Abbreviated CV

Dr. Leonard J. Pietrafesa

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Areas of Interest: Estuarine and Continental Margin Oceanographic, Atmospheric and Land Coupled Processes, Oceanic and Atmospheric Weather and Climate Phenomena and Impacts, Observations and Modeling of Non-Linear Couplings of Atmospheric, Oceanic, Hydraulic Coupled Systems, Wind-Wave-Current Coupled Interactions, Precipitation and River Discharge, Relationships between Climate Conditions, Weather Events and Human Health, Science and Public Policy.

Education:

1965 BS, Fairfield University (Fairfield, CT) Physics & Mathematics
1967 MS, Boston College/University of Chicago (Boston, MA/ Chicago, IL) Geophysical Fluid Dynamics
(Advisors: Fr./Dr. J. DeVane, Dr. L.F. McGoldrick)
1973 PhD,University of Washington (Seattle, WA) Geophysical Fluid Dynamics
(Advisors: Dr. M. Rattray, Dr. J.D. Smith)

Industry Employment:

1965, 1966, 1968 Weston Geophysical Engineers, Boston, MA. (Projects: US Nuclear Test Ban Treaty Verification; New England Power Blackout Source; Panama Canal Expansion Assessment; West Australia Environmental Assessment; Preservation of Old Man on the Mountain, NH)

Academic Experience:

9/1999- Director, Office of External Affairs, College of Physical and Mathematical Sciences, NCSU
7/1989-9/1999 Head, Dept. of Marine, Earth and Atmospheric Sciences, NCSU.
6/1988-7/1989 Associate Dean for Research, College of Physical and Mathematical Sciences, NCSU
7/1988-6/1989 3RD Director, University Honors Council, NCSU
7/1992-12/1996 Director, Southeast University Consortium for Severe Storms (NCSU, FSU, GTU, UAL-H)
7/1981- Full Professor, Department of Marine, Earth and Atmospheric Sciences, NCSU
7/1976 –6/1981 Tenured Associate Professor, Departments of Geosciences & Marine Sciences & Engineering. NCSU
7/1973 –6/1976 Assistant Professor, Dept. of Geosciences, NCSU

Recent (Selected) National Committee Service and Special Recognition:

8/2000- University Member Representative to the University Corporation for Atmospheric Research (UCAR)
6/2001- Chair, NOAA/ National Geodetic Research Program Review Team
5/2002- Member, NOAA/ Climate Monitoring & Diagnostics Laboratory review Team
6/1989- 7/2000 NCSU Heads/Chairs Representative to the UCAR
10/2001 Received 2001 “Cheerleader for Science Award” from UCAR
6/1998- National Oceanographic and Atmospheric Administration (NOAA) Science Advisory Board (FACA approved)
6/1997- 3/1998 National Research Council Group on the Essential Marine/Meteorological Buoy & CMAN National Network
9/1999- Co-Chair of US/People’s Republic of China Steering Committee on Virtual Co-Laboratories

3/1997- Member, National Water Initiative Task Force of National Association of State Universities and Land Grant Colleges (NASULGC)
11/2000- National Association of State Universities and Land Grant College's Representative to US National Water Task Force Team

11/1999 - Member, National Association of State Universities and Land Grant Colleges (NASULGC) Executive Committee on Food, the Environment and Natural Resources

11/1996-11/1997 Chair, NASULGC Board on Oceans and Atmosphere

7/1997-6/1998 Member, National Academy of Science/ National Research Council Committee on Reauthorization of the National Sea Grant College Program

10/1995- 2/2002 Member, American Meteorological Society (AMS)/UCAR Board on Higher Education

3/1998-3/2000 Chair, Consortium for Oceanographic Research and Education (CORE) Board on Education

5/1996- 4/1998 Member, American Geophysical Union (AGU) Committee on Natural Hazards

