JEFFREY A. GEDDES, Ph.D.

Assistant Professor
Boston University, Department of Earth & Environment
685 Commonwealth Ave., Boston, MA 02215

jgeddes@bu.edu
http://sites.bu.edu/jged/

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 on atmospheric reactivity

EDUCATION:

2013 **University of Toronto**, Ph.D. 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

ACADEMIC APPOINTMENTS:

2016- **Boston University**, Department of Earth & Environment
Assistant Professor

2013-2016 **Dalhousie University**, Department of Physics & Atmospheric Science
Postdoctoral Fellow (with Randall V. Martin)

2014-2015 **Massachusetts Institute of Technology**, Department of Civil & Environmental Engineering
Visiting Fellow (with Colette L. Heald)

GRANT ACTIVITY:

2020- CO2-Air Quality Urban Synthesis and Analysis ("CO2-AQ USA") Project: Trends & Drivers of Urban Emissions from Past, Present, to Future **(Co-PI)**; NOAA; 3/2020-3/2023

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

2018- Remote Sensing of Surface Air Quality: New Insight into Intra-Urban Variability in Tropospheric NO_2 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: († denotes trainee)

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 NO_2 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 NO_2 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 and 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 NO_2 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 PEER REVIEW: († denotes trainee)

Geddes JA, Wong AYH†, Pusede SE. Biogenic ozone precursors in nonattainment areas of the US: Decreasing sensitivity to isoprene, increasing vulnerability to soil NOx (Under Rivew in *Geophysical Research Letters*).

BOOK CHAPTERS, REPORTS, & OTHER PUBLICATIONS:

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, Liu X, Chan Miller C, Gonzalez Abad G, Huang G, 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 and Vet R (Eds) (**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.

SELECTED AWARDS & OTHER RECOGNITION:

2018 National Science Foundation CAREER Award

2018 NASA New Investigator Program in Earth Science

2015 Selected Participant in the Atmospheric Chemistry Colloquium for Emerging Senior Scientists (ACCESS XIII), Brookhaven National Laboratory

INVITED SEMINARS:

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

2019 **Boston University**, BU Astronomical Society Meeting, "Keeping an Eye on the Earth's Atmosphere: Modeling and Remote Sensing of Air Quality"

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 NO_2 using satellite data and chemical transport modeling"

2014 **York University**, Center for Atmospheric Chemistry Summer Course in Atmospheric Chemisty and Physics, "Satellite Observations of Chemical Composition"

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 Environments"

INVITED CONFERENCE & WORKSHOP PRESENTATIONS:

2020 **Geddes JA** "Early Results from an Intra-Urban Deployment of Pandoras in a Coastal Urban Environment", Annual TOLNet-Pandora Science Team Workshop, Remote Conference.

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

2018 **Geddes JA**, Martin RV, Buscela E, McLinden C, "NO_2 Stratosphere-Troposphere Separation Strategy for TEMPO (and possible lessons for GEMS)", 9th GEMS Science Team Meeting, Seoul, Korea.

2018 **Geddes JA**, Martin RV, Buscela E, McLinden C, "Stratosphere-Troposphere Separation of NO_2", TEMPO Science Team Meeting, UCAR Center Green Campus, Boulder, CO.

2018 **Geddes JA**, "Investigating Rapid Contemporary Changes in Biosphere-Atmosphere-Chemistry Interactions with a Chemical Transport Model", Canadian Society for Chemistry Conference, Edmonton, Canada.

2017 **Geddes JA**, "Satellite Measurement-Model Fusion for Applications in Health and Atmospheric Deposition", Global Atmospheric Watch Programme and Scientific Advisory Group on Total Atmospheric Deposition, World Meteorological Organization, Geneva, Switzerland

2017 **Geddes JA** and Martin RV, "Stratosphere-Troposphere Separation (STS) for TEMPO NO_2", TEMPO Science Team Meeting, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA.

2016 **Geddes JA** and Martin RV, "Development of Methods for Retrieval and Interpretation of TEMPO NO_2 columns for Top-down Constraints on NOx Emissions and NOy Deposition", TEMPO Science Team Meeting, Washington, DC.

OTHER CONFERENCE & MEETING PRESENTATIONS: LEAD AUTHOR († denotes trainee)

2020 **Geddes JA**. "Early Results from a Pandora Network in Boston", TEMPO Science Team Meeting (Virtual Poster).

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

2019 **Geddes JA**, Adams T†, Abad G, Souri A, Miller C, Nowlan C, Jung Y, Chance K, Kang S, "Optimized Pandora Network for Urban-Scale Evaluation", TEMPO Science Team Meeting, Madison WI (Talk).

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

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

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

2017 **Geddes JA**, Martin RV, "Global Deposition of Reactive Nitogen Oxides Constrained with Satellite Obserations of NO2", 8th International GEOS-Chem Meeting, Harvard University, Cambridge MA (Talk).

