CURRICULUM VITAE

Jonathan D. Raff

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EDUCATION

A.B. Chemistry, Occidental College, Los Angeles, CA, 1998

M.S. Inorganic Chemistry, University of Minnesota, Minneapolis, MN, 2001; Advisor: Prof. Kent R. Mann. Thesis: "Synthesis and Physical Studies of Oligothiophene-Substituted Beta-Diketones and Their Metal Complexes"

Ph.D. Environmental Science, Indiana University, Bloomington, IN, 2007; Advisor: Prof. Ronald A. Hites. Thesis: "Transport of Organic Pollutants and their Atmospheric Fates"

ACADEMIC APPOINTMENTS

Assistant Professor, School of Public and Environmental Affairs, Indiana University, Bloomington, IN (2010–present)

Adjunct Assistant Professor, Department of Chemistry, College of Arts and Science, Indiana University, Bloomington, IN (2012–present)

Associate Member of the University Graduate School with endorsement to direct dissertation committees, Indiana University, Bloomington, IN (2010–present).

OTHER APPOINTMENTS AND PROFESSIONAL CONSULTANTSHIPS

Post-Doctoral Fellow, with Prof. Barbara Finlayson-Pitts, University of California – Irvine, CA (2007–2010)

Graduate Researcher, with Prof. Ronald A. Hites, Indiana University, Bloomington, IN (2001–2007)

Private Consultant for the Law firm of McCrea & McCrea, Bloomington, IN (2006)

Graduate Researcher, with Prof. Kent R. Mann, University of Minnesota, Minneapolis, MN (1998–2001)

Undergraduate Researcher, with Prof. Phoebe K. Dea, Occidental College, Los Angeles, CA (1995–1998)

PROFESSIONAL SOCIETIES

American Association for the Advancement of Science
American Chemical Society
American Geophysical Union

HONORS

Department of Energy (DOE) Early Career Research Program Award, 2015

National Science Foundation (NSF) CAREER Award, 2014

Graduate Teaching Award, School of Public and Environmental Affairs, 2012 & 2013

Atmospheric Chemistry Conference for Emerging Senior Scientists (ACCESS X). Selected participant and recipient of travel grant, Aug, 21–24, 2009

Teaching Assistant of the Year Award, Occidental College, Department of Chemistry, 1998.

Howard Hughes Medical Institute Undergraduate Summer Research Apprenticeship and Professional Apprenticeship, 1997

TEACHING ASSIGNMENTS

1. School of Public and Environmental Affairs, Bloomington, IN

E536, Environmental Chemistry (Fall 2010–2015)

E564, Organic Pollutants: Environmental Chemistry and Fate (Spring 2011, 2013–2015)

E464, Organic Pollutants: Environmental Chemistry and Fate (Spring 2011, 2013–2015)

E262, Environmental Problems and Solutions (Spring 2012)

E272, Introduction to Environmental Sciences (Spring 2014, 2016)

Associate Instructor for Environmental Chemistry (Fall 2003)

2. Department of Chemistry, University of Minnesota, Minneapolis, MN

Teaching Assistant for General Chemistry and Inorganic Chemistry Laboratories, University of Minnesota (1998–2001)

3. Occidental College, Los Angeles, CA

Teaching Assistant for Organic Chemistry Laboratory, Occidental College, CA (1996–1998)

SERVICE

1. University-Wide Service

Panelist at the Introduction to the NSF CAREER workshop organized by the Office of the Vice Provost for Research. (April 2014 and 2015)

Judge for the Indiana Academy of Science's competition for Outstanding Junior Scientist and the Research Presentation sponsored by the College of Arts & Sciences. (2010–present)

Judge for the Annual Women in Science Research Conference sponsored by the Office for Women Affairs. (Spring 2011 & 2012)

Round-table speaker at the Grant Writing Workshop for American Indians/Indigenous Students in Science, an NSF-funded activity administered by the Alliance for Graduate Education and the Professoriate Grant Program (AGEP) and the IU Graduate School. (Feb. 4, 2012)

