Dan Weaver

Ph.D., M.Sc., B.Ed., B.Sc.
Associate Professor, Teaching Stream
Department of Physical & Environmental Sciences
University of Toronto Scarborough

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A. Education

Degrees

2018 Ph.D., Dept. of Physics, University of Toronto
Thesis: Water Vapour Measurements in the Canadian High Arctic
Supervisor: Prof. Kimberly Strong

Also attained: Collaborative Specialization in Environmental Science, School of the Environment

2012 Master of Science, Dept. of Physics, University of Toronto

2010 Bachelor of Education, Ontario Institute for Studies in Education
Qualifications: Physics & Politics (Intermediate/Senior)

2007 Bachelor of Science, Astronomy & Astrophysics,
Dept. of Astronomy, University of Toronto

Professional Certifications

2010 – Present Teacher, Ontario College of Teachers

2016 – 2021 Professional Physicist, Canadian Association of Physicists

Professional Certificates

2022 Effective Online Teaching Practices Certificate,
Association of College and University Educators (ACUE)

Professional Associations

2010 – 2025 Ontario College of Teachers
2016 – 2025 Canadian Association of Physicists
2018, 2024, 2025 European Physical Union
2014 American Geophysical Union

B. Employment

Current appointment

January 2019 – present

Associate Professor, Teaching Stream
Physics and Astrophysics Group
Department of Physical and Environmental Sciences
University of Toronto Scarborough

Courses taught:

PHYA11: Physics for Life Sciences I
Enrollment: ~250 students, 3-hrs lecture + coord labs
Fall 2019 – 2024

PHYA22: Physics for Life Sciences II
Enrollment: ~150 students, 3-hrs lecture + coord labs
Winter 2019 – 2022, 2024 – 2025

PHYB10: Intermediate Physics Laboratory I
Enrollment: ~48 students, 1-hrs lecture + 6-hrs labs
Fall 2019 – 2024

PHYC11: Intermediate Physics Laboratory II
Enrollment: ~20 students, 1-hrs lecture + 6-hrs labs
Winter 2019 – 2025

PHYC14: Introduction to Atmospheric Physics
Enrollment: ~10 students, 2-hrs lecture + 1-hr tutorial
Winter 2023

Courses coordinated:
(2020 – 2025)

PHYD01: Research Project in Physics & Astrophysics
PHYD02: Extended Research Project in Physics & Astrophysics
PHYD72: Supervised Reading in Physics & Astrophysics

Research Lab: Established and Lead the UTSC Atmospheric Observatory

- Maintain and operate instruments.
- Negotiate legal agreements with partner groups and organizations, e.g., Environment and Climate Change Canada.
- Plan and facilitate instrument installations.
- Analyze atmospheric measurement data.
- Create education and outreach content, e.g., for courses, social media, website.
- Worked with UTSC web developers to created and manage website, including interactive plots of measurements: https://www.utsc.utoronto.ca/labs/utsc-atmosphere/

C. Administrative Service

Department of Physical and Environmental Sciences

2019 – 2025	Supervisor, Minor Program in Astronomy & Astrophysics
2019 – 2025	Member, DPES Teaching & Curriculum Committee
2019 – 2025	Member, DPES Outreach Committee
2023 – 2025	Member, Master in Environmental Science Admissions Committee
2019 – 2022	Member, PTR Committee
2019 – 2020	Member, iSPEAC Organizing Group (seminar series)

University of Toronto Scarborough

2023 – 2024	Member, Data Driven Design: Quercus Record Store (D3:QRS) Pre-launch consultations, testing, and workshops
2022 – 2023	Student Academic Success. (SAS) Initiative (Tri-campus U of T) Functional User Group (FUG) (now renamed Student Academic Analytics)
2021 – 2023	Member, Strategic Enrolment Management (SEM) Retention and Flowthrough Working Group

University of Toronto

2025 – present	Member, Institutional Radiation Protection Committee

D. Student Supervisions

2024 Fall	Work Study project, Vanessa Montoya (physics undergraduate student) UTSC-AO data analysis and outreach
2023 – 2024	Work Study project, Libertad Rojas (physics undergraduate student) PHYC11 Interferometer digitization upgrades
Summer 2023	Teaching Fellowship Program, Dustin Almanza (physics Ph.D. student) PHYC11 new Nuclear Magnetic Resonance experiments

