

Jessica B. Gilman

Curriculum Vitae

EDUCATION	University of Colorado, Boulder, Colorado Ph.D. in Analytical and Atmospheric Chemistry	2006
	Ohio State University, Columbus, Ohio B.S. in Chemistry, <i>cum laude</i>	2001
RESEARCH EXPERIENCE	Research Chemist National Oceanic and Atmospheric Administration Earth System Research Laboratories, Chemical Sciences Laboratory, Boulder, Colorado	2016 – present
	Research Associate (Research Scientist II) Research Associate (Research Scientist I)	2011 – 2016 2006 – 2011
	Cooperative Institute for Research in Environmental Science at University of Colorado, Boulder, CO and NOAA ESRL, Chemical Sciences Laboratory	
	Principal investigator of volatile organic compound (VOC) measurements via whole air samplers (iWAS) and in-situ gas chromatography-mass spectrometry (GC-MS) utilizing ground sites (G), mobile lab (M), ships (S), or aircraft (A) for the following experiments: <ul style="list-style-type: none">- COVID-AQS 2020 (G), COVID-19 Air Quality Study, Boulder, CO- FIREX-AQ 2019 (A), Fire Influence on Regional to Global Env. and Air Quality on NASA DC-8, US- NY-ICE 2018 (M), New York Investigation of Chemical Products Experiment, New York, NY- FIREX 2016 (G), Fire Influence on Regional Environments, Missoula, MT- SONGNEX 2015 (A), Shale Oil and Natural Gas Study on NOAA WP-3D aircraft, CO- UBWOS 2014 and 2012 (G), Uintah Basin Winter Ozone Study, Vernal, UT- SENEX 2013 (A), Southeast Nexus on NOAA WP-3D aircraft, Smyrna, TN- SONNE 2012 (G), Summer Ozone Near Natural gas Emissions, Erie, CO, <i>Lead Scientist</i>- BioCORN 2011 (G), Biofuel Crops emission of Ozone Precursors Intensive, Fort Collins, CO- NACHTT 2011 (G), Nitrogen, Aerosol Composition, and Halogens on a Tall Tower, Erie, CO- CalNex 2010 (G), California Nexus of Air Quality and Climate, Pasadena, CA- Fire Lab 2009 (G), Biomass burning emissions from temperate fuels in U.S., Missoula, MT- ICEALOT 2008 (S), Int'l Chemistry Exp. in the Arctic Lower Troposphere on <i>R/V Knorr</i>- BEARPEX 2007 (G), Biosphere Effects on Aerosols and Photochem. Exp., Georgetown, CA- TexAQ5 2006 (S), Texas Air Quality Study on <i>R/V Ronald H. Brown</i> <ul style="list-style-type: none">○ Maintain, characterize, improve, and deploy two custom-built GC-MS instruments○ Co-developed and deployed new analysis system for the NOAA WP-3D aircraft designed to collect, analyze, and re-condition whole air samples (WAS)○ Contributed to the development and advancement of TERN -- a highly-automated, IGOR-based, chromatographic peak area integration program -- with B. Lerner and D. Sueper (Aerodyne Research, Inc.), G. Isaacman-VanWertz (Virginia Tech), and K. Aikin (NOAA CSL)○ Conducted laboratory measurements in collaboration with NOAA GMD (Dr. S.A. Montzka; Dr. G. Petron; Dr. B. Hall), Carnegie Mellon Univ. (Dr. A.L. Robinson), Univ. of Wisconsin (Dr. F.N. Keutsch now at Harvard Univ.), and NOAA ARL and Univ. of Maryland (Dr. Xinrong Wren)○ Mentored undergraduate (Michael Daugherty, Megan Dumas, Dagen Hughes, Alyssa Jacksich) and graduate (Travis Tokarek, Univ. of Calgary) students○ Science Advisor for post-doctoral researcher Dr. Aaron Lamplugh (2019-present)	

Graduate Research Assistant 2001 - 2006
Department of Chemistry at the University of Colorado, Boulder, CO
Thesis Title: Properties of long-chain organics at the air-aqueous interface as proxies for organically coated atmospheric aerosols
Advisor: Prof. Veronica Vaida (Dept. of Chemistry and CIRES Fellow)

- Instruments utilized: Langmuir-Blodgett trough, GC-MS, ESI-MS, ¹H-NMR spectroscopy, and visible absorption spectroscopy
- Implemented derivatization techniques for the identification of oxidized organic products
- Graduate assistant to CU Mass Spectrometry Facility

RESEARCH
EXPERIENCE
continued

Undergraduate Research Assistant 2000 - 2001
Department of Chemistry at the Ohio State University, Columbus, Ohio
Advisor: Prof. Heather C. Allen

- Measured surface tension of aqueous sulfuric acid solutions
- Learned second harmonic generation (SHG) spectroscopy in order to characterize air-aqueous interface of sulfuric acid solutions

GRANTS

CIRES Innovative Research Grant, co-investigator 2018
Do people or forests emit more monoterpenes? Detection of monoterpene emissions from volatile chemical products in urban areas

NOAA Small Business Innovative Research, subtopic author, reviewer and technical expert
“Advanced analysis software for new-generation gas chromatographs and mass spectrometers.” Phases 1 and 2 awarded to Aerodyne Research, Inc. 2017-2020

HONORS and
AWARDS

NASA Group Achievement Award 2020
For outstanding scientific achievements of the Fire Influence on Regional to Global Environments Experiment – Air Quality (FIREX-AQ) airborne Earth science mission team.

NOAA Bronze Medal Award 2020
The highest honor award granted by the Under Secretary of Commerce for Oceans and Atmosphere recognizing federal employees for superior team performance “For outstanding execution of the FIREX-AQ mission, a joint venture with NASA to improve understanding of air quality and climate impacts of fires.”

NOAA OAR Employee of the Year Award for Personal and Professional Excellence 2018
For outstanding innovation in measurements and understanding of atmospheric volatile organic compounds, enabling a software breakthrough that transformed atmospheric compositional analysis using GC-MS, and for public outreach and mentoring of young scientists.

Colorado Governor’s Award for High-Impact Research (Honorable Mention) 2018
Member of a team of scientists honored for “Pioneering work on growing emissions from consumer products improves scientific understanding of air pollution and benefits environmental regulation and policy.”

NOAA Office of Atmospheric Research Outstanding Scientific Paper Award 2017
For co-authorship on the *Nature* paper “High winter ozone pollution from carbonyl photolysis in an oil and gas basin” by Edwards et al.

Colorado Governor’s Award for High-Impact Research 2014
Member of a team of scientists honored for “Helping the public and policy makers understand the air quality and other atmospheric effects of oil and gas activities in Colorado, Utah, Wyoming, and beyond.”

