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Project Scientist
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Education and Credentials

- Post-graduate postdoctoral researcher, University of Washington, Bothell, 2001-2005. Advisor – Dan Jaffe.
- Ph.D. Chemistry (Analytical/Environmental emphasis), University of Washington, Seattle, 1995. Advisor – Richard Gammon.
- B.S. Chemistry with honors, University of California, Santa Cruz, 1988. Advisor – David Kliger.

Current Research Interests and Specialties

- Understanding the atmospheric cycling of mercury, including the formation of Hg^{II} species in the free troposphere, and spatio-temporal patterns of wet and dry deposition.
- Measurements of monomethyl mercury in rainwater, fog water, and sea water to determine sources to aquatic ecosystems.
- Detection of atmospheric plumes of anthropogenic pollution (CO, O₃, Hg, particulates, VOCs, NO_y, SO_x, etc.) on local, regional, and hemispheric scales.
- Interpretation of meteorological measurements using backward air trajectory calculations (residence time, clustering, multivariate analysis) to infer sources of pollution plumes.
- Operation of field and shipboard sites for the measurements of mercury and other atmospheric pollutants in the atmospheric marine boundary layer and the free troposphere.

Grants and Awards

- U.S. EPA, Clean Air Markets Division, Washington, DC, Monitoring Speciated Atmospheric Mercury with the Tekran Instruments at Elkhorn Slough, California. Duration – renewed yearly until 2014.
- National Science Foundation, Using GIS to Integrate the NOAA HYSPLIT Model with Surface-Based Air Quality and Mercury Deposition Data, with Slippery Rock University, Duration – through 2011.
- Packard Endowment for Institute of Marine Sciences, Investigation of Speciated Atmospheric Mercury Deposition in Fog Water at Elkhorn Slough, California, Duration – through 2011.
- National Oceanic and Atmospheric Administration, Estimates of Sources of Gaseous Mercury Emissions in the Los Angeles Basin based on Hg/CO and Hg/SO₂ Ratios Measured during the CalNex Cruise, Duration – through 2010.

Employment

- Project Scientist Step 1, Department of Microbiology and Environmental Toxicology, University of California, Santa Cruz, 2010-present, Supervisor – Russ Flegal.
- Affiliated Researcher, Department of Microbiology and Environmental Toxicology, University of California, Santa Cruz, 2006-2009, Supervisor – Russ Flegal.
- Consultant for University of Nevada, Reno, under Mae Gustin, 2008-2010.
- Consultant for Frontier Geosciences, Seattle, Washington, under Eric Prestbo 2006-2007.

- Post-doctoral researcher for the University of Washington, Bothell, Washington, under Dan Jaffe, 2001-2005.
- Lecturer in the Interdisciplinary Arts and Sciences Department, University of Washington, Bothell, 2000-2005.
- Lecturer of chemistry at Seattle Community Colleges, Shoreline Community College, Bellevue Community College and Green River Community College, 1995-2001.
- Analytical chemist for Toxscan Inc., Watsonville, California, 1988-1990.

Research Publications

Weiss-Penzias, P., M. S. Gustin, S. N. Lyman, 2011, Sources of gaseous oxidized mercury and mercury dry deposition at two southeastern U.S. sites, *Atmospheric Environment*, submitted.

Conaway, C.H., F.J Black, **P. Weiss-Penzias**, M. Gault-Ringold, A.R. Flegal, 2010, Mercury speciation in Pacific coastal rainwater, Monterey Bay, California, *Atmospheric Environment*, 44, 1788-1797

Weiss-Penzias, P., M. S. Gustin, S. Lyman, 2009. Observations of speciated atmospheric 466 mercury at three sites in Nevada, USA: Evidence for a free tropospheric source of reactive 467 gaseous mercury. *Journal of Geophysical Research*, 114, doi: 10.1029/2008JD011607.

Chand, D., D. A. Jaffe, P. C. Swartzendruber, E. Prestbo, W. Hafner, **P. Weiss-Penzias**, S. Kato, A. Takami, S. Hatakeyama, and Y. Kajii, 2008, Reactive and particulate mercury in the Asian marine boundary layer. *Atmospheric Environment*, 42, 7988–7996.

Ebinghaus, R., C. Banic, S. Beauchamp, D. Jaffe, H. H., Kock, N. Pirrone, L. Poissant, F. Sprovieri, and **P. Weiss-Penzias**, 2008 Spatial coverage and temporal trends of land-based atmospheric mercury measurements in the northern and southern hemispheres. In *Mercury Fate and Transport in the Global Atmosphere: Measurements, Models, and Policy Implications*, N. Pirrone and R. Mason Eds., United Nations Environment Program Global Mercury Partnership.

Weiss-Penzias, P., D. A. Jaffe., P. S. Swartzendruber, W. Hafner, D. Chand, and E. Prestbo, 2007. Quantifying Asian and biomass burning sources of mercury using the Hg/CO ratio in pollution plumes observed at the Mount Bachelor observatory, *Atmospheric Environment*, 41, 4366-4379. (*this article has been cited 39 times according to the Web of Science*)

Weiss-Penzias, P., D. A. Jaffe., P. S. Swartzendruber, J. B. Dennison, D. Chand, W. Hafner, and E. Prestbo, 2006, Observations of Asian air pollution in the free troposphere at Mt. Bachelor Observatory during the spring of 2004. , *Journal of Geophysical Research*, 111, D10304, doi: 10.1029/2005JD006522.

