

ADAM THEISEN

*Instrument Operations Manager
Atmospheric Radiation Measurement User Facility*

Argonne National Laboratory
Environmental Science Division
9700 South Cass Ave, Building 240
Lemont, IL 60439-4844

Curriculum Vitae

June 20, 2020

Degrees Attained

- M.S. Atmospheric Science (2009); University of North Dakota
- B.S. Atmospheric Science (2007); University of North Dakota

Positions Held

- **Argonne National Laboratory**, Environmental Science Division (United States)
October 15, 2018
Instrument Operations Manager, Atmospheric Radiation Measurement (ARM) User Facility
Manages roughly 70 instrument experts located across 13 national laboratories and universities with a budget of roughly \$11 million a year. Member of the ARM Infrastructure Management Board that oversees ARM activities and guides decision-making. Serves as the subject matter expert on the ARM spares and repairs budget of \$1.3 million. Manages the Atmospheric data Community Toolkit that serves as an open-source community platform for sharing atmospheric related python codes.
- **Cooperative Institute for Mesoscale Meteorological Studies, University of Oklahoma** (United States)
May 28, 2010
Research Associate II
Oversaw daily operations of the ARM Data Quality Office, including the team of undergraduate student analysts. Developed a broad range of software applications for data quality analysis across an even broader range of meteorological instrumentation; both in-situ and remote sensing.
- **Mountain State Information Systems** (United States)
August 1, 2009
Systems Engineer
Supported the development of the NASA system and software architecture product line at the NASA IV&V facility. Performed static code analysis on flight software for the Global Precipitation Measurement mission, including requirements verification and validation.

Funding

- Role: Instrument Operations Manager
Project Title: **Atmospheric Radiation Measurement User Facility**
Agency: Department of Energy
Status: Active
Period: **Ongoing**

Amount: \$12,692,813.00 (FY20),

- Role: Principle Investigator
Project Title: **Evaluating Precipitation Instrument Performance**
Agency: Argonne National Laboratory SEED LDRD
Status: Active
Period: **FY20**
Amount: \$25,000
- Role: Principle Investigator
Project Title: **Atmospheric data Community Toolkit**
Agency: Argonne National Laboratory SWIFT LDRD
Status: Active
Period: **FY19**
Amount: \$25,000

Professional Activities

- ARM Infrastructure Management Board; Member (2018 – Current)
- ARM Aerosol Measurement and Science Group; Member (2019 – Current)
- ARM Clouds and Precipitation Measurement and Science Group (2019 – Current)

Publications, Presentations, and Other Evidence of Achievement

Refereed Journal Articles

Theisen, A., M. Ungar, B. Sheridan, and B. G. Illston. 2020. More Science with Less: Evaluation of a 3D-Printed Weather Station. *Atmospheric Measurement Techniques Discussions*, 1–20.

Gallo, F., J. Uin, S. R. Springston, J. Wang, G. Zheng, C. Kuang, R. Wood, E. B. Azevedo, A. McComiskey, F. Mei, J. Kyrouac, and A. C. Aiken. 2020. Identifying a regional aerosol baseline in the Eastern North Atlantic using collocated measurements and a mathematical algorithm to mask high submicron number concentration aerosol events. *Atmos. Chem. Phys. Discuss.*, <https://doi.org/10.5194/acp-2020-49>, in review. **(Authorship addition is pending)**

Dahl, N. A., A. Shapiro, C. K. Potvin, A. Theisen, J. G. Gebauer, A. D. Schenkman, and M. Xue. 2019. High-Resolution, Rapid-Scan Dual-Doppler Retrievals of Vertical Velocity in a Simulated Supercell. *Journal of Atmospheric and Oceanic Technology* 36 (8): 1477–1500.

Peppler, R. A., K. E. Kehoe, J. W. Monroe, A. Theisen, and S. T. Moore. 2016. The ARM Data Quality Program. *Meteorological Monographs* 57.

Giangrande, S. E., S. Collis, A. K. Theisen, and A. Tokay. 2014. Precipitation Estimation from the ARM Distributed Radar Network during the MC3E Campaign. *Journal of Applied Meteorology and Climatology* 53 (9): 2130–47.

Kucera, P. A., A. Theisen, and D. Langerud. 2008. Polarimetric Cloud Analysis and Seeding Test (POLCAST). *The Journal of Weather Modification* 40 (1): 64–76.