Round-table speaker during the 13th Annual Association of SPEA Ph.D. Students Conference. Topic: "Surviving & Thriving during the Early Years of a Faculty Position. (March 29, 2013)

Poster session judge for the annual research symposium sponsored by the IU chapter of the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCChE). (2011)

2. University Committee Service

Bachelors of Science in Environmental Science (BSES) Program Committee (2013–present)

Masters of Science in Environmental Science (MSES) Admissions Committee (2011–present)

Environmental Science Ph.D. Program Committee. (2011–present)

Ad hoc search and screen committee for environmental science faculty administrative assistant (2012)

3. Student Service

Gatekeeper for the Environmental Chemistry requirement of the Masters of Science in Environmental Science (MSES) program. (2011–present)

Advisor for the Masters of Science in Environmental Science (MSES) Environmental Chemistry, Toxicology, and Risk Assessment concentration. (2010–present)

Presenter at Math Camp for students entering the MSES and MSES/MPA programs. (Summer 2010 & 2011)

Poster session judge for the annual research symposium sponsored by the IU chapter of the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCChE). (2011)

4. Public Service

Organized outreach lectures and demonstrations by Raff laboratory members for Earth & Environmental Science class at Edgewood High School, Ellettsville, IN. (November 22, 2013)

Pathfinders Summer Program at IU: Gave lecture and chemistry demonstrations to 155 middle school students from Indianapolis and Gary, IN on the topic of air pollution and climate change. (2011)

Science Advisor for "A Moment of Science," a radio program aired by WFIU, Bloomington, IN. (2011–present)

PROFESSIONAL ACTIVITIES

1. Thesis and Dissertation Committees Chaired

Stephanie Hagan, Ph.D. Student, Chemistry Department, Indiana University (2014–present)

Hannah Peel, M.S. student (thesis track), SPEA, Indiana University (2014–2015)

Melissa A. Donaldson, Ph.D. student, SPEA, Indiana University (2013–present)

Nicole K. Scharko, Ph.D. student, SPEA, Indiana University (2012–present)

Mulu A. Kebede, Ph.D. student, SPEA, Indiana University. (2011–present)

Nicole K. Scharko, M.S. student (thesis track), SPEA, Indiana University (2011–2012)

2. Thesis and Dissertation Committee Member

Brandon Bottorff, Ph.D. student, Department of Chemistry, Indiana University (2013–present)

Jennifer Liljegren, Ph.D. student, SPEA, Indiana University. (graduated 2013)

Pamela S. Rickly, Ph.D. student, SPEA, Indiana University. (2011–present)

Yuning Ma, Ph.D. student, SPEA, Indiana University. (graduated 2013)

Paola Crippa, Ph.D. student, College of Arts and Sciences, Indiana University. (graduated 2013)

Pamela S. Rickly, M.S. student, SPEA, Indiana University. (2011)

3. *Post-doctoral Fellows Mentored*

Andrew Berke, Ph.D. University of Wisconsin. (2012–2014)

4. *Undergraduate Student Researchers Mentored*

Laura Appelt, BSES student, Indiana University. (graduated in 2013)

Lauren Swierk, BSES student, Indiana University. (graduated in 2013)

Austin Doyle, BSES student, Indiana University. (graduated in 2014)

Marissa Martinez, Summer Researcher with the Community for Women in Science, Technology, Informatics, and Math. (summer 2013)

Jimena Flores, Groups Scholars Program Summer Research Program. (summer 2013)

LeAndra Slayton, Groups Scholars Program Summer Research Program (summer 2014)

Briana Catanzano, Groups Scholars Program. (2014–present)

Ruth Martinez, Groups Scholars Program Summer Research Program (summer 2015)

5. Peer Reviewer for Grant Proposals

National Oceanic and Atmospheric Administration (NOAA) and the National Science Foundation (NSF).

6. Peer Reviewer for Professional Journals

Environmental Science and Technology, Atmospheric Chemistry and Physics, Environmental Science and Technology Letters, Journal of Physical Chemistry, Proceedings of the National Academy of Science USA, Atmospheric Environment, Chemosphere, Journal of Geophysical Research, Nature Geoscience, Analytical Chemistry, International Journal of Chemical Kinetics.

