

Taryn M. López

Curriculum Vitae

Research Assistant Professor
University of Alaska Fairbanks (UAF)
Geophysical Institute (GI)
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Academic Preparation

- 2007 – 2013 **Ph.D., Environmental Chemistry**
University of Alaska Fairbanks
Thesis: *Characterization and interpretation of volcanic activity at Redoubt, Bezymianny and Karymsky Volcanoes through direct and remote measurements of volcanic emissions*
Committee: Drs. Catherine Cahill (Chair), Jonathan Dehn, Rainer Newberry, William Simpson and Cynthia Werner
- 2003 – 2006 **M.S., Geology**
Michigan Technological University (MTU)
Thesis: *Volcanic gas analysis at Cerro Negro volcano, Nicaragua: Chemical, spatial and thermal trends of Cerro Negro's fumarolic gases, using new and existing gas sampling techniques*
Committee: Drs. I. Matthew Watson (Chair), L. Jean Wardell, William Rose, John Gierke, and Richard Honrath
- 1998 – 2003 **B.S., Geology, Cum Laude**
University of Wisconsin – Eau Claire (UWEC)
Minors in Spanish, Marketing and Latin American Studies
Capstone Research: *Lateral variability in heavy metal speciation within lacustrine environments, Lower Coeur d'Alene River Valley, Idaho*
Advisor: Dr. Robert Hooper

Research Objectives

- Exploit the chemical and isotopic signatures of volcanic gases and waters to constrain volatile sources and elucidate subduction processes
- Use temporal variations in the composition and flux of volcanic gases to identify magma ascent, characterize subsurface hydrothermal conditions, and/or determine changes in conduit permeability
- Combine high temporal resolution volcanic gas composition and/or flux measurements with complementary geophysical data sets to elucidate volcanic processes and eruption dynamics

Positions Held

- Research Assistant Professor, UAF Geophysical Institute (2016 – Present)
- Postdoctoral Researcher, UAF Geophysical Institute (2015 – 2016)
- Postdoctoral Research Fellow, National Science Foundation (NSF) GeoPRISMS Program (2013 – 2015)
- English-Spanish Interpreter, NSF Plutons Project (March 2011, March 2012)
- Graduate Student Internship, U.S. Geological Survey (USGS) AVO (Summer 2010)
- Research Participant, NSF-PIRE Project (2007 – 2009)

- Research Assistant, UAF-GI/AVO (2009 – 2012)
- Teaching Assistant, UAF Chemistry and Biochemistry (2007 – 2008)
- Volunteer, USGS Cascades Volcano Observatory (Summer 2005, 2006)
- Research Assistant, MTU Geological and Mining Engineering and Sciences (2003 – 2006)
- Teaching Assistant, MTU Geological and Mining Engineering and Sciences (Fall 2004, 2005)

Publications in Progress

- Lopez, T.**, Aguilera, F., Tassi, F., de Moor, J.M., Bobrowski, N., Aiuppa, A., Tamburello, G., Rizzo, A., Liuzzo, M., Viveiros, M.F., Cardellini, C., Silva, C., Fischer, T., Jean-Baptiste, P., Kazahaya, R., Hidalgo, S., Malowany, K., Lucic, G., Bagnato, E., Bergsson, B., Reath, K., Liotta, M., Chiodini, G. (in review), New constraints on the magmatic-hydrothermal system and volatile budget of Lastarria Volcano, Chile: Integrated results from the 2014 IAVCEI CCVG 12th Volcanic Gas Workshop, *Geosphere*.
- Lopez, T.**, Tassi, F., Aiuppa, A., Galle, B., Rizzo, A., Fiebig, J., Capecchiacci, F., Giudice, G., Caliro, S., Ketner, D., Tamburello, G. and Paskievitch, J. (in prep), Geochemical constraints on the volatile sources and subsurface conditions at Mount Martin, Mount Mageik, and Trident Volcanoes, Katmai Volcanic Cluster, Alaska, to be submitted to *Journal of Volcanology and Geothermal Research*.
- Lopez, T.**, Holtkamp, S., West, M., Aiuppa, A., Giudice, G., Whittaker, S., Ketner, D., and Paskievitch, J. (in prep), Geochemical constraints on the seismic signatures of subsurface fluid flow, to be submitted to *Earth and Planetary Science Letters*.

