

**Principal Investigator (PI): Mr. Jeffrey Weinrich**

Team Lead, Research Scientist IV  
I. M. Systems Group, Inc. (IMSG)

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**Summary**

- **MS in Aeronautical Science**, BS in Meteorology; Meteorologist & Physical Scientist with over 25 years experience.
- **Creative and highly-motivated** leader who seeks to contribute to organization’s big picture by turning data into valuable and insightful information and aid in strategic decision making and problem solving.
- **Subject matter expertise** across aviation weather forecast operations including forecasting, warning and decision support services and procedures support for civil aviation, producing aviation weather forecasts, managing operations, and integrating weather information from diverse sources.
- **Strong analytical ability** to draw from mathematical knowledge, probability analysis, and applied statistics to test ideas, assess challenges, monitor performance, introduce strategic improvements, and identify opportunities.
- **Excellent communication abilities** as demonstrated by working with multiple weather users to create and develop requirements to support operational decision-making for aviation operations.
- **Excels in independent and team-driven environments** with a wide-ranging skillset that includes programming, predictive modeling, requirements gathering, data management (textual, categorical, and numerical) as well as in guiding strategic changes for long-range vision, developing strategies, and applying innovative ideas and techniques.
- **Performs research designs**, analysis of complex data, and extensive work in developing and innovating scientific algorithms.
- **Develops statistical methods** (heuristic algorithms and goodness-of-fit tests), and introduce new theories inspired by problems in network science under massive data setting (network clustering).

**Education**

- Masters of Aeronautical Science, Specialization in Operations, Embry-Riddle Aeronautical University, Daytona Beach, FL, 2011
- Bachelor of Science in Meteorology, Millersville University, Millersville, PA, 1999

Trainings: Project Management Professional (PMP), (expected 2024) Certified System Engineering Professional (CSEP), (expected 2024)

**Core Proficiencies**

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|---------------------------------------|-------------------------|-------------------------|
| • Strategic Planning & Implementation | • Meteorology Expertise | • Systems Engineering   |
| • Cross-functional Team Leadership    | • Research & Design     | • Change Analysis       |
| • Project Management                  | • Calibrating Equipment | • System Modelling      |
| • Regulatory Compliance               | • Scientific Algorithms | • Policy Interpretation |

## Technical Skills

Weather and Radar Processor (WARP); Joint Polar Satellite System (JPSS); Meteorologists Workstation (MWS); Area Maintenance Control Center (AMCC); Product Distribution and Access (PDA); Traffic Flow Management System (TFMS); Route Availability Planning Tool (RAPT); Weather Capabilities for Aviation in general

## Professional Experience

**2022-Present: SUPPORT SCIENTIST (Rsch Scientist IV)**, |I. M. Systems Group, Inc. at NOAA/NESDIS/STAR, NCWCP, College Park, Maryland

- Support Scientist at Joint Polar Satellite System (JPSS) NOAA Center for Satellite Applications and Research (STAR)
- Quality Assurance Lead for JPSS Satellite Products
- Coordinate Calibration Validation for new JPSS Product Validations and Testing
- Program Manager to NOAA VizLab including staff supervision, COR coordination, Invoice Analysis and Approval, Travel Expense Analysis and Approval, as well as satisfying overall contract requirements.

**2013-2022: CALIBRATION/VALIDATION LEAD, METEOROLOGIST** | Science and Technology Corp., Columbia, MD

- Support National Weather Service (NWS) Office of Science and Technology Integration (OSTI). Assist with Research to Operations for NWS.
- Oversee and lead calibrations and validations for new Algorithms used on the Joint Polar Satellite System.
- Manage algorithm delivery for NOAA Science algorithms.
- Serve as the subject matter and technical expert to the JPSS Proving Ground; act lead for the Aviation Initiative and Volcanic Hazards Initiative.
- Analyze Aviation Cloud and Icing Products for verification and improvement
- Lead cross-functional National Satellite Operations Facility teams in testing data distribution, creating test plans, test procedures, coordinating and executing test activities.
- Maintain relationships with external users to National Oceanic and Atmospheric Administration (NOAA) to coordinate integration events and testing.
- Enforce compliance with all regulations and standards to ensure quality assurance in documentation and satellite products for the Product Distribution and Access System.