Technical Reports

Aiken, A. C., F. Gallo, J. Uin, S. R. Springston, J. Wang, G. Zheng, C. Kuang, A. McComiskey, R. Wood, C. Flynn, and A. Theisen. 2019. Eastern North Atlantic (ENA) Aerosol Supplementary Site (S1) Data Analysis Report. No. DOE/SC-ARM-TR-229. ARM Data Center, Oak Ridge National Laboratory (ORNL), Oak Ridge, TN (United States).

Cook, D., and A. Theisen. 2017. SWATS: Diurnal Trends in the Soil Temperature Report. No. DOE/SC-ARM-TR-193. DOE Office of Science Atmospheric Radiation Measurement (ARM) Program (United States).

Kyrouac, J., and A. Theisen. 2017. Biases of the MET Temperature and Relative Humidity Sensor (HMP45) Report. No. DOE/SC-ARM-TR-192. DOE Office of Science Atmospheric Radiation Measurement (ARM) Program (United States).

Other Presentations

Gallo, F., J. Uin, S. Springston, R. Wood, J. Wang, A. McComiskey, A. Theisen, G. Zheng, A. Aiken, E. Brito de Azevedo. 2019. Optimization of a post data-processing method to identify local aerosol events from continuous data collected by an Aerosol Observing System (AOS) and applications to three years of data at Eastern North Atlantic (ENA). AGU Fall 2019, San Francisco, CA.

Niu, Q., G. McFarquhar, R. Marchand, S. Ding, A. Theisen, R. Humphries. 2019. Distributions of condensation nuclei, cloud condensation nuclei and cloud properties over the Southern Ocean: first results from MARCUS/MICRE. AGU Fall 2019, San Francisco, CA.

Theisen, A. S. Collis, R. Jackson, Z. Sherman, N. Hickmon, K. Kehoe, C. Godine, A. Sockol, A. King, M. Giansiracusa. 2019. Atmospheric data Community Toolkit (ACT): A python library for working with atmospheric data. AMS 100 2020, Boston, MA.

Theisen, A. et al. 2019. Development of a Framework to Allow for Easy Sharing of Code. ARM/ASR PI Meeting, Rockville, MD.

Ritsche, M., A. Theisen, N. Hickmon. 2019. ARM Southern Great Plains (SGP) Update 2018. ARM/ASR PI Meeting, Rockville, MD.

King, A. et al. 2019. Plotting Tool Update - ARM Data Quality Office. ARM/ASR PI Meeting, Rockville, MD.

Costopulos, J., N. L. Hickmon, and A. Theisen. 2019. New Atmospheric Instrumentation Suite From Global Oceans and Argonne National Laboratory Will Expand Ocean-Atmosphere Measurement Capacity. 15th Conf. Polar Meteorology and Oceanography, Boulder, CO.

Theisen, A. and A. Lindenmaier. 2018. Short Convective Campaign Lessons Learned. ARM/ASR PI Meeting, Vienna, VA.

Theisen, A., 2018. DQ Office Machine Learning Efforts. ARM/ASR PI Meeting, Vienna, VA.

Theisen, A., 2018. MARCUS: DQ Update. ARM/ASR PI Meeting, Vienna, VA.

Guntupally, K., K. Kehoe, R. Devarakonda, J. Kumar, A. Theisen, G. Prakash. 2018. DQRs in a Flash!: Using Modernized DQR Submission Tool. ARM/ASR PI Meeting, Vienna, VA.

Toto, T., S. Giangrande, G. McFarquhar, A. Theisen, K. Johnson, M. Wang, and A. Zhou. 2018. MARCUS Ship Navigation and Tilt Corrections: A look at ARSCL-related data from the campaign so far. ARM/ASR PI Meeting, Vienna, VA.

Dahl, N., A. Shapiro, C. Potvin, J. Gebauer, and A. Theisen. 2018. Improving Vertical Velocity Retrievals from Doppler Radar Observations of Convection. ARM/ASR PI Meeting, Vienna, VA.

Singh, A. B. Krishna, and A. Theisen. 2018. User requirements gather and a development plan for interactive data plotting tool to replace NCVWeb. ARM/ASR PI Meeting, Vienna, VA.

Theisen, A., R. Peppler, K. Kehoe, J. Monroe, and J King. 2018. ARM Data Quality Office: Fusion of Automated and Manual QA/QC Techniques. ARM/ASR PI Meeting, Vienna, VA.