Publications

- Fischer, T.P. and **Lopez, T.M.**, (2016), First airborne samples of a volcanic plume for $\delta^{13}\text{C}$ of CO_2 determinations, *Geophysical Research Letters*, 43, doi:10.1002/2016/GL068499.
- Lopez, T.**, Thomas, H., Prata, A., Amigo, A., Fee, D., and Moriano, D. (2015), Volcanic plume characteristics determined using an infrared imaging camera, *Journal of Volcanology and Geothermal Research Special Issue on Volcanic Plume Imaging*.
- Evans, W., Bergfeld, D., Neal, T., McGimsey, G., Werner, C., Waythomas, C., Lewicki, J., **Lopez, T.**, Mangan, M., Miller, T., Difenbach, A., Schaefer, J., Coombs, M., Wang, B., Nicolaysen, K., Izbekov, P., Maharrey, Z., Huebner, M., Hunt, A., Fitzpatrick, J., and Freiburg, G. (2015), Aleutian Arc geothermal fluids: chemical analyses of waters and gases. U.S. Geological Survey Data Release: <http://dx.doi.org/10.5066/F74X55VB>.
- Matoza, R., Fee, D., and **Lopez, T.**, (2014), Acoustic characterization of explosion complexity at Sakurajima, Karymsky, and Tungurahua Volcanoes, *Seismological Research Letters Special Issue on the Sakurajima Volcano Acoustics Workshop*, 85(6). doi:10.1785/0220140110.
- Lopez, T.**, Fee, D., Prata, F., and Dehn, J., (2013), Characterization of volcanic activity at Karymsky Volcano, Kamchatka, Russia, using observations of infrasound, volcanic emissions, and thermal imagery, *Geochemistry, Geophysics, Geosystems*. doi:10.1002/2013GC004817.
- Lopez, T.**, Ushakov, S., Izbekov, P., Tassi, F., Werner, C., and Cahill, C., (2013), Constraints on magma processes, subsurface conditions, and total volatile flux at Bezymianny Volcano in 2007 – 2010 from direct and remote volcanic gas measurements, *Journal of Volcanology and Geothermal Research Special Issue on Magma system Response to Volcano Sector Collapse*, 263, 92-107. doi:10.1016/j.volgeores.2012.10.015.
- Lopez, T.**, Carn, S., Werner, C., Kelly, P., Doukas, M., Pfeffer, M., Fee, D., Webley, P., Cahill, C., Schneider, D., (2013), Evaluation of Redoubt Volcano's sulfur dioxide emissions by the Ozone Monitoring Instrument, *Journal of Volcanology and Geothermal Research*, 259, 290-307, doi:10.1016/j.volgeores.2012.03.002.