5/1999- Member, NASULGC/Department of Interior (USGS) Partnership Committee

5/1998-1/2001 Contributor, IPCC Assessment of Coastal Effects of Climate Change

5/1999- Member, NASULGC/NASA Partnership Committee

11/1994-11/1999 Board of Trustees, National Institute of Statistical Sciences

9/1995-5/1998 Science Advisory Committee of the US Weather Research Program

1/1990-12/1997 Steering Committee of the US Department of Energy Programs in Environment & Health

11/1997- 3/2000 Member CORE Executive Committee

3/1996-11/1997 Chair (the 3rd), Council on Ocean Affairs (the Precursor to CORE)

3/1997-10/2001 Presented oral and written testimony before Six different United States Senate and House Subcommittees on issues related to science, technology, natural resources, severe storms, coastal flooding, societal impacts of severe storms, ocean and atmospheric observing systems, education reform.

9/2002 Made a presentation to the US House Science Committee staffers on the need for value of the USWRP Collaboration Fund at invitation of UCAR

3/1997 –2/1998 Co-Chair (with R. Rotunno) of US Weather Research Program -Prospectus Development Team (#3) on Coastal Weather.

Professional Organizations:

1) American Meteorological Society –Elected Fellow
2) Sigma Xi (past local chapter president)
3) Phi Kappa Phi
4) American Association for the Advancement of Science
5) Society for Non-Linear Mathematics
6) American Geophysical Union
7) Oceanography Society (Charter- Lifetime member)

21 recent/relevant of 163 peer reviewed publications (includes "in press")

1) Pietrafesa, L.J., L. Xie, G. Weatherly, C. Flagg, J. Morrison, 2002. Winds, currents, sea level and seastate in the Mid-Atlantic Bight during the winter/spring 1996 Ocean Margins Program. J. of Deep Sea Research, 49, p. 4331-4354.
2) Flagg, C.N., L.J.Pietrafesa, G. Weatherly, 2002. Springtime hydrography of the southern Middle Atlantic Bight and the onset of seasonal stratification. J. of Deep Sea Research, 49, p. 4297-4330.
3) Xie, L., L.J. Pietrafesa and D.Dickey 2002. The mathematical architecture for a coastal and estuary modeling and environmental prediction system. *Solutions to Coastal Disasters*, p. 441-455.
4) Pietrafesa, L.J. L. Xie, K.J. Wu 2002. The climatology of land-falling tropical cyclones in North Carolina. *Solutions to Coastal Disasters*, p. 396-408.
5) Xie, L. L.J. Pietrafesa, K. Wu, 2002. Numerical Study of wave-current interaction through surface and bottom stresses: Part II, Wind driven circulation in the South Atlantic Bight under variable winds. J. Geophys. Res. (in press)
6) Pietrafesa, L.J., L.Xie, E. Buckley, D. Hildebrand, M.C. Peng 2002. The need for a coastal/estuary/inland flood risk index. Chapter in *Computer Simulation in Hazard and Risk Mitigation*. Wit Press. (in press)

