WILLIAM ROBERT SIMPSON

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Education

Ph.D. Physical Chemistry, *Stanford University*, Stanford, CA — June 1995

B.A. with High Honors, Chemistry with Mathematics minor, *Swarthmore College,* Swarthmore, PA — May 1988

Awards

- CNSM Exemplary Service as Department Chair Award — 2014
- Editors' Citation for Excellence in Refereeing for JGR-Atmospheres — 2011
- 2008-09 College of Natural Science and Mathematics Outstanding Teaching Award — 2009
- Terris and Katrina Moore Prize, Outstanding researcher for the year from the Geophysical Institute — 2008
- NSF CAREER Grant Award — 2001-2006
- Research Innovation Award for cavity ring-down spectroscopy, Research Corporation — 1999
- NSF Graduate Research Fellowship for study at Stanford University — 1989-1992
- American Chemical Society Annual Award for Scholastic Achievement, Swarthmore College — 1988
- Stanley Adamson Prize in Chemistry, Given to the outstanding junior in the Chemistry Department, Swarthmore College — 1987

Honorary Professional societies

Phi Beta Kappa honorary society, Sigma Xi scientific honor society (Swarthmore Chapter), and Phi Lambda Upsilon Chemistry honor society, American Chemical Society, American Association for the Advancement of Science, American Physical Society, American Geophysical Union.

Current Position

PROFESSOR OF PHYSICAL CHEMISTRY, *University of Alaska Fairbanks Chemistry and Biochemistry Department and Geophysical Institute*, Fairbanks, AK — July 2008 - present

Investigating high latitude oxidation chemistry. Developing novel instrumentation for detection of reactive radicals. Investigating snowpack photochemistry at high latitudes.

DEPARTMENT CHAIR, *University of Alaska Fairbanks Chemistry and Biochemistry Department and Geophysical Institute*, Fairbanks, AK
Served as elected department chair July 2010 – June 2014
ASSOCIATE PROFESSOR OF PHYSICAL CHEMISTRY, *University of Alaska Fairbanks Chemistry and Biochemistry Department and Geophysical Institute*, Fairbanks, AK July 2002 - 2008
Investigating high latitude oxidation chemistry. Developing novel instrumentation for detection of reactive radicals. Investigating snowpack photochemistry at high latitudes.

ASSISTANT PROFESSOR OF PHYSICAL CHEMISTRY, *University of Alaska Fairbanks Chemistry and Biochemistry Department and Geophysical Institute*, Fairbanks, AK Sept 1997 - July 02

Current Active Grants

NASA, " Operate Dobson and Brewer Spectrophotometers in Fairbanks, AK", PI William Simpson, 1 years (Apr 2012 -- Apr 2013), $12,663.

NASA ROSES 2009, "Implications of Arctic Sea Ice Reduction on Tropospheric Bromine, Ozone, and Mercury Chemical Processes, Transport, and Distribution", Lead PI is Son Nghiem (JPL), UAF PI William Simpson, 3 years + no-cost extensions (Oct 2010 -- Apr 2015), NNH09ZDA001N, UAF portion $461,084.

NSF OPP AON, "Collaborative Research: The O-Buoy Network of Chemical Sensors in the Arctic Ocean", Lead PI is Paty Matrai (Bigelow Labs, ME), UAF PI William Simpson, 5 years (15 Sep 2010 -- 14 Sep 2015), UAF portion $650,640.

Selected past funding:

NSF Office of Polar Programs, “Collaborative Research: The Collaborative O-Buoy Project: Deployment of a Network of Arctic Ocean Chemical Sensors for the IPY and Beyond”, PI William Simpson, 4 other PIs (collaborative grant), UAF portion $432,961, 4 years, May 2007-2011.

NASA Atmospheric Chemistry, “Integrating ground-based remote sensing of halogen oxides into the ARCTAS mission to improve in-situ and satellite-based measurements”, $38,338 1 year, October 2008-2009.

NSF GEO/ATM Atmospheric Chemistry, "Role of Ice in High Latitude Nitrogen Atmospheric Chemistry", PI William Simpson, co-PI Nicole Moelders, 2 years (Aug 2009 -- Aug 2011), $161,037.

NASA, "Intercomparing and improving ozone, nitrogen dioxide, and halogen gas measurements", PI William Simpson, 2 years (Jan 2010 -- Oct 2011), $65,870.

Classes Taught

General Chemistry, Chem 105X, Freshman-level introductory chemistry for science majors
Physical Chemistry I, Chem 331, Junior-level physical chemistry -- Thermodynamics
Physical Chemistry II, Chem 332, Junior-level physical chemistry -- Quantum Mechanics
Physical Chemistry Laboratory, Chem 434W, Senior-level physical chemistry laboratory

Undergraduate Research Mentor, Chem 488, Mentor undergraduates in my research laboratory
Seminar, Chem 481/482O, Led department seminar class.
Atmospheric Chemistry, Chem 406/606, Atmospheric Chemistry
Molecular Spectroscopy, Chem 632, Graduate-level molecular spectroscopy
Research Presentation Techniques, Chem 691, Graduate-level instruction on presentations.

Service

Department of Chemistry and Biochemistry Chair (July 2010 – June 2014)
Served as College of Natural Sciences and Mathematics (CNSM)'s representative to the University-wide accreditation committee (April 2009 - August 2010)
Group Leader for Atmospheric Sciences Research Group, Geophysical Institute 2005-2008
Member of Observational Facilities Advisor Panel (OFAP), NCAR. Term 2003-2006.
Served as ad-hoc reviewer for Journal of Geophysical Research, Geophysical Research Letters, Journal of Physical Chemistry A, Atmospheric Environment, Atmospheric Chemistry and Physics, Atmospheric Measurement Techniques (editor).
Served as grant reviewer for NSF and DOE grant applications.
Mentor to High-school science project program, Lecture and provide demonstrations for local elementary, junior high, and high schools.
Served University on nine hiring committees, three as chair.

Past Research Experience

POSTDOCTORAL ASSOCIATE: *Geophysical Institute*, Fairbanks, AK Sept 1996-Sept 1997
• Investigated nitrogen oxide chemistry in the group of Professor Daniel Jaffe. Constructed a chemiluminescence detector for NO and optimized performance of this detector. Assisted in balloon based ozone measurements.

POSTDOCTORAL ASSOCIATE: *Princeton University*, Princeton, NJ August 1995-May 1996
• Investigated protein dynamics in the group of Professor Thomas G. Spiro through resonance Raman spectroscopy. Developed instrumentation for time-resolved resonance Raman spectroscopy.

RESEARCH ASSISTANT: *Stanford University*, Stanford, CA September 1989-July 1995
• Performed Ph.D. research in physical chemistry in the group of Professor Richard N. Zare. Gained experience in gas-phase reaction dynamics and high-resolution nanosecond laser spectroscopy, including direct experience with LIF, REMPI, IR generation with an OPO, opto-acoustic, stimulated Raman and CARS spectroscopy. Designed and built fluorescence and ion collection systems including a TOF mass spectrometer.

RESEARCH ASSISTANT: *Swarthmore College*, Swarthmore, PA May 1987-May 1988
• Wrote an undergraduate thesis on original research in laser chemistry performed in the group of Professor Thomas Stephenson. Duties included writing data analysis programs, and building, maintaining, and repairing electronic and mechanical parts of the laser spectrometer.

RESEARCH ASSISTANT: *National Cancer Institute,* Bethesda, MD Summers 1982-1986
• Studied bacterial genetics in the group of Dr. Sankar Adhya. Duties included design of original techniques, molecular cloning, participation in laboratory group discussions, and scheduling of work times.

Publications

1. T. A. Stephenson*, et al., Laser induced fluorescence of jet cooled IBr:$B^3\Pi_0^+$ - X $^1\Sigma^+$ excitation spectra, *J. Phys. Chem.* **93**, 2310 (1989).

2. W. R. Simpson, T. A. Stephenson*, Spectroscopy and A state dynamics of the NeIBr vdW complex, *J. Chem. Phys.* **90**, 3171 (1989).

3. M. J. Bronikowski, W. R. Simpson, B. Girard, R. N. Zare*, Bond specific chemistry: OD:OH product ratios for the reactions H + HOD(100) and H + HOD(001), *J. Chem. Phys.* **95**, 8647-8648 (1991).

4. M. J. Bronikowski, W. R. Simpson, R. N. Zare*, Effect of reagent vibration on the H + HOD reaction: an example of bond-specific chemistry, *J. Phys. Chem.* **97**, 2194-2203 (1993).

5. M. J. Bronikowski, W. R. Simpson, R. N. Zare*, Comparison of reagent stretch vs. bend excitation in the H + D_2O reaction: an example of mode-selective chemistry, *J. Phys. Chem.* **97**, 2204-2208 (1993).

6. W. R. Simpson, A. J. Orr-Ewing, R. N. Zare*, State-to-state dynamics and doubly differential cross sections for the reaction of chlorine with $CH_4(\nu_3=1,J)$, Ed. C.-Y. Ng, Laser techniques for state-selected and state-to-state chemistry, Los Angeles, CA (SPIE: Bellingham, WA, 1993).

7. N. E. Shafer, A. J. Orr-Ewing, W. R. Simpson, H. Xu, R. N. Zare*, State-to-state differential cross sections from photoinitiated bulb reactions, *Chem. Phys. Lett* **212**, 155-162 (1993).

8. W. R. Simpson, A. J. Orr-Ewing, R. N. Zare*, State-to-state differential cross sections for the reaction $Cl(^2P_{3/2}) + CH_4(\nu_3=1,J=1) \rightarrow HCl(v'=1,J') + CH_3$, *Chem. Phys. Lett.* **212**, 163-171 (1993).

9. A. J. Orr-Ewing, W. R. Simpson, T. P. Rakitzis, R. N. Zare*, Preparing reagents: time dependence of HCl(v=1,J) alignment following pulsed infrared excitation, *Isr. J. Chem.* **34**, 95 (1994).

10. W. R. Simpson, A. J. Orr-Ewing, S. A. Kandel, T. P. Rakitzis, R. N. Zare*, Core extraction for measuring state-to-state differential cross sections of bimolecular reactions, *J. Chem. Phys.* **103**, 7299-7312 (1995).

11. W. R. Simpson, T. P. Rakitzis, S. A. Kandel, A. J. Orr-Ewing, R. N. Zare*, Reaction of Cl with vibrationally excited CH_4 and CHD_3: State-to-state differential cross sections and steric effects for the HCl product, *J. Chem. Phys.* **103**, 7313-7335 (1995).