Theisen, A. and D. Sisterson. 2018. Discussion of Recent Cyclical Temperature Trends Detected in the United States. 31st Conference on Climate Variability and Change, 98th AMS Annual Meeting. Abstract ID: 329123. Austin, TX.

Theisen, A., R. Peppler, K. Kehoe, J. Monroe, and J King. 2018. ARM Data Quality Office: Fusion of Automated and Manual QA/QC Techniques. 34th Conference on Environmental Information Processing Technologies, 98th AMS Annual Meeting. Abstract ID: 327309. Austin, TX.

Theisen, A. 2017. Data Quality Office. ARM/ASR Radar Workshop, Stonybrook, NY.

Kehoe, K., J. Monroe, J. King, A. Theisen, S. Moore, and R. Peppler. 2017. ARM Data Quality Office. ARM/ASR PI Meeting, Vienna, VA.

Theisen, A., J. Monroe, S. Moore, J. King, K. Kehoe, and R. Peppler. 2016. ARM Data Quality Office. ARM/ASR PI Meeting, Vienna, VA.

Johnson, K., Bharadwaj, N., Theisen, A., and Isom, B. 2016. Calibrating ARM's Cloud Radars: Process and Timeline. ARM/ASR PI Meeting, Vienna, VA.

King, J., K. Kehoe, J. Monroe, S. Moore, R. Peppler, and A. Theisen. 2015. Aerosol Observing System Data Quality Monitoring at the ARM Data Quality Office: Current Capabilities and Future Prospects. ARM Program Science Team Meeting, Vienna, VA.

Bartholomew, M.J., A. Theisen, J. Kyrouac. 2015. Proposed: An ARM Liquid Precipitation Data Product. ARM Program Science Team Meeting, Vienna, VA.

Bartholomew, M.J., J. Kyrouac, A. Theisen. 2015. ARM Strategic Plan for Observing Liquid Precipitation. ARM Program Science Team Meeting, Vienna, VA.

Peppler, R., J. Monroe, S. Moore, J. King, A. Theisen, and K. Kehoe. 2015. Data Quality: The Final Frontier. ARM Program Science Team Meeting, Vienna, VA.

Collis, S., S. Giangrande, A. Theisen, A. Fridlind, D. Wu, J. Helmus. 2014. High-resolution X-Band networked rainfall morphology. 8th European Conference on Radar in Meteorology and Hydrology, Garmisch-Partenkirchen, Germany.

Collis, S., S. Giangrande, J. Helmus, D. Wu, A. Fridlind, M. Vanlier-Walqui, A. Theisen. 2014. Measuring rainshafts: Bringing python to bear on remote sensing data. Scientific Computing with Python, Austin, TX.

Kehoe, K., S. Moore J.W. Monroe, A. Theisen, E. Kruse, H. Lorenzen, J. Ragland, B. Sullivan, K. Western, and R. Peppler. 2014. ARM Data Quality Office Historical Data Quality Report Review. ARM Program Science Team Meeting, Potomac, MD.

Collis, S., S. Giangrande, J. Helmus, and A. Theisen. 2014. High-resolution X-Band networked rainfall morphology. European Conference on Radar in Meteorology and Hydrology Garmisch-Partenkirchen, Germany.

Collis, S., S. Giangrande, J. Helmus, K. North, V. Ghatge, and A. Theisen. 2014. Prove it! ARM's Progress Towards a Suite of Verified Precipitating Cloud System Retrievals. ARM Program Science Team Meeting, Potomac, MD.

Giangrande, S., A. Theisen S. Collis, and A. Tokay. 2013. Precipitation Estimation from the ARM Distributed Radar Network During the MC3E Campaign. AMS 36th Radar Meteorology Conference. Breckenridge, CO.

Collis, Tao, A. Fridlind, Feng, Wang, Wu, Helmus, Giangrande and Theisen. 2013. Building Observational Targets from Scanning Weather Radars. AMS 36th Radar Meteorology Conference. Breckenridge, CO.

Collis, S., W. Tao, S. Giangrande, A. Fridlind, A. Theisen, and M. Jensen. 2013. Quantitative rainfall metrics for comparing volumetric rainfall retrievals to fine scale models. European Geophysical Union General Assembly, Vienna, Austria.