7) Xie, L. K. Wu, L.J. Pietrafesa, C. Zhang, 2001. Numerical Study of wave-current interaction through surface and bottom stresses: Part I, Wind driven circulation in the South Atlantic Bight under uniform winds. J. Geophys. Res., 106, 16841-16856.
8) Kim,Y.Y., G. Weatherly, L. J. Pietrafesa, 2001. Mass and salt budgets for the southern Mid Atlantic Bight. J. Geophys. Res., 106, C12, 31,263-31,282.
9) Kidder, S.Q., L.J. Pietrafesa, P.J. Croft. 2001. Meteorology, Oceanography and the Liberal Arts. The Chronicle of Higher Education. October, 2001.
10) Grothues, Thomas M., Robert K. Cowen, Leonard J. Pietrafesa, Francesco Bignami, Georges L. Weatherly, and Charles N. Flagg. 2001. Flux of larval fish around Cape Hatteras. Limnol. Oceanogr. 47: 165-175.
11) Pietrafesa,L.J., D. Dickey & L. Xie, 2001. Flooding Due to Hurricanes Dennis and Floyd, Chapter 2 in *Environmental and Socio-Economic Impacts of Hurricane Floyd*, Carolina Coastal Press.
12) Xie, L., L. Pietrafesa and S. Raman, 1999: Coastal Ocean-Atmosphere Coupling. Chap. 6 in (book) *Coastal Ocean Prediction.* AGU Coastal Studies Series. Edited by C.N.K. Mooers, 101.
13) Pietrafesa,L.J., L. Xie, J. Morrison, G.S. Janowitz, J. Pellissier, K. Keeter and R.A. Neuherz, 1999. Numerical Modeling and Visualization of Storm Surge in and round the Albemarle-Pamlico estuary system during Hurricane Emily, August, 1993. Mausam, 48, 4, Oct., 567-578.
14) Xie,L. L.J.Pietrafesa, E. Bohm, C. Zhang and X. Li, 1998. Evidence and Mechanism of Hurricane Fran Induced Ocean Cooling in the Charlesto Trough, Geophys. Res. Letters, 25,6,769-772.
15) Xie,L. and L.J. Pietrafesa, 1999. Systemwide Modeling of Wind and Density Driven Circulation in the Albemarle-Pamlico Estuary Sound System. Part I: Model configuration and testing. Journal of Coastal Research, 15 (4), p. 1163-1177.
16) Li, X., L.J. Pietrafesa, J.M. Morrison, and A. Ochadlick, 1999. Analysis of Oceanic Internal Waves from Airborne Synthetic Aperature Radar. J. of Coastal Research, 15, 4, 884-891.
17) Logan, D., L.J. Pietrafesa, J.M. Morrison, J. Churchill, 2000. Physical Oceanographic Processes Affecting Inflow/Outflow through Beaufort Inlet, NC. J.of Coastal Research, 16, 4, 1111-1125.
18) Xie, L., L.J. Pietrafesa, C. Zhang, 1999. Subinertial Response of the Gulf Stream System to Hurricane Fran, J. Geophys. Res. Letters , 26, 23, 3457-3460.
19) Kidder,S.Q., L.J. Pietrafesa, P. J. Croft, 2002. The introduction of atmospheric and ocean sciences into undergraduate curricula. The Bulletin of the American Society of Meteorology. (in press).
20) Dutton,J.A., L.J. Pietrafesa and J.T. Snow, 1998. Priorities of the Academic Community for the National Weather Service. Bulletin of the American Meteorological Society, vol. 79(5), 761-763.
21) Li, XF, L.J. Pietrafesa, S. Lan, L. Xie, 2000. Significance test for empirical orthogonal function (EOF) analysis of meteorological and oceanic data. C. Journal of Limnology & Oceanography, 1, p. 10-17.

Professional and Public (Invited Only) Presentations: Total of 167
Student Committees Supervised: Chair or Co-Chair of 22 PhD (22 completed) Committees
Chair or Co-Chair of 22 MS (21 Completed) Committees
Post Docs and Technicians Supervised: 28 (Presently J. M. Epps, W. Sweet, J. Kinder, S. Bao, M. Peng))
Grants: Total of 75 Awards as Principal or Co-Principal Investigator totaling $15,974,790**.**
Selected Present Funding:
1) NOAA $325,000, 11/2001-7/2003 Ocean and Atmospheric Observations in the Coastal Ocean of NC (Pietrafesa, Xie and Morrison)
2) NSF $94, 624, 8/1999-9/2002 Ocean Margins Data Assimilation, Interpretation (Pietrafesa, DeMaster and Xie)
3) NSF $99,999, 9/2001-8/2003 Bio-Complexity Incubation: Integrated Modeling between Ecological and Economic & Human/Societal Systems (Smith and Pietrafesa)
4) NOAA $600,000, 3/1/2001 –7/2003 A Risk Assessment Tool: Predicting Coastal Flooding for Operational Purposes (Pietrafesa, Xie and Stirling)
5) NOAA $1,220,000, 5/1/02-4/30/03 Carolina Coastal Observation and Prediction System (Pietrafesa, Xie, and Morrison)