JEFFREY A. GEDDES, Ph.D.

Assistant Professor
Boston University, Department of Earth & Environment
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RESEARCH INTERESTS:

Atmospheric chemistry, including: urban air quality; satellite remote sensing of air pollution; chemical transport modeling; atmosphere-biosphere interactions; impacts of land use and land cover changes

EDUCATION:

2013 **University of Toronto**, PhD. Chemistry
Thesis Title: "Observations of reactive nitrogen oxides: from urban ground level ozone production to biosphere-atmosphere exchange in remote forest environments"
Supervisor: Jennifer G. Murphy

2008 **University of Toronto at Mississauga**, B.Sc. Chemistry and Geology Specialist

GRANT ACTIVITY:

2021 - Measurement-Model Fusion for Global Total Atmospheric Deposition Initiative **(PI)**; Environment & Climate Change Canada; 3/2021-3/2023

2020 - CO2-Air Quality Urban Synthesis and Analysis ("CO2-AQ USA") Project: Trends & Drivers of Urban Emissions from Past, Present, to Future **(Institutional PI)**; NOAA; 6/2020-6/2023

2020 - Remote-Sensing of Surface-Level Ozone Sensitivity to Nitrogen Oxides and Volatile Organic Compounds **(Institutional PI)**; NASA; 3/2020-3/2023

2018 - Remote Sensing of Surface Air Quality: New Insight into Intra-Urban Variability in Tropospheric NO2 and HCHO **(PI)**; NASA; 4/2018-4/2021

2018 - CAREER: Air Quality Impacts of Dynamic Forest-Atmosphere-Chemistry Interactions **(PI)**; NSF; 3/2018-3/2023

PEER REVIEWED PUBLICATIONS: (Underline denotes trainee)

2021 **Wong AYH** and **Geddes JA**. Examining the competing effects of contemporary land management vs. land cover changes on global air quality. *Atmospheric Chemistry and Physics*, doi: 10.5194/acp-21-16479-2021

2021 **Geddes JA**, **Wang B**, and Li D. Ozone and nitrogen dioxide pollution in a coastal urban environment: The role of sea breezes, and implications of their representation for remote sensing of local air quality, *Journal of Geophysical Research: Atmospheres*, doi:10.1029/2021JD035314

2021 **Radford AC**, **Geddes JA**, Gallagher KP, and Larson BA, Open-source methods for estimating health risks of fine particulate matter from coal-fired power plants: A demonstration from Karachi, Pakistan, *Environmental Impact Assessment Review*, doi:10.1016/j.eiar.2021.106638

2020 Demetillo MAG, Navarro A, Knowles KK, **Geddes JA**, Nowlan CR, Janz SJ, Judd LM, Al-Saadi J, Sun K, McDonald BC, Diskin GS, and Pusede SE. Observing air pollution

inequality using high spatial resolution nitrogen dioxide remote sensing measurements in Houston, Texas. *Environmental Science & Technology*, doi: 10.1021/acs.est.8b04852

2020 Lapierre JL, Laughner JL, **Geddes JA**, Koshak W, Cohen RC, and Pusede SE. Observing regional variability in lightning NOx production rates. *Journal of Geophysical Research: Atmospheres*, doi:10.1029/2019JD031362

2019 **Wong AYH**, **Geddes JA**, Tai APK, and Silva SJ. Importance of dry deposition parameterization choice in global simulations of surface ozone. *Atmospheric Chemistry and Physics*, doi:10.5194/acp-19-14365-2019

2019 Demetillo MA, Anderson JF, **Geddes JA**, Xi Y, Najacht EY, Herrara SA, Kabasares KM, Kotsakis AE, Lerdau MT, and Pusede SE. Observing severe drought influences on ozone air pollution in California. *Environmental Science & Technology*, doi:10.1021/acs.est.8b04852

2018 **Geddes JA**, Martin RV, Bucsela EJ, McLinden C, and Cunningham DJM. Stratosphere-troposphere separation of nitrogen dioxide columns from the TEMPO geostationary satellite instrument. *Atmospheric Measurement Techniques*, 11, doi:10.5194/amt-11-6271-2018