Sewell Fellowship, University of Colorado, Boulder, CO 2005-2006

Graduate Teaching Excellence Award, University of Colorado, Boulder, CO 2004

Summary of Publications

as of July 2020

Total number of publications:	100	*Number of first author publications:	7
Total number of citations:	4746	Number of journals published in:	17
Hirsch index:	45	Research ID:	E-7751-2010

- 100 Urban oxidation flow reactor measurements reveal significant secondary organic aerosol contributions from volatile emissions of emerging importance.** R. U. Shah, M. M. Coggon, G. I. Gkatzelis, B. C. McDonald, A. Tasoglou, H. Huber, [J. Gilman](#), C. Warneke, A. L. Robinson and A. A. Presto. *Environmental Science & Technology*, 54(2), 714-725, doi:10.1021/acs.est.9b06531, **2020**
- 99 An odd oxygen framework for wintertime ammonium nitrate aerosol pollution in urban areas: NO_x and VOC control as mitigation strategies.** C. C. Womack, E. E. McDuffie, P. M. Edwards, R. Bares, J. A. de Gouw, K. S. Docherty, W. P. Dube, D. L. Fibiger, A. Franchin, [J. B. Gilman](#), L. Goldberger, B. H. Lee, J. C. Lin, R. Lone, A. M. Middlebrook, D. B. Millet, A. Moravek, J. G. Murphy, P. K. Quinn, T. P. Riedel, J. M. Roberts, J. A. Thornton, L. C. Valin, P. R. Veres, A. R. Whitehill, R. J. Wild, C. Warneke, B. Yuan, M. Baasandorj and S. S. Brown. *Geophysical Research Letters*, 46(9), 4971-4979, doi:10.1029/2019gl082028, **2019**
- 98 Simulating the Weekly Cycle of NO_x-VOC-HO_x-O₃ Photochemical System in the South Coast of California During CalNex-2010 Campaign.** C. X. Cai, J. Avise, A. Kaduwela, J. DaMassa, C. Warneke, [J. B. Gilman](#), W. Kuster, J. de Gouw, R. Volkamer, P. Stevens, B. Lefer, J. S. Holloway, I. B. Pollack, T. Ryerson, E. Atlas, D. Blake, B. Rappenglueck, S. S. Brown and W. P. Dube. *Journal of Geophysical Research-Atmospheres*, 124(6), 3532-3555, doi:10.1029/2018jd029859, **2019**
- 97 Hydrocarbon removal in power plant plumes shows nitrogen oxide dependence of hydroxyl radicals.** J. A. de Gouw, D. D. Parrish, S. S. Brown, P. Edwards, [J. B. Gilman](#), M. Graus, T. F. Hanisco, J. Kaiser, F. N. Keutsch, S. W. Kim, B. M. Lerner, J. A. Neuman, J. B. Nowak, I. B. Pollack, J. M. Roberts, T. B. Ryerson, P. R. Veres, C. Warneke and G. M. Wolfe. *Geophysical Research Letters*, 46(13), 7752-7760, doi:10.1029/2019gl083044, **2019**
- 96 OH chemistry of non-methane organic gases (NMOGs) emitted from laboratory and ambient biomass burning smoke: evaluating the influence of furans and oxygenated aromatics on ozone and secondary NMOG formation.** M. M. Coggon, C. Y. Lim, A. R. Koss, K. Sekimoto, B. Yuan, [J. B. Gilman](#), D. H. Hagan, V. Selimovic, K. J. Zarzana, S. S. Brown, J. M. Roberts, M. Müller, R. Yokelson, A. Wisthaler, J. E. Krechmer, J. L. Jimenez, C. Cappa, J. H. Kroll, J. de Gouw and C. Warneke. *Atmos. Chem. Phys.*, 19(23), 14875-14899, doi:10.5194/acp-19-14875-2019, **2019**
- 95 Volatile chemical products emerging as largest petrochemical source of urban organic emissions.** B. C. McDonald, J. A. de Gouw, [J. B. Gilman](#), S. H. Jathar, A. Akherati, C. D. Cappa, J. L. Jimenez, J. Lee-Taylor, P. L. Hayes, S. A. McKeen, Y. Y. Cui, S. W. Kim, D. R. Gentner, G. Isaacman-VanWertz, A. H. Goldstein, R. A. Harley, G. J. Frost, J. M. Roberts, T. B. Ryerson and M. Trainer. *Science*, 359(6377), 760-764, doi:10.1126/science.aaq0524, **2018**. *Listed as "Hot paper" and "Highly Cited" by ISI. Over 100 citations.*
- 94 Quantifying methane and ethane emissions to the atmosphere from central and western US oil and natural gas production regions.** J. Peischl, S.J. ElIERman, J.A. Neuman, K.C. Aikin, J.A. de Gouw, [J. B. Gilman](#), S.C. Herndon, R. Nadkarni, M. Trainer, C. Warneke, and T.B. Ryerson. *Journal of Geophysical Research-Atmospheres*, 123(14), 7725-7740, doi:10.1029/2018jd028622, **2018**.
- 93 High- and low-temperature pyrolysis profiles describe volatile organic compound emissions from western US wildfire fuels.** K. Sekimoto, A. R. Koss, [J. B. Gilman](#), V. Selimovic, M. M. Coggon, K. J. Zarzana, B. Yuan, B. M. Lerner, S. S. Brown, C. Warneke, R. J. Yokelson, J. M. Roberts and J. de Gouw. *Atmospheric Chemistry and Physics*, 18(13), 9263-9281, doi:10.5194/acp-18-9263-2018, **2018**. *Listed as "Highly Cited" by ISI.*
- 92 Modeling Ozone in the Eastern US using a Fuel-Based Mobile Source Emissions Inventory.** B. C. McDonald, S. A. McKeen, Y. Y. Cui, R. Ahmadov, S. W. Kim, G. J. Frost, I. B. Pollack, J. Peischl, T. B. Ryerson, J. S. Holloway, M. Graus, C. Wameke, [J. B. Gilman](#) , J. A. de Gouw, J.

Kaiser, F. N. Keutsch, T. F. Hanisco, G. M. Wolfe and M. Trainer. *Environmental Science & Technology*, 52(13), 7360-7370, doi:10.1021/acs.est.8b00778, **2018**.