7. Additional professional service

Co-organizer and convener (with Andrew Ault, U. Michigan) for the oral and poster sessions titled, "Environmental Interfaces in the Atmosphere: From Surface Chemistry to Air Quality, Climate, and Health Effects" at the 248th ACS National Meeting & Exposition, San Francisco, CA (Aug. 2014)

Co-organizer and convener (with Philip S. Stevens) for the oral and poster sessions titled, "Sources and Chemistry of Atmospheric Oxidants" at the Fall 2013 Meeting of the American Geophysical Union in San Francisco, CA (Dec. 2013)

Presided over sections of the "Air-Surface Interactions: Chemistry from Molecular to Global Climate Scales" session at the 242nd American Chemical Society meeting in Denver, CO. (Sept. 2011)

PUBLICATIONS

1. Books

Hites, R. H. and Raff J. D. *Elements of Environmental Chemistry*, **2012**, 2nd ed. John Wiley & Sons, Hoboken, NJ, pp. 339

2. Invited Commentary and Editorials

Raff, J. D. "Night-time sinks, daytime sources," *Nat. Geoscience*, **2015**, *8*, 5–7.

3. Peer-reviewed journal articles

Scharko, N. K., Schuette, U. M. E., Berke, A. E., Banina, L., Peel, H. R., Donaldson, M. A., Hemmerich, C., White, J. R., Raff, J. D. "Combined Flux Chamber and Genomics Approach Links Nitrous Acid Emissions to Ammonia Oxidizing Bacteria and Archaea in Urban and Agricultural Soil," *Environ. Sci. Technol.* **2015**, DOI: 10.1021/acs.est.5b00838.

Donaldson, M. A., Bish, D. L., Raff, J. D. "Soil Surface Acidity Plays a Determining Role in the Atmospheric-Terrestrial Exchange of Nitrous Acid," *Proc. Natl. Acad. Sci. USA*, **2014**, *111*, 18472–18477.

Scharko, N. K., Berke, A. E., Raff, J. D. "Release of Nitrous Acid and Nitrogen Dioxide from Nitrate Photolysis in Acidic Aqueous Solutions," *Environ. Sci. Technol.* **2014**, *48*, 11991–12001.

Donaldson, M. A., Berke, A. E., Raff, J. D. "Uptake of Gas Phase Nitrous Acid onto Boundary Layer Soil Surfaces," *Environ. Sci. Technol*. **2014**, *48*, 375–383.

Kebede, M. A., Scharko, N. K., Appelt, L. E., Raff, J. D. "Formation of Nitrous Acid During Ammonia Photooxidation on TiO_2 under Atmospherically Relevant Conditions," *J. Phys. Chem. Lett*. **2013**, *4*, 2618–2623.

Kebede, M. A., Varner, M. E., Scharko, N. K., Gerber, R. B., Raff, J. D. "Photooxidation of Ammonia on TiO_2 as a Source of NO and NO_2 under Atmospheric Conditions," *J. Amer. Chem. Soc*. **2013**, *135*, 8606–8615.

Moussa, S. G., Stern, A. C., Raff, J. D., Dilbeck, D. J., Tobias, D. J., Finlayson-Pitts, B. J. "Experimental and Theoretical Studies of the Interaction of Gas Phase Nitric Acid and Water with a Self-Assembled Monolayer," *Phys. Chem. Chem. Phys*. **2013**, *15*, 448–458.

Raff, J. D., Szányi, J., Finlayson-Pitts, B. J. "Thermal and Photochemical Oxidation of Self-Assembled Monolayers on Alumina Particles Exposed to Nitrogen Dioxide" *Phys. Chem. Chem. Phys*. **2011**, *13*, 604–611.

Raff, J. D., Finlayson-Pitts, B. J. "Hydroxyl Radical Quantum Yields from Isopropyl Nitrite Photolysis in Air" *Environ. Sci. Technol*. **2010**, *44*, 8150–8155.