- Lopez, T.**, (2013), Characterization and interpretation of volcanic activity at Redoubt, Bezymianny, and Karymsky Volcanoes through direct and remote measurements of volcanic emissions, *Ph.D. Dissertation*, University of Alaska Fairbanks.
- Fee, D., McNutt, S., **Lopez, T.**, Arnoult, K., Szuberla, C., Olson, J., (2013), Combining local and remote infrasound recordings from the 2009 Redoubt Volcano eruption, *Journal of Volcanology and Geothermal Research*, 259, 100-114, doi:10.1016/j.jvolgeores.2011.09.012.
- Kelly, P., Kern, C., **Lopez, T.**, Werner, C., Roberts, T., Aiuppa, A., (2013), Rapid chemical evolution of tropospheric volcanic emissions from Redoubt Volcano, Alaska, based on observations of ozone and halogen-containing gases, *Journal of Volcanology and Geothermal Research*, 259, 317-333, doi:10.1016/j.jvolgeores.2012.04.023.
- Webley, P., **Lopez, T.**, Ekstrand, A., Dean, K., Rinkleff, P., Dehn, J., Cahill, C., Wessels, R., Schneider, D., Bailey, J., Izbekov, P., and Worden, A., (2013), Remote observations of the eruptive clouds and surface thermal activity during the 2009 eruption of Redoubt Volcano, *Journal of Volcanology and Geothermal Research*, 259, 185-200, doi:10.1016/j.jvolgeores.2012.06.023.
- Werner, C., Kelly, P., Doukas, M., **Lopez, T.**, Pfeffer, M., McGimsey, R., Neal, C., (2013), Degassing associated with the 2009 Eruption of Redoubt Volcano, Alaska, *Journal of Volcanology and Geothermal Research*, 259, 270-284, doi:10.1016/j.jvolgeores.2012.04.012.
- Schaefer, J., Bull, K., Cameron, C., Coombs, M., Diefenbach, A., **Lopez, T.**, McNutt, S., Neal, C., Payne, A., Power, J., Schneider, D., Scott, W., Snedigar, S., Thompson, G., Wallace, K., Waythomas, C., Webley, P., Werner, C. (2012), The 2009 eruption of Redoubt Volcano, Alaska, *Alaska Division of Geological and Geophysical Surveys Report of Investigations 2011-5*, 45 p.
- Carn, S.A., and **T.M. Lopez**, (2011), Opportunistic validation of sulfur dioxide in the Sarychev Peak volcanic eruption cloud, *Atmospheric Measurement Techniques*, 4, 1705-1712.
- Lopez, T.M.**, (2006), Volcanic gas analysis at Cerro Negro Volcano, Nicaragua: Chemical, spatial, and thermal trends of Cerro Negro's fumarolic gases using new and existing gas sampling techniques, *Master's Thesis*, Michigan Technological University.

Presentations and Abstracts

- Lopez, T.**, Fischer, T., Rizzo, A., Werner, C., Kern, C., Along-arc trends in volatile composition within the Aleutian Arc with implications for volatile cycling, Presentation Abstract: American Geophysical Union Fall Meeting, San Francisco, California, December 12 – 16, 2016.
- Lopez, T.**, Fischer, T., Rizzo, A., Werner, C., Kern, C., Linking subduction to volcanism within the Aleutian Arc using volcanic gas geochemistry, Poster: Subduction Zone Observatory Workshop, Boise, Idaho, September 28-30, 2016.
- Lopez, T.**, Using volcanic gas geochemistry to trace volatile cycling within subduction zones, Presentation: Subduction Zone Observatory Workshop, Boise, Idaho, September 28-30, 2016.
- Lopez, T.** Fischer, T., Rizzo, A., Isotopic Constraints on Volatile Cycling within the Aleutian Arc, Presentation Abstract: Japan Kamchatka Alaska Subduction Processes 9th Workshop, Fairbanks, Alaska, May 31 – June 3, 2016.
- Lopez, T.**, Tassi, F., Capecchiacci, F., Chiodini, G., Fiebig, J., Rizzo, A., Caliro, S., Gas Geothermometry for typical and atypical hydrothermal gases: A case study of Mount Magiek and Trident Volcanoes, Alaska, Poster Abstract: European Geophysical Union General Assembly, Vienna, Austria, April 18 – 22, 2016.
- Lopez, T.**, Holtkamp, S., West, M., Aiuppa, A., Guidice, G., Whittaker, S., Galle, B., Capecchiacci, F., Ketner, D., Tassi, F., Paskievitch, J., Chiodini, G., Fiebig, J., Rizzo, A., and Caliro, S., Combining high temporal resolution gas composition and seismic data to identify subsurface fluid movement within the Katmai Volcanic Complex, Alaska, Presentation Abstract: American Geophysical Union Fall Meeting, San Francisco, California, December 14 – 18, 2015.