Collis, S., S. Giangrande, A. Theisen, and J. Helmus. 2013. ARM Remote Sensing Precipitation Radar Products from the Tropics. ARM Program Science Team Meeting, Potomac, MD.

Collis, S., S. Giangrande, J. Helmus, A. Theisen, N. Bharadwaj, K. Widener, and K. North. 2013. Value adding the Scanning ARM Precipitation Radars. ARM Program Science Team Meeting, Potomac, MD.

Theisen, A., S. Collis, S. Giangrande, and A. Tokay. 2013. Precipitation Estimation from the ARM Distributed Radar Network During the MC3E Campaign. ARM Program Science Team Meeting, Potomac, MD.

Moore, S., K. Kehoe, J.W. Monroe, A. Theisen, R. Peppler. 2013. ARM Climate Research Facility Data Quality Office. ARM Program Science Team Meeting, Potomac, MD.

Collis, S., S. Giangrande, A. Theisen, J. Helmus, N. Bharadwaj, and K. Widener. 2013. ARM Remote Sensing Precipitation Radar, Products from the Tropics. MJO Field Data and Science Workshop, Kohala Coast, Hawaii.

Collis, S., S. Giangrande, N. Bharadwaj, and A. Theisen. 2012. Networked observations of precipitating clouds systems in Oklahoma. Fall American Geophysical Union, San Francisco, CA.

Theisen, A., S. Giangrande, and S. Collis. 2012. Precipitation Estimation from the ARM Distributed Radar Network During the MC3E Campaign. Fall American Geophysical Union, San Francisco, CA.

Collis, S., S. Giangrande, M. Dunn, N. Bharadwaj, P. Kollias, A. Theisen, and K. North, 2012. The ARM End-to-End Geophysical Retrieval System. 7th European Conference on Radar in Meteorology and Hydrology, Toulouse, FR.

Theisen, A. 2012. ARM Data Quality Office Radar Quality Control. ARM Program Science Team Meeting, Crystal City, VA.

Theisen, A.K., S. Collis, S. Giangrande, R. Peppler. 2012. Quality Control Techniques for Precipitation Radar. ARM Program Science Team Meeting, Crystal City, VA.

Collis, S., K. North, S. Giangrande, N. Bharadwaj, K. Widener, A. Theisen, and P. Kollias. 2012. Moments to Models: Progress Towards a Suite of Precipitation Radar VAPs. ARM Program Science Team Meeting, Crystal City, VA.

Giangrande, S., A. Theisen, S. Collis. 2012. Precipitation Estimation from the ARM Distributed Radar Network During the MC3E Campaign. ARM Program Science Team Meeting, Crystal City, VA.

Theisen, A.K., K. Kehoe, J.W. Monroe, S. Moore, R. Peppler. 2011. Data Quality Office Inspection Tools and Techniques. ARM Program Science Team Meeting, San Antonio, TX.

Theisen, Adam and Mark Askelson. 2009. An In-Depth Analysis of a Banded Wintertime Precipitation Event. Northern Plains Weather Workshop, Rapid City, SD.

Askelson, M.A., J.S. Tilley, C.J. Theisen, A.K. Theisen. 2008. The Ganged Phased Array Radar Risk Mitigation System: Atmospheric Sciences Applications. 2008 AGU. Ft. Lauderdale, FL

Kucera, P. A., A. Theisen, D. Langerud. 2008. Polarimetric Radar Analysis of Hygroscopic Seeding. 17th Conference on Planned and Inadvertent Weather Modification. Westminster, CO.

Kucera, P. A., A. Theisen, D. Langerud. 2007. Polarimetric Radar Analysis of Hygroscopic Seeding. Weather Mod. Assoc. Annual Conference, San Francisco, CA.

Kucera, P. A., A. Theisen, D. Langerud. 2007. Polarimetric Radar Analysis of Hygroscopic Seeding. Ninth WMO Scientific Conference on Weather Mod., Antalya, Turkey.

Organization of Workshops and Symposia

Theisen, A. N. Hickmon, and G. Doyle. 2019. ARM Instrument Mentor Meeting. Argonne National Laboratory, IL.

Significant Software Developed

Adam Theisen, Bobby Jackson, Zach Sherman, Ken Kehoe, Corey Godine, Alyssa Sockol, ... Nicki Hickmon. 2019. Atmospheric data Community Toolkit (ACT). Zenodo.

<http://doi.org/10.5281/zenodo.3855668>