Swartzendruber, P. S., D. A. Jaffe., E. Prestbo, **P. Weiss-Penzias**, N. Selin, R. Park, D. Jacob, S. Strode, and L. Jaegle, 2006. Observations of Reactive Gaseous Mercury in the Free-Troposphere at the Mt. Bachelor Observatory, *Journal of Geophysical Research*, 111, D24301, doi:10.1029/2006JD007415.

Jaffe, D. A., E. Prestbo, P. Swartzendruber, **P. Weiss-Penzias**, S. Kato, A. Takami, S. Hatakeyama, and Y. Kajii, 2005, Export of Atmospheric Mercury from Asia. *Atmospheric Environment*, 39, 3029-3038. (*this article has been cited 94 times according to the Web of Science*)

Weiss-Penzias, P., D. Jaffe, L. Jaegle, and Q. Liang, 2004. Influence of long-range-transported pollution on the annual and diurnal cycles of carbon monoxide and ozone at Cheeka Peak Observatory, *Journal of Geophysical Research*, 109, D23S14, doi:10.1029/2004JD004505.

Weiss-Penzias, P., D. Jaffe, A. McClintick, E. Prestbo, and M. Landis, 2003, Gaseous elemental mercury in the marine boundary layer: Evidence for rapid removal in anthropogenic pollution. *Environmental Science and Technology*, 37, 3755-3763. (this article has been cited 52 times according to the Web of Science)

Jaeglé, L., D. A. Jaffe, H. U. Price, **P. Weiss-Penzias**, P. I. Palmer, M. J. Evans, D. J. Jacob, and I. Bey, 2003, Sources and budgets for CO and O₃ in the northeastern Pacific during the spring of 2001: Results from the PHOBEA-II Experiment. *Journal of Geophysical Research*, 108(D20), 8802, doi:10.1029/2002JD003121.

Jaffe, D., M. S. Landis, **P. Weiss-Penzias**, and E. Prestbo, 2003, Comment on 'Mercury concentrations in coastal California precipitation: Evidence of local and trans-Pacific fluxes of mercury to North America' by D. J. Steding and A. R. Flegal. *Journal of Geophysical Research*, 108(D17), 4553, doi:10.1029/2003JD003504.

Jaffe, D. and **P. Weiss-Penzias**, 2002, Biogeochemical Cycles – The Nitrogen Cycle. In Encyclopedia of Atmospheric Sciences, J. Holton, Ed., Elsevier.

Weiss, P. S., J. E. Johnson, R. H. Gammon, and T. S. Bates, 1995, Reevaluation of the open ocean source of carbonyl sulfide to the atmosphere. *Journal of Geophysical Research*, 100(D11), 23,083–23,092.

Weiss, P. S., S. S. Andrews, J. E. Johnson, and O. C. Zafiriou, Photoproduction of carbonyl sulfide in south Pacific Ocean waters as a function of irradiation wavelength, 1995, *Geophysical Research Letters*, 22(3), 215–218.

Milder, S. J, **P. S. Weiss**, D. S. Kliger, 1989, Time-resolved absorption, circular dichroism, and emission of tRNA. Evidence that the photo-cross-linking of 4-thiouridine in tRNA occurs from the triplet state. *Biochemistry*, 28(5), 2258-2264.

Oral Presentations

2010, “Observations of plumes containing gaseous mercury from point sources in the Los Angeles Basin during the 2010 CalNex ship cruise”, American Geophysical Union Fall Meeting, San Francisco, California.

2008, National Atmospheric Deposition Program, Annual Meeting, Madison, Wisconsin – *Invited Speaker*

2008, UNEP Global Partnership of Atmospheric Mercury Transport and Fate Research, Rome Italy – *Invited Speaker*

2006, “Atmospheric mercury fluxes based on ratios with carbon monoxide in pollution plumes from Asian, U.S., and biomass burning sources”. American Geophysical Union Fall Meeting, San Francisco, California.

2006, “Identification and quantification of mercury source regions from year-long observations at a mountain-top site in the free troposphere”. Eighth International Conference on Mercury and a Global Pollutant, Madison, WI.

2005, “Teaching Environmental Sustainability through Indigenous Culture: The History of Ishi and the Yahi People of California”. First International Conference on Environmental, Cultural, Economic, and Social Sustainability, Honolulu, Hawaii.

2001, "Spring and Summer Observations of Carbon Monoxide, Ozone, Non-Methane Hydrocarbons and Elemental Mercury". American Geophysical Union Fall Meeting, San Francisco, California.

Other Professional Activities

2010, Participant, NADP Annual Meeting, Lake Tahoe, CA

2009, Poster presentation, American Geophysical Union Fall Meeting, San Francisco, California.

2008, Poster presentation, American Geophysical Union Fall Meeting, San Francisco, California.

2007, Poster presentation, American Geophysical Union Fall Meeting, San Francisco, California.

2007, Participant, CALFED Bay-Delta Program Annual Workshop and Review of Mercury Projects, Sacramento, California.

2006, Participant, NADP Planning Meeting for a Proposed Mercury Trends Network (MTN), Riverside, California.

Student Fellowships

1992-1995, Graduate fellowship from Global Change Education Program, U.S. Department of Energy.