- Fee, D., Kim, K., Yokoo, A., Izbekov, P., **Lopez, T.**, Prata, F., Ahonen, P., Kazahaya, R., Shinohara, H., Shimano, T., Nakamichi, H., Iguishi, M., Infrasound waveform inversion and mass flux validation from Sakurajima Volcano, Japan, Presentation Abstract: American Geophysical Union Fall Meeting, San Francisco, California, December 14 – 18, 2015.
- Fiebig, J., Tassi, F., Viveiros, F., Silva, C., **Lopez, T.**, and D'Alessandro, W., The bulk isotopic composition of hydrocarbons in subaerial volcanic-hydrothermal emissions from different tectonic settings, Presentation Abstract: American Geophysical Union Fall Meeting, San Francisco, California, December 14 – 18, 2015.
- Kern, C., **Lopez, T.**, Diaz, J.A., Vanderwaal, S., and Levy, A., Integration and testing of miniaturized volcanic gas-sensing instruments on UAV platforms, Poster Abstract: American Geophysical Union Fall Meeting, San Francisco, California, December 14 – 18, 2015.
- Lopez, T.**, Volcanic gases: Insight into a volcano's plumbing system, **Invited Talk:** UAF Undergraduate Research and Scholarly Activity Symposium, February 4, 2015.
- Lopez, T.**, Whittaker, S., West, M., Holtkamp, S., Aiuppa, A., Guidice, G., Galle, B., Ketner, D., Kaufman, M., Paskievitch, J., Keyson, J. and Prejean, S., Comparison of High Temporal Resolution Gas Composition and Seismic Data from Three Persistently Degassing and Seismically Active Alaskan Volcanoes, Presentation Abstract: American Geophysical Union Fall Meeting, San Francisco, California, December 15 – 19, 2014.
- Fee, D., Matoza, R., **Lopez, T.**, Ruiz, M., Gee, K., Nielsen, T., Kim, K., Classification, Characterization, and Automatic Detection of Volcanic Explosion Complexity using Infrasound, Poster Abstract: American Geophysical Union Fall Meeting, San Francisco, California, December 15 – 19, 2014.
- Albert, S., Fee, D., **Lopez, T.**, Firstov, P., Makhmudov, E., Infrasound Waveform Classification and Emissions Correlation at Karymsky and Sakurajima Volcanoes, Poster Abstract: American Geophysical Union Fall Meeting, San Francisco, California, December 15 – 19, 2014.
- Lopez, T.**, Tassi, F., Capecchiacci, F., Rizzo, A., Fiebig, J., Aiuppa, A., Guidice, G., Galle, B., Caliro, S., Chiodini, G., Ketner, D., Kaufman, M., Paskievitch, J., Whittaker, S., West, M., Geochemical and seismic constraints on volatile sources, subvolcanic conditions and subsurface fluid movement at Mount Martin, Mount Mageik and Trident Volcanoes, Alaska, Presentation Abstract: International Association of Volcanology and Chemistry of the Earth's Interior – Commission on the Chemistry of Volcanic Gases – 12th Gas Workshop, Copiapo, Chile November 16 – 25, 2014.
- Lopez, T.**, Deep Carbon Observatory Reservoirs and Fluxes Community Overview, **Invited Talk:** Deep Carbon Observatory Early Career Scientist Workshop, San Jose, Costa Rica, February 17 – 21, 2014.
- Lopez, T.**, Tassi, F., Aiuppa, A., Rizzo, A., Fiebig, J., Capecchiacci, F., Galle, B., Guidice, G., Chiodini, G., Caliro, S., Ketner, D., Kaufman, A.M., Paskievitch, J., West, M., Combining direct and remote measurements of volcanic fluids to constrain the source and flux of volatiles through the Katmai Volcanic Cluster, Alaska, Poster Abstract: Deep Carbon Observatory Early Career Scientist Workshop, San Jose, Costa Rica, February 17 – 21, 2014.
- Lopez, T.**, Tassi, F., Aiuppa, A., Rizzo, A., Fiebig, J., Capecchiacci, F., Galle, B., Guidice, G., Chiodini, G., Caliro, S., Ketner, D., Kaufman, A.M., Paskievitch, J., West, M., Combining direct and remote measurements of volcanic fluids to characterize subvolcanic conditions within the Katmai Volcanic Cluster, Alaska, **Invited Talk:** American Geophysical Union Fall Meeting, San Francisco, California, December 9 – 13, 2013.
- Lopez, T.**, Ushakov, S., Izbekov, P., Tassi, F., Cahill, C., Neill, O., Werner, C., Constraints on magma processes, subsurface conditions and total volatile flux at Bezymianny Volcano from direct and remote volcanic gas measurements, **Invited Talk:** USGS Menlo Park Volcano Science Center Seminar Series, Menlo Park, California, January 29, 2013.
- Fee, D., **Lopez, T.**, Rowell, C., Matoza, R.S., Szuberla, C., Prata, F., Firstov, P., Makhmudov, E., Combining infrasound and imaging techniques to characterize and quantify eruptive activity at