12. W. R. Simpson, T. P. Rakitzis, S. A. Kandel, T. Lev-On, R. N. Zare*, Picturing the transition-state region and understanding vibrational enhancement in the $Cl+CH_4 \rightarrow HCl+CH_3$ reaction, *J. Phys. Chem.* , **100**, 7938-7947 (1996).

13. A. J. Orr-Ewing, W. R. Simpson, T. P. Rakitzis, S. A. Kandel, R. N. Zare*, Scattering-Angle Resolved Product Rotational Alignment for the Reaction of Cl with Vibrationally Excited Methane, *J. Chem. Phys.*, 5961-5971 (1997).

14. Schulz, K.J., and W.R. Simpson*, Frequency-matched cavity ring-down spectroscopy, *Chem. Phys. Lett.*, *297*, 523-529, (1998).

15. Jaffe, D.*, T. Anderson, D. Covert, R. Kotchenruther, B. Trost, J. Danielson, W. Simpson, T. Berntsen, S. Karlsdottir, D. Blake, J. Harris, and G. Carmichael, Transport of Asian air pollution to North America, *Geophys. Res. Lett.*, *26* (6), 711-714, (1999).

16. Zhao, X., C. Tengroth, R. Chen, W. R. Simpson, T. G. Spiro, Time-resolved Raman spectroscopy with a tunable ultraviolet kilohertz nanosecond laser, J. Raman Spectroscopy, *30*, 773-776, (1999).

17. Lloyd, S.*, W.H. Swartz, T. Kusterer, D. Anderson, C.T. McElroy, C. Midwinter, R. Hall, K. Nassim, D. Jaffe, W. Simpson, J. Danielson, D. Griffin, B. Johnson, D. Quincy, S. Oltmans, P. Newman, R. McPeters, G. Labow, L. Moy, C. Seftor, and G. Toon, Total ozone observations and trend at Fairbanks during POLARIS, *J. Geophys. Res.*, *104* (D21), 26767-26778, (1999).

18. King, M.D., E.M. Dick, and W.R. Simpson*, A new method for the atmospheric detection of the nitrate radical (NO_3), *Atmos. Env.*, *34*, 683-686, (2000).

19. Michelsen, H.A., and W.R. Simpson, Relating state-dependent cross sections to non-Arrhenius behavior for the Cl + CH_4 reaction, *J. Phys. Chem. A.*, *105*, 1476-1488, (2000).

20. Jaffe, D., T. Anderson, D. Covert, B. Trost, J. Danielson, W. Simpson, D. Blake, J. Harris, and D. Streets, Observations of ozone and related species in the Northeast Pacific during the PHOBEA campaigns: 1. Ground based observations at Cheeka Peak, *J. Geophys. Res.*, *105* (D7), 7449-7461, (2001).

21. King, M.D., and W.R. Simpson*, The extinction of UV radiation in Arctic snow at Alert, Canada (82°N), *J. Geophys. Res.*, 106 (D12), 12499-12508, (2001).

22. Simpson, W.R., M.D. King, H.J. Beine, R.E. Honrath, and M.C. Peterson, Atmospheric photolysis rates during the Polar Sunrise Experiment ALERT2000 Field Campaign, *Atmos. Env.*, 36 (15-16) 2471-2480 (2002).

23. Simpson, W.R., M.D. King, H.J. Beine, R.E. Honrath, and X. Zhou, Radiation-transfer modeling of snow pack photochemical processes during ALERT2000., *Atmos. Env.*, 36 (15-16), 2663-2670 (2002).

24. Zhou, X., H.J. Beine, R.E. Honrath, J.D. Fuentes, W.R. Simpson, P.B. Shepson, and J.W. Bottenheim, Snowpack Photochemical Production of HONO: a Major Source of OH in the Arctic Boundary Layer in Spring Time, *Geophys. Res. Lett.*, 28(21), 4087-4090, 2001.

25. Harald J. Beine, Richard E. Honrath, Florant Dominé, William R. Simpson, Martin D. King, Jose D. Fuentes, NOx during background and ozone depletion periods at Alert: Fluxes above the snow surface, *J. Geophys. Res.* 107 (D21), 4584-4596 (2002).

26. Amanda M. Grannas, Paul B. Shepson, Christofe Gimbaud, Ann Louise Sumner, Mary Albert, William Simpson, Florant Dominé, Hacine Boudries, Jan Bottenheim, Harald J. Beine, Richard E. Honrath, Zianliang Zhou, A study of carbonyl compounds and photochemistry in the Arctic atmospheric boundary layer, *Atmos. Env.* 36 (15-16), 2733-2742 (2002).

27. K. Seki, Y. Kasai, Y. Murayama, M. Kohei, T. Itable, F. J. Murcray, W. R. Simpson, and S. A. Lloyd, Trace gas observations with Poker Flat FTIR, *J. Communication Res. Lab.* 49 (2), 191-200 (2002).

28. W. R. Simpson, Continuous wave cavity ring-down spectroscopy applied to *in-situ* detection of dinitrogen pentoxide (N_2O_5), Rev. Sci. Inst., 74:7, 3442-3452 (2003).

29. Simpson, W. R., L. Alvarez-Aviles, T. A. Douglas, M. Sturm, and F. Domine (2005), Halogens in the coastal snow pack near Barrow, Alaska: Evidence for active bromine air-snow chemistry during springtime, *Geophys. Res. Lett.*, *32*, L04811.

30. Douglas, T. A., M. Sturm, W. R. Simpson, S. Brooks, S. Lindberg, and D. Perovich (2005), Elevated mercury measured in snow and frost flowers near Arctic sea ice leads, Geophys. Res. Lett., 32, L04502.

31. Domine, F., A. S. Taillandier, W. R. Simpson, and K. Severin (2005), Specific surface area, density and microstructure of frost flowers, *Geophys. Res. Lett.*, *32*, L13502.

32. Phillips, G. J., and W. R. Simpson (2005), Verification of snowpack radiation transfer models using actinometry, *J. Geophys. Res.*, *110*. D08306.

33. Flowers, B. A., M. E. Angerhofer, W. R. Simpson, T. Nakayama, and Y. Matsumi (2005), Nitrate radical quantum yield from peroxyacetyl nitrate photolysis, *J. Phys. Chem. A*, *109*, 2552-2558.

34. James D. Ayers, Randy L. Apodaca, William R. Simpson, and Douglas S. Baer (2005), Off-Axis Cavity Ring-Down Spectroscopy: Application to Atmospheric Nitrate Radical Detection, *Applied Optics*, 44, 7239-7242.

35. Ayers, J. D., and W. R. Simpson (2006), Measurements of N_2O_5 near Fairbanks, Alaska, J. Geophys. Res., 111, D14309.

36. Taillandier, A.-S., F. Domine, W. R. Simpson, M. Sturm, T. A. Douglas, and K. Severin, Evolution of the Snow Area Index (SAI) of the subarctic snowpack in central Alaska over a whole season. Consequences for the air to snow transfer of pollutants., Environ. Sci. Technol., 40 (24), 7521 -7527, doi:10.1021/es060842j, (2006).

37. Domine, F., A.-S. Taillandier, S. Houdier, F. Parrenin, W. R. Simpson, and T. A. Douglas (2007), Interactions between snow metamorphism and climate: physical and chemical aspects, in "Physics and Chemistry of Ice", W.F. Kuhs, ed., Royal Society of Chemistry, Cambridge, UK, pp. 27-46., in Physics and Chemistry of Ice, edited by W. F. Kuhs, Royal Society of Chemistry, Cambridge, UK.

38. Taillandier, A., F. Domine, W. R. Simpson, M. Sturm, and T. A. Douglas (2007), Rate of decrease of the specific surface area of dry snow: Isothermal and temperature gradient conditions, J. Geophys. Res., 112, F03003, doi:03010.01029/02006JF000514.

39. Simpson, W. R., D. Carlson, G. Hoenninger, T. A. Douglas, M. Sturm, D. K. Perovich, and U. Platt (2007), The Dependence of Arctic Tropospheric Halogen Chemistry on Sea Ice Conditions, Atmos. Chem. Phys., 7, 621 – 627.

40. W. R. Simpson, R. von Glasow, K. Riedel, P. Anderson, P. Ariya, J. Bottenheim, J. Burrows, L. Carpenter, U. Frieß, M. E. Goodsite, D. Heard, M. Hutterli, H.-W. Jacobi, L. Kaleschke, B. Neff, J. Plane, U. Platt, A. Richter, H. Roscoe, R. Sander, P. Shepson, J. Sodeau, A. Steffen, T. Wagner, E. Wolff (2007), Halogens and their role in polar boundary-layer ozone depletion, Atmos. Chem. Phys., 7, 4375-4418, 2007

41. Grannas, A. M., Jones, A. E., Dibb, J., Ammann, M., Anastasio, C., Ariya, P., Beine, H. J., Bergin, M., Bottenheim, J., Boxe, C. S., Carver, G., Chen, G., Crawford, J. H., Domine, F., Frey, M. M., Guzman, M. I., Heard, D. E., Helmig, D., Hoffmann, M. R., Honrath, R. E., Huey, L. G., Hutterli, M., Jacobi, H., Klan, P., McConnell, J., Sander, R., Savarino, J., Shepson, P. B., Simpson, W. R., Sodeau, J. R., von Glasow, R., Weller, R., Wolff, E., and Zhu, T. (2007), An overview of snow photochemistry: Evidence, mechanisms and impacts, Atmos. Chem. Phys., 7, 4329-4373.

42. Flowers, B. A.; Stanton, J. F.; Simpson, W. R., Wavelength Dependence of Nitrate Radical Quantum Yield from Peroxyacetyl Nitrate Photolysis: Experimental and Theoretical Studies J. Phys. Chem. A., 111(45), 11602-11607. DOI: 10.1021/jp0749118 (2007).

43. F. Domine, M. Albert, T. Huthwelker, H.-W. Jacobi, A. A. Kokhanovsky, M. Lehning, G. Picard, and W. R. Simpson (2008), Snow physics as relevant to snow photochemistry, Atmos. Chem. Phys., 8, 171-208, doi:10.5194/acp-8-171-2008.

44. Thomas A. Douglas, Matthew Sturm, William R. Simpson, Joel D. Blum, Laura Alvarez-Aviles, Gerald J. Keeler, Donald K. Perovich, Abir Biswas, and Kelsey Johnson, Influence of Snow and Ice Crystal Formation and Accumulation on Mercury Deposition to the Arctic, Environ. Sci. Technol., 42 (5), 1542–1551, doi:10.1021/es070502d (2008).

