenix, AZ.

01/09 "Climatology of storm surges in the New York City Region" AMS Conference on Coastal Processes. AMS annual meeting. Phoenix, AZ.

12/08 "Storm Surges Along the South Shore of Long Island" Stony Brook Southhampton Seminar Series.

11/08 "The New York Bight Jet: Climatology and structural evolution." National Weather Service Northeast Regional Operational Workshop. Albany, NY, November 4-5, 2008.

08/08 "Orographic modification of convection and flow kinematics by the Oregon coastal range and Cascades during IMPROVE-2. AMS 13th Conference on Mountain Meteorology. Whistler, BC.

02/08 "Overview of the Stony Brook Modeling System for the New York Region", IBM Research, Yorktown Heights, NY.

12/07 "Observations and theory of orographic precipitation. " Invited. Collaborative Program for Operational Meteorology, Education and Training (COMET), Boulder, CO.

11/07 "Verification of Extratropical Cyclones in Operational Models." National Weather Service Northeast Regional Operational Workshop. Albany, NY, November 7-8, 2007.

08/07 "Observational and theorectical advances in orographic precipitation" Invited. AMS Mesoscale Conference, New Hampshire.

02/07 "Microclimates " Invited for ESS 590 course, Stony Brook.

12/06 "Observations and theory of orographic precipitation. " Invited. Collaborative Program for Operational Meteorology, Education and Training (COMET), Boulder, CO.

10/06 "The Impact of Coastal Boundaries and Small Hills on the Precipitation Distribution Across Southern Connecticut and Long Island", ITPA TAOS Seminar, Stony Brook, NY

09/06 "An Investigation of Cool Season Extratropical Cyclone Forecast Errors in Operational Models" Cyclone Workshop, Pacific Grove, CA.

08/06 "Two-Dimensional Idealized Simulations of the Impact of Multiple Windward Ridges on Orographic Precipitation" 12 Conference on Mountain Meteorology, Santa Fe, NM.

06/06 "Verification of WRF over complex terrain and coastal regions using field data and ensembles." Annual WRF Users Workshop, Boulder, CO.

03/06 "Observations and theory of orographic precipitation." Invited. Collaborative Program for Operational Meteorology, Education and Training (COMET), Boulder, CO.

10/05 "Climatology of Barrier Jets along the southeast Alaskan coast using synthetic aperture radar data." 11th Conference on Mesoscale Processes. American Meteorological Society, Albuquerque, NM.

09/05 "Verification of an ensemble system over the Northeast U.S." 17th conference on Numerical Weather Prediction. American Meteorological Society, Washington, D.C.

08/05 "Storm surge modeling for the New York City Metropolitan region." 17th conference on Numerical Weather Prediction. American Meteorological Society, Washington, D.C.

06/05 "Ensemble modeling over the Northeast U.S." Invited, DTRA Meteorological Uncertainty in Transport and Dispersion. Frankfort, Germany

11/04 "Implementation of the Weather Research and Forecasting model at Stony Brook," National Weather Service Winter Weather Workshop, Upton, NY.

11/04 "An update on the Stony Brook University ensemble forecast system," 6th Northeast Operational Workshop, Albany, NY.

9/04 "Recent advances in the predictability of landfalling storms," invited, Marine Sciences Research Center Colloqium, Stony Brook University, NY

9/04 "Regional short-term atmospheric prediction for the New York metropolitan region and its applications," invited, Coastal Oceanography Colloquium, Rutgers University, New Brunswick, NJ

6/04 "Some comparisons between IMPROVE-2 and IPEX kinematic and precipitation evolution, and bulk microphysical verification," AMS 11th Mountain Meteorology Conference, Bartlett, NH.

3/04 "New York City regional short-term atmospheric prediction and its applications," invited, IGERT Colloquium and Distinguished Lecture Series, Columbia University, NY.

1/04 "An investigation of mesoscale predictability over the Northeast U.S," AMS 16th Numerical Weather Prediction conference, Seattle, WA.