PEER-REVIEWED
PUBLICATIONS
continued

- 91 Secondary organic aerosol (SOA) yields from NO₃ radical + isoprene based on nighttime aircraft power plant plume transects.** J. L. Fry, S. S. Brown, A. M. Middlebrook, P. M. Edwards, P. Campuzano-Jost, D. A. Day, J. L. Jimenez, H. M. Allen, T. B. Ryerson, I. Pollack, M. Graus, C. Warneke, J. A. de Gouw, C. A. Brock, [J. Gilman](#), B. M. Lerner, W. P. Dube, J. Liao and A. Welti. *Atmospheric Chemistry and Physics*, 18(16), 11663-11682, doi:10.5194/acp-18-11663-2018, **2018**.
- 90 Diurnal Variability and Emission Pattern of Decamethylcyclopentasiloxane (D-5) from the Application of Personal Care Products in Two North American Cities.** M. M. Coggon, B. C. McDonald, A. Vlasenko, P. R. Veres, F. Bernard, A. R. Koss, B. Yuan, [J. B. Gilman](#), J. Peischl, K. C. Aikin, J. DuRant, C. Warneke, S. M. Li and J. A. de Gouw. *Environmental Science & Technology*, 52(10), 5610-5618, doi:10.1021/acs.est.8b00506, **2018**.
- 89 Sources and characteristics of summertime organic aerosol in the Colorado Front Range: perspective from measurements and WRF-Chem modeling.** R. Bahreini, R. Ahmadov, S. A. McKeen, K. T. Vu, J. H. Dingle, E. C. Apel, D. R. Blake, N. Blake, T. L. Campos, C. Cantrell, F. Flocke, A. Fried, [J. B. Gilman](#), A. J. Hills, R. S. Hornbrook, G. Huey, L. Kaser, B. M. Lerner, R. L. Mauldin, S. Meinardi, D. D. Montzka, D. Richter, J. R. Schroeder, M. Stell, D. Tanner, J. Walega, P. Weibring and A. Weinheimer. *Atmospheric Chemistry and Physics*, 18(11), 8293-8312, doi:10.5194/acp-18-8293-2018, **2018**.
- 88 Non-methane organic gas emissions from biomass burning: identification, quantification, and emission factors from PTR-ToF during the FIREX 2016 laboratory experiment.** A. R. Koss, K. Sekimoto, [J. B. Gilman](#), V. Selimovic, M. M. Coggon, K. J. Zarzana, B. Yuan, B. M. Lerner, S. S. Brown, J. L. Jimenez, J. Krechmer, J. M. Roberts, C. Warneke, R. J. Yokelson and J. de Gouw. *Atmospheric Chemistry and Physics*, 18(5), 3299-3319, doi:10.5194/acp-18-3299-2018, **2018**.
- 87 Chemistry of Volatile Organic Compounds in the Los Angeles Basin: Formation of Oxygenated Compounds and Determination of Emission Ratios.** J. A. de Gouw, [J. B. Gilman](#), S. W. Kim, S. L. Alvarez, S. Dusanter, M. Graus, S. M. Griffith, G. Isaacman-VanWertz, W. C. Kuster, B. L. Lefer, B. M. Lerner, B. C. McDonald, B. Rappengluck, J. M. Roberts, P. S. Stevens, J. Stutz, R. Thalman, P. R. Veres, R. Volkamer, C. Warneke, R. A. Washenfelder and C. J. Young. *Journal of Geophysical Research-Atmospheres*, 123(4), 2298-2319, doi:10.1002/2017jd027976, **2018**.
- 86 Nitrous acid formation in a snow-free wintertime polluted rural area.** C. Tsai, M. Spolaor, S. F. Colosimo, O. Pikelnaya, R. Cheung, E. Williams, [J. B. Gilman](#), B. M. Lerner, R. J. Zamora, C. Warneke, J. M. Roberts, R. Ahmadov, J. de Gouw, T. Bates, P. K. Quinn and J. Stutz. *Atmospheric Chemistry and Physics*, 18(3), 1977-1996, doi:10.5194/acp-18-1977-2018, **2018**.
- 85 Intercomparison of OH and OH reactivity measurements in a high isoprene and low NO environment during the Southern Oxidant and Aerosol Study (SOAS).** D. Sanchez, D. Jeong, R. Seco, I. Wramham, J. H. Park, W. H. Brune, A. Koss, [J. Gilman](#), J. de Gouw, P. Miszta, A. Goldstein, K. Baumann, P. O. Wennberg, F. N. Keutsch, A. Guenther and S. Kim. *Atmospheric Environment*, 174(227-236), doi:10.1016/j.atmosenv.2017.10.056, **2018**.
- 84 Automated single-ion peak fitting as an efficient approach for analyzing complex chromatographic data.** G. Isaacman-VanWertz, D. T. Sueper, K. C. Aikin, B. M. Lerner, [J. B. Gilman](#), J. A. de Gouw, D. R. Worsnop and A. H. Goldstein. *Journal of Chromatography A*, 1529(81-92), doi:10.1016/j.chroma.2017.11.005, **2017**.
- 83 Chemistry of Volatile Organic Compounds in the Los Angeles basin: Nighttime Removal of Alkenes and Determination of Emission Ratios.** J. A. de Gouw, [J. B. Gilman](#), S. W. Kim, B. M. Lerner, G. Isaacman-VanWertz, B. C. McDonald, C. Warneke, W. C. Kuster, B. L. Lefer, S. M. Griffith, S. Dusanter, P. S. Stevens and J. Stutz. *Journal of Geophysical Research-Atmospheres*, 122(21), 11843-11861, doi:10.1002/2017jd027459, **2017**.

- 82 **Ethene, propene, butene and isoprene emissions from a ponderosa pine forest measured by relaxed eddy accumulation.** R. C. Rhew, M. J. Deventer, A. A. Turnipseed, C. Warneke, J. Ortega, S. Shen, L. Martinez, A. Koss, B. M. Lerner, [J. B. Gilman](#), J. N. Smith, A. B. Guenther and J. A. de Gouw. *Atmospheric Chemistry and Physics*, 17(21), 13417-13438, doi:10.5194/acp-17-13417-2017, **2017**.
- 81 **Observations of VOC emissions and photochemical products over US oil- and gas-producing regions using high-resolution H₃O⁺ CIMS (PTR-ToF-MS).** A. Koss, B. Yuan, C. Warneke, [J. B. Gilman](#), B. M. Lerner, P. R. Veres, J. Peischl, S. Eilerman, R. Wild, S. S. Brown, C. R. Thompson, T. Ryerson, T. Hanisco, G. M. Wolfe, J. M. S. Clair, M. Thayer, F. N. Keutsch, S. Murphy and J. de Gouw. *Atmospheric Measurement Techniques*, 10(8), 2941-2968, doi:10.5194/amt-10-2941-2017, **2017**.
- 80 **Transition from high- to low-NO_x control of night-time oxidation in the southeastern US.** Edwards, P. M., K. C. Aikin, W. P. Dube, J. L. Fry, [J. B. Gilman](#), J. A. de Gouw, M. G. Graus, T. F. Hanisco, J. Holloway, G. Huber, J. Kaiser, F. N. Keutsch, B. M. Lerner, J. A. Neuman, D. D. Parrish, J. Peischl, I. B. Pollack, A. R. Ravishankara, J. M. Roberts, T. B. Ryerson, M. Trainer, P. R. Veres, G. M. Wolfe, C. Warneke and S. S. Brown. *Nature Geoscience*, 10(7), p490+, doi:10.1038/ngeo2976, **2017**.
- 79 **An improved, automated whole air sampler and gas chromatography mass spectrometry analysis system for volatile organic compounds in the atmosphere.** B. M. Lerner, [J. B. Gilman](#), K. C. Aikin, E. L. Atlas, P. D. Goldan, M. Graus, R. Hendershot, G. A. Isaacman-VanWertz, A. Koss, W. C. Kuster, R. A. Lueb, R. J. McLaughlin, J. Peischl, D. Sueper, T. B. Ryerson, T. W. Tokarek, C. Warneke, B. Yuan and J. A. de Gouw. *Atmospheric Measurement Techniques*, 1(10), p291-313, doi:10.5194/amt-10-291-2017, **2017**.
- 78 **Reactive nitrogen partitioning and its relationship to winter ozone events in Utah.** R. J. Wild, P. M. Edwards, T. S. Bates, R. C. Cohen, J. A. de Gouw, W. P. Dubé, [J. B. Gilman](#), J. Holloway, J. Kercher, A. R. Koss, L. Lee, B. M. Lerner, R. McLaren, P. K. Quinn, J. M. Roberts, J. Stutz, J. A. Thornton, P. R. Veres, C. Warneke, E. Williams, C. J. Young, B. Yuan, K. J. Zarzana and S. S. Brown. *Atmos. Chem. Phys.*, 16(2), 573-583, doi:10.5194/acp-16-573-2016, **2016**.
- 77 **A high-resolution time-of-flight chemical ionization mass spectrometer utilizing hydronium ions (H₃O⁺ ToF-CIMS) for measurements of volatile organic compounds in the atmosphere.** B. Yuan, A. Koss, C. Warneke, [J. B. Gilman](#), B. M. Lerner, H. Stark and J. A. de Gouw. *Atmospheric Measurement Techniques*, 6(9), p2735-2752, doi:10.5194/amt-9-2735-2016, **2016**.
- 76 **Formaldehyde production from isoprene oxidation across NO_x regimes.** G. M. Wolfe, J. Kaiser, T. F. Hanisco, F. N. Keutsch, J. A. de Gouw, [J. B. Gilman](#), M. Graus, C. D. Hatch, J. Holloway, L. W. Horowitz, B. H. Lee, B. M. Lerner, F. Lopez-Hilfiker, J. Mao, M. R. Marvin, J. Peischl, I. B. Pollack, J. M. Roberts, T. B. Ryerson, J. A. Thornton, P. R. Veres and C. Warneke. *Atmospheric Chemistry and Physics*, 4(16), p2597-2610, doi:10.5194/acp-16-2597-2016, **2016**.
- 75 **Instrumentation and measurement strategy for the NOAA SENEX aircraft campaign as part of the Southeast Atmosphere Study 2013.** C. Warneke, M. Trainer, J. A. de Gouw, D. D. Parrish, D. W. Fahey, A. R. Ravishankara, A. M. Middlebrook, C. A. Brock, J. M. Roberts, S. S. Brown, J. A. Neuman, B. M. Lerner, D. Lack, D. Law, G. Hubler, I. Pollack, S. Sjostedt, T. B. Ryerson, [J. B. Gilman](#), J. Liao, J. Holloway, J. Peischl, J. B. Nowak, K. C. Aikin, K. E. Min, R. A. Washenfelder, M. G. Graus, M. Richardson, M. Z. Markovic, N. L. Wagner, A. Welti, P. R. Veres, P. Edwards, J. P. Schwarz, T. Gordon, W. P. Dube, S. A. McKeen, J. Brioude, R. Ahmadov, A. Bougiatioti, J. J. Lin, A. Nenes, G. M. Wolfe, T. F. Hanisco, B. H. Lee, F. D. Lopez-Hilfiker, J. A. Thornton, F. N. Keutsch, J. Kaiser, J. Q. Mao and C. D. Hatch. *Atmospheric Measurement Techniques*, 7(9), p3063-3093, doi:10.5194/amt-9-3063-2016, **2016**.
- 74 **Real-time measurements of secondary organic aerosol formation and aging from ambient air in an oxidation flow reactor in the Los Angeles area.** A. M. Ortega, P. L. Hayes, Z. Peng, B. B. Palm, W. W. Hu, D. A. Day, R. Li, M. J. Cubison, W. H. Brune, M. Graus, C. Warneke, [J. B. Gilman](#), W. C. Kuster, J. de Gouw, C. Gutierrez-Montes and J. L. Jimenez. *Atmospheric*