45. Apodaca, R. L., Huff, D. M., and Simpson, W. R.: The role of ice in N_2O_5 heterogeneous hydrolysis at high latitudes, Atmos. Chem. Phys., 8, 7451-7463, 2008.

46. Laura Alvarez-Aviles, William R. Simpson, Thomas A. Douglas, Matthew Sturm, Donald Perovich, Florent Dominé, Frost flower chemical composition during growth and its implications for aerosol production and bromine activation, J. Geophys. Res., 113, D21304, doi:10.1029/2008JD010277.

47. Knepp, T. N., Bottenheim, J., Carlsen, M., Carlson, D., Donohoue, D., Friederich, G., Matrai, P. A., Netcheva, S., Perovich, D. K., Santini, R., Shepson, P. B., Simpson, W., Valentic, T., Williams, C., and Wyss, P. J.: Development of an autonomous sea ice tethered buoy for the study of ocean-atmosphere-sea ice-snow pack interactions: the O-buoy, Atmos. Meas. Tech., 3, 249-261, doi:10.5194/amt-3-249-2010, 2010.

48. Carlson, D., Donohoue, D., Platt, U., and Simpson, W. R.: A low power automated MAX-DOAS instrument for the Arctic and other remote unmanned locations, Atmos. Meas. Tech., 3, 429-439, doi:10.5194/amt-3-429-2010, 2010.

49. Domine, F., Houdier, S., Taillandier, A.-S., and Simpson, W. R.: Acetaldehyde in the Alaskan subarctic snowpack, Atmos. Chem. Phys., 10, 919-929, doi:10.5194/acp-10-919-2010, 2010.

50. R. J. Salawitch, T. Canty, T. Kurosu, K. Chance, Q. Liang, A. da Silva, S. Pawson, J. E. Nielsen, J. M. Rodriguez, P. K. Bhartia, X. Liu, L. G. Huey, J. Liao, 4 R. E. Stickel, D. J Tanner, J. E. Dibb, W. R. Simpson, D. Donohoue, A. Weinheimer, F. Flocke, D. Knapp, D. Montzka, J. A. Neuman, J. B. Nowak, T. B. Ryerson, S. Oltmans, D. R. Blake, E. L. Atlas, D. E. Kinnison, S. Tilmes, L. L. Pan, F. Hendrick, M. Van Roozendael, K. Kreher, P. V. Johnston, R. S. Gao, B. Johnson, T. P. Bui, G. Chen, R. B. Pierce, J. H. Crawford, and D. J. Jacob, A new interpretation of total column BrO during Arctic spring, Geophysical Research Letters, 37, L21805, 2010, doi: 10.1029/2010GL043798.

51. Huff, D. M., P. L. Joyce, G. J. Fochesatto, W. R. Simpson, "Deposition of dinitrogen pentoxide, N_2O_5, to the snowpack at high latitudes", Atmos. Chem. Phys., 11, 4929–4938, 2011, doi:10.5194/acp-11-4929-2011.

52. L. Krnavek, W. R. Simpson, D. Carlson, F. Domine, T. A. Douglas, M. Sturm (2012) The chemical composition of surface snow in the Arctic: Examining marine, terrestrial, and atmospheric influence. Atmospheric Environment, 50, 349-359.

53. Fuchs, S., W. R. Simpson, R. L. Apodaca, T. Brauers, R. C. Cohen, J. N. Crowley, H. P. Dorn, W. P. Dubé, J. L. Fry, R. Häseler, Y. Kajii, A. Kiendler-Scharr, I. Labazan, J. Matsumoto, T. F. Mentel, Y. Nakashima, F. Rohrer, A. W. Rollins, G. Schuster, R. Tillmann,

and A. Wahner (2012), Comparison of N2O5 mixing ratios during NO3Comp 2007 in SAPHIR, Atmos. Meas. Tech., 5, 2763-2777, doi:10.5194/amt-5-2763-2012.

54. Pratt, K. A., K. D. Custard, P. B. Shepson, T. A. TDouglas, D. Pöhler, S. General, J. Zielcke, W. R. Simpson, U. Platt, D. J. Tanner, L. G. Huey, M. Carlsen, and B. H. Stirm (2013), Photochemical production of molecular bromine in Arctic surface snowpacks, Nature Geoscience, doi:10.1038/ngeo1779.
55. Nghiem, S.V., Clemente-Colon, P., Douglas, T., Moore, C., Obrist, D., Perovich, D., Pratt, K., Rigor, I., Simpson, W., Shepson, P.B., Steffen, A., Woods, J., Studying Bromine, Ozone, and Mercury Chemistry in the Arctic, Eos, 94(33), 269-291, 2013.
56. Dorn, H.-P., Apodaca, R. L., Ball, S. M., Brauers, T., Brown, S. S., Crowley, J. N., Dubé, W. P., Fuchs, H., Häseler, R., Heitmann, U., Jones, R. L., Kiendler-Scharr, A., Labazan, I., Langridge, J. M., Meinen, J., Mentel, T. F., Platt, U., Pöhler, D., Rohrer, F., Ruth, A. A., Schlosser, E., Schuster, G., Shillings, A. J. L., Simpson, W. R., Thieser, J., Tillmann, R., Varma, R., Venables, D. S., and Wahner, A.: Intercomparison of NO3 radical detection instruments in the atmosphere simulation chamber SAPHIR, Atmos. Meas. Tech., 6, 1111-1140, doi:10.5194/amt-6-1111-2013, 2013.
57. Halfacre, J. W., Knepp, T. N., Shepson, P. B., Thompson, C. R., Pratt, K. A., Li, B., Peterson, P. K., Walsh, S. J., Simpson, W. R., Matrai, P. A., Bottenheim, J. W., Netcheva, S., Perovich, D. K., and Richter, A.: Temporal and spatial characteristics of ozone depletion events from measurements in the Arctic, Atmos. Chem. Phys., 14, 4875-4894, doi:10.5194/acp-14-4875-2014, 2014.
58. Joyce, P. L., von Glasow, R., and Simpson, W. R.: The fate of NOx emissions due to nocturnal oxidation at high latitudes: 1-D simulations and sensitivity experiments, Atmos. Chem. Phys., 14, 7601-7616, doi:10.5194/acp-14-7601-2014, 2014.
59. General, S., Pöhler, D., Sihler, H., Bobrowski, N., Frieß, U., Zielcke, J., Horbanski, M., Shepson, P. B., Stirm, B. H., Simpson, W. R., Weber, K., Fischer, C., and Platt, U.: The Heidelberg Airborne Imaging DOAS Instrument (HAIDI) – a novel imaging DOAS device for 2-D and 3-D imaging of trace gases and aerosols, Atmos. Meas. Tech., 7, 3459-3485, doi:10.5194/amt-7-3459-2014, 2014.
60. Bhatt, U. S., D. A. Walker, J. E. Walsh, E. C. Carmack, K. E. Frey, W. N. Meier, S. E. Moore, F.-J. W. Parmentier, E. Post, V. E. Romanovsky, and W. R. Simpson. Implications of arctic sea ice decline for the earth system. Annual Review of Environment and Resources, 39(1):57–89, 2014.
61. Peterson, P. K., Simpson, W. R., Pratt, K. A., Shepson, P. B., Frieß, U., Zielcke, J., Platt, U., Walsh, S. J., and Nghiem, S. V.: Dependence of the vertical distribution of bromine monoxide in the lower troposphere on meteorological factors such as wind speed and stability, Atmos. Chem. Phys., 15, 2119-2137, doi:10.5194/acp-15-2119-2015, 2015.
62. Simpson, W. R.; Brown, S. S.; Saiz-Lopez, A.; Thornton, J. A.; Glasow, R. von. , Tropospheric Halogen Chemistry: Sources, Cycling, and Impacts, *Chem. Rev.*, 115, 4035–4062, doi: 10.1021/cr5006638, 2015.
63. Custard, K. D., Thompson, C. R., Pratt, K. A., Shepson, P B., Liao, J., Huey, L. G., Orlando, J. J., Weinheimer, A. J., Apel, E., Hall, S. R., Flocke, F., Mauldin, L., Hornbrook, R. S., Pöhler, D., General, S., Zielcke, J., Simpson, W. R., Platt, U., Fried, A., Weibring, P., Sive, B. C., Ullmann, K., Cantrell, C., Knapp, D. J., and Montzka, D. D.: The NOx dependence of

bromine chemistry in the Arctic atmospheric boundary layer, Atmos. Chem. Phys., 15, 10799-10809, doi:10.5194/acp-15-10799-2015, 2015.

64. Peterson, P. K., W. R. Simpson, and S. V. Nghiem, Variability of bromine monoxide at Barrow, Alaska, over four halogen activation (March–May) seasons and at two on-ice locations, J. Geophys. Res. Atmos., 121, 1381–1396, doi:10.1002/2015JD024094, 2016.
65. Peterson PK, Pratt KA, Simpson WR, Nghiem SV, Pérez Pérez LX, et al. 2016. The role of open lead interactions in atmospheric ozone variability between Arctic coastal and inland sites. Elem Sci Anth 4: 000109. doi: 10.12952/journal.elementa.000109, 2016.
66. Peterson, P. K., Pöhler, D., Sihler, H., Zielcke, J., General, S., Frieß, U., Platt, U., Simpson, W. R., Nghiem, S. V., Shepson, P. B., Stirm, B. H., Dhaniyala, S., Wagner, T., Caulton, D. R., Fuentes, J. D., and Pratt, K. A.: Observations of bromine monoxide transport in the Arctic sustained on aerosol particles, Atmos. Chem. Phys., 17, 7567-7579, https://doi.org/10.5194/acp-17-7567-2017, 2017.
67. Burd, J. A., P. K. Peterson, S. V. Nghiem, D. K. Perovich, and W. R. Simpson (2017), Snowmelt onset hinders bromine monoxide heterogeneous recycling in the Arctic, J. Geophys. Res. Atmos., 122, doi:10.1002/2017JD026906.
68. Simpson, W. R., Peterson, P. K., Frieß, U., Sihler, H., Lampel, J., Platt, U., Moore, C., Pratt, K., Shepson, P., Halfacre, J., and Nghiem, S. V.: Horizontal and vertical structure of reactive bromine events probed by bromine monoxide MAX-DOAS, Atmos. Chem. Phys., 17, 9291-9309, https://doi.org/10.5194/acp-17-9291-2017, 2017.