1/04 "The rapid evolution of convection approaching the New York City Metropolitan Region," AMS 9th Conference on Urban Meteorology, Seattle, WA.

11/03 "Development of a real-time ensemble forecast system," Northeast Regional Operational Workshop, Albany, NY.

9/03 "Numerical Simulations of the landfall of tropical storm Floyd," 8th Cyclone Workshop, Val Morin, Canada.

6/03 "Evaluation of the bulk microphysical pathways and sensitivities during 13-14 December IMPROVE2," AMS 10th Conference on Mesoscale Processes, Portland, OR.

5/03 "Numerical Simulations of the extratropical transition of Floyd (1999)," invited, Dept of Atmospheric Sciences, Albany, NY.

11/02 "High resolution simulations of Floyd (1999): Structural evolution and responsible mechanisms for the heavy rainfall," The 4th Northeast Regional Operational Workshop, Albany, NY.

8/02 "Objective verification of the MM5 over the Northeast U.S.: Comparison with the NCEP Eta and impact of high resolution, American Meteorological Society, 15th Conference on Numerical Weather Prediction, San Antonio, TX

6/02 "Sensitivity of orographic precipitation to changing ambient conditions: An idealized modeling perspective. American Meteorological Society 10th Conference on Mountain Meteorology, Park City, UT.

4/02 "Simulation and prediction of North American coastal weather using high resolution mesoscale models, Invited, New York University, Atmosphere-Ocean Colloquium.

2/02 "Simulation and prediction of North American coastal weather using high resolution mesoscale models, Invited, Marine Sciences Research Center, Stony Brook University, Atmosphere-Ocean Colloquium.

7/01 "Verification of MM5 and Eta surface trough passages over the Eastern Pacific, AMS 9th Conference on Mesoscale Processes, Fort Lauderdale, FL.

7/01 "Numerical simulations a land-falling cold front during COAST: Rapid evolution and responsible mechanisms" AMS 9th Conf. Mesoscale Processes, Fort Lauderdale, FL.

4/01 "Real-time mesoscale modeling around coastal regions of the Northeast U.S.", Invited, University of Rhode Island, Oceanography departmental seminar."

Teaching Activity

Recent Teaching (Fall 2014- Spring 2016):

Fall 2014

Advanced Synoptic Meteorology and Forecasting, ATM 347, 3 credits, undergraduate majors, 8 students, SUNY-Stony Brook, 100% responsibility.

Introduction to Stony Brook for University Scholars, SCH 101, 1 credit, **2 sections**, 36 students, SUNY-Stony Brook, 100% responsibility.

The Lessons of Sandy: Coastal Risk Analysis of the Metropolitan New York/New Jersey Region,

MAR 577, 1 credit, graduate and undergraduate, 15 students, SUNY-Stony Brook, 20% responsibility.

Forecasting Practicum, ATM 437, 1 credit, undergraduate majors, 4 students, SUNY-Stony Brook, 100% responsibility.

Graduate Seminar in Atmospheric Sciences, MAR 595, 1 credit, graduate majors, 6 students, SUNY-Stony Brook, Fall 2002–present; 33% responsibility.

Spring 2015

Atmospheric Structure and Analysis, ATM247, 3 credits, 13 students, SUNY-Stony Brook, 100% responsibility.

Freshman Seminar, SSO 102, 1 credit, freshman, 20 students, SUNY-Stony Brook, 100% responsibility.

Fall 2015

Advanced Synoptic Meteorology and Forecasting, ATM 347, 3 credits, undergraduate majors, 8 students, SUNY-Stony Brook, 100% responsibility.

Introduction to Stony Brook for University Scholars, SCH 101, 1 credit, **2 sections**, 38 students, SUNY-Stony Brook, 100% responsibility.

Forecasting Practicum, ATM 437, 1 credit, undergraduate majors, 4 students, SUNY-Stony Brook, 100% responsibility.