E. Grants

Teaching Grants

2025 – 2026	UTSC CTL – Teaching Equipment Grant: $5,349 “ECG and EMG Experiments”
2024 – 2025	UTSC CTL – Teaching Equipment Grant: $8,645.63 “Human Eye Models for Optics Experiments”
2023 – 2024	UTSC CTL – Teaching Equipment Grant: $13,844.45 “Physics Waves Experiment”
2022	UTSC PIE – PHYA11 Practical Curriculum Renewal: $3,500 “Newton’s Laws & Forces Experiment”
2020 – 2021	UTSC CTL – Teaching Equipment Grant: $9,544 “Optics experiment kits”
2019 – 2020	UTSC CTL – Teaching Equipment Grant: $17,844 “Track and smart carts for physics kinematic and dynamics physics experiments”
2019 – 2020	UTSC CTL – Teaching Software Grant: $1,231 “PASCO Capstone 2”
2019 – 2020	UTSC CTL – Teaching Equipment Grant: $8,793 “Portable educational kit Atomic Force Microscope for instructional purposes” (co-investigator: Ruby Sullan, Chemistry)

Funding: graduate school

2015 – 2016	E. F. Burton Fellowship ($11,500)
2014 – 2015	R.A. Blyth Fellowship ($11,000)
2013 – 2014	University of Toronto Fellowship ($11,000)
2012 – 2013	University of Toronto Fellowship ($10,000)
2011 – 2012	University of Toronto Fellowship ($10,000)

Travel

2025	UTSC CTL Professional Development grant ($1000) to support EGU meeting attendance
2016	Centre for Global Change Science (CGCS), Graduate Student Research Award ($4500)
2012	University of Toronto School of Graduate Studies (SGS), Conference Grant ($770)

Fieldwork

2015 – 2016	Northern Scientific Training Program ($2900)
2014 – 2015	Northern Scientific Training Program ($2900)
2013 – 2014	Northern Scientific Training Program ($3400)
2012 – 2013	Northern Scientific Training Program ($3000)

F. Awards

University of Toronto Scarborough

2025	Dean's Merit Award, University of Toronto Scarborough
2024	Dean's Merit Award, University of Toronto Scarborough
2023	Dean's Merit Award, University of Toronto Scarborough
2022	Dean's Merit Award, University of Toronto Scarborough
2020	Dean's Merit Award, University of Toronto Scarborough

Research and Teaching Excellence

June 2020	Tertia M.C. Hughes Memorial Graduate Student Prize, Canadian Meteorological and Oceanographic Society (For excellence in Ph.D. thesis.)
June 2017	Van Kranendonk Teaching Assistant Award, Dept. of Physics, University of Toronto
April 2017	Alan H. Weatherley Graduate Fellowship in Environmental Leadership, School of the Environment, University of Toronto
April 2015	George Burwash Langford Award, School of the Environment, University of Toronto
October 2018	Outstanding Student Poster and PICO (OSPP) Award, European Geosciences Union (EGU) meeting, Vienna, Austria
November 2012	Best student presentation, CANDAC/CREATE annual workshop, Toronto, Ontario, Canada
July 2012	Best research poster, CREATE Summer School in Arctic Atmospheric Science, Nottawasaga, Ontario, Canada

G. Conference Presentations

(presenter underlined)

Zen Mariani, Dominique Brunet, Robert Crawford, Robert Reed, Stephen Holden, Ka Sung, Daniel Michelson, David Sills, **Dan Weaver**, Junhong Wang, and Yushan Su. "The Southern Ontario LIDAR (SOLID) MESONET: Impacts on Aviation and Severe Weather Nowcasting", AMS Annual Meeting. January 14, 2025.

Zen Mariani, Dominique Brunet, Robert Crawford, Robert Reed, Stephen Holden, Daniel Michelson, David Sills, **Dan Weaver**, and Yushan Su. "The Southern Ontario LIDAR (SOLID) MESONET: Impacts on Aviation and Severe Weather Nowcasting", Northeast Regional Operational Workshop and NYS Mesonet workshop, November 15, 2024.

Xiaoyi Zhao, Vitali Fioletov, Debora Griffin, Chris McLinden, Sumi Wren, Kimberly Strong, **Dan Weaver**, Yushan Su, Jonathan Davies, Akira Ogyu, Reno Sit, Ihab Abboud, Ramina Alwarda, Sum Chi Lee. Introduction of Pandora and Pandonia Global network – extra efforts for SWAPIT. Study of Winter Air Pollution in Toronto (SWAPIT) meeting, Oct. 30, 2023.