Manuscripts in press and submitted

Datasets:

Obuoy 1 Deployment https://arcticdata.io/catalog/#view/urn:uuid:783d8459-fcd8-449e-a39d-674cc9c84f02
Obuoy 2 Deployment https://arcticdata.io/catalog/#view/urn:uuid:9f409bb4-708f-4358-9ff0-6ebd21934d16
Obuoy 3 Deployment https://arcticdata.io/catalog/#view/urn:uuid:38905184-7cda-472b-b715-fecbd26a2193
Obuoy 4 Deployment https://arcticdata.io/catalog/#view/urn:uuid:d3364fe1-2210-41f9-9c14-658348656ec4
Obuoy 5 Deployment https://arcticdata.io/catalog/#view/urn:uuid:a14b85e4-9457-4e39-b7d3-7e2d3b5951d9
Obuoy 6 Deployment https://arcticdata.io/catalog/#view/urn:uuid:911a3515-0d30-4b50-a7a1-613f22695538
Obuoy 7 Deployment https://arcticdata.io/catalog/#view/urn:uuid:526388e1-71cf-4d28-bb18-702a4ef4e3fa
Obuoy 8 Deployment https://arcticdata.io/catalog/#view/urn:uuid:f315d131-858b-4346-924a-1aa657fb945f
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Obuoy 10 Deployment https://arcticdata.io/catalog/#view/urn:uuid:8283f986-a34f-4c6e-98ef-496bac44abfb
Obuoy 11 Deployment https://arcticdata.io/catalog/#view/urn:uuid:92d1c694-dd42-4893-874b-39b8d03a71f8
Obuoy 12 Deployment https://arcticdata.io/catalog/#view/urn:uuid:6dfff21e-bcc6-4e43-8054-1eb96a73e9cf

Obuoy 13 Deployment https://arcticdata.io/catalog/#view/urn:uuid:875272a3-52dd-4c21-8e14-984015832955
Obuoy 14 Deployment https://arcticdata.io/catalog/#view/urn:uuid:49c15cbe-440d-4e72-bd7e-4f92c3c397f4
Obuoy 15 Deployment https://arcticdata.io/catalog/#view/urn:uuid:d176e6f1-4b4f-4ac0-a3a8-d2e01f632dd1

Discussion papers and extended abstracts (not peer reviewed):

Donohoue, D., D. Carlson, and W. R. Simpson, "Rapid methods for inversion of MAX-MAXDOAS elevation profiles to surface-associated box concentrations, visibility, and heights: Application to analysis of Arctic BrO events", Atmos. Meas. Tech. Discuss., 3, 429-439, doi:10.5194/amt-3-429-2010, 2010.

Conference Talks and Posters (Post July 1998, presenter underlined):

"High latitude oxidation chemistry", W. R. Simpson, a talk presented at Stanford University, 10 August 1998.

"Cavity Ring-Down Spectroscopy: A New Tool for Trace Gas Detection and Atmospheric Transmission Studies", W.R. Simpson, K. J. Schulz, E. Dick, Poster Presented at 49th Arctic Science conference, 27 October 1998

"Cavity ring-down spectroscopy: a new tool for arctic radical chemistry investigations" W. R. Simpson, K. J. Schulz, E. Dick, Poster at AGU Fall meeting, San Francisco, CA, 7 December 1998.

"Atmospheric cavity ring-down spectroscopy: Application to measurement of reactive radicals", William R. Simpson, Martin King, Eric Dick, An informal talk presented during Sandia visitors to develop grant ideas (resulted in grant submission), 20 April 1999.

"Production of $O(^1D)$ from ozone photolysis at high latitudes: Sensitivity to quantum yields in the 320 nm region", Martin King, Andrew Elsberg, Liz Hillard, Pam Sousanes, William R. Simpson, Talk presented at the 50th Arctic Science Conference, Denali Park and Preserve, Alaska, 20 September 1999

"Cavity ring-down spectroscopy applied to nitrate radical detection", Eric Dick, Martin King, William R. Simpson, Poster presented at the 50th Arctic Science Conference, Denali Park and Preserve, Alaska, 21 September 1999

"Developing cavity ring-down spectroscopy for trace gas detection", William R. Simpson, Martin King, Eric Dick, An invited talk at Sandia National Laboratory Combustion Research Facility, Livermore, CA, 27 September 1999

"Production of $O(^1D)$ from photolysis of ozone at high latitudes: Sensitivity to quantum yields in the 320 nm region" A. E. Elsberg, E. A. Hilliard, M. D. King, P. Sousanes, and W. R. Simpson, a talk at the PRIMENet meeting, Sequoia National Park, California, USA, 1-4 November 1999.

"High Latitude photochemistry in the atmosphere and in the snowpack", W. R. Simpson, a talk for the Atmospheric Sciences seminar series, UAF, 9 Feb 2000.

"A new method for the atmospheric detection of the nitrate radical", M. D. King, E. M. Dick, and W. R. Simpson, 17th informal symposium on kinetics and photochemical processes in the atmosphere, University of California, Irvine, CA, 29 February 2000.

"Relating state-dependent cross-sections to non-Arrhenius behavior for the $Cl+CH_4$ reaction," H. A. Michelsen and W. R. Simpson, a talk presented at the Spring 2000 ACS Meeting in San Francisco 26 - 30 March (2000).

"Measurements of ultraviolet light fluxes in the snow pack at the ALERT2000 field campaign," William Simpson and Martin King, Poster presentation at EMSL 2000 meeting, Richland, WA, 19 - 24 June (2000).

"Nitrous Oxide (N_2O) production in sprites," D.R. Moudry, W.R. Simpson and H.C. Stenbaek-Nielsen, Poster presentation at the CEDAR 2000 conference, 25-30 June, (2000).

"Relating state-dependent cross sections to non-Arrhenius behavior for the $Cl+CH_4$ reaction", H. A. Michelsen, C. A. Taatjes, and W. R. Simpson, a poster at the 16th International Symposium on Gas Kinetics, Cambridge, England, July 22-27, 2000.

"Snow-pack photochemistry at the ALERT2000 field campaign, C.F.S. Alert (82°N), Canada," William R. Simpson and Martin D. King, a talk to the UAF Chemistry and Biochemistry department, 26 Sep 2000.

"Ultraviolet radiation in and above the snow at ALERT2000", William Simpson and Martin King, ALERT2000 Data Workshop, Rome, Italy, 3 Oct 00

"Observations of ultraviolet light fluxes in snow during the ALERT2000 field campaign", Martin King, William Simpson, Submitted as poster, American Geophysical Union Fall Meeting, San Francisco, December 15-19, 2000.

"The oxidation of methane by atomic chlorine: Combining chemical and molecular dynamics measurements", H. A. Michelsen and W. R. Simpson, a talk at the American Geophysical Union Fall Meeting, San Francisco, December 15-19, 2000.

"Application of cavity ring-down spectroscopy to determine nitrate radical (NO_3) concentrations in the atmosphere", Eric M. Dick, Martin D. King, and William R. Simpson, a poster at the American Geophysical Union Fall Meeting, San Francisco, December 15-19, 2000.

"Another look at $Cl+CH_4$: Using state-resolved data to reduce the uncertainties of thermal rate constants", H. A. Michelsen and W. R. Simpson, a poster at the Workshop on Laboratory Studies of Upper Troposphere/Lower Stratosphere Processes in Breckenridge, CO, July 23-27, 2001.

"Observations of atmospheric trace gases at Poker Flat, Alaska" Y. Murayama, S. Ochiai, K. Mizutani, Y. Kasai, F. Murcray, R. Collins, W. Simpson, H. Masuko, Spring meeting of Society of Geomagnetism and Earch, Platnetary and Space Sciences, June4-8, 2001, Japan

"An analysis of the temperature-dependence of the Dobson dataset from $TOMS^3$-F", William Simpson, Brandon Kerns, and $TOMS^3$-F Science team, $TOMS^3$-F Data Workshop, 24-25 Aug, 2001, Boulder, CO.

"The total ozone measurements by satellites, sondes, and spectrometers at Fairbanks (TOMS-3F) field campaign: Preliminary results", P. K. Bhartia, R. D. McPeters, R. S. Stolarski, S. M. Hollandsworth–Frith and G. J. Labow, S. A. Lloyd, R. D. Evans, B. J. Johnson and S. J. Oltmans, W. R. Simpson, C. T. McElroy, J. B. Kerr and C. A. McLinden, Network for the Detection of Stratospheric Change (NDSC) 2001 Symposium, held in Arcachon, France, Sept. 24-27, 2001.

"Observation of atmospheric trace species by Fourier-transform infrared spectrometer at Poker Flat, Alaska", Kouji Seki, Yasuko Kasai, Yasuhiro Murayama, Kohei Mizutani, Frank J. Murcray, William R. Simpson, Steven A. Lloyd, Fall AGU meeting, San Francisco, 2001.

"Arctic atmospheric chemistry: Developing and deploying instruments to understand the chemistry of the Arctic atmosphere.", Bill Simpson, Eric Dick, Martin King, UAF Chemistry departmental seminar, 23 Oct 2001.

"Arctic atmospheric chemistry: Developing and deploying instruments to understand the chemistry of the Arctic atmosphere.", Bill Simpson, Eric Dick, Martin King, University of Idaho Chemistry departmental seminar, Moscow ID, 27 Nov 2001.

"Arctic atmospheric chemistry: Developing and deploying instruments to understand the chemistry of the Arctic atmosphere.", Bill Simpson, Eric Dick, Martin King, Oregon State University Chemistry departmental seminar, Corvallis, OR, 28 Nov 2001.

"Arctic atmospheric chemistry: Developing and deploying instruments to understand the chemistry of the Arctic atmosphere.", Bill Simpson, Eric Dick, Martin King, Reed College Chemistry departmental seminar, Portland, OR, 29 Nov 2001.

"Arctic atmospheric chemistry: Developing and deploying instruments to understand the chemistry of the Arctic atmosphere.", Bill Simpson, Eric Dick, Martin King, UAF Mechanical Engineering departmental seminar, Fairbanks, AK, 13 Dec 2001.

"The Total Ozone Measurements by Satellites, Sondes and Spectrometers at Fairbanks ($TOMS^3$-F) Field Campaign: Preliminary Results", S. A. Lloyd, P. K. Bhartia, R. D. McPeters, R. S. Stolarski, S. M. Hollandsworth-Frith, G. J. Labow, R. D. Evans, B. J. Johnson and S. J. Oltmans, W. R. Simpson, C. T. McElroy, J. B. Kerr and C. A. McLinden, Poster at Spring AGU, DC, 2002.

