

# **Jessica Williams**

## **GIS Specialist**

### **EDUCATION**

- M.S. Geographic Information Science - Northwest Missouri State University - 2013
- B.S. Meteorology - Pennsylvania State University – 2004

### **PROFESSIONAL AFFILIATIONS AND CERTIFICATIONS**

- American Meteorological Society (2000-2012)
- ESRI ArcGIS Desktop I & II, Washington DC, 2006
- Fundamentals of ERDAS IMAGINE, Washington DC, 2006
- URISA's GISCorps, 2013

### **FIELDS OF SPECIALIZATION**

- Cartography and Graphic Design
- Remote Sensing and Imagery Analysis
- Change Detection Analysis
- Geo-statistical Analysis
- Land Use/Land Cover Analysis
- Watershed Modeling
- Web-Mapping and Web-Design
- Database Design and Implementation
- Site Suitability Analysis
- Aviation Meteorology

### **EXPERIENCE SUMMARY**

Ms. Williams has been involved in GIS since 2006 when she started working for MDA Federal Inc. as a geospatial analyst. There she was a contractor at the Defense Intelligence Agency amongst a mixed agency team providing geospatial services through the integration and application of GIS and remote sensing technologies. She then joined NOAA in 2007 as an aviation forecaster for the FAA Air Route Traffic Control Center. She briefed Air Traffic Management on weather impacts to National Airspace and issued critical aviation advisories. This allowed timely planning of air traffic and personnel, reducing air traffic backups and delays and fuel costs. She also incorporated her GIS skills to generate new web pages, graphics for weather briefings, and research the effects of land cover on thunderstorm severity over the southeast US. She then joined the NOAA Hurricane Hunters in 2009 as a research meteorologist. There she directed aircrew and led operational and research missions in severe weather environments to gather scientific data in flight. She also analyzed, quality controlled and disseminated the scientific data to modeling centers and researchers. Prior to being involved with GIS, Ms. Williams was an officer in the USAF in charge of 20 weather forecasters providing wartime support for operations in the Central Command.

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### **PROJECT EXPERIENCE**

Ms. Williams was the project manager for the NOAA new aviation scientific data system, the Airborne Atmospheric Measurement and Profiling System (AAMPS). She managed the development and maintenance of the data system, organized tasks and projects, and set work priorities based on the needs of the organization. She set up meetings to discuss development goals, updates, current status and troubleshooting to the AAMPS team. She supervised contractor work and ensured proper funding and payment for authorized work. She also worked with partner organizations and customers in the development of new agency wide software to include an in-flight moving map of atmospheric data, secure transfer of data and data basing of collected data. She also initiated training to pertinent employees on new software use and integration.

She was also a project manager for NOAA Aircraft Operations Centers Winter Storms Reconnaissance Program. There she managed a group of 10 NOAA employees deployed in the Pacific to perform operational mission flights to gather atmospheric data over the Pacific Ocean to improve winter storm forecasting over the entire US. She coordinated between the NOAA National Center for Environmental Prediction and the National Hurricane Center in tasking the NOAA Gulf-stream IV on specific flight tracks to gather information in areas where models needed improvement. She coordinated with the Aircraft Commander, lead engineer, lead meteorologist, lead technician and any media requests to accomplish the mission safely and effectively. She completed a research paper using GIS to perform a data denial study to show the effectiveness of data collected from the NOAA G-IV in improving winter storm forecasts.

Ms. Williams was in charge of Aircraft RADAR training and issues for NOAA AOC. She developed and presented RADAR training and exams for all AOC and scientific personnel bi-annually. She performed calibrations on Aircraft Radar Systems and developed spreadsheets to estimate cloud top and precipitation top heights in flight to assist in decision making and the safety of flight.

Her interest in GIS and its use in earth and environmental science led her to initiate research for her M.S. thesis in the verification of numerical weather model precipitation forecasts to improve forecasting accuracy. This research used NetCDF files and converted them to raster grids of forecasted precipitation amounts and compared them to grids of observed precipitation totals using geospatial analysis. The samples were associated with mid-latitude cyclones when precipitation impacts large areas of the US. The results showed the model biases in spatial relation to the weather system and the model tendencies to over forecast precipitation, enabling forecasters to improve more upon the model.