2018 Petroff A, Murphy JG, Thomas SC, and **Geddes JA**. Size-resolved aerosol flux above a temperate broadleaf forest: Measurements and modelling. *Atmospheric Environment*, 190: 359-375

2018 Zhou S, Tai A, Sun S, Sadiq M, Heald CL, and **Geddes JA**. Coupling between surface ozone and leaf area index in a chemical transport model: Strength of feedback and implications for ozone air quality and vegetation health. *Atmospheric Chemistry and Physics*, 18, doi:10.5194/acp-18-14133-2018.

2017 **Geddes JA**, and Martin RV. Global deposition of total reactive nitrogen oxides from 1996 to 2014 constrained with satellite observations of NO2 columns. *Atmospheric Chemistry and Physics*, 17, 10071-10091, doi:10.5194/acp-17-10071-2017.

2017 Larkin A, **Geddes JA**, Martin RV, Xiao Q, Liu Y, Marshall DJ, Brauer M, and Hystad P. A global land use regression model for nitrogen dioxide air pollution. *Environmental Science & Technology*, doi:10.1021/acs.est.7b01148.

2017 Zheng T, Chen J, He L, Arain MA, Thomas SC, Murphy JG, **Geddes JA**, and Black TA. Inverting the maximum carboxylation rate (Vcmax) from the sunlit leaf photosynthesis rate derived from measured light response curves at tower flux sites. *Agricultural and Forest Meteorology*, 236, 48-666.

2016 **Geddes JA**, Heald CL, Silva SJ, and Martin RV. Land cover change impacts on atmospheric chemistry: simulating projected large-scale tree mortality in the United States. *Atmospheric Chemistry and Physics*, 16, 2323-2340, doi:10.5194/acp-16-2323-2016.

2016 **Geddes JA**, Martin RV, Boys BL and van Donkelaar A. Long-term trends worldwide in ambient NO2 concentrations inferred from satellite observations. *Environmental Health Perspectives*, doi: 10.1289/ehp.1409567.

2016 Heald CL, and **Geddes JA**. The Impact of Historical Land Use Change From 1850 to 2000 on Particulate Matter and Ozone. *Atmospheric Chemistry and Physics*, 16, 14997-15010, doi:10.5194/acp-16-14997-2016.

2016 Silva SJ, Heald CL, **Geddes JA**, Austin KG, Kasibhatla PS, and Marlier ME. Impacts of current and projected oil palm plantation expansion on air quality over Southeast Asia. *Atmospheric Chemistry and Physics*, 16, 10621-10635, doi:10.5194/acp-16-10621-2016.

2016 Larkin A, van Donkelaar A, **Geddes JA**, Martin RV, and Hystad P. Typologies of urban expansion and associated air pollution changes in East Asia from 2000 to 2010. *Environmental Science & Technology*, doi:10.1021/acs.est.6b02549.

2014 **Geddes JA**, Murphy JG, Schurman J, Petroff A, and Thomas SC. Net ecosystem exchange of an uneven-aged managed forest in central Ontario, and the impact of a spring heat wave event. *Agricultural and Forest Meteorology*, 198-199: 105-115.

2014 **Geddes JA**, and Murphy JG. Observations of reactive nitrogen oxide fluxes by eddy covariance above two mid-latitude North American mixed hardwood forests. *Atmospheric Chemistry and Physics*, 14: 2939-2957.

2014 Pugliese SC, Murphy JG, **Geddes JA**, and Wang JM. The impacts of precursor reduction and meteorology on ground-level ozone in the Greater Toronto Area. *Atmospheric Chemistry and Physics*, 14: 8197-8207.

2013 Wang JM, Murphy JG, **Geddes JA**, Winsborough CL, Basiliko N, and Thomas SC. Methane fluxes measured by eddy covariance and static chamber techniques at a temperate forest in central Ontario, Canada. *Biogeosciences*, 10: 4371-4382.