Njegic, B., Raff, J. D., Finlayson-Pitts, B. J., Gordon, M., Gerber, R. B., "Catalytic Role for Water in Atmospheric Production of ClNO" *J. Phys. Chem. A* **2010**, *114*, 4609–4618.

Raff, J. D., Njegic, B., Chang, W., Dabdub, D., Gerber, R. B., Gordon, M., Finlayson-Pitts, B. J. "Chlorine Activation Indoors and Outdoors via Surface-Mediated Reactions of Nitrogen Oxides with Hydrogen Chloride" *Proc. Natl. Acad. Sci. USA* **2009**, *106*, 13647–13654.

Kamboures, M. A., Raff, J. D., Miller, Y., Phillips, L. F., Finlayson-Pitts, B. J., Gerber, R. B. "Complexes of HNO_3 and NO_3^- with NO_2 and N_2O_4, and Their Potential Role in Atmospheric HONO Formation" *Phys. Chem. Chem. Phys*. **2008**, *39*, 6019–6032.

Raff, J. D., Hites, R. A. "Deposition versus Photochemical Removal of PBDEs from Lake Superior Air" *Environ. Sci. Technol.* **2007**, *41*, 6725–6731.

Raff, J. D., Hites, R. A. "Gas-Phase Reactions of Brominated Diphenyl Ethers with OH Radicals" *J. Phys. Chem. A* **2006**, *110*, 10783–10792.

Raff, J. D., Stevens, P. S.; Hites, R. A. "Relative Rate and Product Studies of the OH-Acetone Reaction" *J. Phys. Chem. A* **2005**, *109*, 4728–4735.

Raff, J. D., Hites, R. A. "Transport of Sediment-Bound Toxaphene in the Mississippi River" *Environ. Sci. Technol*. **2004**, *38*, 2785–2791.

Pappenfus, T. M., Raff, J. D., Hukkanen, E. J., Burney, J. R., Casado, J., Drew, S. M., Miller, L. L., Mann, K. R. "Dinitro and Quinodimethane Derivatives of Terthiophene That Can Be Both Oxidized and Reduced. Crystal Structures, Spectra, and a Method for Analyzing Quinoid Contributions to Structure" *J. Org. Chem*. **2002**, *67*, 6015–6024.

Pappenfus, T. M., Chesterfield, R. J., Frisbie, C. D., Mann, K. R., Casado, J., Raff, J. D., Miller, L. L. "A pi-Stacking Terthiophene-Based Quinodimethane Is an n-Channel Conductor in a Thin Film Transistor" *J. Am. Chem. Soc*. **2002**, *124*, 4184–4185.

4. Graphical Contributions

Ezell, M. J.; Johnson, S. N.; Raff, J. D.; Finlayson-Pitts, B. J. "Fig. 2-1: An airborne nanoparticle can have many fates." in "Challenges in Characterizing Small Particles: Exploring Particles from the Nano- to Microscales," **2012**, Chemical Sciences Roundtable, National Research Council, National Academies Press. pp. 85

Front cover designs for: *Phys. Chem. Chem. Phys*. **2009**, *11*, 7741–8104; *Phys. Chem. Chem. Phys*. **2013**, *15*, 448–458; *Proc. Natl. Acad. Sci. USA* **2009**, *106*, 13647–13654.

PRESENTATIONS* (*presenter is listed as first author*)

Raff, J. D., "Molecular Level Perspectives on the Atmospheric-Terrestrial Exchange of Nitrous Acid," presented to the Department of Chemistry at the University of Michigan, Ann Arbor, MI, April 8, 2015. (Invited Seminar)

Raff, J. D., Donaldson, M. A., Berke, A. E., "Transformations of Nitrogen Oxides at the Troposphere-Soil Interface," presented at the 249th ACS National Meeting & Exposition, Denver, CO, United States, March 25, 2015. (Invited Talk)