Chemistry and Physics, 11(16), p7411-7433, doi:10.5194/acp-16-7411-2016, 2016. Listed as "Highly Cited" by ISI

PEER-REVIEWED
PUBLICATIONS
continued

- 73 **Influence of oil and gas emissions on summertime ozone in the Colorado Northern Front Range.** E. E. McDuffie, P. M. Edwards, [J. B. Gilman](#), B. M. Lerner, W. P. Dube, M. Trainer, D. E. Wolfe, W. M. Angevine, J. deGouw, E. J. Williams, A. G. Tevlin, J. G. Murphy, E. V. Fischer, S. McKeen, T. B. Ryerson, J. Peischl, J. S. Holloway, K. Aikin, A. O. Langford, C. J. Senff, R. J. Alvarez, S. R. Hall, K. Ullmann, K. O. Lantz and S. S. Brown. *Journal of Geophysical Research-Atmospheres*, 14(121), p8712-8729, doi:10.1002/2016jd025265, 2016.
- 72 **Observational constraints on glyoxal production from isoprene oxidation and its contribution to organic aerosol over the Southeast United States.** J. Y. Li, J. Q. Mao, K. E. Min, R. A. Washenfelder, S. S. Brown, J. Kaiser, F. N. Keutsch, R. Volkamer, G. M. Wolfe, T. F. Hanisco, I. B. Pollack, T. B. Ryerson, M. Graus, [J. B. Gilman](#), B. M. Lerner, C. Warneke, J. A. de Gouw, A. M. Middlebrook, J. Liao, A. Welti, B. H. Henderson, V. F. McNeill, S. R. Hall, K. Ullmann, L. J. Donner, F. Paulot and L. W. Horowitz. *Journal of Geophysical Research-Atmospheres*, 16(121), p9849-9861, doi:10.1002/2016jd025331, 2016.
- 71 **Continued emissions of carbon tetrachloride from the United States nearly two decades after its phaseout for dispersive uses.** L. Hu, S. A. Montzka, B. R. Miller, A. E. Andrews, J. B. Miller, S. J. Lehman, C. Sweeney, S. M. Miller, K. Thoning, C. Siso, E. L. Atlas, D. R. Blake, J. de Gouw, [J. B. Gilman](#), G. Dutton, J. W. Elkins, B. Hall, H. L. Chen, M. L. Fischer, M. E. Mountain, T. Nehr Korn, S. C. Biraud, F. L. Moore and P. Tans. *Proceedings of the National Academy of Sciences of the United States of America*, 11(113), p2880-2885, doi:10.1073/pnas.1522284113, 2016.
- 70 **Measurements of hydroxyl and hydroperoxy radicals during CalNex-LA: Model comparisons and radical budgets.** S. M. Griffith, R. F. Hansen, S. Dusanter, V. Michoud, [J. B. Gilman](#), W. C. Kuster, P. R. Veres, M. Graus, J. A. de Gouw, J. Roberts, C. Young, R. Washenfelder, S. S. Brown, R. Thalman, E. Waxman, R. Volkamer, C. Tsai, J. Stutz, J. H. Flynn, N. Grossberg, B. Lefer, S. L. Alvarez, B. Rappenglueck, L. H. Mielke, H. D. Osthoff and P. S. Stevens. *Journal of Geophysical Research-Atmospheres*, 8(121), p4211-4232, doi:10.1002/2015jd024358, 2016.
- 69 **Emissions of nitrogen-containing organic compounds from the burning of herbaceous and arboraceous biomass: Fuel composition dependence and the variability of commonly used nitrile tracers.** M. M. Coggon, P. R. Veres, B. Yuan, A. Koss, C. Warneke, [J. B. Gilman](#), B. M. Lerner, J. Peischl, K. C. Aikin, C. E. Stockwell, L. E. Hatch, T. B. Ryerson, J. M. Roberts, R. J. Yokelson and J. A. de Gouw. *Geophysical Research Letters*, 18(43), p9903-9912, doi:10.1002/2016gl070562, 2016.
- 68 **Secondary formation of nitrated phenols: insights from observations during the Uintah Basin Winter Ozone Study (UBWOS) 2014.** B. Yuan, J. Liggio, J. Wentzell, S. M. Li, H. Stark, J. M. Roberts, [J. B. Gilman](#), B. Lerner, C. Warneke, R. Li, A. Leithead, H. D. Osthoff, R. Wild, S. S. Brown and J. A. de Gouw. *Atmos. Chem. Phys.*, 4(16), p2139-2153, doi:10.5194/acp-16-2139-2016, 2016.
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continued

