Curriculum Vitae

MICHAEL E. SPLITT

Assistant Professor – Aviation Meteorology
Florida Institute of Technology
College of Aeronautics
Melbourne, FL 32901

Work Phone: 321-674-7468
Cell: 321-427-5424
Email: msplitt@fit.edu

EDUCATIONAL BACKGROUND

M.S. Meteorology, University of Oklahoma - Fall 1991

Certification in Science Education, University of Oklahoma - Fall 1992

B.S. Meteorology, Northern Illinois University - Spring 1986

PROFESSIONAL MEMBERSHIPS

➢ **Aircraft Owners & Pilots Association**

➢ **American Meteorological Society**

➢ **American Geophysical Union**

➢ **Friends & Partners in Aviation Weather**

➢ **National Weather Association**

  ▪ **Member of the Aviation Committee**

➢ **National Gay Pilots Association**

AWARDS

- **Jimenez Faculty/Researcher Award 2021 FAA PEGASAS Center of Excellence annual meeting.**
- **Florida Tech Student Government Association College of Aeronautics Teacher of the Year 2019-2020**

EMPLOYMENT

➢ **Assistant Professor of Meteorology,** Florida Institute of Technology, College of Aeronautics, 8/2016 to present

  ▪ Instructor for Aviation Meteorology, Aviation Meteorology II, and Aviation Meteorology: Theory and Practice

  ▪ FAA/PEGASAS program Co-PI for Project 33 Augmented Weather Information Project (AWIP) (*Recent*).

  ▪ FAA/PEGASAS program PI for Project 34 Helicopter Operations Weather Interfaces

(HOWI). (*Recent*)

- FAA/PEGASAS program Co-PI for Project 35 Enhanced Hands-Minimized Weather Interfaces for Pilots (*Current*)

- Co-PI for a funded project (since 2005) provided operational support for a General Dynamics Radionuclide Aerosol Sampler/Analyzer (RASA) located at the Melbourne International Airport in support of the Comprehensive Nuclear Test Ban Treaty. (*Current*) Local operator (and lead operator for FIT). (*Current*)

- Faculty participant as a mentor for the Summer 2021 and Summer 2022 Statistical Models with Applications to Geoscience (SMAG) REU program (*Ongoing*)

- Participant in FIT team that assessed bird strike information for pilots as part of the FAA WiSC program. (*Concluded*)

➢ **Adjunct Faculty/ Research Associate**, Florida Institute of Technology 1/2003 – 7/2016

- Synoptic Meteorology Instructor: 2003-2016

  - Including annual participation as part of the FIT forecasting team in the National Forecast Contest and weather data system administrator.

- Participating Faculty: Field Projects (summer) in the former FIT Department of Marine and Environmental systems

  - Land based studies on topics such as a) the sea breeze, b) radar reflectivity and rainfall, and c) surface roughness lengths: 2004, 2005, 2010, 2011, 2012.

  - Air/sea interaction cruises: 2006, 2007, 2008, 2009, 2010, 2011.

- Research Associate: 2005-2016

  - Analysis of the impact, particularly in the surface and boundary layer, of high resolution sea surface temperature on WRF-ARW model runs in the region of the Gulf Stream off the Florida east coast.

  - Data thinning for atmospheric data assimilation studies.

  - Atmospheric roughness length and mesonet quality control research.

    - Utilized EPA's AERSFC, one of the data pre-processors for AERMOD, for NLCD land use data surface roughness analysis.

    - Supervised a graduate student in running WRF EMS simulations for comparison to tower data over the Kennedy Space Center.

  - Providing support for a NOAA CSTAR funded project on an ensemble-based approach to forecasting surf, set-up, and surge in the coastal zone.

  - Tropical cyclone wind speed probability forecast verification studies.

  - Terrestrial gamma ray flash meteorology.

  - Blue jet meteorology.

    - Dual polarization radar data analysis using WDSS-II including hydrometeor classification for a blue jet event in Florida.

    - Conducted initial WRF EMS simulations for a blue jet event in Florida and for Indian River Lagoon hydrodynamical modeling support.

- ➢ **Research Associate**, University of Utah 1/1997 – 12/2005
  - ▪ Development scientist for the MesoWest and ROMAN projects: http://mesowest.utah.edu/index.html
  - ▪ Weather support for 2002 Winter Olympics.
  - ▪ Forecaster for a portion of the VTMX 2000 Campaign.
- ➢ **Research Associate**, University of Oklahoma 1/1993 - 4/2000
  - ▪ Data Quality Specialist for the ARM SGP Site Scientist Team.
    - ▪ Experience with a broad range of in situ and remote sensing systems.
  - ▪ Weather forecaster for selected Intensive Operation Periods including those with aircraft operations.
- ➢ **Meteorologist**, NWS Muskegon Michigan 10/1986 - 7/1987

REFEREED PUBLICATIONS

- Michalsky, J., E. Dutton, D. Nelson, M. Rubes, T. Stoffel, M. Wesley, M. Splitt, J. DeLuisi, 1999: **Optimal Measurement of Surface Shortwave Irradiance Using Current Instrumentation**. *Journal of Atmospheric and Oceanic Technology*: Vol. 16, No. 1, pp. 55-69.