Lawson Gillespie, Nasrin Pak, Sebastien Ars, Romina Piunno, **Dan Weaver**, Felix Vogel, and Debra Wunch: The GTA Greenhouse Gas Observatory Network: An update for 2022. TCCON Meeting, June 2022.

X. Zhao, D. Griffin, V. E. Fioletov, C. A. McLinden, A. Cede, M. Tiefengraber, M. Mueller, K. Bognar, K. Strong, F. Boersma, H. Eskes, J. Davies, A. Ogyu, S. C. Lee, **D. Weaver**: "Assessment of the Quality of TROPOMI High-spatial resolution NO_2 Data Products and COVID-19 Lockdown Air Quality Changes in the Greater Toronto Area", American Geophysical Union Fall Meeting, December 2020.

N. Pak, S. Ars, B. Lehman, **D. Weaver**, F. Vogel, and D. Wunch: "Methane Measurements Using Portable Fourier Transform Spectrometers in the Greater Toronto Area", American Geophysical Union Fall Meeting, December 2019. (poster)

D. Weaver, K. Strong, M. Schneider, C. Sioris, K. A. Walker, H. Vömel, M. Sommer, C. T. McElroy. Intercomparison of atmospheric water vapour satellite measurements made over the Canadian High Arctic. European Geosciences Union meeting, Vienna, Austria, April 2018. (poster)

D. Weaver, K. Strong, K. A. Walker, C. Sioris, M. Schneider, C. T. McElroy, H. Vömel. Intercomparison of satellite water vapour profile measurements at Eureka, Nunavut. ACE-Odin Science Team Meeting, University of Waterloo, Waterloo, Canada, October 2017.

D. Weaver, K. Strong, M. Schneider, P. M. Rowe, C. Sioris, K. A. Walker, and H. Vömel. High Arctic water vapour measurements at PEARL. Canadian Meteorological and Oceanographic Society Congress, Toronto, Canada, June 2017. (poster)

D. Weaver, K. Strong, M. Schneider, N. Deutscher. Intercomparison of water vapour products update. IRWG /TCCON meeting, Jeju, Republic of Korea, May 2016.

D. Weaver, K. Strong, M. Schneider, N. Deutscher. TCCON and MUSICA water vapour intercomparison. IRWG workshop, Toronto, Canada, June 2015.

D. Weaver, K. Strong, M. Schneider, N. Deutscher, T. Blumenstock, J. Robinson, J. Notholt, V. Sherlock, D.W.T. Griffith, S. Barthlott, O.E. García, M. Palm, N. Jones, F. Hase, R. Kivi, Y. González, E. Sepúlveda, M. Gisi, T. Warneke, S. Dohe, R. Kohlhepp, A. Wiegele, E. Christner, B. Lejeune, and P. Demoulin. Intercomparison of MUSICA and TCCON water vapour products. AGU Fall Meeting, San Francisco, United States, December 2014. (poster)

S. Conway, **D. Weaver**, J. Mendonca, C. Viatte, E. Lutsch, A. Pugliese, K. Strong. Eureka Site Report. IRWG meeting, Bad Sulza, Germany, May 2014.

D. Weaver, K. Strong, M. Schneider K.A. Walker, T. Uttal, N. O'Neill, C.T. McElroy, C. Sioris, Z. Mariani, P.M. Rowe, V.P. Walden, H. Vömel. Intercomparison of atmospheric water vapour measurements in the High Arctic. NSERC CREATE-AAS Research Symposium, Toronto, Canada, April 2014.

D. Weaver, K. Strong, M. Schneider, K.A. Walker, T. Uttal, N. O'Neill, C.T. McElroy, C. Sioris, Z. Mariani, P.M. Rowe, V.P. Walden, H. Vömel. Expanding our understanding of atmospheric water vapour in the High Arctic. ArcticNet Meeting, Halifax, Canada, December 2013.

Debora Griffin, Dan Weaver, Kaley Walker, Kimberly Strong, Felicia Kolonjari, Rodica Lindenmaier, Lin Dan, Gloria Manney, Chris Boone, Peter Bernath, James R. Drummond. Investigating the stratosphere of the High Arctic using three Fourier transform spectrometers: instrument intercomparison and validation between 2011 and 2013. ArcticNet Meeting, Halifax, Canada, December 2013.