- 26 Vertically resolved measurements of nighttime radical reservoirs; in Los Angeles and their contribution to the urban radical budget.** C. J. Young, R. A. Washenfelder, J. M. Roberts, L. H. Mielke, H. D. Osthoff, C. Tsai, O. Pikelnaya, J. Stutz, P. R. Veres, A. K. Cochran, T. C. VandenBoer, J. Flynn, N. Grossberg, C. L. Haman, B. Lefer, H. Stark, M. Graus, J. de Gouw, J. B. Gilman, W. C. Kuster and S. S. Brown. *Environmental Science & Technology*, 20(46), p10965-10973, doi:10.1021/es302206a, **2012**.
- 25 Increasing atmospheric burden of ethanol in the United States.** J. A. de Gouw, J. B. Gilman, A. Borbon, C. Warneke, W. C. Kuster, P. D. Goldan, J. S. Holloway, J. Peischl, T. B. Ryerson, D. D. Parrish, D. R. Gentner, A. H. Goldstein and R. A. Harley. *Geophysical Research Letters*, 39, doi:L1580310.1029/2012gl052109, **2012**.
- 24 Airborne and ground-based observations of a weekend effect in ozone, precursors, and oxidation products in the California South Coast Air Basin.** I. B. Pollack, T. B. Ryerson, M. Trainer, D. D. Parrish, A. E. Andrews, E. L. Atlas, D. R. Blake, S. S. Brown, R. Commane, B. C. Daube, J. A. de Gouw, W. P. Dube, J. Flynn, G. J. Frost, J. B. Gilman, N. Grossberg, J. S. Holloway, J. Kofler, E. A. Kort, W. C. Kuster, P. M. Lang, B. Lefer, R. A. Lueb, J. A. Neuman, J. B. Nowak, P. C. Novelli, J. Peischl, A. E. Perring, J. M. Roberts, G. Santoni, J. P. Schwarz, J. R. Spackman, N. L. Wagner, C. Warneke, R. A. Washenfelder, S. C. Wofsy and B. Xiang. *Journal of Geophysical Research-Atmospheres*, 117), doi:D00v0510.1029/2011jd016772, **2012**.
- 23 Chemical and physical transformations of organic aerosol from the photo-oxidation of open biomass burning emissions in an environmental chamber.** C. J. Hennigan, M. A. Miracolo, G. J. Engelhart, A. A. May, A. A. Presto, T. Lee, A. P. Sullivan, G. R. McMeeking, H. Coe, C. E. Wold, W. M. Hao, J. B. Gilman, W. C. Kuster, J. de Gouw, B. A. Schichtel, J. L. Collett, Jr., S. M. Kreidenweis and A. L. Robinson. *Atmospheric Chemistry and Physics*, 15(11), p7669-7686, doi:10.5194/acp-11-7669-2011, **2011**. *Listed as "Highly Cited" by ISI. Over 100 citations.*
- 22 Modelled and measured concentrations of peroxy radicals and nitrate radical in the US Gulf Coast region during TexAQS 2006.** R. Sommariva, T. S. Bates, D. Bon, D. M. Brookes, J. A. de Gouw, J. B. Gilman, S. C. Herndon, W. C. Kuster, B. M. Lerner, P. S. Monks, H. D. Osthoff, A. E. Parker, J. M. Roberts, S. C. Tucker, C. Warneke, E. J. Williams, M. S. Zahniser and S. S. Brown. *Journal of Atmospheric Chemistry*, 4(68), p331-362, doi:10.1007/s10874-012-9224-7, **2011**.
- 21 The glyoxal budget and its contribution to organic aerosol for Los Angeles, California, during CalNex 2010.** R. A. Washenfelder, C. J. Young, S. S. Brown, W. M. Angevine, E. L. Atlas, D. R. Blake, D. M. Bon, M. J. Cubison, J. A. de Gouw, S. Dusanter, J. Flynn, J. B. Gilman, M. Graus, S. Griffith, N. Grossberg, P. L. Hayes, J. L. Jimenez, W. C. Kuster, B. L. Lefer, I. B. Pollack, T. B. Ryerson, H. Stark, P. S. Stevens and M. K. Trainer. *Journal of Geophysical Research-Atmospheres*, 116, doi:D00v0210.1029/2011jd016314, **2011**.
- 20 Ozone production in remote oceanic and industrial areas derived from ship based measurements of peroxy radicals during TexAQS 2006.** R. Sommariva, S. S. Brown, J. M. Roberts, D. M. Brookes, A. E. Parker, P. S. Monks, T. S. Bates, D. Bon, J. A. de Gouw, G. J. Frost, J. B. Gilman, P. D. Goldan, S. C. Herndon, W. C. Kuster, B. M. Lerner, H. D. Osthoff, S. C. Tucker, C. Warneke, E. J. Williams and M. S. Zahniser. *Atmospheric Chemistry and Physics*, 6(11), p2471-2485, doi:10.5194/acp-11-2471-2011, **2011**.
- 19 Evidence of rapid production of organic acids in an urban air mass.** P. R. Veres, J. M. Roberts, A. K. Cochran, J. B. Gilman, W. C. Kuster, J. S. Holloway, M. Graus, J. Flynn, B. Lefer, C. Warneke and J. de Gouw. *Geophysical Research Letters*, 38, doi:L1780710.1029/2011gl048420, **2011**.