- Richardson, Scott J., Michael E. Splitt, Barry M. Lesht, 2000: **Enhancement of ARM Surface Meteorological Observations during the Fall 1996 Water Vapor Intensive Observation Period**. *Journal of Atmospheric and Oceanic Technology*: Vol. 17, No. 3, pp. 312-322.

- J. Horel, M. Splitt, L. Dunn, J. Pechmann, B. White, C. Ciliberti, S. Lazarus, J. Slemmer, D. Zaff, and J. Burks, 2002: **Mesowest: Cooperative Mesonets in the Western United States**. *Bulletin of the American Meteorological Society*: Vol 83, No. 2, pp 211-226.

- J. Horel, T. Potter, L. Dunn, W. J. Steenburgh, M. Eubank, M. Splitt, and D. J. Onton, 2002: **Weather Support for the 2002 Winter Olympic and Paralympic Games**. *Bulletin of the American Meteorological Society*: Vol 83, No. 2, 227-240.

- Revercomb, H. E., Turner, D. D., Tobin, D. C., Knuteson, R. O., Feltz, W. F., Barnard, J., Bösenberg, J., Clough, S., Cook, D., Ferrare, R., Goldsmith, J., Gutman, S., Halthore, R., Lesht, B., Liljegren, J., Linné, H., Michalsky, J., Morris, V., Porch, W., Richardson, S., Schmid, B., Splitt, M., Van Hove, T., Westwater, E., Whiteman, D. 2003: **The ARM Program's Water Vapor Intensive Observation Periods.** *Bulletin of the American Meteorological Society*: Vol. 84, No. 2, pp. 217–236

- Lazarus, Steven M., Corey G. Calvert, Michael E. Splitt, Pablo Santos, David W. Sharp, Peter F. Blottman, Scott M. Spratt, 2007: **Real-Time, High-Resolution, Space–Time Analysis of Sea Surface Temperatures from Multiple Platforms**. *Mon. Wea. Rev*., 135, 3158–3173.

- LaCasse, Katherine M., Michael E. Splitt, Steven M. Lazarus, William M. Lapenta, 2008: **The Impact of High-Resolution Sea Surface Temperatures on the Simulated Nocturnal Florida Marine Boundary Layer**. *Mon. Wea. Rev*., 136, 1349–1372.

- Lazarus, Steven M., Michael E. Splitt, Michael D. Lueken, Rahul Ramachandran, Xiang Li, Sunil Movva, Sara J. Graves, Bradley T. Zavodsky, 2010: **Evaluation of Data Reduction**

Algorithms for Real-Time Analysis. *Wea. Forecasting*, 25, 837–851.

- Splitt, Michael E., Jaclyn A. Shafer, Steven M. Lazarus, William P. Roeder, 2010: **Evaluation of the National Hurricane Center's Tropical Cyclone Wind Speed Probability Forecast Product**. *Wea. Forecasting*, **25**, 511–525.

- Splitt, M. E., S. M. Lazarus, D. Barnes, J. R. Dwyer, H. K. Rassoul, D. M. Smith, B. Hazelton, and B. Grefenstette (2010), **Thunderstorm characteristics associated with RHESSI identified terrestrial gamma ray flashes**, *J. Geophys. Res.*, 115, A00E38, doi:10.1029/2009JA014622.

- Lazarus, Steven M., Samuel T. Wilson, Michael E. Splitt, Gary A. Zarillo, 2013: **Evaluation of a Wind-Wave System for Ensemble Tropical Cyclone Wave Forecasting. Part I: Winds**. *Wea. Forecasting*, **28**, 297–315.

- Lazarus, Steven M., Samuel T. Wilson, Michael E. Splitt, Gary A. Zarillo, 2013: **Evaluation of a Wind-Wave System for Ensemble Tropical Cyclone Wave Forecasting. Part II: Waves**. *Wea. Forecasting*, **28**, 316–330.

- Splitt, M. E, S. M. Lazarus, S. Collins, D. N. Botambekov, and W. P. Roeder, 2014: **Probability Distributions and Threshold Selection for Monte Carlo–Type Tropical Cyclone Wind Speed Forecasts**. *Wea. Forecasting*, **29**, 1155–1168.

- Lazarus, S. M., M. E. Splitt, J. Brownlee, N. Spiva, and N. Liu (2015), **A Thermodynamic, kinematic and microphysical analysis of a jet and gigantic jet-producing Florida thunderstorm**, *J. Geophys. Res. Atmos.*, **120**, 8469–8490, doi:10.1002/2015JD023383.