2012 **Geddes JA**, Murphy JG, Celarier EA, and O'Brien J. Biases in long-term NO2 averages inferred from satellite observations due to cloud selection criteria. *Remote Sensing of Environment*, 124: 210-216.

2009 **Geddes JA**, Murphy JG, and Wang DW. Long term changes in nitrogen oxides and volatile organic compounds in Toronto and the challenges facing local ozone control. *Atmospheric Environment*, 43: 3407-3414.

2007 **Geddes JA**, and Moore GWK. A climatology of sea ice embayments in the Cosmonaut Sea, Antarctica. *Geophysical Research Letters*, 34: doi:10.1029/2006GRL027910.

MANUSCRIPTS UNDER REVIEW:

- Fu J, Carmichael G, Dentener F, Aas W, Andersson C, Barrie L, Cole A, Galy-Lacau C, **Geddes JA**, Itahashi S, Kanakidou M, Labrador L, Paulot F, Schwede D, Tan J, and Vet R, Improving Estimates of Sulfur, Nitrogen, and Ozone Total Deposition through Multi-Model and Measurement-Model Fusion (Under Review at *Environmental Science & Technology*).
- **Wong AYH**, **Geddes JA**, Ducker JA, Holmes CD, Fares S, Goldstein AH, Mammarella I, Munger, JW, New evidence for the importance of non-stomatal pathways in ozone deposition during extreme heat and dry anomalies (Under Review at *Geophysical Research Letters*)

REPORTS AND NON-REFEREED PUBLICATIONS:

2021 Kanakidou M et al. (**Geddes JA**, contributing author). Global Atmospheric Watch Report No. 269, "Measurement-Model Fusion for Global Total Atmospheric Deposition (MMF-GTAD) Initiative Implementation Plan for 2021–2026". World Meteorological Organization, Geneva, Switzerland.

2020 Labrador L and Vet R (Eds) (**Geddes JA**, contributing author). Global Atmospheric Watch Report No. 250, "Expert Meeting on Measurement-Model Fusion for Global Total Atmospheric Deposition". World Meteorological Organization, Geneva, Switzerland.

2019 Chance K et al. (**Geddes JA**, contributing author). TEMPO Green Paper: Chemistry, physics, and meteorology experiments with the Tropospheric Emissions: monitoring of pollution instrument. SPIE Remote Sensing: Sensors, Systems, and Next-Generation Satellites XXII, Proceedings Volume 11151. doi:10.1117/12.2534883.

2017 Carou S et al. (**Geddes JA**, contributing author). Global Atmospheric Watch Report No. 234, "Measurement-Model Fusion for Global Total Atmospheric Deposition". World Meteorological Organization, Geneva, Switzerland.

2012 **Geddes JA**, and Murphy JG. The Science of Smog: Chemical concepts in ground level ozone and particulate matter. Chapter 10 in The Handbook of Metropolitan Sustainability (Ed. Frank Zeman). Woodhead Publishing Ltd. Philadelphia PA.

INVITED SEMINARS: († denotes international seminar)

2021 **University of Wyoming**, Department of Atmospheric Science Seminar Series, "Examining the impacts of biosphere-atmosphere-chemistry interactions over decadal timescales"

2021 †**Environment and Climate Change Canada**, Air Quality Research Division Seminar Series, "Air Quality and Surface-Atmosphere Interactions: Modeling and remote sensing from urban-to-global scales"

2021 †**Dalhousie University**, Atmospheric Science Seminar Series, "Exploring Contemporary Changes in Biosphere-Atmosphere-Chemistry Interactions"

2020 **Frontiers in Atmospheric Chemistry Seminar Series**, Co-Hosted by Massachusetts Institute of Technology, Colorado State University, University of Michigan, Reed College, University of Toronto, and University of California Davis (Attended by >300 participants internationally) "Exploring Contemporary Changes in Biosphere-Atmosphere-Chemistry Interactions'"

2019 **University of Washington**, Department of Atmospheric Sciences Colloquium, "Checking Atmospheric Chemistry's Pulse: Modeling and Remote Sensing of Biosphere Interactions"

2018 **Boston University**, Department of Chemistry, Physical Chemistry Seminar Series, "Keeping an Eye on the Atmosphere: Modeling and Remote Sensing of Atmospheric Chemistry"

2017 **Harvard University**, Atmospheric and Environmental Chemistry Seminar Series, "Air Quality and the Biosphere: What is the view from space?"