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

2016 **Geddes JA**, Martin RV, Heald CL, Silva JS, "Rapidly changing interactions between forests and atmospheric chemistry: Contemporary changes in land use and anthropogenic emissions", International Global Atmospheric Chemistry Science Conference, Breckenridge, CO (Poster).

2015 **Geddes JA**, Heald CL, Silva SJ and Martin RV, "Simulating the impacts of large scale insect- and disease-driven tree mortality on atmospheric chemistry", Fall Meeting of the American Geophysical Union, San Francisco, CA (Talk).

2015 **Geddes JA**, Martin RV and Heald CL, "Simulating insect-driven tree mortality impacts on atmospheric chemistry", Gordon Research Conference in Atmospheric Chemistry, Waterville Valley, NH (Poster).

2015 **Geddes JA**, Martin RV, and Heald CL, "A new land use module for GEOS-Chem", 7th International GEOS-Chem Meeting, Harvard University, Cambridge, MA (Talk).

2014 **Geddes JA**, Martin RV, and Boys BL, "Integrating satellite observations, chemical transport modeling, and population data to estimate decadal trends in ground-level NO2 exposure worldwide", Fall Meeting of the American Geophysical Union, San Francisco, CA (Poster).

2014 **Geddes JA**, Martin RV, and Boys BL, "Deriving long-term spatially averaged surface NO_2 concentrations across multiple satellite instruments, IACPES Symposium, Toronto, ON (Talk).

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

2012 **Geddes JA**, and Murphy JG, "Observations of reactive nitrogen oxide fluxes by eddy covariance above a mid-latitude mixed hardwood forest", Fall Meeting of the American Geophysical Union, San Francisco, CA (Talk).

2012 **Geddes JA**, and Murphy JG, "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", Joint First Conference on Atmospheric Biogeosciences and American Meteorological Society Meeting, Boston, MA (Talk).

2012 **Geddes JA**, Murphy JG, Thomas SC, Schurman J, Filewod B, and Petroff A, "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", Joint First Conference on Atmospheric Biogeoscience and American Meteorological Society Meetig, Boston, MA (Talk).

2011 **Geddes JA**, Murphy JG, Winsborough W, Basiliko N, Thomas S, Petroff A, and Desousa A, "Biosphere-atmosphere exchange at a mixed hardwood forest in Central Ontario subject to high nitrogen deposition", Annual Meeting of the Canadian Meteorological and Oceanographic Society, Victoria, ON (Talk).

2010 **Geddes JA**, Murphy JG, O'Brien J, and Celarier EA, "Potential selection biases in satellite observations of NO_2 and SO_2 due to clouds", Joint Meeting of the Canadian Geophysical Union and Canadian Meteorological and Oceanographic Society, Ottawa, ON (Talk).

2009 **Geddes JA**, and Murphy JG, "Investigation of the role of Ox partitioning and particle load on nocturnal O_x loss", Canadian Society of Chemistry Annual Meeting, Hamilton, ON (Poster).

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

OTHER CONFERENCE & MEETING PRESENTATIONS: CONTRIBUTING AUTHOR

(† denotes trainee)

2020 Wong AYH†, **Geddes JA**, Emmons LK, Val Martin M, "Quantifying present and future impacts of reactive soil nitrogen emissions on global air quality", Fall Meeting of the American Geophysical Union, Virtual Conference (Poster).

2020 Adams TJ†, **Geddes JA**, Spinei E, Brown ,L "Reconciling ground-based remote sensing and in-situ observations of COVID-related air quality changes in the Boston area", Fall Meeting of the American Geophysical Union, Virtual Conference (Poster).

2020 Spinei E, **Geddes JA**, Adams TJ†, Muller M, Gebetsberger M, "Urban air pollution monitoring at micro- local, and meso- scales using Pandora instrument", European Geophysical Union General Assembly, Virtual Conference (Talk).

2020 Adams TJ†, **Geddes JA**, Abad GG, Sour AH, Miller C, Nowlan CR, Jung Y, Chance K, "Early results and new insights into tropospheric NO2 variability from a network of Pandora spectrometers in a coastal urban environment", American Meteorological Society Annual Meeting, Boston MA (Poster).

2019 Wong AYH†, **Geddes JA**, Ducker J, Holmes CD, "Constraining ozone dry deposition using ozone and water vapor flux measurements", Fall Meeting of the American Geophysical Union, San Francisco CA (Poster).

2019 Demetillo MAG, Navarro A, Knowles K, **Geddes JA**, Nowlan CR, Sun K, Judd LM, Al-Saadi JA, Pusede SE, "Evaluating Air Pollution Inequality Using High-Resolution Nitrogen Dioxide Measurements", Fall Meeting of the American Geophysical Union, San Francisco CA (Talk).