**2012-2013: TEST ENGINEER, METEOROLOGIST** | Computer Sciences Corp., Egg Harbor Township, NJ

- Meteorological Subject Matter Expert (SME) for weather functions on the Traffic Flow Management System (TFMS), responsible for the functionality testing of the Traffic Situation Display including Display, Flights, Alerts, Weather, Reroute, and other Traffic Management Tools
- Test the Route Availability Planning Tool (RAPT), an automated decision support tool to determine which departure routes will be affected by hazardous weather.
- Develop test plans and procedures to verify the fulfillment of requirements for Engineering Change Proposals (ECPs). Successfully completed over 55 packages
- Track budget, schedule and tasks for major software releases on the TFMS ensuring completion within the given project goals.

**2009-2012: SOFTWARE TEST ENGINEER, SOFTWARE RELEASE MANAGER** | Actionet Inc., Vienna, VA

**2003-2009: SYSTEMS ENGINEER, METEOROLOGIST** | A3 Technology, Inc., Galloway, NJ

**2000-2003: METEOROLOGIST, COMPUTER SCIENTIST** | Engility Corp., Egg Harbor Township, NJ

**1996-1999: RESEARCH SUPERVISOR/LEAD FORECASTER** | Millersville University, Millersville, PA

**1994-1995: RESEARCH ASSISTANT** | Drexel University, Philadelphia PA

**Publications/Presentations (selected)**

Noh Y-J, Haynes JM, Miller SD, Seaman CJ, Heidinger AK, **Weinrich J**, Kulie MS, Niznik M, Daub BJ. A Framework for Satellite-Based 3D Cloud Data: An Overview of the VIIRS Cloud Base Height Retrieval and User Engagement for Aviation Applications. *Remote Sensing*. 2022; 14(21):5524. <https://doi.org/10.3390/rs14215524>

Goldstein, J., **Weinrich, J.A.**, Joint Polar Satellite System (JPSS) Cloud Products and Applications in Aviation, *American Meteorological Society Annual Meeting*, Denver, CO, January 2023.

Zhou, L., **Weinrich, J.**, Reed, B. Dunlap, L., Young, A. Liu, X., Divakaria, M., Updates on Joint Polar Satellite System (JPSS) and Low Earth Orbit (LEO) data products, *American Meteorological Society Annual Meeting*, Denver, CO, January 2023.

Goldstein, J., **Weinrich, J.A.**, Joint Polar Satellite System (JPSS) Cloud Products and Applications in Aviation, *American Geophysical Union*, Chicago, IL, December 2022.

Goldstein, J., **Weinrich, J.A.**, JPSS Aviation Initiative, *EUMETSAT Meteorological Satellite Conference*, Brussels, Belgium, September 2022.

**Weinrich, J.A.**, NWS Transition Plan Review Process and Updates for Research to Operations, *National Weather Association Annual Meeting*, Pittsburgh, PA, August 2022.

Goldstein, J., **Weinrich, J.A.**, Joint Polar Satellite System (JPSS) Cloud Products and Applications in Aviation, *AMS Collective Madison Meeting*, Madison, WI, August 2022

Noh, Y. J., J. M. Haynes, M. Niznik, S. D. Miller, **J. Weinrich**, and A. Heidinger, 2022: Working with Forecasters and Pilots to Develop User-Oriented Satellite Cloud Products for Aviation Applications. *22nd Conference on Aviation, Range, and Aerospace Meteorology 102nd AMS Annual Meeting*, January 2022, Houston, TX (Virtual)

Goldstein, J., **Weinrich, J.A.**, Joint Polar Satellite System (JPSS) Cloud Products and Applications in Aviation, *AMS Collective Madison Meeting*, Madison, WI, August 2022

Goldstein, J., **Weinrich, J.A.**, Joint Polar Satellite System (JPSS) Cloud Products and Applications in Aviation, *American Geophysical Union*, New Orleans, LA, December 2021