2017 **Boston University**, Biogeosciences Seminar Series, "Air Quality and the Biosphere: What is the view from space"

2016 †**University of Toronto**, Department of Chemistry, "Air quality and biosphere interactions: Measuring and modeling global change"

2016 **Colorado State University**, Department of Civil and Environmental Engineering, "Air quality and biosphere interactions: Measuring and modeling global change"

2015 **University of Virginia**, Department of Environmental Sciences Seminar Series, "Air quality and biosphere-atmosphere interactions: Observations from space and in the field"

2015 **University of California Riverside**, Bourns College of Engineering, "Telling the Whole Story: Studying the Impacts of Atmospheric Nitrogen Oxides at Global, Regional, and Local Scales"

2015 **Harvard-Smithsonian Center for Astrophysics**, Atomic and Molecular Physics Seminar, "Trends in ambient NO2 using satellite data and chemical transport modeling"

2013 **Cornell University**, Department of Earth and Atmospheric Sciences, "Urban Ozone Production and Biosphere-Atmosphere Exchange"

2013 **Dalhousie University**, Atmospheric Science Seminar Series, "Observations of Reactive Nitrogen Oxides: From Ground Level Ozone Production to Biosphere-Atmosphere Exchange in Downwind Forest Environment"

INVITED CONFERENCE & WORKSHOP PRESENTATIONS: († denotes international conference/workshop)

2021 **National Atmospheric Deposition Program Fall Science Symposium**, "The WMO Measurement Model Fusion for Global Total Atmospheric Deposition Initiative: Supporting Science, Policy, ad Sustainable Development Goals" (Remote)

2021 **Telluride Science Research Center, Mapping Urban Air: Linking Observations and Processes**, "Ground- and satellite-based remote sensing of a coastal urban environment" (Telluride CO)

2021 †**Intensive Workshop on Atmospheric and Environmental Chemistry**, Co-Hosted by Carnegie Mellon University and University of Saskatchewan, "Atmospheric Chemical Transport Modeling: When, Why, and How?" (Remote)

2020 **TOLNet-Pandora Science Team Workshop**, "Early Results from an Intra-Urban Deployment of Pandoras in a Coastal Urban Environment" (Remote)

2019 †**World Meteorological Organization, Expert Meeting on Measurement-Model Fusion for Global Total Atmospheric Deposition**, "Insight from Satellite Remote Sensing for Measurement-Model Fusion Estimates of Atmospheric Deposition" (Geneva Switzerland)

2018 †**GEMS Science Team Meeting**, "NO2 Stratosphere-Troposphere Separation Strategy for TEMPO (and possible lessons for GEMS)" (Seoul Korea)

2018 **TEMPO Science Team Meeting**, "Stratosphere-Troposphere Separation of NO2" (Boulder CO)

2018 †**Canadian Society for Chemistry Conference**, "Investigating Rapid Contemporary Changes in Biosphere-Atmosphere-Chemistry Interactions with a Chemical Transport Model" (Edmonton AB)

2017 †**World Meteorological Organization, Expert Meeting on Measurement-Model Fusion for Global Total Atmospheric Deposition**, "Satellite Measurement-Model Fusion for Applications in Health and Atmospheric Deposition" (Geneva Switzerland)

2017 **TEMPO Science Team Meeting**, "Stratosphere-Troposphere Separation (STS) for NO2" (Cambridge MA)