Raff, J. D., Scharko, N. K., Varner, M., Gerber, R. B., "Elucidating Mechanisms of Nitrate Photochemistry on Environmental Surfaces," presented at the 249th ACS National Meeting & Exposition, Denver, CO, United States, March 22, 2015. (Invited Talk)

Raff, J. D., "Molecular Level Perspectives on the Atmospheric-Terrestrial Exchange of Nitrous Acid," presented to the Department of Chemistry at Penn State, November 5, 2014. (Invited Seminar)

Raff, J. D., "Abiotic and Biogeochemical Controls on Reactive Nitrogen Cycling on Boundary Layer Surfaces," presented to the Earth, Atmospheric, and Planetary Sciences Department at Purdue University, October 31, 2014. (Invited Seminar)

Kebede, M. A., Raff, J. D., "Investigation of the conversion of nitrogen dioxide to nitrous acid on iron oxide surfaces," presented at the 248th ACS National Meeting & Exposition, San Francisco, CA, United States, August 10-14, 2014. (Poster)

Varner, M. E., Raff, J. D., Gerber, R. B., "Computational Studies of the role of water in the formation and reaction of NO_x species," presented at the 248th ACS National Meeting & Exposition, San Francisco, CA, United States, August 10-14, 2014. (Talk)

Raff, J. D., Scharko, N. K., Berke, A. E., "Mechanisms of nitrate photochemistry as probed by cavity-enhanced absorption spectroscopy," presented at the 248th ACS National Meeting & Exposition, San Francisco, CA, United States, August 10-14, 2014. (Talk)

Raff, J. D., Donaldson, M. A., "New Insights into the Mechanism of Nitrous Acid Uptake and Release on Boundary Layer Soil Surfaces," presented at the 248th ACS National Meeting & Exposition, San Francisco, CA, United States, August 10-14, 2014. (Invited Talk)

Varner, M. E., Kebede, M. A., Scharko, N. K., Raff, J. D., Gerber, R. B., "Intermediates in the photooxidation of ammonia," presented at the 247th ACS National Meeting & Exposition, Dallas, TX, United States, March 16-20, 2014. (Talk)

Kebede, M. A., Raff, J. D., "Photochemistry of ammonia on surfaces containing titanium dioxide," presented at the 246th ACS National Meeting & Exposition, Indianapolis, IN, United States, September 8-12, 2013. (Poster)

Scharko, N. K., Raff, J. D., "Infrared spectroscopy studies of ammonia oxidation on TiO_2 surfaces as a photolytic source of nitrous acid," presented at the 246th ACS National Meeting & Exposition, Indianapolis, IN, United States, September 8-12, 2013. (Poster)

Raff, J. D., Donaldson, M. A., Berke, A. E. "Mechanism of Nitrous Acid Uptake onto Soil Particles Coated with Thin-Films of Water," presented at the American Geophysical Union Meeting, Dec. 13, 2012, San Francisco, CA. (Talk)

Berke, A. E., Raff, J. D. "Characterization of a Cavity-Enhanced Absorption Spectrometer for Studying Nitrous Acid Formation Pathways in the Laboratory," presented at the American Geophysical Union Meeting, Dec. 9, 2012, San Francisco, CA. (Poster)

Mielke, L. H., Lew, M., Bottorff, B., Berke, A. E., Raff, J. D., Stevens, P. S., Dusanter, S. "Development of a New Laser Photofragmentation/Fluorescent Assay by Gas Expansion (LP/FAGE) Technique for the Quantification of Tropospheric Nitrous Acid (HONO) at Low Parts-Per-Trillion Mixing Ratios," presented at the American Geophysical Union Meeting, Dec. 9, 2012, San Francisco, CA. (Poster)

Raff, J. D., "Sources and Sinks of Nitrous Acid in Soil: Implications for Understanding Air Pollution," presented at the SPEA Dean's Research Workshop, Oct. 30, 2013, Bloomington, IN. (Talk)

Raff, J. D. "Advancing Our Understanding of the Atmospheric Chemistry of HONO through Analytical Chemistry," presented at the 2013 Turkey Run Analytical Chemistry Conference, Sep. 28, 2013, Marshall, IN. (Invited Talk)