- Kelly, N.A., D.M. Smith, J.R. Dwyer, M.E. Splitt, S.M. Lazarus, F. Martinez-McKinney, B. Hazelton, B. Grefenstette, A. Lowell, H.K. Rassoul, 2015. **Relativistic electron avalanches as a thunderstorm discharge competing with lightning**, *Nature Communications*, **6.**

- Weaver, R.J., P. Taeb, S. Lazarus, M. Splitt, B.P. Holman, J. Colvin, 2016. **Sensitivity of modeled estuarine circulation to spatial and temporal resolution of input meteorological forcing of a cold frontal passage**. *Estuarine, Coastal and Shelf Science,* **123**, Part A, 28-40.

- Holman, B.P., S. M. Lazarus, M. E. Splitt, 2017. **A Fetch-Based Statistical Method to Bias Correct and Downscale Wind Speed over Unresolved Water Bodies**. *Wea. Forecasting*, **32**, 1637–1657.

- Holman, B.P., S. M. Lazarus, M. E. Splitt, 2018. **Statistically and dynamically downscaled, calibrated, probabilistic 10-m wind vector forecasts using ensemble model output statistics**. *Mon. Weather Rev.*, 146 (2018), pp. 2859-2880, 10.1175/MWR-D-17-0338.1**.**

- Boggs, L, N. Liu, J. A. Riousset, F. Shi, S. Lazarus, M. Splitt, H.K. Rassoul, 2018. **Thunderstorm charge structures producing gigantic jets.** Scientific reports vol. 8, 1 18085.

- Colvin, J.; Lazarus, S.; Splitt, M.; Weaver, R.; Taeb, P. **Wind driven setup in east central Florida's Indian River Lagoon: Forcings and pameterizations**. *Estuary Coast. Shelf Sci.* **2018**, *2013*, 40–48

- Boggs, L. D., Liu, N., Peterson, M., Lazarus, S., Splitt, M., Lucena, F., Nag, A., & Rassoul, H. (2019). **First observations of gigantic jets from geostationary orbit**. *Geophysical Research Letters*, **46**, 3999– 4006.

- Colvin, J., Lazarus, S., Splitt, M. **Extracting nearshore wave properties from video: A new method for coastal estuaries**, *Estuary Coast. Shelf Sci.*, Volume 246, 2020.

- Smith, D. M., Kelley, N. A., Buzbee, P., Infanger, A., Splitt, M., Holzworth, R. H., & Dwyer, J. R. (2020). **Special classes of terrestrial gamma ray flashes from RHESSI**. *Journal of Geophysical Research: Atmospheres*, **125**, e2020JD033043. https://doi.org/10.1029/2020JD033043
- Lazarus, S. M., Chiappa, J., Besing, H., Splitt, M. E., & Riousset, J. A. (2021). **Distinguishing characteristics of the tropical cyclone gigantic jet environment**. *Journal of the Atmospheric Sciences*, *78*(9), 2741-2761.
- Splitt, M. E., M. Hennard, and P. Bougeard (2021) **Survey of general aviation pilot reports (PIREPs) conformity, consistency, and quality**. *J. Operational Meteor.*, 9 (6), 76-88, doi: https://doi.org/10.15191/nwajom.2021.0906.
- Carstens, Ph D., J. S. Harwin, S. Michael, Ph D. Li, M. S. Splitt, and M. S. Olabanji. (2022) **Accuracy of Commercially-Available Speech Recognition Systems in Identifying PIREP Terminology.** *International Journal of Aviation, Aeronautics, and Aerospace,* 9 (3) (p. 8)

OTHER RECENT PROCEEDINGS

- Caldwell, B. S., & Splitt, M. E. (2021). **GA Pilot Information and Weather Technology and the Cockpit: Fixed Wing and Rotorcraft Issues**. In *AIAA AVIATION 2021 FORUM* (p. 2955).
- Splitt, Michael, Barrett S. Caldwell, Vivek Sharma, and Nicholas Houghton. (2022) "**Scales and Attributes of Weather Information Representativeness for Pre-flight and En-route Advisories for Pilots in Low Altitude Operations.**" In *AIAA AVIATION 2022 Forum* (p. 3779)

OTHER PUBLICATIONS

- Splitt, M.E., Lamb, P.J., and Sisterson, D.L., "**Site Scientific Mission Plan for the Southern Great Plains CART Site; Jul-December 1995**," Argonne National Laboratory, Environmental Research Division, 74 pp. (1995)

- Splitt, M., J. Horel, B. White, 2001: **Data collection, processing, and quality control for MesoWest**. Automated Weather Stations for Application in Agriculture and Water Resources Management, K. Hubbard and M. Sivakumar, Eds., WMO/TD No. 1074, 211-218 pp.

- Chaffin, J., Smith, D., Cummer, S., Pu, Y., & Splitt, M. (2021, April). **Constraining the Origin Altitude of the first Satellite-Detected Reverse-Beam Terrestrial Gamma-ray Flash Produced by a Cloud-to-Ground Lightning Leader**. In EGU General Assembly Conference Abstracts (pp. EGU21-3250).