2016 **TEMPO Science Team Meeting**, "Development of Methods for Retrieval and Interpretation of TEMPO NO2 columns for Top-down Constraints on NOx Emissions and NOy Deposition" (Washington DC)

2014 **Summer Course in Atmospheric Chemistry and Physics**, Hosted by York University, Center for Atmospheric Chemistry, "Satellite Observations of Chemical Composition" (Toronto ON)

OTHER CONFERENCE & WORKSHOP PRESENTATIONS (Presenting Author):

2021 **TEMPO Science Team Meeting**, "Two Years of Pandora Measurements in Boston: Lessons Learned with a view towards geostationary satellite evaluation" (Remote, Poster)

2020 **TEMPO Science Team Meeting**, "Early Results from a Pandora Network in Boston" (Remote, Poster)

2019 **Gordon Research Conference on Atmospheric Chemistry**, "Biogenic ozone precursors in nonattainment areas of the US: Decreasing sensitivity to isoprene, increasing vulnerability to soil NOx (Newry ME, Poster)

2019 **TEMPO Science Team Meeting**, "Optimized Pandora Network for Urban-Scale Evaluation", (Madison WI, Talk)

2018 **American Geophysical Union Fall Meeting**, "Characterizing Sea Breeze Effects on Surface Ozone Concentrations in the Boston Region, and Implications for Remote Sensing of Local Air Quality" (Washington DC, Talk)

2017 **American Geophysical Union Fall Meeting**, "Impacts of Interannual Variability in Biogenic VOC Emissions near Transitional Ozone Production Regimes" (New Orleans LA, Talk)

2017 **Gordon Research Conference on Atmospheric Chemistry**, "Interannual Variability of Biogenic Isoprene Emissions: Tipping the Scales Near Transitional Ozone Production Regimes?'', (Newry ME, Poster)

2017 **International GEOS-Chem Meeting**, "Global Deposition of Reactive Nitogen Oxides Constrained with Satellite Obserations of NO2" (Cambridge MA, Talk)

2016 **American Geophysical Union Fall Meeting**, "Strategies for Stratosphere-Troposphere Separation of Nitrogen Dioxide Columns from the TEMPO Geostationary Instrument" (San Francisco CA, Poster)

2016 **International Global Atmospheric Chemistry Conference**, "Rapidly changing interactions between forests and atmospheric chemistry: Contemporary changes in land use and anthropogenic emissions" (Breckenridge CO, Poster)

2015 **American Geophysical Union Fall Meeting**, "Simulating the impacts of large scale insect- and disease-driven tree mortality on atmospheric chemistry" (San Francisco CA, Talk)

2015 **Gordon Research Conference on Atmospheric Chemistry**, "Simulating insect-driven tree mortality impacts on atmospheric chemistry" (Waterville Valley NH, Poster)

2015 **International GEOS-Chem Meeting**, "A new land use module for GEOS-Chem" (Cambridge MA, Talk)

2014 **American Geophysical Union Fall Meeting**, "Integrating satellite observations, chemical transport modeling, and population data to estimate decadal trends in ground-level NO2 exposure worldwide" (San Francisco CA, Poster)

2014 **IACPES Symposium**, Deriving long-term spatially averaged surface NO2 concentrations across multiple satellite instruments" (Toronto ON, Talk)

2013 **National Atmospheric Deposition Program Annual Meeting and Scientific Symposium**, Reactive nitrogen oxides fluxes above two mid-latitude North American mixed hardwood forests" (Park City UT, Talk)

2012 **American Geophysical Union Fall Meeting, "**Observations of reactive nitrogen oxide fluxes by eddy covariance above a mid-latitude mixed hardwood" (San Francisco CA, Talk)

2012 **American Meteorological Society Meeting, Conference on Atmospheric Biogeosciences**, "Observations of mixing ratios and fluxes of reactive nitrogen oxides above a mixed hardwood forest in central Ontario during the summer and fall of 2011" (Boston MA, Talk)