Kebede, M. A., Scharko, N. K., Appelt, L. E., Raff, J. D. "Nitrous Acid Formation During Ammonia Photooxidation on TiO_2 under Ambient Conditions," presented at the Gordon Research Conference on Atmospheric Chemistry, West Dover, VT, Jul. 28, 2013. (Poster)

Raff, J. D. "Reactions of Ammonia on TiO_2 Surfaces as a Source of Atmospheric NO_x," presented at the American Geophysical Union Meeting, Dec. 5, 2012, San Francisco, CA. (Talk)

Raff, J. D., "New Insights into the Reactive Fate of Ammonia and its Role in Air Pollution," presented at the SPEA Dean's Research Workshop, Sept. 26, 2012, Bloomington, IN. (Talk)

Raff, J. D., "Fundamental Studies of Abiotic and Biogenic Nitrous Acid Formation," presented at the SPEA Dean's Research Workshop, Sept. 27, 2011, Bloomington, IN. (Talk)

Raff, J. D., Szányi, J., Finlayson-Pitts, B. J. "Photochemical and thermal oxidation of organic coatings on mineral dust and urban surfaces exposed to NO_x," presented at the 237th American Chemical Society National Meeting, Aug. 28, 2011, Denver, CO. (Invited Talk)

Raff, J. D., "Reactions at Environmental Interfaces: Chlorine Activation and Air Pollution," presented at Dow AgroSciences, Aug. 3, 2011, Indianapolis, IN. (Talk)

Raff, J. D., Finlayson-Pitts, B. J. "Hydroxyl Radical Quantum Yields from Isopropyl Nitrite Photolysis in Air," presented at the Gordon Research Conference on Atmospheric Chemistry, West Dover, VT, Jul. 24, 2011. (Poster)

Raff, J. D., "Reactions at Environmental Interfaces: Renoxification and Chlorine Activation," IU Department of Chemistry, Jan. 19, 2011, Bloomington, IN. (Talk)

Raff, J. D., Szányi, J., Finlayson-Pitts, B. J. "Photochemical Oxidation of Self-Assembled Monolayers on Alumina Particles Exposed to NO_x," presented at the 27th Informal Symposium on Kinetic and Photochemical Processes in the Atmosphere, Feb. 12, 2010, University of California – San Diego, CA. (Poster)

Raff, J. D., Njegic, B., Chang, W., Dabdub, D., Gerber, R. B., Gordon, M., Finlayson-Pitts, B. J. "Chlorine Activation via Surface - Mediated Reactions of Nitrogen Oxides with Hydrogen Chloride," presented at the Gordon Research Conference on Atmospheric Chemistry, August 23–28, 2009, Waterville, NH. (Invited Poster)

Raff, J. D., Njegic, B., Chang, W., Dabdub, D., Gerber, R. B., Gordon, M., Finlayson-Pitts, B. J. "Chlorine Activation via Surface - Mediated Reactions of Nitrogen Oxides with Hydrogen Chloride," presented at the Tenth Atmospheric Chemistry Conference for Emerging Senior Scientists (ACCESS X), August 20–23, 2009, Brookhaven National Laboratory, Long Island, NY. (Invited Talk)

Raff, J. D.; Njegic, B., Chang, W., Dabdub, D., Gordon, M., Gerber, R. B.; Finlayson-Pitts, B. J. "Heterogeneous Chlorine Activation from NO_x-HCl Reactions on Surfaces," presented at the 237th American Chemical Society National Meeting, Mar. 22–26, 2009, Salt Lake City, UT. (Talk)

Raff, J. D., Njegic, B., Chang, W., Dabdub, D., Gerber, R. B., Gordon, M., Finlayson-Pitts, B. J. "Reactions of HCl with surface-adsorbed NO_x, and their role in chlorine activation," presented at the 26th Informal Symposium on Kinetic and Photochemical Processes in the Atmosphere, Mar. 5, 2009, University of California – Riverside, CA. (Poster)