- Karymsky Volcano, Kamchatka, Russia, Presentation Abstract: American Geophysical Union Fall Meeting, San Francisco, California, December 3 – 7, 2012.
- Lopez, T.**, Fee, D., Prata, F., Characterization of volcanic activity using observations of infrasound, volcanic emissions, and thermal imagery at Karymsky Volcano, Kamchatka, Russia, Presentation Abstract: European Geosciences Union General Assembly, Vienna, Austria, April 22 – 27, 2012.
- Lopez, T.**, Dehn, J., Fee, D., Belousov, A., Buurman, H., Grapenthin, R., Ushakov, S., Use of high temporal resolution thermal imagery of Karymsky's volcanic plume to constrain volcanic activity and elucidate vent processes, Poster Abstract: American Geophysical Union 2011 Fall Meeting, San Francisco, California, December 5 – 9, 2011.
- Kelly, P., Kern, C., **Lopez, T.**, Werner, C., Roberts, T., Aiuppa, A., and Wang, B., Synthesis of observations of halogen-containing gases, ozone, and gaseous elemental mercury in the tropospheric plume of Redoubt Volcano, Alaska, Poster Abstract: American Geophysical Union 2011 Fall Meeting, San Francisco, California, December 5 – 9, 2011.
- Lopez, T.**, Ushakov, S., Izbekov, P., Werner, C., Cahill, C., and Carn, S., Characterization and interpretation of the volcanic activity at Bezymianny Volcano from 2007 through 2010: A volcanic gas perspective, Presentation Abstract: International Association of Volcanology and Chemistry of the Earth's Interior – Commission on the Chemistry of Volcanic Gases – 11th Gas Workshop, Petropavlovsk-Kamchatsky, Russia, September 1 – 10, 2011.
- Lopez, T.**, Ushakov, S., Izbekov, P., Werner, C., Cahill, C., and Carn, S., Characterization and interpretation of the volcanic activity at Bezymianny Volcano from 2007 through 2010: A volcanic gas perspective, Presentation Abstract: 7th Biennial Workshop on Japan-Kamchatka-Alaska Subduction Processes (JKASP), Petropavlovsk-Kamchatsky, Russia, August 25 – 30, 2011.
- Lopez, T.**, Ushakov, S., and Izbekov, P., Relating the composition and mass flux of volcanic gas emissions with eruptive activity at Bezymianny Volcano from 2007 – 2010, Presentation Abstract: American Geophysical Union 2010 Fall Meeting, San Francisco, California, December 14 – 17, 2010.
- Lopez, T.**, Carn, S., Webley, P., Pfeffer, M., Doukas, M., Kelly, P., Werner, C., Prata, A., Schneider, D., and Cahill, C., Evaluation of satellite derived sulfur dioxide measurements for volcano monitoring during the 2009 Redoubt eruption, **Invited Talk:** American Geophysical Union 2009 Fall Meeting, San Francisco, California, December 14 – 18, 2009.
- Carn, S., **Lopez, T.**, Pfeffer, M., Doukas, M., Kelly, P., Werner, C., Krotkov, N., Yang, K., Prata, A., Kivi, R., Kurosu, T. and Krueger, A., The 2008-2009 cluster of North Pacific volcanic eruptions: A-Train observations and OMI validation, Plenary Talk: EOS Aura Science Team Meeting, Leiden, The Netherlands, September 14 – 17, 2009.
- Lopez, T.**, Ushakov, S., Clark, T., Izbekov, P., A comparison of volcanic SO₂ emissions from Bezymianny, Shiveluch, and Mount St. Helens volcanoes, Poster Abstract: 6th Biennial Workshop on Japan-Kamchatka-Alaska Subduction Processes (JKASP), Fairbanks, Alaska, June 22 – 26, 2009.
- Lopez, T.**, Doukas, M., McGee, K., Werner, C., Carn, S., Comparison of the Ozone Monitoring Instrument (OMI) satellite retrieved SO₂ products with airborne measurements for the 2006 Fourpeaked volcanic eruption, Poster Abstract: International Association of Volcanology and Chemistry of the Earth's Interior – Commission on the Chemistry of Volcanic Gases – 10th Gas Workshop, Mexico City, Mexico, November 10 – 20, 2008.
- Clark, T., **Lopez, T.**, Ushakov, S., Sulfur Dioxide emissions from Bezymianny Volcano, Kamchatka: Results from the 2007 field season, Poster Abstract: American Geophysical Union 2007 Fall Meeting, San Francisco, California, December 10 – 14, 2007.
- Lopez, T.M.**, Watson, I.M., Wardell, L.J., Ramsey, M., Morrow, W., and Saballos, J.A., Mapping Cerro Negro's fumarole field: Field analysis and instrument comparison, Poster Abstract: Cities on Volcanoes 4, Quito, Ecuador, January 23 – 27, 2006.