Spring 2016

Advanced Synoptic Mesoscale Meteorology, MAR 598, 3 credits, graduate majors, 8 students, SUNY-Stony Brook, 100% responsibility.

Freshman Seminar, SSO 102, 1 credit, freshman, 20 students, SUNY-Stony Brook, 100% responsibility.

Past Undergraduate Courses:

Atmospheric Structure and Analysis, ATM 247, 3 credits, undergraduate majors, 8-16 students, SUNY-Stony Brook, taught Spring of 2000, 2001, 2003, 2005, 2007, 2009; 2011, 2013, and 2015 100% responsibility.

Advanced Synoptic Meteorology and Forecasting, ATM 347, 3 credits, undergraduate majors, 5-10 students, SUNY-Stony Brook, Fall of 1999-2016; 100% responsibility.

Forecasting Practicum, ATM 437, 1 credit, undergraduate majors, 2-4 students, SUNY-Stony Brook, Fall and Spring 2002-present; 100% responsibility.

Introduction to Stony Brook, SCH 101, 1 credit, freshman, ~20 students, SUNY-Stony Brook, Fall 2012, 2013, 100% responsibility.

Extreme Weather Freshman Seminar, SSO 102, 1 credit, freshman, ~20 students, SUNY-Stony Brook, Spring 2008;2010, 2011, 2013, 2014, 2015, and 2016 100% responsibility.

Devistating Weather Events of the Past and Future, SSO 102, 1 credit, freshman, 20 students, SUNY-Stony Brook, Spring 2010, 2011, and 2013; 100% responsibility

Intro. to Science, WSE 187, 3 credits, Women in Science and Engineering (WISE) undergraduates, 7-9 students, SUNY-Stony Brook, Spring 2001, 2003; 20% responsibility.

Weather 101, 4 credits, non-majors, 25 students, University of Washington, Seattle, WA, Summer 1996; 100% responsibility.

Past Graduate Courses:

Advanced Synoptic Mesoscale Meteorology, MAR 598, 3 credits, graduate majors, 8-12 students, SUNY-Stony Brook, Spring 2002, 2004, 2006, 2008, 2010, 2012, 2014, and 2016 100% responsibility.

Graduate Seminar in Atmospheric Sciences, MAR 694/595, 1 credit, graduate majors, 8-12 students, SUNY-Stony Brook, Fall 2002–present; 20% responsibility.

The Lessons of Sandy: Coastal Risk Analysis of the Metropolitan New York/New Jersey Region, MAR 577, 1 credit, graduate and undergraduate, 10-15 students, SUNY-Stony Brook, Fall 2013, 20% responsibility.

Foundations of Earth Sciences, ESS 501, 3 credits, ESS graduate majors, 7-10 students, SUNY-Stony Brook, Fall 2004, 2005; 25% responsibility.

Introduction to Synoptic Meteorology, ATM 502, 3 credits, graduate majors, 10 students, University of Washington, Seattle, WA, Winter 1997; 100% responsibility.

Introduction to Synoptic Meteorology Laboratory, ATM 503, 1 credit, graduate majors, 10 students, University of Washington, Seattle, WA, Winter 1997; 50% responsibility.

Graduate Student Exam Committees (name of advisor in parenthesis):

Travis Baggett (Waliser)	M.S.
Younjoo Lee (Lwiza)	M.S.
Xuelong Zhou (Geller)	Ph.D.
Ling Wang (Geller)	Ph.D.
Jinbo Wu (Zhang)	Ph.D.
Xiaosong Yang (Chang)	Ph.D.
Jie Gong (Geller)	Ph.D.
Shu Meir Wang (Geller)	M.S.
Minghua Zheng (Chang)	Ph.D.
Shuaiqi Tang (Zhang)	Ph.D.
Diego Berea (Kairoutdinov)	Ph.D.
Aichen Niu (Hameed)	M.S.
Xin Zhou (Kairoutdinov)	Ph.D.
Jungmin Lee (Kairoutdinov)	Ph.D.

