Biographical Sketch - David Neil Whiteman

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Professional Preparation

1978, Physics, City of London Polytechnic, London, England (one semester)
1979, B.A. Physics, Williams College (cum laude, Phi Beta Kappa), Williamstown, MA
1980-1986, Meteorology, University of Maryland, College Park (various coursework)
1997, M.S. Applied Physics, University of Maryland Baltimore County (UMBC), Baltimore, MD
2000, Ph.D. Applied Physics, UMBC (dissertation entitled "Investigation of Cloud Properties using a Raman Lidar")

Appointments

2017 – Present, Senior Researcher, Howard University Beltsville Campus
2017- 2020, Senior Scientist Emeritus, NASA/GSFC, Greenbelt, MD
2017 – Present, Howard University Research Scientist, Beltsville, MD
1979 – 2017, Physical Scientist, NASA/Goddard Space Flight Center, Greenbelt MD

Publications (relevant and other)

1. Whiteman, D. N., K. Boateng, S. Harbison, H. Oke, A Rappaport, M. Watson, A. Ajayi, O. Okunuga, R. Forno, M. Andrade' Breakdown of a Nocturnal Inversion Measured with a Low-Cost Tethersonde System: a High School Student Experiment, Bulletin of the American Meteorological Society, print publication Feb 1, 2023, online publication March 2, 2023, DOI: https://doi.org/10.1175/BAMS-D-21-0150.1
2. Whiteman David N., Di Girolamo Paolo, Behrendt Andreas, Wulfmeyer Volker, Franco Noemi, Statistical Analysis of Simulated Spaceborne Thermodynamics Lidar Measurements in the Planetary Boundary Layer, Frontiers in Remote Sensing, Vol 3, 2022, https://www.frontiersin.org/article/10.3389/frsen.2022.810032, doi 10.3389/frsen.2022.810032, ISSN 2673-6187
3. Whiteman, D. N., Daniel Pérez-Ramírez, Igor Veselovskii, Peter Colarco, Virginie Buchard, Retrievals of aerosol microphysics from simulations of spaceborne multiwavelength lidar measurements, In Journal of Quantitative Spectroscopy and Radiative Transfer, Volume 205, 2018, Pages 27-39, ISSN 0022-4073, (2018) https://doi.org/10.1016/j.jqsrt.2017.09.009. (http://www.sciencedirect.com/science/article/pii/S0022407317306398)
4. Whiteman, D. N., Cadirola, M., Venable, D., Calhoun, M., Miloshevich, L., Vermeesch, K., Twigg, L., Dirisu, A., Hurst, D., Hall, E., Jordan, A., and Vömel, H.: Correction technique for Raman water vapor lidar signal-dependent bias and suitability for water vapor trend monitoring in the upper troposphere, Atmos. Meas. Tech., 5, 2893-2916, doi:10.5194/amt-5-2893-2012, 2012.

5. Whiteman, D. N., K. C. Vermeesch, L. D. Oman, and E. C. Weatherhead (2011), The relative importance of random error and observation frequency in detecting trends in upper tropospheric water vapor, J. Geophys. Res., 116, D21118, doi:10.1029/2011JD016610.
6. F. J. Immler, J. Dykema, T. Gardiner, D. N. Whiteman, P. W. Thorne, and H. Vömel, Reference Quality Upper-Air Measurements: guidance for developing GRUAN data products, Atmos. Meas. Tech., 3, 1217-1231, 2010.
7. Miloshevich LM, Vomel H, Whiteman DN, T. Leblanc, Accuracy assessment and correction of Vaisala RS92 radiosonde water vapor measurements, J. Geophys. Res, Vol. 114, D11305 (2009).
8. Whiteman, D. N., F. Russo, L. Miloshevich, B. Demoz, Z. Wang, I. Veselovskii, H. Voemel, S. Hannon, B. Lesht, F. Schmidlin, A. Gambacorta, C. Barnet, Analysis of Raman lidar and radiosonde measurements from the AWEX-G field campaign and its relation to Aqua validation, J. Geophys. Res., 111, D09S09, doi:10.1029/2005JD006429 (2006).
9. Whiteman, D. N., B. Demoz, P. Di Girolamo, J. Comer, I. Veselovskii, K. Evans, Z. Wang, M. Cadirola, K. Rush, G. Schwemmer, B. Gentry, S. H. Melfi, B. Mielke, D. Venable, T. Van Hove, Raman Water Vapor Lidar Measurements During the International H2O Project. I. Instrumentation and Analysis Techniques, J. Atmos. Oceanic Technol., 23, 157-169 (2006).
10. Whiteman, D. N., B. Demoz, P. Di Girolamo, J. Comer, I. Veselovskii, K. Evans, Z. Wang, D. Sabatino, G. Schwemmer, B. Gentry, R-F. Lin, A. Behrendt, V. Wulfmeyer, E. Browell, R. Ferrare, S. Ismail, J. Wang, Raman Water Vapor Lidar Measurements During the International H2O Project. II. Case Studies, J. Atmos. Oceanic Technol., 23, 170-183 (2006).
11. Revercomb, H.E., D. Turner, D. Tobin, R. Knuteson, W. Feltz, J. Barnard, J. Bosenberg, S. Clough, D. Cook, R. Ferrare, J. Goldsmith, S. Gutman, R. Halthore, B. Lesht, J. Liljegren, H. Line, J. Michalsky, V. Morris, W. Porch, S. richardson, B. Schmid, M. Splitt, T. Van Hove, E. Westwater, D. Whiteman, "The Atmospheric Radiation Measurement (ARM) Program's Water Vapor Intensive Observation Periods: Overview, Initial Accomplishments, and Future Challenges, B AM METEOROL SOC 84 (2): 217-236 (2003).
12. Whiteman, D. N., S. H. Melfi, R. A. Ferrare, "Raman Lidar System for Measurement of Water Vapor and Aerosols in the Earth's Atmosphere", Appl. Opt. Vol. 31 No. 16 (1992)

Synergistic Activities

1. Field Campaign Leadership
    a. NASA CAMEX-3 (1998), AWEX-G (2003), periodic WAVES campaigns (2006-2021)
2. Conference and Workshop Organization
    a. NDACC Calibration workshop (2010)
    b. GRUAN ICM (2014)
    c. Latin American Lidar Worshops (2008-2014)
3. Research Advisor to graduate students
    a. UMBC – Felicita Russo (2006)

    b. UMD – Scott Rabenhorst (2010)
    c. HU – Rasheen Connell (2009), Monique Walker (2014)
4. International Committee Participation
    a. GRUAN Task Team co-Lead and membership (current)
    b. GCOS Working Group on Atmospheric Reference Observations (current)
    c. GAW Chacaltaya, Bolivia Steering Committee (current)
5. Development of new analysis techniques using Raman lidar
    a. Warm cloud retrievals – droplet size, liquid water content
    b. Cold cloud retrievals – multiple scattering corrected optical depth and particle size
    c. Development of temperature dependent Raman lidar equations
    d. Correction technique for systematic biases in UT Raman water vapor lidar measurements