- 18 **Volatile organic compound emissions from switchgrass cultivars used as biofuel crops.** A. S. D. Eller, K. Sekimoto, J. B. Gilman, W. C. Kuster, J. A. de Gouw, R. K. Monson, M. Graus, E. Crespo, C. Warneke and R. Fall. *Atmospheric Environment*, 19(45), p3333-3337, doi:10.1016/j.atmosenv.2011.03.042, **2011**.
- 17 **Isocyanic acid in the atmosphere and its possible link to smoke-related health effects.** J. M. Roberts, P. R. Veres, A. K. Cochran, C. Warneke, I. R. Burling, R. J. Yokelson, B. Lerner, J. B. Gilman, W. C. Kuster, R. Fall and J. de Gouw. *Proceedings of the National Academy of Sciences of the United States of America*, 22(108), p8966-8971, doi:10.1073/pnas.1103352108, **2011**.
- 16 **The Chemistry of Atmosphere-Forest Exchange (CAFE) Model - Part 2: Application to BEARPEX-2007 observations.** G. M. Wolfe, J. A. Thornton, N. C. Bouvier-Brown, A. H. Goldstein, J. H. Park, M. McKay, D. M. Matross, J. Mao, W. H. Brune, B. W. LaFranchi, E. C. Browne, K. E. Min, P. J. Wooldridge, R. C. Cohen, J. D. Crouse, I. C. Faloona, J. B. Gilman, W. C. Kuster, J. A. de Gouw, A. Huisman and F. N. Keutsch. *Atmospheric Chemistry and Physics*, 3(11), p1269-1294, doi:10.5194/acp-11-1269-2011, **2011**.
- 15 **Photochemical modeling of glyoxal at a rural site: observations and analysis from BEARPEX 2007.** A. J. Huisman, J. R. Hottle, M. M. Galloway, J. P. DiGangi, K. L. Coens, W. Choi, I. C. Faloona, J. B. Gilman, W. C. Kuster, J. de Gouw, N. C. Bouvier-Brown, A. H. Goldstein, B. W. LaFranchi, R. C. Cohen, G. M. Wolfe, J. A. Thornton, K. S. Docherty, D. K. Farmer, M. J. Cubison, J. L. Jimenez, J. Mao, W. H. Brune and F. N. Keutsch. *Atmospheric Chemistry and Physics*, 17(11), p8883-8897, doi:10.5194/acp-11-8883-2011, **2011**.
- 14 **Origins and composition of fine atmospheric carbonaceous aerosol in the Sierra Nevada Mountains, California.** D. R. Worton, A. H. Goldstein, D. K. Farmer, K. S. Docherty, J. L. Jimenez, J. B. Gilman, W. C. Kuster, J. de Gouw, B. J. Williams, N. M. Kreisberg, S. V. Hering, G. Bench, M. McKay, K. Kristensen, M. Glasius, J. D. Surratt and J. H. Seinfeld. *Atmospheric Chemistry and Physics*, 19(11), p10219-10241, doi:10.5194/acp-11-10219-2011, **2011**.
- 13 **Airborne formaldehyde measurements using PTR-MS: calibration, humidity dependence, inter-comparison and initial results.** C. Warneke, P. Veres, J. S. Holloway, J. Stutz, C. Tsai, S. Alvarez, B. Rappenglueck, F. C. Fehsenfeld, M. Graus, J. B. Gilman and J. A. de Gouw. *Atmospheric Measurement Techniques*, 10(4), p2345-2358, doi:10.5194/amt-4-2345-2011, **2011**.
- 12 **VOC identification and inter-comparison from laboratory biomass burning using PTR-MS and PIT-MS.** C. Warneke, J. M. Roberts, P. Veres, J. B. Gilman, W. C. Kuster, I. Burling, R. Yokelson and J. A. de Gouw. *International Journal of Mass Spectrometry*, 303(1), 6-14, doi:10.1016/j.ijms.2010.12.002, **2011**.
- 11 ***Ozone variability and halogen oxidation within the Arctic and sub-Arctic springtime boundary layer.** J. B. Gilman, J. F. Burkhart, B. M. Lerner, E. J. Williams, W. C. Kuster, P. D. Goldan, P. C. Murphy, C. Warneke, C. Fowler, S. A. Montzka, B. R. Miller, L. Miller, S. J. Oltmans, T. B. Ryerson, O. R. Cooper, A. Stohl and J. A. de Gouw. *Atmospheric Chemistry and Physics*, 21(10), p10223-10236, doi:10.5194/acp-10-10223-2010, **2010**.
- 10 **Development and validation of a portable gas phase standard generation and calibration system for volatile organic compounds.** P. Veres, J. B. Gilman, J. M. Roberts, W. C. Kuster, C. Warneke, I. R. Burling and J. de Gouw. *Atmospheric Measurement Techniques*, 3(3), p683-691, doi:10.5194/amt-3-683-2010, **2010**.
- 9 ***Measurements of volatile organic compounds during the 2006 TexAQs/GoMACCS campaign: Industrial influences, regional characteristics, and diurnal dependencies of the OH reactivity.** J. B. Gilman, W. C. Kuster, P. D. Goldan, S. C. Herndon, M. S. Zahniser, S. C. Tucker, W. A. Brewer, B. M. Lerner, E. J. Williams, R. A. Harley, F. C. Fehsenfeld, C. Warneke and J. A. de Gouw. *Journal of Geophysical Research-Atmospheres*, 114, doi:10.1029/2008jd011525, **2009**.
- 8 **Methyl chavicol: Characterization of its biogenic emission rate, abundance, and oxidation products in the atmosphere.** N. C. Bouvier-Brown, A. H. Goldstein, D. R. Worton, D. M. Matross,

J. B. Gilman, W. C. Kuster, D. Welsh-Bon, C. Warneke, J. A. de Gouw, T. M. Cahill and R. Holzinger. *Atmospheric Chemistry and Physics*, 6(9), p2061-2074, **2009**.

PEER-REVIEWED
PUBLICATIONS
continued

- 7 **In-situ ambient quantification of monoterpenes, sesquiterpenes, and related oxygenated compounds during BEARPEX 2007: Implications for gas- and particle-phase chemistry.** N. C. Bouvier-Brown, A. H. Goldstein, J. B. Gilman, W. C. Kuster and J. A. de Gouw. *Atmospheric Chemistry and Physics*, 15(9), p5505-5518, **2009**.
- 6 **Closing the peroxy acetyl nitrate budget: Observations of acyl peroxy nitrates (PAN, PPN, and MPAN) during BEARPEX 2007.** B. W. LaFranchi, G. M. Wolfe, J. A. Thornton, S. A. Harrold, E. C. Browne, K. E. Min, P. J. Wooldridge, J. B. Gilman, W. C. Kuster, P. D. Goldan, J. A. de Gouw, M. McKay, A. H. Goldstein, X. Ren, J. Mao and R. C. Cohen. *Atmospheric Chemistry and Physics*, 19(9), p7623-7641, **2009**.
- 5 ***Interfacial properties of mixed films of long-chain organics at the air-water interface.** J. B. Gilman, H. Tervahattu and V. Vaida. *Atmospheric Environment*, 34(40), p6606-6614, **2006**.
- 4 ***Permeability of acetic acid through organic films at the air-aqueous interface.** J. B. Gilman and V. Vaida. *Journal Of Physical Chemistry A*, 24(110), p7581-7587, **2006**.
- 3 ***Selectivity and stability of organic films at the air-aqueous interface.** J. B. Gilman, T. L. Eliason, A. Fast and V. Vaida. *Journal Of Colloid And Interface Science*, 1(280), p234-243, **2004**.
- 2 **Kinetics and products of the reaction of gas-phase ozone with anthracene adsorbed at the air-aqueous interface.** B. T. Mmereki, D. J. Donaldson, J. B. Gilman, T. L. Eliason and V. Vaida. *Atmospheric Environment*, 36(38), p6091-6103, **2004**. *Over 100 citations*.
- 1 **Oxidation of organic films relevant to atmospheric aerosols.** T. L. Eliason, J. B. Gilman and V. Vaida. *Atmospheric Environment*, 9(38), p1367-1378, **2004**.

PRESENTATION
METRICS

Summary of Presentations

as of July 2020

Number of invited talks and seminars:	13	Number of guest lectures:	7
Number of oral presentations:	14	Other (data meetings, etc.):	11
Number of poster presentations:	6	Total number of presentations:	51

INVITED TALKS
and SEMINARS

- 13 **A summary of recent measurements characterizing the emissions of hydrocarbons and other trace gases in several U.S. shale basins and associated environmental impacts of shale oil/gas production.** J.B. Gilman *et al.*
 - National Center for Atmospheric Research, Boulder, CO, May **2017**.
- 12 **Airborne and ground-based measurements of emissions from oil and gas extraction and their impacts in the Colorado Front Range.** J.B. Gilman *et al.*
 - FRAPPE/Discover-AQ science meeting, National Center for Atmospheric Research, Boulder, CO, May **2017**.
- 11 **Air quality implications of shale oil and natural gas operations: characterizing the emissions of volatile organic compounds.** J.B. Gilman *et al.*
 - University of California Irvine, April **2017**.
- 10 **Characterizing the emissions of volatile organic compounds from oil and natural gas operations in several U.S. shale basins.** J.B. Gilman *et al.*
 - Department of Chemistry Seminar at Hendrix College, Conway, AR, March **2014**.
 - Department of Atmospheric Science Seminar at Colorado State University, Fort Collins, CO, November **2013**.
- 8 **Regional characteristics and potential atmospheric impacts of volatile organic compounds (VOCs) emitted from oil and natural gas operations in several major shale plays across the United States.** J.B. Gilman, B. M. Lerner, M. Dumas, D. Hughes, A. Jaksich, C.D. Hatch, M. Graus, J.