Wie Zhang (Zhang) Ph.D.

John Hastings (A. Broccoli, Rutgers) Ph.D. (outside member)
Heather Archambault (D. Keyser, U. Albany) Ph.D. (outside member)
Jeffrey Cunningham (S. Yuter, N.C. State) Ph.D. (outside member)

Graduate Dissertation or Honors Projects Completed or Being Written Under Direction

Current Supported Students:

Name	Title	Status	Date
Sara Ganetis (RA supported)	Multi-bands in the cyclone comma head	Ph.D. expected	05/17
Alicia Camacho (RA supported)	Cycle Relative Diagnostics of Climate Models	M.S. expected	12/17
Ryan Connelly (RA supported)	Ensemble Predictions of Multi-Bands	M.S. expected	12/17
Xinxia Song (RA supported)	Cyclone Relative Diagnostics of Operational Models	M.S. expected	08/17
Taylor Mandelbaum (TA supported)	Ensemble Spread Anomaly Tool in Operations	M.S. expected	12/17
Nicholas Leonardo (RA supported)	Multi-model ensembles and data assimilation for landfalling storms	Ph.D. expected	05/17
Na Zhou (RA supported)	Microphysical Parameterization Improvements	Ph.D. expected	05/20

Past Students

Name	Title	Status	Date
Yanguang Zeng	An investigation of bulk microphysical sensitivities within the MM5 for orographic precipitation	M.S. received	05/03
Matthew Jones	Development and evaluation of an ensemble forecast system over the Northeast U.S.	M.S. received	10/04
Joseph Olson	Investigation of landfalling fronts and barrier jets along the West Coast of North America	Ph.D. received	10/07
Michael Charles	Multi-year verification of extra-tropical cyclones in operational models	M.S. received	05/08
Yanluan Lin	Verification and improvement of bulk microphysical parameterizations in mesoscale models	Ph.D. received	12/08
David Novak	Numerical modeling and predictability of mesoscale precipitation banding over the Northeast United States	Ph.D. received	05/09
John Murray	Climatology of convection over the Northeast U.S.	M.S. received	08/09
Tom DiLiberto	Storm surge modeling of past hurricane events for Long Island	M.S. received	08/09
Kelly Lombardo (RA supported)	Numerical modeling of convection over the Northeast U.S.	Ph.D. received	08/11
Joe Pollina (NWS STEP supported)	Fire weather climatology over the Northeast	M.S. received	08/11

Sean Bratton (RA supported)	Cyclone variability and hypoxia over Long Island Sound	M.S. received	12/11
David Stark (RA supported)	Microphysics within winter storms over coastal Northeast	M.S. received	08/12
Matthew Souders (RA supported)	Wave packet climatology and its predictability	M.S. received	05/13
Micheal Layer (RA supported)	Ensemble prediction of high wind events around Long Island	M.S. received	05/14
Matthew Sienkiewicz (RA supported)	Validation of WRF PBL schemes over the coastal ocean	M.S. received	12/14
Michael Erickson (RA supported)	Ensemble post-processing and data assimilation	Ph.D. received	05/15
Keith Roberts (RA supported)	An Application of Regression for Storm Surge Prediction	M.S. received	05/15
Nathan Korfe (RA supported)	Use of Ensembles in Operations	M.S. received	06/16
Zhenhai Zhang (RA supported)	Future Climate Change of East Coast Winter Storms	Ph.D. received	09/16

Research Associates (Post-Docs) Advised

Dr. Kelly Lombardo 2011/09 – 2013/08

Dr. Michael Erickson 2015/06 – 2016/03

Recent Departmental Service (Committees, Special Programs, etc.)