D. Weaver, K. Strong, M. Schneider, T. Uttal, N. O'Neill, C.T. McElroy, C. Sioris, K.A. Walker. Intercomparison of water vapour measurements at Eureka, IRWG Meeting, Abashiri, Japan, June 2013.

K. Strong, O. Colebatch, S. Conway, P.F. Fogal, D. Griffin, D.B.A. Jones, Z. Mariani, J. Mendonca, M. Semelhago, I. Stanevich, C. Viatte, K.A. Walker, D. Weaver, C. Whaley, R. Lindenmaier, H. Fast, R. Mittermeier, J.R. Drummond, J. Franklin, J.G. Giroux, and J.C. Lin. Probing Atmospheric Composition over Canada using Ground-based FTIR Spectroscopy. Optical Society of America Fourier Transform Spectroscopy (OSA-FTS) Meeting, Arlington, Virginia, USA, 23-27 June 2013. In Imaging and Applied Optics (Optical Society of America, Washington, DC, 2013), FTh2C.1. Invited talk.

D. Weaver, K. Strong, M. Schneider, T. Uttal, C. Perro, T. Duck, A. Moss, E. McCullough, R.J. Sica, N. O'Neill, C.T. McElroy, C. Sioris, K. Strawbridge, K.A. Walker. Intercomparison of water vapour measurements at Eureka, IRWG Meeting, Wengen, Switzerland, June 2012.

C. Whaley, K. Strong, D. Jones, D. Weaver. Ground-based FTIR Measurements and Modeling of Tropospheric Trace Gases Over Toronto. Imaging and Applied Optics Technical Digest. Signal Recovery and synthesis, July 10, 2011, Toronto, Canada.

C. Adams, A. Fraser, K. Strong, C. McLinden, J. Mendonca, J.-H. Park, D. Weaver, X. Zhao, R. Lindenmaier, R. Batchelor, F. Goutail, A. Pazmino, K. Walker, J.R. Drummond, K. Chance, T. Kurosu, R. Schofield, P. Bernath, C. Boone, C.T. McElroy, D. Deigenstein, V. Umlenski, G. Manney, and W. Daffer. Highlights of UV-visible measurements at PEARL, CANDAC Workshop and CREATE Symposium, Halifax, Canada, Nov 1 2010.

C. Adams, K. Strong, R. Lindenmaier, R. Batchelor, J.-H. Park, D. Weaver, A. Fraser, J. Mendonca, J. R. Drummond, F. Goutail, A. Pazmino, K.A. Walker, P. Bernath, C. Boone, C.T. McElroy, D. Degenstein, C.A. McLinden, G. Manney and W. Daffer. Intercomparison of ground-based and satellite NO_2 measurements above Eureka, Nunavut, ACE/OSIRIS Joint Meeting, Toronto, Canada, Oct 26 2010.

H. Publications (Peer Reviewed)

Zhao X, Fioletov V, Alwarda R, Su Y, Griffin D, **Weaver, D**, Strong K, Cede A, Hanisco T, Tiefengraber M, McLinden C, Eskes H, Davies J, Ogyu A, Sit R, Abboud I, Lee SC. Tropospheric and Surface Nitrogen Dioxide Changes in the Greater Toronto Area during the First Two Years of the COVID-19 Pandemic. Remote Sensing, 14(7):1625, https://doi.org/10.3390/rs14071625, 2022.

K. Gierens, L. Wilhelm, M. Sommer, and **D. Weaver**: On ice supersaturation over the Arctic, Meteorol. Z., https://doi.org/10.1127/metz/2020/1012, 2020.

D. Weaver, K. Strong, K. A. Walker, C. Sioris, M. Schneider, C. T. McElroy, H. Vömel, M. Sommer, K. Weigel, W. Rozanov, J. P. Burrows, W. G. Read, E. Fishbein, and G. Stiller: Comparison of ground-based and satellite measurements of water vapour vertical profiles over Ellesmere Island, Nunavut, Atmos. Meas. Tech., https://doi.org/10.5194/amt-12-4039-2019, 2019.