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

2018 Demetillo MAG, Knowles K, Navarro A, **Geddes JA**, Nowlan CR, Judd LM, Al-Saadi JA, Pusede SA, "Assessing Air Pollutant Exposure Inequities Using High-Resolution Nitrogen Dioxide Datasets", Fall Meeting of the American Geophysical Union, Washington DC (Poster).

2018 Chance K, Liu X, Suleiman RM, Abad GG, Zoogman P, ... **Geddes JA**, et al. "The TEMPO Green Paper: Applications in Air Quality and Health, Agriculture, Forestry, and Economics", Fall Meeting of the American Geophysical Union, Washing DC (Oral).

2017 Pusede S, **Geddes JA**, Buysse CE, Esperanza A, Najacht E, Anderson JF, Baily CB, Munyan J, "On the effects of NOx emission control and drought on an ozone-polluted ecosystem" Fall Meeting of the American Geophysical Union, New Orleans, LA (Talk).

2017 Wong AYH†, Tai APK, **Geddes JA**,"Effects of rising CO_2 levels on surface ozone through various biogeochemcial pathways under different land use scenarios in 21st century", Workshop on Ozone Dry Deposition: Constraints from Multiplatform Observations and Multiscale Modeling, Lamont-Doherty Earth Observatory, NY (Poster).

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

2016 Pusede S, **Geddes JA**, Kent K, Decesare W, "Drought impacts on high ozone in California", International Global Atmospheric Chemistry Science Conference, Breckenridge, CO (Talk).

2015 Silva SJ, Heald CL, **Geddes JA**, Marlier ME, Austin K, Kasibhatla PS, "Oil Palm expansion over Southeast Asia: land use change and air quality" Fall Meeting of the American Geophysical Union, San Francisco, CA (Poster).

2014 Martin RV, van Donkelaar A, Boys BL, **Geddes JA**, Kharol S, Lee CL, Nowlan RC, Snider G, Weagle C, Xu J, "Advances in studies of air quality and health informed with satellite remote sensing", Fall Meeting of the American Geophysical Union, San Francisco, CA (Talk).

2014 Pugliese SC, Murphy JG, **Geddes JA**, Wang JM, "The impacts of precursor reduction and meteorology on ground-level ozone in the Greater Toronto area", Urban Environmental Pollution 2014, Toronto, Canada, (Talk).

2012 Wang JM, Murphy JG, Winsborough CL, Basiliko N, **Geddes JA**, Thomas S, "Methane fluxes measured by eddy covariance at a temperate upland forest", Fall Meeting of the American Geophysical Union, San Francisco, CA (Poster).

2012 Petroff A, Murphy JG, Thomas SC, **Geddes JA**, "Dry deposition of particulate nitrogen in a broadleaf forest: The importance of the coarse mode", First Conference on Atmospheric Biogeosciences, Boston, MA (Talk).

2012 Murphy JG, Wang J, Winsborough C, Basiliko N, **Geddes JA**, Thomas SC, "Methane fluxes measured by eddy covariance at a temperate upland forest in central Ontario", First Conference on Atmospheric Biogeosciences, Boston, MA (Talk).

2010 Murphy JG, **Geddes JA**, Petroff A, Desousa A, Ellis R, Thomas SC, "Monitoring carbon, nitrogen, and particulate matter exchange in a northern hardwood forest subject to high N deposition", 29th Conference on Agricultural and Forest Meteorology, Keystone CO (Poster).

2009 Celarier EA, Murphy JG, **Geddes JA**, Gleason JF, "Satellite retrieval and ground based measurements of NO2", American Geophysical Union Joint Assembly, Toronto, Canada (Talk).

2008 Celarier EA, Gleason JF, Murphy JG, **Geddes JA**, "OMI measurements of NO2 in the greater Toronto area: Consistency with in situ measurements", Air and Waste Management Association Symposium on Air Quality Measurements Methods and Technology, Chapel Hill, NC (Talk).

2008 Celarier EA, Kurosu TP, Murphy JG, **Geddes JA**, Bucsela EJ, Bojkov BR, Retscher C, "Properties of urban NO2 fields from OMI measurements", American Geophysical Union Joint Assembly, Fort Lauderdale, FL (Talk).