Director, Institute for Terrestrial and Planetary Atmospheres

Member, SoMAS Faculty Council (2015-2016)

Chair, SoMAS Atmospheric Search Committee for two position (2013-2014)

Member, SoMAS Graduate Admissions Committee, 2001-present

Member, ITPA graduate oral qualifying exam, 11/00 to present.

Chair, ITPA graduate oral qualifying exam, 2012-2015.

Member, SoMAS Undergraduate Programs Committee, 9/99-present.

Advisor, SoMAS undergraduate advisor to the ATM major, 9/99 to present.

Member, UCAR Member Representative for SoMAS. 2007-present

Organizer, SoMAS Friday Weather Discussion in Weather lab, 9/00-present.

Member, SoMAS Dean Search Committee, 2010-2011.

Member, SoMAS Computer Specialist Search Committee, 2011.

Chair, SoMAS Computer Research Faculty Search Committee 2008.

Chair, SoMAS Supercomputer Faculty Search Committee 2006-2007.

Member, SoMAS Search for Public Outreach/Relations Specialist, 2007.

Organizer, SoMAS National Weather Forecasting Team, 9/01-present.

Mentor, SoMAS summer REU program, 6/00-8/07.

Organizer, SoMAS/ITPA Prime Time (Recruiting) Events 9/99-present.

Member, SoMAS Computing Staffing Committee, 5/99-9/99.

Member, SoMAS Faculty Advisory Committee, 12/99-12/02.

Member, SoMAS Education Committee for 5-year plan, 5/03-12/03.

Recent University Service

Director for Institute for Terrestrial and Planetary Atmospheres, 09/14 - present

University Scholars Faculty Director, 08/11 – present

Vice-Provost Leadership Group, 01/12-present

Academic Advisor for ATM program, 01/2000 - present

Supervisor for undergraduate research of 20 students, 2000-present. See additional relevant information below.

Advisor, Meteorology Club, 9/01-present.

Advisory Board member: Stony Brook Phi Beta Kappa, 01/09-present.

Participant in SBU High School Open House (ATM major table), 2000-present.

Provost Search Committee, 01/11 – 12/11

Committee on General Education at Stony Brook, 05/09-05/11.

SoMAS Dean Search Committee, 07/10-03/11.

Provost Advisory Council, 01/09-12/10.

Committee on Undergraduate Experience, 09/10-12/12.

Affiliate Faculty, Stony Brook Southampton, 06/09-05/10.

Chair, University Undergraduate Council, 01/06-9/08.

Member, University Undergraduate Council, 09/05-05/09.

Co-Chair, First-Year Matters Learning Sub-committee, 10/07-05/08

Member, Supercomputer Cluster Faculty Search 2006-2007.

Member, Seawulf Computer Users Committee, 2006-present.

Mentor undergraduates for university RAIRE program, 2000-2002.

Member, Stony Brook, Internet-2 committee and users, 10/00-10/01.

Develop Meteorological Computer Visualization workstation for SBU main library, 9/00-9/02.

Undergraduate and High School Research Supervised

Served as research mentor for several undergraduate students. Below are the students and associated research projects. Those projects between 2000 and 2002 were supported with $5,000. awarded to Colle by the Stony Brook University RAIRE program:

1. Anthony Richey, Summer 2000, REU student from Indiana University. “Calculated surface fluxes over Long Island Sound in relation to Hypoxia development.”