Raff, J. D., Njegic, B., Chang, W., Dabdub, D., Gerber, R. B., Gordon, M., Finlayson-Pitts, B. J. "Insights into heterogeneous chlorine activation in the polluted marine boundary layer" presented at the Annual AirUCI workshop, Jan. 27–28, 2009, Laguna Beach, CA. (Talk)

Raff, J. D., Njegic, B., Chang, W., Dabdub, D., Gerber, R. B., Gordon, M., Finlayson-Pitts, B. J. "Insights into heterogeneous chlorine activation in the polluted marine boundary layer" presented at the American Geophysical Union Fall Meeting, Dec. 15–19, 2008, San Francisco, CA. (Talk)

Raff, J. D.; Kamboures, M. A., Miller, Y.; Gerber, R. B.; Finlayson-Pitts, B. J. "Heterogeneous photochemistry of nitric acid–NO_x complexes," presented at the 235th American Chemical Society National Meeting, April 6–10, 2008, New Orleans, LA. (Poster)

Raff, J. D., Kamboures, M. A., Miller, Y., Gerber, R. B., Finlayson-Pitts, B. J. "Heterogeneous photochemistry of nitric acid–NO_x complexes," presented at the Invited Expert Workshop on Nitrous acid: Tropospheric Chemistry, Measurement Methods and Future Directions, Mar. 3–5, 2008, Bergische Universität, Wuppertal, Germany. (Poster)

Raff, J. D., Kamboures, M. A., Miller, Y., Phillips, L. F., Finlayson-Pitts, B. J., Gerber, R. B. "Complexes of HNO_3 and NO_3^- with NO_2 and its Dimer, and Their Potential Role in Atmospheric HONO Formation," presented at the 25th Informal Symposium on Kinetic and Photochemical Processes in the Atmosphere, Feb. 20, 2008, University of California – Los Angeles, CA. (Poster)

Raff, J. D., Kamboures, M. A., Finlayson-Pitts, B. J., Gerber, R. B. "The Role of Nitric Acid Complexes on Surfaces in Indoor and Outdoor Chemistry, " presented at the Annual AirUCI workshop, Jan. 23–24, 2008, Newport Beach, CA. (Talk)

Raff, J. D., Kamboures, M. A., Finlayson-Pitts, B. J., Gerber, R. B. "The Role of Nitric Acid Complexes on Surfaces in Indoor and Outdoor Chemistry, " presented at the workshop on Interfacial Chemistry in Indoor Environments, Jul. 17–18, 2007, Berkeley, CA. (Talk)

Raff, J. D., Hites, R. A. "Insights into the Atmospheric Chemistry of Polybrominated Diphenyl Ethers," presented at the 4th International Workshop on Brominated Flame Retardant, Apr. 24–27, 2007, Amsterdam, Netherlands. (Talk)

Raff, J. D., Hites, R. A. "Atmospheric Chemistry of Polybrominated Diphenyl Ether Flame Retardants: The Importance of Photolysis as a Fate Process," presented at the American Geophysical Union Fall Meeting, Dec. 10–15, 2006, San Francisco, CA. (Poster)

Raff, J. D., Hites, R. A. "Atmospheric Chemistry of Polybrominated Diphenyl Ether Flame Retardants," presented at the 2006 EPA Graduate Fellowship Conference, Sept. 24–26, 2006, Washington D.C. (Poster and Talk)

Raff, J. D., Hites, R. A. "Gas Phase Degredation of Polybrominated Diphenyl Ethers: Photolysis vs. Reaction with OH Radical," presented at the American Geophysical Union Fall Meeting, Dec. 5–9, 2005, San Francisco, CA. (Poster)

Raff, J. D., Hites, R. A. "Polybrominated Diphenyl Ethers in Mississippi River Suspended Sediment," presented at the 24th International Symposium on Halogenated Environmental Organic Pollutants and POPs (Dioxin 2004), Sept. 5–12, 2004, Berlin, Germany. (Talk)

**List does not include seminars given during job interviews*