ADVISING:

Postdoctoral Trainees

Fernando Santos, Earth & Environment (2020-present)
Bo Wang, Earth & Environment (2021-present)

Ph.D. Trainees

Arden C. Radford, Earth & Environment (2019-present)
Taylor J. Adams, Earth & Environment (2018-present)
Anthony Y.H. Wong, Earth & Environment (2017-present)

Undergraduate Trainees

Natalie Pienkowska, BU, Computer Science (Directed Study Student, 2019)
Marissa Lee, BU, Earth & Environmental Science (Work-Study Student, 2018-2019)
Sarah Yasenka, BU, Earth & Environmental Science (UROP Student, 2017)
Shane Devlin, BU, Chemistry (Lab Volunteer, 2017)

Visiting Fellows

Leah Brown, Dalhousie University, Physics & Atmospheric Science (Visiting Fellow, 2019 & 2020)
Lei Liu, Nanjing University (2017-2018)

Ph.D. Dissertation Committees

Jon Wang, Earth & Environment (2017-present)
Sarah Garvey, Earth & Environment (2019-present)
Jesse Turiel, Earth & Environment (2019-present)

COURSES TAUGHT:

Department of Earth & Environment, Boston University

2021 Spring	EE540: Atmospheric Chemistry and Global Change (8 undergraduates, 4 graduate students)
2020 Fall	GE446/646: Remote Sensing of the Atmosphere (3 undergraduates, 14 graduate students)
2020 Spring	ES 540: Atmospheric Chemistry and Global Change (6 undergraduates, 7 graduate students)
2019 Fall	GE302: Remote Sensing of the Environment (40 undergraduates)
2019 Spring	ES540: Atmospheric Chemistry and Global Change (4 undergraduates, 9 graduate students)
2018 Fall	GE446/646: Remote Sensing of the Atmosphere (3 undergraduates, 12 graduate students)
2018 Spring	ES540: Atmospheric Chemistry and Global Change (5 undergraduates, 5 graduate students)
2017 Fall	GE302: Remote Sensing of the Environment (25 undergraduates)
2017 Spring	ES540: Atmospheric Chemistry and Global Change (5 udergraduates, 1 graduate student)

PROFESSIONAL SERVICE: Review Activities

Grant Review Panelist

NSF (2019)
NASA (2017, 2016)

Ad Hoc Grant Reviewer

NSF (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 Science & Technology; Geophysical Research Letters; Journal of Advances in Modeling Earth Systems; Journal of Geophysical Research-Atmospheres; Nature Communications; Nature Climate Change; 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

2020	Co-Convener, *Biosphere-Atmosphere Interactions and Atmospheric Chemistry* Session at the Fall AGU Meeting
2020-	Steering Committee Member, WMO GAW Measurement-Model Fusion for Global Atmospheric Deposition Initiative
2019	Co-Convener, *Biosphere-Atmosphere Interactions and Atmospheric Chemistry* Session at the Fall AGU Meeting
2018	Volunteer Judge, American Geophysical Union Outstanding Student Presentation Awards
2017-	Co-Chair, GEOS-Chem Working Group on Chemistry-Ecosystems-Climate
2016-	Science Team Member, TEMPO (Tropospheric Emissions: Monitoring of Pollution) Geostationary Satellite Instrument
2016	Volunteer Judge, American Geophysical Union Outstanding Student Presentation Awards
2015	Volunteer Judge, American Geophysical Union Outstanding Student Presentation Awards

PROFESSIONAL SERVICE: Boston University

2020-	Steering Committee Member, Earth & Environment Inclusion and Diversity
2019	Faculty Judge, Biogeocience Symposium
2018-	Core Faculty Member, BU URBAN (NSF NRT)
2018-	Associated Faculty Member, BU Center for Remote Sensing
2018-	Committee Member, Natural Science Curriculum Committe
2018	Biogeocience Student Research and Travel Award Faculty Evaluation Committee
2018	Earth & Environment PhD Student Admissions Committee
2018	Biogeocience Symposium Best Presentation Faculty Judge

FIELD CAMPAIGNS & 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 Modelling Summer Course University of Colorado Research Station, Nederland CO
2008	NitroEurope Ammonia Intercomparison Study Centre for Ecology and Hydrology, Penicuik Scotland

OTHER RECOGNITION:

2016	Early Career Travel Grant, International Global Atmospheric Chemistry (IGAC)
2013-2015	NSERC CREATE IACPES Postdoctoral Research Fellowship
2009-2012	NSERC Canadian Graduate Scholarship (Doctoral)
2012	Outstanding Student Presentation Award, AGU, Biogeosciences Section
2012	Graduate Student Award, University of Toronto Centre for Global Change Science
2011	Best Presentation Award, University of Toronto Environmental Chemistry Colloquium
2009	Best Student Poster, Canadian Society for Chemistry, Environment Division
2009	Chemistry Teaching Fellowship, University of Toronto
2008-2009	NSERC Canadian Graduate Scholarship (Masters)
2008	Ontario Ministry of Environment Graduate Student Endowment Fund
2007	Helen Sawyer Hogg Graduate Student Admission Award, University of Toronto
2007	Undergraduate Internship Award, University of Toronto Centre for Global Change Science
2006	NSERC Canadian Undergraduate Student Research Award
2005	NSERC Canadian Undergraduate Student Research Award
2005	Roger E. Dean Memorial Scholarship in Geology, University of Toronto