2. Craig Freiderich, Spring 2000, "Structure and evolution of the sea breeze over Long Island." Presented results at the Stony Brook RAIRE poster presentation.
3. Joseph Olson, Spring 2000, "Transition of Hurricane Floyd into an extratropical system." Presented poster at the Stony Brook RAIRE poster presentation.
4. Joseph Olson, Spring 2001, "Objective verification of two weather prediction models." Presented poster at the Stony Brook Spring Celebration for Undergraduate Achievement.
5. Michael Charles, Spring 2001: "The rapid changes in structure and evolution of squall lines approaching Long Island." Presented poster at the Stony Brook Spring Celebration for Undergraduate Achievement.
6. Jacob Tomco, Summer 2001 REU student from the University of Washington. "Current measurements and modeling over Great South Bay."
7. Nelson Vaz, Spring 2002, "Objective verification of the MM5 and Eta during a sea breeze event." Presented poster at the Stony Brook Spring Celebration for Undergraduate Achievement.
8. Michael Charles, Spring 2002, "Lightning climatology over the Northeast U.S." Presented poster at the Stony Brook Spring Celebration for Undergraduate Achievement.
9. Kenneth Widelski, Fall 2002, "The effects of soil properties and topography on the nocturnal surface temperatures near Westhampton, Long Island."
10. Adrienne Leptich, Spring 2003, "Observations of snowflake types and size distributions during two major winter storms." Presented poster at the Stony Brook Spring Celebration for Undergraduate Achievement.
11. Michael Charles and Joe Giannotti, Spring 2003, "Meteorological comparisons of the three greatest snowstorms to affect the New York City Region during the past 30 years." Presented poster at the Stony Brook Spring Celebration for Undergraduate Achievement.
12. Garrett Wedam, Summer 2003, REU student from Univ of. Washington. "Comparisons of sea breeze simulations over Long Island Sound with a mesoscale model."
13. Joe Giannotti, Spring 2004, "Meteorological evaluation of a mesoscale model using a cross Long Island Sound Ferry" Presented poster at the Stony Brook Spring Celebration for Undergraduate Achievement.
14. Michael Otepka, Summer 2004, REU student from Saint Louis University, "Mesoscale modeling over Great South Bay."
15. Michael Konopka, Fall 2004, "The structural evolution of a cyclogenesis event over the Eastern U.S. in January 2004."
16. Amber Metzker, Summer 2005, REU student from St. Cloud State, MN, "Air-sea interactions over Great South Bay, LI"
17. Jason Keeler, Summer 2006, REU student from SUNY-Oswego, "Convective Evolution around Long Island"
18. Alexander Titus, Fall 2007, "Tornadoes on Long Island"
19. Katherine Rojowsky, Fall 2007, "Climatology of winds around NYC during major storm surge events"
20. Evan Goldpaer, 2007-2008, Kings Park High School, Cyclone predictability over the data sparse Pacific, *Intel Semi-Finalist 2008*.
21. Daniel McKeny, Summer 2008, REU student from North Carolina State University.
22. Cory Clifton, Fall 2008-Spring 2009, Stony Brook Honor's thesis: Observations of eye-wall replacement cycles during the RAINEX field experiment.

23. Brian Lin, Summer 2009, REU student from MGill University. **"**Synoptic variability associated with mixing events over western Long Island Sound."
24. Austin Rutcofky, summer 2010, Plainview High School. "Surface cold anomalies over eastern Long Island during the cool season"
25. Karen Schuab, summer 2010, Commack High School. "Storm surge variations and predictions for NYC"
26. Jason Schaeffer, fall 2010-spring 2012, Stony Brook Honor's thesis: "Regional Climate Change for NYC-Long Island region"
27. Keith Roberts, fall 2011-spring 2011, "Development of a statistical storm surge model."
28. Emily Schaefer, Kings Park High School, spring 2011- fall 2012, "Temperature changes over Long Island during later 20th Century"
29. Harrison Li, Ward Melville High School, spring 2012 – summer 2014, "Convective storm changes over the Northeast U.S." *Intel Semi-Finalist 2013*.
30. Samantha Zito, Bethpage High School, summer 2013, "Spatial variability of flooding from hurricane Sandy."
31. Denise Prussen, Merrick High School, summer 2014, "Ranking Hurricanes in Terms of a Power Index."
32. Michael Colbert, fall 2014 – spring 2015, Stony Brook Honor's Thesis: "Synoptic Flow Patterns and Mesoscale Conditions Associated with Convective Initiation Along the Sea Breeze Front Across Long Island and NYC.
33. Nima Mohammadi, Ward Melville High School, fall 2014 – summer 2016, "PBL wind profiles over coastal New England using LIDAR."
34. Katherine Ratner, Calhoun High School, fall 2014 – summer 2015, "Power Dissipation of Tropical Cyclones in the Atlantic Basin by Sub-Region of Origin."
35. Patrick Chi, Niskayuna High School, summer 2015, "Using Power Dissipation as an Alternative Method to Categorize and Rank Hurricane Intensity." *Intel Semi-Finalist 2016*.
36. Elizabeth Van Loon and Abbigayle Cuomo, Commack High School, summer 2015, "The Implementation and Verification of a Forest Fire Index for the Northeastern United States."
37. Ben Rhee, Syosset High School, summer 2016, "An Analysis of Power Dissipation in Extratropical Cyclones."

