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Daniel Oster Ph.D.

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PROFILE

Researcher with over eight years experience in aerosol, in-situ and optical remote sensing, measurements such as: Lidar, radiometry, nephelometry, telemetry, and wind lidar. Expertise in analysis and measurements with electron microscope, spectroscopy, gravimetric, tensile, humidifier systems, particle generation, sizing, and counting. Vast practice in optical measurements and instrumentation including: Laser, polarization, photo-detection, transient digitizers and photomultiplier tubes. Solid understanding of flow control, micro-controllers, machining.
Supervisor and leader with experience leading, training and supervising scientists while overseeing coordination of multi-disciplinary tasks, and development planning.
Sales professional adept at providing exceptional customer service, providing technical support, marketing, design and distribution of product documentation, brochures and Web sites.

EDUCATION

Ph.D. in Atmospheric Physics **GPA: 3.63** Expected: 09/20xx
University of Maryland, Baltimore County, (UMBC), Baltimore, MD

M.S. in Physics **GPA: 3.63** 01/20xx
University of Maryland, Baltimore County, (UMBC), Baltimore, MD

B.S. Physics Engineering **GPA: 3.94** 12/20xx
Universidad del Cauca, Popayan, Colombia

PROFESSIONAL EXPERIENCE

University of Maryland, Baltimore County, (UMBC) **Baltimore, MD**
Graduate Research Assistant - *Joint Center for Earth Systems Technology (JCET)* 08/20xx - Present

Aerosol measurements and analysis

- Designed and built a humidifier-dryer system for the hygroscopic growth measurements with a nephelometer to study the water uptake of aerosol particles.
- Study effect of relative humidity for laboratory generated and ambient aerosol particles in different USA regions.
- Investigated effect of water on phase function and polarization on ambient and laboratory-generated particles.
- Performed installation, calibration, and data analysis of instruments such as; LIDAR, nephelometers, sunphotometer, particle samplers, gas samplers, ozonesondes, radiosondes, wind-lidar.
- Collaborated with the Laboratory of Aerosols and Clouds Optics (LACO) in the construction of an imaging polar nephelometer (PI-Neph).

Air Quality

- Studied main sources of air pollution in the Baltimore metropolitan area (2008-2012) using $PM_{2.5}$ speciated data.
- Performed air quality and aerosol optical measurements for the Maryland Department of Environment (MDE) including lidar observations.
- Weekly blogger in the U.S. Air Quality Blog - The Smog Blog: http://alg.umbc.edu/usaq/ describing the main air quality conditions in the US using ground and satellite data.

NASA Field Campaigns

- Participated in National Aeronautics and Space Administration (**NASA**) campaigns for Deriving Information on Surface Conditions from Column and Vertically Resolved Observations relevant to Air Quality (DISCOVER-AQ) performing ground aerosol measurements in:
  - Baltimore-Washington corridor 2011.
  - San Joaquin Valley, California 2013
  - Colorado 2014.
- Participated in a **NASA** campaign for Studies of Emissions and Atmospheric composition, Clouds and Climate Coupling by Regional Surveys ($SEACR^4S$), performing aerosol optical measurements on a NASA **DC-8 aircraft**.
  - Houston, Texas August 2013.

Department of Environment – Cauca, Colombia **Popayan - Colombia**
Air Quality Engineer 08/20xx -05/20xx

- Led a group of 5 engineers to perform air quality measurements of PM_{10}, $PM_{2.5}$, NOx, and O_3 parameters in different regions with high influence of agricultural burnings.
- Trained a group of 25 engineers in the in the operation and calibration of instruments such Partisol 2025 dichotomous (Thermo Scientific), Cubis microbalance (Sartorius), and scanning spectrometer (Unico).
- Directed measurements and evaluated emissions from major industries in Cauca-Colombia.
- Analyzed long-term industrial emissions and its impact on air quality; results used to regulate emission controls.

TEACHING EXPERIENCE

University of Maryland, Baltimore County, Baltimore, MD 08/20xx -05/20xx

- Ideas in Astronomy
- Modern Physics.
- Introductory Physics Laboratory

Universidad del Cauca, Colombia **Popayan Colombia**

- Teaching assistant in the physics labs. 02/20xx – 08/20xx

Universidad Cooperativa de Colombia

- Instructor for electronics and systems labs 05/20xx – 04/20xx

SALES EXPERIENCE

Single-Click Computers **Popayan, Colombia**
Co-founder/Sales Professional 01/20x – 04/20xx

- Assembled standard and customized computer CPU's for individuals and companies.
- Provided installation and technical support of assembled computers, computer parts, software, routers, servers, security systems, copiers, printers, and projectors.

SKILLS

Programming: Matlab, C/C++
Control: LabVIEW
OS: Windows, Mac OS, Linux
Web Design: WordPress, HTML.
Computer Aided Design: Pro Engineer, Solid Works
Languages: Spanish (native speaker)

SELECTED PUBLICATIONS AND PRESENTATIONS

Oster D., Delgado, R., Wesloh, D., Powers, R.J., and Hoff, R., *Aerosol particulate matter in the Baltimore Metropolitan Area: Temporal variation over a six-year period*. Revised for publication. *J. Air & Waste Manage. Assoc. 2015.* UAWM-2015-0048.

Oster D., L. Ziemba, A. Beyersdorf, T. Berkoff, Q. Zhang, R. Delgado, C. Hennigan, and Hoff, R., *Hygroscopic Measurements of Aerosol Particles in the San Joaquin Valley CA, Baltimore MD, and Golden CO*. *Under revision*.

Moshary, F., Cordero, L., Wu, Y., Gross, B., **Orozco, D**., Sawamura, P., & McCormick, M. P. *Assessment of long scale plume transport to the US East coast using coordinated CREST lidar network and synergistic AERONET and satellite measurements*. Proc. SPIE 8894, Lidar Technologies, Techniques, and Measurements for Atmospheric Remote Sensing IX, 88940K , 2013.

Oster D, Alegria D, Gaona S, Bastidas A, Rodriguez E. *Design and construction of a sunphotometer for atmospheric aerosols characterization*. Optica Pura y Aplicada (OPA) Vol 41, 117-121, 2008.

Oster D, Alegria D, Gaona S, Bastidas A, Rodriguez E. *Classification and characterization of atmospheric aerosol in Popayán, Colombia* . Optica Pura y Aplicada (OPA) Vol 41, 123-127-02, 2008.