2012 **American Meteorological Society Meeting, Conference on Atmospheric Biogeosciences**, "Observations of canopy-scale carbon fluxes at a mid-latitude mixed hardwood forest and decreased growing season productivity due to record high temperatures during leaf emergence" (Boston MA, Talk)

2011 **Canadian Meteorological and Oceanographic Society Meeting**, "Biosphere-atmosphere exchange at a mixed hardwood forest in Central Ontario subject to high nitrogen deposition" (Victoria BC, Talk)

2010 **Canadian Meteorological and Oceanographic Society and Canadian Geophysical Union Joint Meeting** "Potential selection biases in satellite observations of NO2 and SO2 due to clouds" (Ottawa ON, Talk)

2009 **Canadian Society of Chemistry Meeting**, "Investigation of the role of Ox partitioning and particle load on nocturnal Ox loss" (Hamilton ON, Poster)

2008 **American Geophysical Union Fall Meeting**, "Investigating long term changes in nitrogen oxides and volatile organic compounds in the city of Toronto and their effect on local ozone production" (San Francisco CA, Poster)

OTHER CONFERENCE & WORKSHOP PRESENTATIONS (Contributing Author): (Underline denotes trainee)

2021 **American Geophysical Union Fall Meeting**, Wong AYH et al., "Impact of global climate and land use change on soil reactive nitrogen emissions – implication on air quality" (New Orleans, Talk)

2021 **American Geophysical Union Fall Meeting**, Adams TJ et al., "Assessing the spatiotemporal variability of total column NO2 in Boston observed by TROPOMI and an intra-urban network of Pandoras" (New Orleans, Poster)

2021 **American Geophysical Union Fall Meeting**, Wang B et al., "High resolution modeling in a coastal urban environment in support of geostationary retrievals of air quality" (New Orleans, Talk)

2021 **American Geophysical Union Fall Meeting**, Santos F et al., "Classifying the diurnal variability in column measurements of NO2 and implications for geostationary monitoring" (New Orleans, Poster)

2021 **American Geophysical Union Fall Meeting**, Murphy JG et al., "Comparison of the NOx source from particle nitrate renoxification and soil emissions across North America" (New Orleans, Talk)

2021 **Society of Environmental Toxicology and Chemistry**, Rindy J et al., "Quantifying tree exposure to ambient pollutants using passive samplers", (Virtual, Talk)

2021 **Community Earth System Model Workshop**, Wong AYH et al., "Impact of global climate and land use change on soil reactive nitrogen emissions: implication on air quality from CESM2.1" (Virtual, Talk)

2020 **American Geophysical Union Fall Meeting**, Wong AYH et al., "Quantifying present and future impacts of reactive soil nitrogen emissions on global air quality" (Virtual, Poster)

2020 **American Geophysical Union Fall Meeting**, Adams TJ et al., "Reconciling ground-based remote sensindg and in-situ observations of COVID-related air quality changes in the Boston area" (Virtual, Poster)

2020 **European Geophysical Union General Assembly**, Spinei et al., "Urban air pollution monitoring at micro- local, and meso- scales using Pandora instrument" (Virtual, Talk)

2020 **American Meteorological Society Meeting**, Adams TJ et al. "Early results and new insights into tropospheric NO2 variability from a network of Pandora spectrometers in a coastal urban environment" (Boston MA, Poster)

2019 **American Geophysical Union Fall Meeting**, Wong AYH et al., "Constraining ozone dry deposition using ozone and water vapor flux measurements" (San Francisco CA, Poster)

2019 **American Geophysical Union Fall Meeting**, Demetillo MAG et al., "Evaluating Air Pollution Inequality Using High-Resolution Nitrogen Dioxide Measurements" (San Francisco CA, Talk)

2018 **American Geophysical Union Fall Meeting**, Wong AYH et al., "Long-term Global Multi-physical Modelling of Ozone Dry Deposition Velocity - with Focus on Process Uncertainty and Implication on Air Quality Modelling" (Washington DC, Poster)