Current and Pending Support

Title: Nowcasting Severe Storm Evolution and Tracking Storm Life Cycles in the Northeast United States Using GOES-R (Co-PI)
Amount: $444,235 Period covered: 09/01/15-08/31/18
Support: Active Source: NASA

Title: Validation of significant weather features and processes in operational models using a cyclone relative approach (Lead PI)
Amount: $415,219 Period covered: 05/01/15-04/30/17
Support: Active Source: NOAA-NWS

Title: "Evaluation of Long Range Ensemble Weather Modeling." (Lead PI)
Amount: $112,995 Period covered: 02/01/14-01/31/17
Support: Active Source: ConEd

Title: Employing ensemble data assimilation, parameter estimation, and field data to improve fire weather predictions in mesoscale models. (Lead PI)
Amount: $108,159. Period covered: 08/01/13-07/15/17
Support: Active Source: U.S. Forest Service

Title: Collaborative Research: Observations and modeling of mesoscale precipitation in cool season extratropical cyclones. (Co-PI).
Amount: $355,466 Period covered:02/01/14-01/31/18
Support: Active Source: NSF

Title: An Evaluation and Application of Multi-Model Ensembles in Operations for High Impact Weather over the Eastern U.S. (Lead PI)
Amount: $337,772. Period covered: 10/01/13-09/30/17
Support: Active Source: NOAA-CSTAR

Title: Hazard SEES Type 2: Dynamic Integration of Natural, Human, and Infrastructure Systems for Hurricane Evaluation and Sheltering (Co-PI)
Amount: $478,362. Period covered: 09/01/13-08/31/18
Support: Active Source: NSF

Title: GeoPREP Track 2: Expanding the geosciences pathway (CO-PI).
Amount: $1,500,000. Period covered: 08/01/09-12/31/16
Support: Active Source: NSF

Title: Improving atmospheric models for offshore wind resource mapping and prediction using LIDAR, aircraft, and in-ocean observations (Lead PI)
Amount: $675,219 Period covered:09/01/11-06/30/16
Support: Active Source: DOE

Title: Using field and satellite measurements to improve snow and riming processes in cloud resolving models. (Lead PI)
Amount: $310,375. Period covered: 03/01/13-02/28/17
Support: Active Source: NASA

Title: Using OLYMPEX Field Data, Satellite Simulators, and Unique Surface Instrumentation to Improve Cloud Microphysical Parameterizations
Amount: $235,224. Period covered: 02/01/16-01/31/19
Support: Active Source: NASA

Title: GP-IMPACT: Increasing Geosciences Enrollment through Research Experiences, Mentoring, and Curriculum Interactions With Community Colleges and High Schools
Amount: $409,289 Period Covered: 09/15/16 – 9/14/19
Support: Active Source: NSF

Pending:

Source: NSF
Project Title: PREEVENTS Track 2: Collaborative Research: Utilizing Observations and Hydrologic-Atmospheric Models to Better Understand Ultra-Urban Flash Flood Processes
Requested Amount: $556,365
Requested Period: 5/1/17 – 4/30/21
Investigator months: 1.0 month summer