- Lopez, T.M.**, Watson, I.M., Wardell, L.J., Ramsey, M.S., and Saballos, J.A., Geochemical analysis of S-bearing species using Differential Optical Absorption Spectroscopy (DOAS) and infrared imaging at Cerro Negro's fumarole field, Cerro Negro Volcano, Nicaragua, Poster Abstract: International Association of Volcanology and Chemistry of the Earth's Interior – Commission on the Chemistry of Volcanic Gases – 9th Gas Workshop, Palermo, Italy, May 1 – 10, 2005.
- Lopez, T.M.**, Watson, I.M., Rose, W.I., Escobar, D., and Wardell, L.J., How Oxidation State Ratios of Sulfur Species Vary in Different Volcanic Settings within Central America (Variación de los estados de oxidación de las especies de la sulfura en diferentes vulcanes en America Central). Oral Presentation: Central American Workshop on Enhancing Volcanic Hazard Avoidance through Remote Sensing (King's College, DFID, INETER), Managua, Nicaragua, March 15 – 19, 2004.
- Lopez, T.M.**, Watson, I. M., Rodriguez, L., Branan, Y., Rose, W., and Bluth, G. Photometric Observations of Aerosol Plumes at Volcanoes in Guatemala, El Salvador and Nicaragua. Poster Abstract: American Geophysical Union 2003 Fall Meeting, San Francisco, California, December 8 – 12, 2003.
- Lopez, T.M.**, Strumness, L., Hooper, R., Mahoney, J.B. Lateral Variability in Heavy Metal Speciation within Lacustrine Environments, Lower Coeur d' Alene River Valley, Idaho, Poster Abstract: University of Wisconsin System Research Symposium, Eau Claire, Wisconsin, April 29, 2003.

Synergistic Activities

- U.S. Geological Survey Powell Center Working Group on Volcano Remote Sensing, Member (2016 – present)
- Deep Carbon Observatory (DCO) DEepCarbon DEgassing (DECADE) Project, Board Member and Co-Vice Chair (2014 – present)
- International Association of Volcanology and Chemistry of the Earth's Interior (IAVCEI) Commission on the Chemistry of Volcanic Gases (CCVG), Secretary (2014 – present)
- DCO Field Focus Site Organizing Committee, Member (2015 – present)
- DCO DECADE Project, Member (2013 – present)
- UAF International Volcanological Field School, Assistant Field Instructor (2013 – present)
- GI Volcanology Group, Member (Fall 2013 – present)
- AVO Duty Remote Sensor, Rotating Position (2012 – present)
- DCO Early Career Scientist Workshop Organizing Committee, Member (2013 – 2014)
- DCO DECADE Project, Network and Observatories Committee, Chair (2013)
- AVO Alarm Integration for Monitoring Team, Member (2013)
- UAF Chancellor's Strategic Planning Research Committee, Member (2012)
- GI Graduate Student Association, Vice President (2010 – 2011), Member (2010 – 2013)
- GI Director Search Committee, Member (2010 – 2011)
- Alaska Volcano Observatory, Member (2006 – present)
- IAVCEI CCVG, Member (2005 – present)
- IAVCEI, Member (2004 – present)