"A new method to detect methane via ICOS", W. Simpson and D. Baer, Presentation at "Development of a Research Agenda to Determine the Current Circumpolar Carbon Budget", 29-30 July 2002, Fairbanks, AK

"The Total Ozone Measurements by Satellites, Sondes and Spectrometers at Fairbanks ($TOMS^3$-F) Field Campaign", W. R. Simpson, S. A. Lloyd, P. K. Bhartia, R. D. McPeters, R. S. Stolarski, S. M. Hollandsworth-Frith and G. J. Labow, R. D. Evans, B. J. Johnson and S. J. Oltmans, C. T. McElroy, J. B. Kerr and C. A. McLinden, a talk at the 53rd Arctic Science Conference, AAAS Arctic Division, 18-21 September, 2002, Fairbanks AK.

"Cavity ring-down spectroscopic detection of NO_3", William R. Simpson, A talk at the Air Force Research Laboratory, 23 Aug 2002, Hanscom, MA.

"Using cavity-enhanced spectroscopy to investigate atmospheric chemistry", William R. Simpson, an invited poster presentation at the German-American Frontiers of Chemistry Conference, 23-25 August 2002, Durham, New Hampshire.

"Detection of NO_3 and N_2O_5 via cavity ring-down spectroscopy", William R. Simpson, a poster presentation at the Global Climate Change in the Arctic conference GCCA4, 4-8 November 2002, Fairbanks, AK.

"Radiation transfer and photochemistry in snow", William R. Simpson, a talk at the Ocean-Air-Ice chemistry planning meeting, 10-12 November 2002, Purdue University, Indiana.

"Nighttime nitrogen oxidation at high latitudes: winter observations of N_2O_5 in Fairbanks, Alaska", William R. Simpson, Eric M. Dick, Gavin Phillips, Brad Flowers, An invited talk at the Climate Monitoring and Diagnostics Laboratory (NOAA/CMDL), 22 May 2003, Boulder CO.

"Observations of N_2O_5 and NO_3 in ambient air via continuous-wave cavity ring-down spectroscopy", William R. Simpson, Eric M. Dick, and Gavin Phillips, a talk at the 58th Molecular Spectroscopy Symposium, 16-20 June 2003, Columbus OH.

"Photolysis of Peroxyacetyl Nitrate (PAN) Studied by Cavity Ring-down Spectroscopy", William R. Simpson, Mark Angerhofer, Gavin Phillips, Tomoki Nakayama, Yutaka Matsumi, Bradley Flowers, John Stanton, a talk at the 58th Molecular Spectroscopy Symposium, 16-20 June 2003, Columbus OH.

"Using cavity ring-down spectroscopy to measure N_2O_5 and NO_3 at high latitudes ", William R. Simpson, James Ayers, a poster at the Gordon Research Conference, Atmospheric Chemistry, 7-12 September, 2003, Big Sky Resort, MT.

"Photochemistry of Peroxyacetyl nitrate (PAN)", William R. Simpson, Brad Flowers, and Mark Angerhofer a poster at the Gordon Research Conference, Atmospheric Chemistry, 7-12 September, 2003, Big Sky Resort, MT.

"NO_3 and N_2O_5 detection using cavity ring-down spectroscopy", Bill Simpson, James Ayers, and Randy Apodaca, UAF Atmospheric Science seminar, 1 Oct 2003.

"Testing snow photochemical models using chemical actinometry and in-snow radiometry", William R. Simpson, Gavin J. Phillips, Anne-Sophie Taillandier, Florent Domine, Martin King, Matthew Sturm, Glenn Liston, Tom Douglas, Snow photochemistry workshop, Brno Czech Republic, 6 Nov 2004.

"Arctic Atmospheric Chemistry: A spectroscopic approach", William R. Simpson, Institute for Environmental Physics (IUP) seminar, University of Heidelberg, Heidelberg, Germany, 18 Nov 2004.

"Transfer of halogens from the sea ice to the atmosphere: results from snow analyses near Alert, Ny-Ålesund, and Barrow", Florent Domine, Roberto Sparapani, Antonietta Ianiello, Harald J Beine, William R Simpson, Laura Alvarez-Aviles, Thomas Douglas, Matthew Sturm, Anne-Sophie Taillandier, and Stephan Houdier, a poster presented at the International Global Atmospheric Chemistry (IGAC) conference, New Zeland, Nov 2004.

"Physical and chemical changes in snowpacks subjected to different metamorphic conditions.A new feedback for climate change", Florent Domine, William R Simpson, Anne-Sophie Taillandier, Laura Alvarez-Aviles, Stephan Houdier, Thomas Douglas, Matthew Sturm, Ken Severin, , a poster presented at the International Global Atmospheric Chemistry (IGAC) conference, New Zeland, Nov 2004.

"Air-Snow interactions and Atmospheric Chemistry", William R. Simpson, Institute for Environmental Physics (IUP) student seminar, University of Heidelberg, Heidelberg, Germany, 3 Dec 2004.

"A coupled physical, optical, and photochemical model of snow: relating measurements of specific surface area to snow optical properties", Gavin Phillips, William R. Simpson, Anne-Sophie Taillandier and Florent Domine, a poster presented at the Fall AGU meeting, San Francisco, CA, Dec 2004.

"Measurements of NO_3 and N_2O_5 in the Polluted Subarctic Atmosphere: A Seasonal Perspective from Multi-Year Observations in Fairbanks, AK", James D. Ayers, and William Simpson, a poster presented at the Fall AGU meeting, San Francisco, CA, Dec 2004.

"Observations of halogen concentrations in polar snow near Barrow, Alaska indicate that bromide is highly affected by atmospheric chemistry", Laura Alvarez-Aviles, William R.

Simpson, Thomas A. Douglas, Matthew Sturm, Florent Domine, a poster presented at the Fall AGU meeting, San Francisco, CA, Dec 2004.

"Coupled Physical and Chemical Study of the Subarctic Snowpack: Feedback of Metamorphic Intensity on Climate Change", Anne-Sophie Taillandier, Laura Alvarez-Aviles, Florent Domine, William R. Simpson, Stephan Houdier, Thomas Douglas, Matthew Sturm Richard Stolzberg , a poster presented at the Fall AGU meeting, San Francisco, CA, Dec 2004.

"Halogen activation in the Arctic Springtime Boundary Layer: How chemical physics helps us to understand field observations", William R. Simpson , Gerd Hönninger, Laura Alvarez-Aviles, Matthew Sturm, Tom Douglas, Florent Domine, Invited talk at the Joint Institute for Laboratory Astrophysics (JILA), CU Boulder, 22 Apr 2005.

"Field studies of halogen activation and its relationship to tropospheric ozone depletion and mercury deposition", William R. Simpson, Laura Alvarez-Aviles, Gerd Hoenninger, Ulrich Platt, Thomas A. Douglas, Matthew Sturm, Florent Domine, A poster presented at the Atmospheric Chemistry Gordon Research Conference, Big Sky Montana, 6-9 September, 2005.

"A smoking gun at the smoking lead?: Halogen activation chemistry on the North Slope of Alaska", William R. Simpson , Gerd Hönninger, Laura Alvarez-Aviles, Matthew Sturm, Tom Douglas, Florent Domine, An invited talk at the workshop entitled "The Interaction between the Atmosphere and Frozen Surfaces in Polar Regions", Toronto, Canada, September 19-21, 2005.

"Spatial Gradients in Halogen Oxides Across the North Slope of Alaska Indicate That Halogen Activated Airmasses are Spatially Large", W.R. Simpson, Hoenninger, G S, Platt, U., A talk presented at the AGU Fall Meeting, San Francisco, 5–9 December 2005.

"OOTI (Out On The Ice)", Hoenninger, G, Staebler, R, Morin, S, Netcheva, S, Simpson, W, Savarino, J, Bottenheim, J, A talk presented at the AGU Fall Meeting, San Francisco, 5–9 December 2005.

"Off-Axis Cavity Ring-Down Spectroscopy and Field Measurements of Dinitrogen Pentoxide at High-Latitudes", Apodaca, R L, Huff, D M, Simpson, W R, Ayers, J D, Baer, D S, A poster presented at theAGU Fall Meeting, San Francisco, 5–9 December 2005.

"Mercury deposition to snow and ice provides a link between the lower atmosphere and the cryosphere in northern Alaska", Douglas, T A, Sturm, M, Simpson, W R, Alvarez-Aviles, L, Blum, J D, Perovich, D K, Keeler, G J, Lammers, A, Biswas, A, A talk presented at the AGU Fall Meeting, San Francisco, 5–9 December 2005.

"LEADX-2005: A system study of near-surface winter tropospheric processes near Barrow, Alaska", Sturm, M., Shepson, P B, Bottenheim, J W, Pinto, J, Blum, J, Simpson, W R, Perovich, D K, Douglas, T, Brooks, S, Rhew, R, Keeler, G, A poster presented at the AGU Fall Meeting, San Francisco, 5–9 December 2005.

"Atmosphere Ice Chemical Interactions Workshop Arctic Ozone Depletion Overview", William R. Simpson, An invited talk presented at the AICI Conference, Grenoble France 29-31 May 2006.

"Physical and chemical evolution of dry snowpacks during metamorphism", Florent Dominé, A.-S. Taillandier, S. Houdier, F. Parrenin, W. R. Simpson, and T. A. Douglas, The Physics and Chemistry of Ice (PCI2006) conference, Bremerhaven, Germany 23-28 July, 2006.

"Nocturnal atmospheric chemistry probed by off-axis cavity ring-down spectroscopy", William R. Simpson, Randy Apodaca, Deanna Huff, James Ayers, Doug Baer, An invited talk at the American Chemical Society Fall meeting, San Francisco, 11 Sep 2006.

"Springtime Halogen Chemistry and Mercury Deposition in the Arctic", William R. Simpson , Dan Carlson, Gerd Hönninger, Laura Alvarez-Aviles, Matthew Sturm, Tom Douglas, Ulrich Platt, UAF Chemistry departmental seminar, Fairbanks, AK, 26 Sep 2006.

"Off-Axis Cavity Ring-Down Spectroscopy: Technical Aspects and Studies of High-Latitude Heterogeneous Hydrolysis of N_2O_5", William R. Simpson, Randy Apodaca, Deanna Huff, James Ayers, Juelich, Germany, 20-21 Nov 2006

"Observations of chemical composition in frost flower growth process and their implication in aerosol production and bromine activation chemistry", Laura Alvarez-Aviles, William R. Simpson, Thomas A. Douglas, Matthew Sturm, Donald Perovich, Fall AGU meeting, San Francisco, CA, 11-15 Dec, 2006.

"OBuoys MAXDOAS design status", William R. Simpson, Dan Carlson, Laura Alvarez-Aviles, Paty Matrai, Paul Shepson, Don Perovich, Udo Frieß, Ulrich Platt, Hannover, New Hampshire, 15-17 March 2007.