Peischl, I. B. Pollack, T. B. Ryerson, J. S. Holloway, M. K. Trainer, K. C. Aikin, C. Warneke and J.A. de Gouw. Oral presentation at the 125th Annual Geological Society of America Meeting, Denver, CO, October **2013**.

INVITED TALKS
and SEMINARS
continued

- 7 **Characterizing emissions and assessing air quality impacts from oil and natural gas operations in Colorado and Utah.** [J.B. Gilman](#), B.M. Lerner, C. Warneke, F. Geiger, J.S. Holloway, J. Peischl, T.B. Ryerson, C.J. Young, P.M. Edwards, S.S. Brown, J.M. Roberts, E.J. Williams, D.D. Parrish and J.A. de Gouw. Oral presentation at the 246th American Chemical Society National Meeting, Indianapolis, IN, September **2013**.
- 6 **Source signature of volatile organic compounds associated with oil and natural gas operations in Colorado and Utah.** [J.B. Gilman](#), B.M. Lerner, C. Warneke, J.S. Holloway, J. Peischl, T.B. Ryerson, C.J. Young, P.M. Edwards, S.S. Brown, D. E. Wolfe, E.J. Williams and J.A. de Gouw. Oral presentation at the AGU Fall Meeting, San Francisco, CA, December **2012**.
- 5 **Characterizing VOC emissions from fossil fuel production, processing, and combustion.** [J.B. Gilman et al.](#) Air Quality Symposium Honoring James Meagher, Boulder, CO, August **2012**.
- 4 **VOCs associated with oil and natural gas operations in Colorado.** [J.B. Gilman et al.](#) Statement to the Regional Air Quality Council Board Meeting, Denver, CO, June **2012**.
- 3 **VOCs associated with oil and natural gas operations in Colorado and Utah: regional characteristics and potential atmospheric impacts.** [J.B. Gilman et al.](#) NOAA Chemical Sciences Division Seminar, Boulder, CO, May **2012**.
- 2 **Volatile organic compounds (VOCs): impacts on local air quality and regional transport.** [J.B. Gilman et al.](#) Department of Chemistry Seminar at College of Wooster, Wooster, OH, April **2010**.
- 1 **Volatile organic compounds (VOCs): global distribution and impacts on local air quality.** [J.B. Gilman et al.](#) Department of Chemistry Seminar at Hendrix College, Conway, AR, November **2008**.

CONFERENCE
and MEETING
PRESENTATIONS

- 20 **Source Signature of emissions from volatile chemical products (VCPs), combustion, and fossil fuels in in New York City in winter and summer 2018.** [J.B. Gilman](#), M.M. Coggon, G.I. Gkatzelis, J. Peischl, K.C. Aikin, Fred Moshary, B.C. McDonald, and C. Warneke. Oral presentation at the Global Atmospheric Watch, VOC experts meeting, Urbino, Italy, November **2018**.
- 19 **Source Signature of emissions from volatile chemical products (VCPs), combustion, and fossil fuels in Winter and Summer 2018 in New York City and Boulder, CO.** [J.B. Gilman](#), M.M. Coggon, G.I. Gkatzelis, J. Peischl, K.C. Aikin, B.C. McDonald, and C. Warneke. Oral presentation at the AGU Fall Meeting, Washington, DC, December **2018**.
- 18 **Volatile organic compounds (VOCs) from biomass burning: GC-MS analysis of primary combustion emissions of fuels common to North America.** [J.B. Gilman](#), A.R. Koss, K. Sekimoto, B.M. Lerner, K.C. Aikin, B. Yuan, M. Coggon, V. Selimovic, R.J. Yokelson, J.M. Roberts, C. Warneke, and J.A. de Gouw. Oral presentation at the AGU Fall Meeting, New Orleans, LA, December **2017**.
- 17 **Compositional comparison and emission fluxes of volatile organic compounds (VOCs) from oil and natural gas operations in several U.S. shale basins.** [J.B. Gilman](#), B.M. Lerner, T. Tokarek, A. Koss, B. Yuan, C. Warneke, J. Peischl, T.B. Ryerson, and J.A. de Gouw. Oral presentation at the Global Atmospheric Watch, VOC meeting, Boulder, CO, May **2017**.
- 16 **Compositional comparison of VOCs from oil and natural gas in 13 shale basins.** [J.B. Gilman et al.](#) Oral presentation at the American Meteorological Society, Atmospheric Chemistry Conference, Seattle, WA, Jan. **2017**.
- 15 **Emissions of volatile organic compounds (VOCs) from oil and natural gas activities in 13 major U.S. shale basins.** [J.B. Gilman et al.](#) Poster presentation at the International Global Atmospheric Chemistry, Breckinridge, CO, Sept. **2016** and Health Effects Institute Research Planning Workshop, Denver, CO, July **2018**.