2018 **American Geophysical Union Fall Meeting**, Demetillo MAG et al., "Assessing Air Pollutant Exposure Inequities Using High-Resolution Nitrogen Dioxide Datasets" (Washington DC, Poster)

2018 **American Geophysical Union Fall Meeting**, Chance K et al., "The TEMPO Green Paper: Applications in Air Quality and Health, Agriculture, Forestry, and Economics" (Washington DC, Talk)

2017 **American Geophysical Union Fall Meeting**, Pusede SE et al., "On the effects of NOx emission control and drought on an ozone-polluted ecosystem" (New Orleans LA, Talk)

2017 **Workshop on Ozone Dry Deposition: Constraints from Multiplatform Observations and Multiscale Modeling**, Wong AYH et al., "Effects of rising COw levels on surface ozone through various biogeochemcial pathways under different land use scenarios in 21st century" (Lamont-Doherty Earth Observatory NY, Poster)

2016 **American Geophysical Union Fall Meeting**, Wong AYH et al., "Effects of land use and land cover change on global ozone air quality in the mid-21st century" (San Francisco CA, Poster)

2016 **International Global Atmospheric Chemistry Conference**, Pusede SE et al., "Drought impacts on high ozone in California" (Breckenridge CO, Talk)

2015 **American Geophysical Union Fall Meeting**, Silva SJ et al., "Oil Palm expansion over Southeast Asia: land use change and air quality" (San Francisco CA, Poster)

2014 **American Geophysical Union Fall Meeting**, Martin RV et al., Advances in studies of air quality and health informed with satellite remote " (San Francisco CA, Talk)

2014 **Urban Environmental Pollution**, Pugliese SC et al., "The impacts of precursor reduction and meteorology on ground-level ozone in the Greater Toronto " (Toronto ON, Talk)

2012 **American Geophysical Union Fall Meeting**, Wang et al., "Methane fluxes measured by eddy covariance at a temperate upland " (San Francisco CA, Poster)

2012 **American Meteorological Society Meeting, Conference on Atmospheric Biogeosciences**, Petroff A et al., "Dry deposition of particulate nitrogen in a broadleaf forest: The importance of the coarse mode" (Boston MA, Talk)

2012 **American Meteorological Society Meeting, Conference on Atmospheric Blogeosciences**, Murphy JG et al., "Methane fluxes measured by eddy covariance at a temperate upland forest in central Ontario" (Boston MA, Talk)

2010 **American Meteorological Society Meeting, Conference on Agricultural and Forest Meteorology**, Murphy JG et al., "Monitoring carbon, nitrogen, and particulate matter exchange in a northern hardwood forest subject to high N" (Keystone CO, Poster)

2009 **American Geophysical Union Spring Meeting**, Celarier EA et al., "Satellite retrieval and ground based measurements of NO2" (Toronto ON, Talk)

2008 **Air & Waste Management Association Symposium on Air Quality Measurements Methods and Technology**, Celarier et al"OMI measurements of NO2 in the greater Toronto area: Consistency with in situ measurements" (Chapel Hill NC, Talk)

2008 **American Geophysical Union Spring Meeting**, Celarier EA et al., "Properties of urban NO2 fields from OMI measurements" (Fort Lauderdale FL, Talk)

ACADEMIC ADVISING:

Postdoctoral Trainees:

2020 - Fernando Santos
2021 - Bo Wang

Ph.D. Trainees:

2021 - Jenna Rindy
2019 - Arden C Radford
2018 - Taylor J Adams
2017 - Anthony YH Wong

Undergraduate Trainees:

2021 Sophie Abou-Rizk (Research Assistant)
2020 Leah Brown (Research Assistant)
2019 Natalie Pienkowska (Directed Study)
2018 Marissa Lee (Work Study)
2017 Sarah Yasenka (UROP)
2017 Shane Devlin (Volunteer)

Visiting Fellows:

2017 - 2018 Lei Liu

Ph.D. Dissertation Committees:

2019 - Sarah Garvey
2017 - 2019 Jon Wang
2017 - 2019 Jesse Turiel

External Ph.D. Examiner:

2021 Sabour Baray (York University, Canada)

COURSES TAUGHT:

2021 Fall	EE 302: Remote Sensing of the Environment (40 undergrads)
2021 Spring	EE 540: Atmospheric Chemistry and Global Change (10 undergrads / 4 graduate students)
2020 Fall	EE 446/646: Remote Sensing of the Atmosphere (3 undergrads / 14 graduate students)
2020 Spring	ES 540: Atmospheric Chemistry and Global Change (6 undergrads / 7 graduate students)
2019 Fall	GE 302: Remote Sensing of the Environment (40 undergrads)
2019 Spring	ES 540: Atmospheric Chemistry and Global Change (5 undergrad / 9 graduate students)
2018 Fall	GE 446/646: Remote Sensing of the Atmosphere (3 undergrads / 12 graduate students)
2018 Spring	ES 540: Atmospheric Chemistry and Global Change (5 undergrad / 5 graduate students)
2017 Fall	GE 302: Remote Sensing of the Environment (25 undergrads)
2017 Spring	ES 540: Atmospheric Chemistry and Global Change (5 undergrads / 1 graduate student)

REVIEW ACTIVITIES

Grant Review Panelist:

NSF (2019)
NASA (2017, 2016)

Ad Hoc Grant Reviewer:

NSF (2021, 2020, 2019, 2018, 2016)
NOAA (2015)
NERC UK (2018)

Journal Peer Reviewer:

ACS Earth and Space Chemistry
Atmosphere
Atmospheric Chemistry & Physics
Atmospheric Environment
Atmospheric Measurement Techniques
Environmental Pollution
Environmental Science & Technology
Geophysical Research Letters
Journal of Advances in Modeling Earth Systems
Journal of Geophysical Research-Atmospheres
Nature Climate Change
Nature Communications
Nature Geoscience
Proceedings of the National Academy of Sciences
Remote Sensing of Environment
Science Advances
Science of the Total Environment
Scientific Reports
Urban Climate

PROFESSIONAL SERVICE: Scientific Community

Steering Committee Member, WMO GAW Measurement-Model Fusion for Global Total Atmospheric Deposition Initiative (2020 -)

Validation Team Member, GEMS Geostationary Satellite Instrument (2020 -)

Co-chair, GEOS-Chem Steering Committee Working Group on Chemistry-Ecosystem-Climate (2017 -)

Co-convener, *Biosphere-Atmosphere Interactions and Atmospheric Chemistry* session at American Geophysical Union Fall Meeting (2019, 2020)

Volunteer Judge, American Geophysical Union Outstanding Student Presentation Awards (2015, 2016, 2018)

PROFESSIONAL SERVICE: Boston University

Diversity Equity and Inclusion Committee Member, Earth & Environment (2020 -)

Natural Science Curriculum Committee Member, College of Arts and Science, (2018 - 2021)

Internal Advisory Board Member, BU URBAN (2021 -)

Faculty Reviewer, BU Campus Climate Lab Research Grants (2021)

Faculty Judge, Biogeoscience Symposium and Student Research Travel Award (2018, 2019)

Core Faculty Member, BU Global Development Policy Center (2020 -)

Associated Faculty Member, BU Center for Remote Sensing (2018 -)

Core Faculty Member, BU URBAN (2018 -)

Earth & Environment, PhD Admissions Committee (2018)

FIELD CAMPAIGNS & OTHER TRAINING

2012	Nitrogen oxide fluxes by eddy covariance PROPHET Tower at the University of Michigan Biological Station, Pellston MI
2009 – 2013	Greenhouse gas and nitrogen oxide fluxes by eddy covariance Haliburton Forest and Wildlife Reserve Research Tower, Haliburton ON
2009	Flux Measurements and Modeling Summer Course University of Colorado Research Station, Nederland CO
2008	NitroEurope Ammonia Intercomparison Study Centre for Ecology and Hydrology, Penicuik Scotland