"O-buoys: self-contained, autonomous buoys for long-term observations of atmospheric chemical species in the polar marine boundary layer", Jan W. Bottenheim, Udo Friess, Patricia A. Matrai, Donald K. Perovich, Paul B. Shepson, and William R. Simpson, Spring European Geophysical Union (EGU) meeting, Vienna, Austria, 15–20 April 2007.

"Consideration of sea ice types and their role in springtime Arctic halogen chemistry", William R. Simpson, Dan Carlson, Laura Alvarez-Aviles, Matthew Sturm, Tom Douglas, Gerd Hönninger, Ulrich Platt, an invited talk, Institut für Umweltphysik, Universität Bremen, Bremen, Germany,14 June 2007.

“Measurements of vertical distributions of halogen oxides (e.g. BrO, IO) to understand their sources and reactivity during Barrow 09”, William R. Simpson, A talk at the OASIS 2009 Field campaign planning meeting, 9-10 July, 2007.

“University of Alaska Fairbanks Arctic Research Capabilities and Plans during ARCPAC – Spring 2008”, William R. Simpson, A talk presented at NOAA-Boulder in the Earth Systems Research Laboratory, Chemical Sciences Division, Boulder, Colorado, 11 July 2007.

“The role of sea ice and its microstructure on Arctic springtime halogen chemistry”, William R. Simpson, Laura Alvarez-Aviles, Dan Carlson, Ulrich Platt, Thomas A. Douglas, Matthew Sturm, Alexander Laskin, a poster presented at the Atmospheric Chemistry Gordon Research Conference, August 26-31, 2007.

“Surface reactivity and catalysis by liquid and liquid-like surfaces”, William R. Simpson, a talk in the UAF Environmental Chemistry Seminar Series, 15 Nov 2007.

“Observations of High-latitude NOx Removal Processes: The Roles of Dinitrogen Pentoxide, Aerosols, and Seasonal Snow Pack”, Apodaca, R. L.*, Huff, D., Simpson, W.R., a talk given at the Fall meeting of the American Geophysical Union (AGU), San Francisco, 10-14 Dec., 2007.

“Applications of Spectroscopy to Studying Atmospheric Chemistry”, Simpson, W.R., Apodaca, R. L., Huff, D., Carlson, D., a talk given at the Fall meeting of the American Geophysical Union (AGU), San Francisco, 10-14 Dec., 2007.

"Salt Distributions in the Sea-Ice Snowpack and Implications for Arctic Halogen Activation", Carlson, D.*, Alvarez-Aviles, A., Simpson, W.R., a poster given at the Fall meeting of the American Geophysical Union (AGU), San Francisco, 10-14 Dec., 2007.

"A Multiphase Study of the Chemical Composition of Air, Aerosol Particles, Snow, and Ice Forms Collected Near Barrow, Alaska Provides Information on Bromine Activation", Alvarez-Aviles, A.*, Carlson, D. Simpson, W.R., a poster given at the Fall meeting of the American Geophysical Union (AGU), San Francisco, 10-14 Dec., 2007.

"University of Alaska Fairbanks MAXDOAS halogen oxide observations", William R. Simpson, a talk presented in the ARCTAS campaign science seminar series, 15 April, 2008.

"Arctic Atmospheric Chemistry", William R. Simpson, A talk presented to the Fairbanks Chamber of Commerce, 8 May, 2008.

"Modeling of physical properties of a seasonal subarctic snowpack", H.-W. Jacobi, A.-S. Taillandier, F. Domine, S. Houdier, W.R. Simpson, M. Sturm, and T.A. Douglas, A poster at the IGAC 10th International Conference, 7-12 Sept 2008, Annecy, France.

"MAX-DOAS observations of BrO at Barrow; inversion of slant column densities to vertical column densities and vertical profiles", Deanna Donohoue, Dan Carlson, William R. Simpson, a talk given at the BrO ARCTAS workshop, 3 Oct 2008, Greenbelt, Maryland.

"Chemistry on Ice Surfaces", William Simpson, Tom Trainor, a talk given to the Environmental Chemistry Seminar Series, 12 Nov 2008, Fairbanks Alaska.

"High-Latitude Nitrogen Oxide Oxidation During Wintertime", Randy L. Apodaca*, Deanna M. Huff, William R. Simpson, a talk given at the 2008 AGU Fall Meeting, 15-19 Dec 2008, San Francisco, CA.

"Max-DOAS observations of BrO in Barrow, AK during Spring 2008", Deanna L. Donohoue, Daniel Carlson, Bryan Johnson, and William R.Simpson, a poster given at the 2008 AGU Fall Meeting, 15-19 Dec 2008, San Francisco, CA.

"University of Alaska Fairbanks MAXDOAS halogen oxide observations", William R. Simpson, Dan Carlson, Deanna Donohoue, a talk given at the 2009 ARCTAS all-hands meeting, 27-30 January 2009, Virginia Beach, VA.

"Max-DOAS observations of BrO in Barrow, AK during Spring 2008", Deanna L. Donohoue, Daniel Carlson, and William R.Simpson, a poster given at the 2009 ARCTAS all-hands meeting, 27-30 January 2009, Virginia Beach, VA.

"The Obuoy Project", Paty Matrai, Paul Shepson, Don Perovich, Jan Bottenheim, William R. Simpson, T. Knepp, R. Santini, P. Wyss, M. Carlson, J. Davison, S. Netcheva, C. Williams, D. Carlson, R. Stehle, T. Valentic, F. Gernot, F. Chavez, C. Rauschenberg, A talk given to the Barrow Arctic Science Consortium Science Schoolyard Project, 7 Feb 2009, Barrow, Alaska.

"Impurities in Snow on Sea Ice and their Atmospheric Chemistry", William R. Simpson, Dan Carlson, Deanna Donohoue, A talk given to the Snow on Sea Ice Workshop, 27 Feb 2009, Fairbanks Alaska.

"Measurements of Arctic Atmospheric Halogen Chemistry: Connecting Measurements from Aircraft, Ground Sites, and Free-Floating Autonomous Ice-Tethered Buoys", William R. Simpson, Deanna Donohoue, and Dan Carlson, A talk given in the Atmospheric Sciences Seminar series, 8 Apr 2009, Fairbanks Alaska.

"An Empirical Approach to Determining the Boundary Layer Bromine Monoxide (BrO) Abundance from Satellite Total Column Measurements", Simpson, W R, Donohoue, D, Carlson, D A, a poster given at the 2009 AGU Fall Meeting, 14-18 Dec 2009, San Francisco, CA.

"Deposition of N_2O_5 to the snowpack at high latitudes", Huff, D M, Apodaca, R L, Joyce, P L, Fochesatto, G J, Simpson, W R, a poster given at the 2009 AGU Fall Meeting, 14-18 Dec 2009, San Francisco, CA.

"The geochemical composition of frost flowers in the Alaskan Arctic and their role in mercury deposition", Douglas, T A, Sturm, M, Blum, J D, Sherman, L S, Steffen, A, Simpson, W R, a talk given at the 2009 AGU Fall Meeting, 14-18 Dec 2009, San Francisco, CA.

"Multiple Axis Differential Optical Absorption Spectroscopy (MAX-DOAS) Observations of Bromine Monoxide (BrO) at Barrow, Alaska: An Instrumental Inter-Comparison", Carlson, D A, Donohoue, D, Simpson, W R, Friess, U, Sihler, H, Platt, U, a poster given at the 2009 AGU Fall Meeting, 14-18 Dec 2009, San Francisco, CA.

"Comparison of BrO observed by ground-based MAX-DOAS and satellite for Barrow, Alaska during ARCTAS, March and April 2008", Donohoue, D, Carlson, D, Simpson, W R, Kurosu, T P, Chance, K, Canty, T P, Salawitch, R J, a poster given at the 2009 AGU Fall Meeting, 14-18 Dec 2009, San Francisco, CA.

"Towards a Space-Based Estimate of Tropospheric Column BrO: A Description of Model Estimates of the Stratospheric Contribution to the Total Column", Canty, T P, Salawitch, R J, Liang, Q, Da Silva, A, Pawson, S, Rodriguez, J M, Kinnison, D E, Tilmes, S, Pan, L, Pierce, R, Kurosu, T P, Chance, K, Liu, X, Simpson, W R, Donohoue, D, Carlson, D A, a poster given at the 2009 AGU Fall Meeting, 14-18 Dec 2009, San Francisco, CA.

"Understanding Satellite BrO Measurements during ARCTAS and ARCPAC", Choi, S, Wang, Y, Koo, J, Zeng, T, Kurosu, T P, Chance, K, Richter, A, Rozanov, A, Pierce, R, Natarajan, M, Al-Saadi, J A, Worden, J, Huey, G, Neuman, J, Dibb, J E, Hair, J W, Fenn, M A, Weinheimer, A J, Ryerson, T B, Oltmans, S J, Thompson, A M, Simpson, W R, Salawitch, R J, Canty, T P, Adams, C, Strong, K, a poster given at the 2009 AGU Fall Meeting, 14-18 Dec 2009, San Francisco, CA.

"Airborne, Ground-based, and Satellite Measurements of BrO during ARCTAS and ARCPAC", Salawitch, R J, Canty, T P, Kurosu, T P, Chance, K, Liang, Q, Pawson, S, Liu, X, Huey, G, Liao, J, Stickel, R E, Tanner, D, Dibb, J E, Weinheimer, A J, Flocke, F M, Knapp, D J, Montzka, D D, Neuman, J, Simpson, W R, Donohoue, D, Carlson, D, Blake, D R, Kinnison, D E, Tilmes, S, Pan, L, Pierce, R, Hendrick, F, Kreher, K, Wang, Y, Choi, S, Atlas, E L, a talk given at the 2009 AGU Fall Meeting, 14-18 Dec 2009, San Francisco, CA.

"Remote Sensing of Bromine Monoxide in Relation to Boundary Layer Halogen Chemistry", William R. Simpson, Deanna Donohoue, Dan Carlson, Ross Salawitch, Tim Canty, Thomas Kurosu, and Kelly Chance, An invited talk given at the 2010 IGARSS conference, 25-30 July 2010, Honolulu, HI.

“Estimations of nitrogen deposition due to heterogeneous hydrolysis of N_2O_5 at high latitudes”, P L Joyce*, W R Simpson, R von Glasow, A poster at the 2010 Fall AGU meeting, San Francisco, CA.