PRESENTATIONS
continued

- 13 **Emissions of volatile organic compounds (VOCs) from oil and natural gas activities: compositional comparison of several major U.S. shale basins via NOAA airborne measurements.** [J.B. Gilman et al.](#) Oral presentation at the AGU Fall Meeting, San Francisco, CA, December **2015**.
- 12 **Oil and gas VOC emissions and chemistry.** [J.B. Gilman](#). Oral and poster presentation at the NOAA ESRL Chemical Sciences Review, March **2015**.
- 10 **Primary emissions and secondary formation of volatile organic compounds from natural gas production in several major U.S. shale plays.** [J.B. Gilman](#), B.M. Lerner, C. Warneke, M. Graus, R. Lui, A. Koss, B. Yuan, S. Murphy, S. Alvarez, B. Lefer, K.-E. Min, S.S. Brown, J.M. Roberts, H.S. Osthoff, J. Peischl, T.B. Ryerson, and J.A. de Gouw. Oral presentation at the AGU Fall Meeting, San Francisco, CA, December **2014**.
- 9 **Characterizing emissions of volatile organic compounds from oil and natural gas operations in U.S. shale basins.** [J.B. Gilman](#), B.M. Lerner, C. Warneke, M. Graus, R. Lui, A. Koss, B. Yuan, S. Murphy, B. Lefer, K.-E. Min, S.S. Brown, J.M. Roberts, H.S. Osthoff, J. Peischl, T.B. Ryerson, and J.A. de Gouw. Oral presentation at the 16th Global Emissions Initiative Conf., Boulder, CO, June **2014**.
- 8 **Characterizing emissions of volatile organic compounds in the Haynesville, Fayetteville, and Marcellus shale regions via aircraft observations during SENEX 2013.** [J.B. Gilman](#), B. M. Lerner, M. Dumas, D. Hughes, A. Jaksich, C.D. Hatch, M. Graus, J. Peischl, I. B. Pollack, T. B. Ryerson, J. S. Holloway, M. K. Trainer, K. C. Aikin, C. Warneke and J.A. de Gouw. Poster presentation at the AGU Fall Meeting, San Francisco, CA, December **2013**.
- 7 **Source Signature of volatile organic compounds (VOCs) from oil and natural gas operations in Northeastern Colorado.** [J.B. Gilman](#), B.M. Lerner, W.C. Kuster, and J.A. de Gouw. Poster presentation at Energy and the Environment Symposium, Boulder, CO November **2012**.
- 6 **Characterizing the chemical evolution of air masses via multi-platform measurements of volatile organic compounds (VOCs) during CalNEX: composition, OH reactivity, and potential SOA formation.** [J.B. Gilman](#), W.C. Kuster, D. Bon, C. Warneke, B.M. Lerner, E.J. Williams, J.S. Holloway, I.B. Pollack, T.B. Ryerson, E.L. Atlas, D.R. Blake, S.C. Herndon, M.S. Zahniser, A. Vlasenko, SM. Li, S. Alvarez, B. Rappenglueck, J. Flynn, N. Grossberg, B. Lefer and J.A. de Gouw. Poster presentation at the AGU Fall Meeting, San Francisco, CA, December **2011**.
- 5 **OH reactivity and SOA potential of VOCs and other trace gases measured in controlled laboratory biomass burns.** [J.B. Gilman](#), W.C. Kuster, P.D. Goldan, C. Warneke, P. Veres, J.M. Roberts, J.A. de Gouw, I.R. Burling, R.J. Yokelson. Oral presentation at the AGU Fall Meeting, San Francisco, CA, December **2010**.
- 4 **Springtime halogen oxidation determines the variability in surface ozone concentrations throughout the Arctic and sub-Arctic.** [J.B. Gilman](#), B.M. Lerner, W.C. Kuster, P.D. Goldan, S.A. Montzka, B.R. Miller, L. Miller, S.J. Oltmans, T.B. Ryerson, J.F. Burkhart, A. Stohl, E.J. Williams, J.A. de Gouw. Oral presentation at the AGU Fall Meeting, San Francisco, CA, December **2009**.
- 3 **Volatile Organic Compounds (VOCs) measured in the Arctic aboard the R/V Knorr during ICEALOT 2008: primary sources and evidence of halogen oxidation.** [J.B. Gilman](#), W.C. Kuster, P.D. Goldan, B.M. Lerner, E.J. Williams, and J.A. de Gouw. Oral presentation at the AGU Fall Meeting, San Francisco, CA, December **2008**.
- 2 **Volatile organic compounds (VOCs) measured aboard the Ronald H. Brown during TexAQs 2006 and their OH reactivity.** [J.B. Gilman](#), W.C. Kuster, P.D. Goldan, S.C. Herndon, M.S. Zahniser, S.C. Tucker, W.A. Brewer, B.M. Lerner, E.J. Williams, H.D. Osthoff, S.S. Brown, C. Warneke and J.A. de Gouw. Oral presentation at the AGU Fall Meeting, San Francisco, CA, December **2007**.
- 1 **Permeability of organic films at the air-water interface.** [J.B. Gilman](#), H. Tervahattu, V. Vaida. Oral presentation at the 231st ACS National Meeting, Atlanta, GA, March **2006**.

GUEST
LECTURES

- 7 **Air pollution puzzles: Utilizing gas chromatography-mass spectrometry to identify emission sources and unravel pollution formation.** Instrumental Analysis (undergraduate level) at University of Colorado, Boulder, CO, March **2020**.

Guest Lectures
continued

- 6 **Volatile organic compounds (VOCs): sources, chemistry, and secondary formation of pollutants.** Atmospheric Chemistry (graduate level) at Ohio State University, Columbus, OH, March **2014**.
 - 5 **GC-MS instrumentation and application to atmospheric chemistry.** Advanced Analytical Chemistry (undergraduate level) at Hendrix College, Conway, AR, March **2014**.
 - 4 **Atmospheric Chemistry of Oil and Natural Gas Operations.** Atmospheric Chemistry (graduate level) at University of Colorado, Boulder, CO, March **2013**.
 - 3 **Sources of volatile organic compounds (VOCs) and their impacts on local air quality.** Environmental Chemistry (undergraduate level) at University of Colorado, Boulder, CO, April **2012** and May **2013**.
 - 1 **VOCs measured aboard the R/V Brown: results from the 2006 Texas air quality study.** Graduate seminar "Organics in the atmosphere" at University of Colorado, Boulder, CO, April **2008**
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DATA MEETINGS

- 11 **Oral Presentations:**
 - Firelab Data Meeting, Boulder, CO, November **2017**.
 - Discussion of NOAA research on Oil/Natural Gas Emissions and Impacts with DOJ and EPA Region 8, Boulder, CO, January and June **2016**.
 - Spring 2015 Measurements in Oil and Gas Production Regions, Boulder, CO, October **2015**
 - Uintah Basin Wintertime Ozone Study (UBWOS) Data Meeting, Vernal, UT, June **2014**.
 - Southeast Atmosphere Study (SAS) Data Workshop, Boulder, CO, April **2014**.
 - Uintah Basin Wintertime Ozone Study (UBWOS) Data Meeting, Vernal, UT, June **2012**.
 - California Nexus (CalNex) Data Analysis Workshop, Sacramento, CA, May **2011**
 - R/V Atlantis (CalNex) Data Analysis Workshop, Davis, CA, January **2011**
 - POLARCAT (ICEALOT) Workshop, Durham, NH, June **2009**
 - Biosphere Effects on Aerosols and Photochemistry Experiment (BEARPEX) Science Meeting, Berkeley, CA, February **2008**
 - Principal Findings Data Analysis Workshop (TexAQS II/GoMACCS), Austin, TX, June **2007**.
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PROFESSIONAL
AFFILIATIONS

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

PROFESSIONAL
ACTIVITIES

Lead Founder/Organizer, NOAA CSL First Friday Forum seminar series **2018**
CIRES Member Council, Vice-Chair of Council and CSD representative **2010 - 2013**
Conference Activities:

- Convener, chair, and student presentation judge of session "The impacts of energy production and use on air quality and climate" at AGU Fall Meeting, San Francisco, CA, December **2015**
- Chair and student presentation judge at AGU Fall Meeting, San Francisco, CA, December **2014**
- Student presentation judge at AGU Fall Meeting, San Francisco, CA, December **2013**

Reviewer of Manuscripts for: Journal of Geophysical Research-Atmospheres, Environmental Science and Technology, Atmospheric Chemistry and Physics, Atmospheric Environment, Journal of Atmospheric Chemistry, Elementa, Science of the Total Environment, and Journal of Environmental and Physical Health
Reviewer of Proposals for: National Science Foundation (NSF), National Oceanic and Atmospheric Administration (NOAA), and National Aeronautics and Space Administration (NASA)
Reviewer of Fellowship Applications for: NOAA Hollings Scholars
Reviewer of Book Chapter for: *Mass Spectrometry Handbook* (John Wiley & Sons, Inc.)

OUTREACH
ACTIVITIES

“Human Element” documentary by James Balog , Featured scientist	2019
Science on Tap , co-Presenter	2018
CSU Front Range Geoscience Mentor Program , Member	2015 -- <i>present</i>
Earth Science Women’s Network , Member	2015 -- <i>present</i>
Experiences in Professional Research Organizations and Atmospheric Chemistry at Hendrix , NOAA CSD Organizer and Contributor at Storm Peak Lab, Steamboat, CO	2015
NOAA Hollings Scholar Seminar , Presenter	2012, 2014, 2015, 2016, 2018
NASA Women in Science Symposium , Demonstration Leader	2012
Earth Explorers , Contributor to middle school science project	2012

SELECT MEDIA
COVERAGE

- NOAA researchers: Air quality in Colorado improving, some other states not so much.** Kati Weis. *CBS 4 Denver* video posted May 7, 2020: <https://denver.cbslocal.com/2020/05/07/coronavirus-air-quality-colorado-boulder-noaa-researchers/>
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