- Noh, Y. J., J. M. Haynes, M. Niznik, S. D. Miller, and **J. Weinrich**, 2021: Development of VIIRS 3D Cloud Structure Products for Aviation Users. *American Geophysical Union*, New Orleans, LA, December 2021
- Weinrich, J.A.**, Game Changing Applications of Polar Orbiting Satellites Data for Flight Planning and Operations, *Southwest Aviation Weather Safety Workshop*, Albuquerque, NM, November 2021.
- Weinrich, J.A.**, Maximizing the Value of NOAA Data through Investment, Innovation, and Governance, *2021 NOAA Environmental Data Management Workshop*, Virtual, August 2021
- Noh, Y. J., Hanes, J., Miller, S. D., Heidinger, A., and **Weinrich, J.**, 2021: Improvement of Satellite Cloud Vertical Cross-section Products for Aviation Weather Applications. 101st AMS Annual Meeting/24th Conference on Satellite Meteorology, Oceanography, and Climatology, 11-15 January 2021 (Virtual).
- Miller, S., Haynes, J, Seaman, C, Heidinger, A, **Weinrich, J.**, Improvement of Satellite 3-D Cloud Structure Information for Aviation Users, *University of Alaska Fairbanks*, April 2021
- Weinrich, J.A.**, JPSS Aviation Initiative, *American Meteorological Society Annual Meeting*, Virtual, January 2021
- Weinrich, J.A.**, JPSS Cloud and Precipitation Products, *2020 NASA GPM-ACCP Transport and Logistics Workshop*, Virtual, November 2020.
- Weinrich, J.A.**, JPSS Aviation Initiative, *American Meteorological Society Annual Meeting*, Boston, MA, January 2020
- Weinrich, J.A.**, JPSS Aviation Weather Products for General Aviation, *Alaska Airman's Association Great Alaska Aviation Gathering*, Anchorage, AK, May 2019.
- Weinrich, J.A.**, JPSS Aviation Initiative: Supporting Forecasters and Pilots, *Southwest Aviation Weather Safety Workshop*, Phoenix, AZ, June 2019.
- Weinrich, J.**, Joint Polar Satellite System (JPSS) Aviation Initiative: Supporting Aviation Forecasters and Pilots, *Joint Satellite Conference*, Boston, MA, September 2019.
- Reed, B., Layns, A., Zhou, L, Goldberg, M. and **Weinrich, J.**, Status of JPSS Data Products in Operations, *Joint Satellite Conference*, Boston, MA, September 2019.
- Weinrich, J.A.**, JPSS Aviation Initiation and Cloud Products Demonstration Update, *American Geophysical Union*, San Francisco, CA, December 2019
- McWilliams, G., Goldberg, M, Zhou, L., Reed, B. and Weinrich, J.A.**, Satellites Providing Critical Support for Environmental Disaster Monitoring and Response: From TIROS-1, the United States' First Weather Satellite, to the Current Generation of Environmental Satellites, *American Geophysical Union*, San Francisco, CA, December 2019.
- Weinrich, J.A.**, Joint Polar Satellite System (JPSS) Proving Ground Initiatives, *AMS Weather Analysis and Forecasting Conference*, Denver, CO, June 2018
- Weinrich, J.A.**, Joint Polar Satellite System (JPSS) Data Products, *AMS Weather Analysis and Forecasting Conference*, Denver, CO, June 2018
- Weinrich, J.A.**, Polar Satellite Products for General Aviation Users in Alaska, *JPSS Alaska Summit*, Anchorage, AK, May 2018.
- Weinrich, J.A.**, *JPSS Aviation Initiation and Cloud Products Demonstration Update*, *American Geophysical Union*, Washington, DC, December 2018.
- Weinrich, J.A.**, *JPSS Data Products*, *EUMETSAT Meteorological Satellite Conference*, Tallinn, Estonia, September 2018.
- Weinrich, J.A.**, NWS Transition Plan Review Process and Updates for Research to Operations, *National Weather Association Annual Meeting*, St Louis, MO, August 2018.

**Weinrich, J.A.**, JPSS-1 Algorithm Updates and Upgrades, *American Geophysical Union*, New Orleans, LA, December 2017.

**Weinrich, J.** J-1 Readiness from a Cal/Val Perspective, *NOAA Satellite Conference*, New York, NY, July 2017.

**Weinrich, J.**, Reed, B. Divakaria, M., Layns, A. Zhao, L., JPSS-1 Readiness from a Cal/Val Perspective, *American Meteorological Society Annual Meeting*, Seattle, WA, January 2017.

**Weinrich, J.**, Reed, B. Divakaria, M., Layns, A. Zhao, L., Overview of Improved Data Products from the JPSS Block 2.0 System, *American Meteorological Society Annual Meeting*, Seattle, WA, January 2017.