“A New Interpretation of Total Column BrO during Arctic Spring”, R J Salawitch, T P Canty, T P Kurosu, K Chance, Q Liang, S Pawson, P K Bhartia, X Liu, L G Huey, J E Dibb, W R Simpson, D Donohoue, A J Weinheimer, F M Flocke, J Neuman, J B Nowak, T B Ryerson, S

J Oltmans, D R Blake, E L Atlas, D E Kinnison, S Tilmes, L Pan, F Hendrick, M Van Roozendael, K Kreher, P V Johnston, R Pierce, J H Crawford, D J Jacob, Title of Team: and A da Silva, J.E. Nielsen, J.M. Rodriguez, J. Liao, R.E. Stickel, D.J. Tanner, D. Knapp, D. Montzka, R.S. Gao, T.P. Bui, and G. Chen, A talk at the 2010 Fall AGU meeting, San Francisco, CA.

"Long term Measurements of ozone, bromine monoxide and carbon dioxide over the Frozen Arctic Ocean Surface: first data from O-Buoy Deployments", J W Bottenheim, P A Matrai, S Netcheva, D K Perovich, P B Shepson, W R Simpson, Title of Team: the O-Buoy team, A poster at the 2010 Fall AGU meeting, San Francisco, CA.

"Rejuvenation of Arctic Sea Ice and Tropospheric Chemical Change", S V Nghiem, I G Rigor, P Clemente-Colon, A Freeman, A Richter, J P Burrows, P B Shepson, J W Bottenheim, D G Barber, W R Simpson, D K Perovich, M Sturm, A Steffen, L Kaleschke, D K Hall, T Markus, H Eicken, G Neumann, A poster at the 2010 Fall AGU meeting, San Francisco, CA.

"Arctic Atmospheric Chemistry", William R. Simpson. A talk given to the IARC Summer School: Modeling the Arctic Climate, 3 June 2011, Fairbanks, AK.

"Long Term Observations of Reactive Halogens in the Arctic Boundary Layer", William R. Simpson, Steven Walsh, Peter Peterson, Dan Carlson, Deanna Donohoue, a poster presented at the Atmospheric Chemistry Gordon Conference, July 24-29 2011, Mount Snow Resort, West Dover, VT.

"Observations of BrO above Fairbanks, AK using Ground-Based MAX-DOAS: Influences of Spectral Fitting Windows", Peter Peterson, Steven Walsh, Patrick Joyce, William Simpson, Udo Frieß and Ulrich Platt, a poster presented at the 2011 Fall AGU meeting, 5-9 Dec 2011, San Francisco, CA.

"The Measurement of Bromine Monoxide from Fairbanks, AK and Comparison with AURA/OMI", G. H. Mount, E. Spinei, J. Herman, A. Cede, N. Abuhassan, W. R. Simpson, R. McPeters, P.K. Bhartia, B. Johnson, R. Salawitch,T. Canty, K. Chance, T. Kurosu, R. Suleiman, a poster presented at the 2011 Fall AGU meeting, 5-9 Dec 2011, San Francisco, CA.

"The BRomine, Ozone, and Mercury EXperiment in (BROMEX)", Son V. Nghiem, Paul B. Shepson, William Simpson, Donald K. Perovich, Matthew Sturm, Thomas Douglas, Ignatius G. Rigor, Pablo Clemente-Colón, John P. Burrows, Andreas Richter, Jan Bottenheim, Alexandra Steffen, David G. Barber, Lars Kaleschke, Dorothy K. Hall, Thorsten Markus, Hajo Eicken, and Gregory Neumann, a poster presented at the 2011 Fall AGU meeting, 5-9 Dec 2011, San Francisco, CA.

"Improved OMI BrO and OClO algorithms and BrO validation", Suleiman, R M, Chance, K, Kurosu, T P, Mount, G H, Spinei, E, Simpson, W R, Kreher, K, Donohoue, D, Salawich, R., Hendrick, F, a poster presented at the 2011 Fall AGU meeting, 5-9 Dec 2011, San Francisco, CA.

O-buoy measurements over the Arctic sea ice: Temporal and spatial extents of ozone depletion events, Halfacre, J W, Shepson P B, Simpson, W R, Knepp T N, Pratt K A, Matrai P A, Bottenheim J W, Perovich, D K, Baldwin, M E, Fuentes, J D., a poster presented at the 2011 Fall AGU meeting, 5-9 Dec 2011, San Francisco, CA.

"Halogen activation in the Arctic boundary layer: Field and laboratory investigations to elucidate the chemical mechanism", William R. Simpson, Steven J. Walsh, Peter Peterson, Erin

Gleason, Eyal Saiet, Deanna Donohoue, and Dan Carlson, Invited talk at University of Toronto, 30 Apr 2012, Toronto, CANADA.

"Remote Sensing of Halogen Oxides in the Arctic: Improving Understanding of Oxidation Chemistry in the Arctic", William R. Simpson, Steven J. Walsh, Peter Peterson, Erin Gleason, Eyal Saiet, Paul Shepson, John W. Halfacre, Udo Friess, Ulrich Platt, Todd Valentic, Invited talk at the Fall 2012 ACS National Meeting, 19 Aug 2012, Philadelphia, PA.

"Vertical Profiles of BrO and De-Coupling of the BrO Layer from the Surface", Peter Peterson, Steven Walsh, Erin Gleason, William Simpson, Udo Frieß, and Ulrich Platt, a talk presented at the BROMEX Workshop, 16-18 October 2012, Seattle WA.

"Lagrangian experiments between the IceLanders and Barrow to probe the timescale of ozone depletion and halogen activation", Steve Walsh, Peter Peterson, Erin Gleason, William Simpson, a talk presented at the BROMEX Workshop, 16-18 October 2012, Seattle WA.

"Observations of BrO above Barrow, AK using Ground-Based MAX-DOAS: Investigating Effects of Surface Chemistry on Observed BrO Boundary Layer Vertical Column Densities", Peter Peterson, Steven J Walsh, Erin Gleason, William Simpson, Udo Frieß, Ulrich Platt, Samuel Oltmans, Kerri Pratt, Kyle Custard, Paul Shepson, David Tanner, and Gregory Huey, a poster presented at the American Geophysical Union Fall Meeting, December 2012, San Francisco, CA.

"Horizontal gradients of bromine monoxide (BrO) across the lead and young sea ice features from surface based instruments near Barrow, AK during the BRomine, Ozone, Mercury EXperiment (BROMEX), Spring 2012", Steven J. Walsh, William Simpson, Peter Peterson, Erin Gleason, Paul Shepson, Kerri Pratt, John W. Halfacre, Samuel Oltmans, Ignatius Rigor, Son Nghiem, Donald Perovich, Matthew Sturm, Johannes Zielcke, Udo Frieß, and Ulrich Platt, a poster presented at the American Geophysical Union Fall Meeting, December 2012, San Francisco, CA.

"Examining the ability of snow and sea ice to maintain halogen activation", William R. Simpson, Steven Walsh, Peter Peterson, Erin Gleason, Paul Shepson, Kerri Pratt, John W. Halfacre, Samuel Oltmans, Florent Domine, Son V. Nghiem, Don Perovich, Matthew Sturm, a poster presented at the American Geophysical Union Fall Meeting, December 2012, San Francisco, CA.

"Temporal and spatial characteristics of ozone depletions events from measurements over the Arctic Ocean" J.W. Halfacre, T.N. Knepp, P.B. Shepson, B. Li, W.R. Simpson, P. Peterson, S.J. Walsh, C.R. Stephens, K. A. Pratt, P. Matrai, J.W. Bottenheim, S. Netcheva, D.K. Perovich, A. Richter, a poster presented at the American Geophysical Union Fall Meeting, December 2012, San Francisco, CA.

"Measurements of Vertical Profiles of Turbulence, Temperature, Ozone, Aerosols, and BrO over Sea Ice and Tundra Snowpack during BROMEX", Paul Shepson; Dana Caulton; Maria Obiminda L. Cambaliza; Suresh Dhaniyala; Jose D. Fuentes; Stephan General; John W. Halfacre; Son V. Nghiem; Lemuel Perez Perez; Peter K. Peterson; Ulrich Platt; Denis Pohler; Kerri A. Pratt; William R. Simpson; Brian Stirm; Steven J. Walsh; Johannes Zielcke, a poster presented at the American Geophysical Union Fall Meeting, December 2012, San Francisco, CA.

"Long-term seasonal observations over the transitioning Arctic Ocean pack-ice: The O-Buoy Chemical Network", Patricia A. Matrai; Jan W. Bottenheim; Francisco Chavez; Gernot

Friederich; John W. Halfacre; Stoyka Netcheva; Donald K. Perovich; Peter K. Peterson; Carlton D. Rauschenberg; Paul Shepson; William R. Simpson; Todd A. Valentic; Steven J. Walsh; Christopher R. Williams, a poster presented at the American Geophysical Union Fall Meeting, December 2012, San Francisco, CA.

"Atmospheric Halogen Chemistry: Current state of knowledge and opportunities for interdisciplinary research", William R. Simpson, Erin Gleason, Peter Peterson, Simeon Schum, Steven J. Walsh, Geophysical Institute Graduate Student Association Seminar Series, 8 Apr 2013, Fairbanks, AK.

"Horizontal and vertical distributions of Arctic halogen oxides and their relationship to changing Arctic sea ice", William R. Simpson, Peter K. Peterson, Steven J. Walsh, Deanna Donohoue, Udo Frieß, Ulrich Platt, Paul Shepson, Kerri Pratt, Don Perovich, Paty Matrai, Son Nghiem, Sam Oltmans, 2013 International DOAS Workshop, 12-14 Aug 2013, Boulder, CO.

"Physiochemical Properties of Sodium Chloride Particles on Laboratory Ice Surfaces", Erin P. Gleason, William R. Simpson, a poster presented at the American Geophysical Union Fall Meeting, December 2013, San Francisco, CA, Poster number C13A-0662.

"Impacts of Recent Perennial Sea Ice Reduction on Reactive Halogen Observations at Barrow, Alaska", Peter Peterson, William Simpson, Deanna Donohoue, Son Nghiem, Udo Frieß, Ulrich Platt, a talk presented on 9 Dec 2014 at the American Geophysical Union Fall Meeting, December 2013, San Francisco, CA.

"Photochemical Bromine Production from Arctic Surface Snowpacks and Resulting Chemistry Aloft", Kerri A. Pratt, Paul B. Shepson, Roland von Glasow, Peter Peterson, William R. Simpson, Denis Pöhler, Stephan General, Johannes Zielcke, Kyle D. Custard, Thomas A. Douglas, Ulrich Platt, David J. Tanner, L. Gregory Huey, Mark Carlsen, Brian H. Stirm, an invited talk presented at the American Geophysical Union Fall Meeting, December 2013, San Francisco, CA.