Recent Collaborators

Alessandro Aiuppa, INGV-Palermo, Italy; Alvaro Amigo, SERNAGEOMIN, Chile; Peter Barry, Oxford University, UK; Deb Bergfeld, USGS Menlo Park Science Center; Simon Carn, MTU; Cathy Cahill, UAF; Stefano Caliro, INGV-Naples, Italy; Francesco Capecchiacci, University of Florence, Italy; Giovanni Chiodini, INGV-Naples, Italy; Maarten de Moor, OVSICORI, Costa Rica; Jorge Andres Diaz, University of Costa Rica, Costa Rica; Jon Dehn, UAF; Mike Doukas, USGS Cascades Volcano Observatory (CVO), Bill Evans, USGS Menlo Park Science Center (MPSC); David Fee, UAF; Jens Fiebig, Goethe University, Germany; Tobias Fischer, University of New Mexico; Bo Galle, Chalmers

University of Technology, Sweden; Donato Giovanelli, Rutgers University; Gaetano Guidice, INGV-Palermo, Italy; Daniel Hummer, Southern Illinois University; Pavel Izbekov, UAF; Max Kaufman, UAF; Peter Kelly, USGS CVO; Dane Ketner, USGS AVO; Christoph Kern, USGS CVO; Karen Lloyd, University of Tennessee; Robin Matoza, University of California Santa Barbara; David Moriano, Norwegian Institute for Air Research (NIAR), Norway; John Paskievitch, USGS AVO; Fred Prata, NIAR, Norway; Katherine Pratt, University of Rhode Island; Andrea Rizzo, INGV-Palermo, Italy; David Schneider, USGS AVO; Franco Tassi, University of Florence, Italy; Helen Thomas, NIAR, Norway; Sergey Ushakov, Institute of Volcanology and Seismology, Kamchatka; Peter Webley, UAF; Cynthia Werner, USGS AVO; Mike West, UAF.

Gas Sampling and Analysis Experience

- Direct fumarole sampling using Giggenbach bottles
- SO₂ column density and flux measurements using scattered UV radiation and Differential Optical Absorption Spectroscopy with FLYSPEC and microDOAS instruments
- Plume composition measurement and analysis using Multiple Gas Analyzer Systems and RatioCalc software
- δ¹³C ratios and CO₂ concentrations within volcanic plumes using Isotope Ratio Infrared Spectrometer
- Plume SO₂ and ash column density measurements using NicAIR infrared cameras
- Thermal emission measurements using FLIR infrared cameras
- Analyzing OMI and OMPS satellite SO₂ data products using Omiplot software

Student Advisory Committees

- Sean Egan, PhD Candidate, UAF Environmental Chemistry, Chair: Martin Stuefer
- Nathan Graham, PhD Student, UAF Department of Geology and Geophysics, Chair: Jessica Larsen

Software Fluency

- Microsoft office (Word, Powerpoint, Excel)
- Matlab
- Adobe Illustrator
- Origin
- Omiplot (OMI analysis software)
- RatioCalc (MultiGAS analysis software)
- VolatileCalc (Volatile Solubility software)
- Qtegra (Delta Ray analysis software)
- LapFly and FluxCalc (FLYSPEC analysis software)
- ImageIR (FLIR analysis software)

Languages Spoken

- English – Native
- Spanish – Moderate proficiency
- Russian – Basic proficiency