"Direct sun measurements of O_3, SO_2 and aerosol optical depth from Brewer #171 at Goddard Space Flight Center, Maryland (2001-2010) and Fairbanks, Alaska (2011-2013)", Alexander Cede, Gordon Labow, William Simpson, Erin Gleason, Richard McPeters, Jay Herman, Tenerife2014 Conference.

"Seasonal effects on Arctic halogen chemistry", William R. Simpson, Steven J. Walsh, and Peter K. Peterson, an oral presentation at the 2014 Canadian Society for Chemistry Conference, Chemistry of the Sea and Sky, 1-5 June 2014, Vancouver, BC, CA.

"Vertical and horizontal gradients in bromine monoxide assist in understanding arctic halogen activation mechanisms", William R. Simpson, Peter K. Peterson, and Son Nghiem, an oral presentation at the ACS National Meeting, San Francisco, CA, August 10-14, 2014.

Patricia M. Matrai, Jan W. Bottenheim, Mark Carlsen, Francisco Chavez, Mike Everly, Gernot Friederich, John W. Halfacre, Stoyka Netcheva, Robert Oglesbee, Donald K. Perovich, Peter Peterson, Carlton D. Rauschenberg, Paul B. Shepson, William R. Simpson, Todd Valentic, Christopher R. Williams, Phillip Wyss, James Zimmerman, "Long-term observations over the transitioning Arctic Ocean pack-ice: The O-Buoy chemical network", a presentation at the Arctic Change 2014 Conference, 8-12 Dec 2014, Ottawa, Canada.

J. W. Halfacre, P. B. Shepson, P. K. Peterson, W. R. Simpson, J. W. Bottenheim, S. Netcheva, S. V. Nghiem, A. Richter, J. Burkhart, D. K. Perovich, P. A. Matrai , Arctic Ozone Depletion Event Characteristics from Coastal- and Ocean-based Observations, Poster number C31C-0315 from the Fall AGU meeting, 15-19 Dec 2014, San Francisco, CA, USA.

Chris Moore, Daniel Obrist, Alexandra Steffen, Ralf M. Staebler, Thomas A. Douglas, William R. Simpson, Peter Peterson, and Son V. Nghiem, Role of Snow and Ice Surfaces in the Atmospheric Cycling of Mercury in the Arctic, presented at the ICMGP, 14-19 June 2015, Jeju, Korea.

Peter Peterson, Kerri Pratt, William Simpson, Son Nghiem, Johannes Zielke, Stephan General, Denis Poehler, Udo Friess, Ulrich Platt, Paul Shepson, "Use of ground-based and airborne MAX-DOAS to examine horizontal and vertical BrO gradients at Barrow, Alaska", Oral presentation at the 7th International DOAS workshop, 6-8 July 2015, Brussels Belgium.

William R. Simpson, "Wintertime photooxidation – Radical sources and recycling", a poster given at the Atmospheric Chemistry Gordon Research Conference: "Multiphase Processes: Observations and Fundamentals", August 2-7, 2015, Waterville Valley, NH, USA.

William Simpson, Paty Matrai, Francisco Chavez, Paul Shepson, Donald Perovich, Peter Peterson, John Halfacre, and the Obuoy Team, "Autonomous "OBuoy" observations of the Arctic atmosphere", An oral presentation at the Arctic Observing Open Science Meeting, 17-19 Nov 2015.

Justine Burd*, Son V. Nghiem, William R. Simpson, "Environmental Factors Influencing Arctic Halogen Chemistry During Late Spring", Poster A11C-0083 at the Fall 2015 AGU meeting, 14-18 December, 2015, San Francisco, CA, USA

Peter Peterson, Kerri Pratt, William R Simpson, Paul B Shepson, Denis Pöhler, Udo Friess, Johannes Zielcke, Ulrich Platt. Son V Nghiem, and Holger Sihler, "Characterizing Variability in the Spatial Distribution of Bromine Explosion Events in the Vicinity of Barrow, Alaska", Poster A11C-0084 at the Fall 2015 AGU meeting, 14-18 December, 2015, San Francisco, CA, USA

Kerri Pratt, Peter Peterson, Mark Hartwig, Nathaniel May, William R Simpson, Denis Pöhler, Johannes Zielcke, Udo Friess, Stephan General, Ulrich Platt, Paul B Shepson, Ignatius G Rigor, Son V Nghiem, Michael Steele, and James Morison, "Arctic Ozone and Bromine Chemistry: Relationships with Snow Composition and Open Lead Presence", Invited talk A34F-01 at the Fall 2015 AGU meeting, 14-18 December, 2015, San Francisco, CA, USA

Pam Wales, Ross J Salawitch, Timothy P Canty, George H Mount, Elena Spinei, Raid M Suleiman, Kelly Chance, Richard D McPeters, Pawan K Bhartia, Thomas p Kurosu, William R Simpson, Deanna Donohoue, Bryan J Johnson, Douglas E Kinnison, Simone Tilmes, Sungyeon Choi, and Joanna Joiner, "A Reevaluation of the Contribution of Very Short Lived Bromocarbons to Stratospheric Bromine Loading", Poster A21B-0126 at the Fall 2015 AGU meeting, 14-18 December, 2015, San Francisco, CA, USA

William R Simpson, Peter Peterson, and Justine Burd*, "Vertical Structure and Vertical Evolution of Halogen Activation Events Observed by Autonomous Buoys", Poster A41K-0230 at the Fall 2015 AGU meeting, 14-18 December, 2015, San Francisco, CA, USA

Kristian Nattinger*, William R Simpson, and Deanna Huff, "Compositional Analysis of Fine Particulate Matter in Fairbanks, Alaska", Poster A41K-0218 at the Fall 2015 AGU meeting, 14-18 December, 2015, San Francisco, CA, USA

William R. Simpson, Kristian Nattinger*, and Michael Hooper§, "Efforts towards improving quantificaton of wood smoke contribution to Fairbanks North Star Borough fine particulate (PM2.5) pollution", an oral presentation at the NORM regional ACS meeting, June 26-29, 2106, Anchorage, AK, USA.

William R. Simpson, “Arctic Atmospheric Chemistry”, a lecture given to the 2016 IARC summer school, 13 July 2016, Fairbanks, AK, USA.

William R. Simpson, “Arctic Oxidation Chemistry”, a lecture delivered over the internet to the Connaught Summer Institute 2016, 19 July, 2016, Toronto, ON, Canada

William R. Simpson, “Arctic Chemistry And Climate”, a lecture delivered over the internet to the Connaught Summer Institute 2016, 21 July, 2016, Toronto, ON, Canada

KC Nattinger*, Deanna Huff, William R. Simpson, “Spatial and Temporal Analysis of the Composition of Fine Particulates in Fairbanks, Alaska”, A talk given to the FNSB “Clear the Air, Paths to Attainment Conference and Expo”, 26-28 Sep 2016.

Peter Peterson, William Simpson, Son Nghiem, Johannes Zielcke, Stephan General, Denis Pöhler, Udo Frieß, Ulrich Platt, Paul Shepson, Holger Sihler, and Kerri Pratt, “Characterizing the Vertical Extent of Reactive Halogen Chemistry in the Vicinity of Barrow, Alaska”, a poster presented at the International Global Atmospheric Chemistry (IGAC) Project 2016 Science Conference, 26-30 September 2016, Breckenridge, CO, USA.

William Simpson, Ulrich Platt, Udo Friess, and Peter Peterson, “MAX-DOAS observations of aerosol optical properties”, an oral presentation given to the IASOA Aerosol working group, 5 Oct 2016.

William Simpson, Will Swanson, Ulrich Platt, Udo Frieß, Paty Matrai, Paul Shepson, Wes Halfacre, Peter Peterson, Kerri Pratt, Don Perovich, and Francisco Chavez, “Looking around the Arctic: What you can learn through autonomous spectroscopic measurements of gases and particles”, UAF Atmospheric Sciences Informal Seminar, 26 Oct 2016, Fairbanks, AK, USA.

William Simpson, Will Swanson, Ulrich Platt, Udo Frieß, Paty Matrai, Paul Shepson, Wes Halfacre, Peter Peterson, Kerri Pratt, Don Perovich, and Francisco Chavez, “Looking around the Arctic: What you can learn through autonomous spectroscopic measurements of gases and particles”, an invited talk to Harvard University, 4 Nov 2016, Harvard University, Cambridge, MA, USA.

Nicole Jacobs*, William R Simpson, Kimberly Strong, Stephanie A Conway, Yasuko Kasai, Manvendra Krishna Dubey, Harrison Alexander Parker, Frank Hase, Thomas Blumenstock, and Qiansi Tu, “An investigation of regional tropospheric methane in central interior Alaska using direct-sun FTIR”, Poster number A41F-0101 presented at the 2016 Fall Meeting of the American Geophysical Union, San Francisco, CA, USA

William R. Simpson, Udo Frieß, Allison McComiskey, and Jessie Creamean, “Arctic aerosol and cloud observations via MAX-DOAS: Methods and comparison with established methods”, Poster number A51J-021 presented at American Geophysical Union Fall Meeting 2016, San Francisco, CA, USA, 12-16 December 2016

William Simpson, Will Swanson, Ulrich Platt, Udo Frieß, Paty Matrai, Paul Shepson, Wes Halfacre, Peter Peterson, Kerri Pratt, Don Perovich, and Francisco Chavez, “MAX-DOAS measurements of gases and particles from the Arctic sea ice probed by autonomous ice-tethered buoys”, an talk to the Institute of Environmental Physics, University of Heidelberg, 12 Jan 2017, Heidelberg, Germany.

William Simpson, Will Swanson, Ulrich Platt, Udo Frieß, Paty Matrai, Paul Shepson, Wes Halfacre, Peter Peterson, Kerri Pratt, Don Perovich, and Francisco Chavez, “Autonomous

"O-Buoy" observations of gases, particles, and clouds from the Arctic sea ice", an talk to LATMOS, University of Paris, 17 Jan 2017, Paris, France.

William Simpson, Will Swanson, Ulrich Platt, Udo Frieß, Paty Matrai, Paul Shepson, Wes Halfacre, Peter Peterson, Kerri Pratt, Don Perovich, and Francisco Chavez, "Observations of gases, particles, and clouds from the Arctic sea ice: A progress report", an talk to the Remote Sensing group, Max Planck Institute for Chemistry, 19 Jan 2017, Mainz, Germany.