D. Weaver, K. Strong, M. Schneider, P.M. Rowe, C. Sioris, K.A. Walker, Z. Mariani, T. Uttal, C.T. McElroy, H. Vömel, A. Spassiani, and J.R. Drummond: Intercomparison of water vapour measurements in the Canadian high Arctic, Atmos. Meas. Tech., doi:10.5194/amt-10-2851-2017, 2017.

X. Zhao, **D. Weaver**, K. Bognar, G. Manney, L. Millan, X. Yang, E. Eloranta, M. Schneider, and K. Strong: Cyclone-induced surface ozone and HDO depletion in the Arctic, Atmos. Chem. Phys., 17, 14955-14974, https://doi.org/10.5194/acp-17-14955-2017, 2017.

Griffin, D., Walker, K. A., Conway, S., Kolonjari, F., Strong, K., Batchelor, R., Boone, C. D., Dan, L., Drummond, J. R., Fogal, P. F., Fu, D., Lindenmaier, R., Manney, G. L., and **Weaver, D.**: Multi-year comparisons of ground-based and space-borne Fourier Transform Spectrometers in the high Arctic between 2006 and 2013, Atmos. Meas. Tech., https://doi.org/10.5194/amt-10-3273-2017, 2017.

S. Barthlott, M. Schneider, F. Hase, A. Wiegele, E. Christner, Y. Gonzalez, T. Blumenstock, S. Dohe, O.E. Garcia, E. Sepulveda, K. Strong, J. Mendonca, **D. Weaver**, M. Palm, N.M. Deutscher, T. Warneke, J. Notholt, B. Lejeune, E. Mahieu, N. Jones, D.W.T. Griffith, V.A. Velazco, D. Smale, J. Robinson, R. Kivi, P. Heikkinen, and U. Raffalski. Using XCO2 retrievals for assessing the long-term consistency of NDACC/FTIR data sets. Atmos. Meas. Tech., 8, 1555-1573, 2015.

E. Sepúlveda, M. Schneider, F. Hase, S. Barthlott, D. Dubravica, O. E. García, A. Gomez-Pelaez, Y. González, J. C. Guerra, M. Gis, R. Kohlhepp, S. Dohe, T. Blumenstock, K. Strong, **D. Weaver**, M. Palm, A. Sadeghi, N. M. Deutscher, T. Warneke, J. Notholt, N. Jones, D. W. T. Griffith, D. Smale, G. W. Brailsford, J. Robinson, F. Meinhardt, M. Steinbacher, T. Aalto, and D. Worthy. Tropospheric CH_4 signals as observed by NDACC FTIR at globally distributed sites and comparison to GAW surface in-situ measurements, Atmos. Meas. Tech., 7, 2337-2360, 2014.

D. Griffin, K. A. Walker, J. E. Franklin, M. Parrington, C. Whaley, J. Hopper, J. R. Drummond, P. I. Palmer, K. Strong, T. J. Duck, I. Abboud, P. F. Bernath, C. Clerbaux, P.-F. Coheur, K. R. Curry, L. Dan, E. Hyer, J. Kliever, G. Lesins, A. Saha, K. Tereszchuk, M. Maurice, and **D. Weaver**. Investigation of CO, C_2H_6 and aerosols in a boreal fire plume over Eastern Canada during BORTAS 2011 using ground- and satellite-based observations, and model simulations. Atmos. Chem. Phys., 13, 10227-10241, 2013.

P.I. Palmer, M. Parrington, J.D. Lee, A.C. Lewis, A.R. Rickard, P.F. Bernath, T.J. Duck, D.L. Waugh, D.W. Tarasick, S. Andrews, E. Aruffo, L.J. Bailey, E. Barrett, S.J.-B. Bauguitte, K.R. Curry, P. Di Carlo, L. Chisholm, L. Dan, G. Forster, J.E. Franklin, M.D. Gibson, D. Griffin, D. Helmig, J.R. Hopkins, J.T. Hopper, M.E. Jenkin, D. Kindred, J. Kliever, M. Le Breton, S. Matthiesen, M. Maurice, S. Moller, D.P. Moore, D.E. Oram, S.J. O'Shea, R.C. Owen, C.M.L.S. Pagniello, S. Pawson, C.J. Percival, J.R. Pierce, S. Punjabi, R.M. Purvis, J.J. Remedios, K.M. Rotermund, K.M. Sakamoto, A.M. da Silva, K.B. Strawbridge, K. Strong, J. Taylor, R. Trigwell, K.A. Tereszchuk, K.A. Walker, **D. Weaver**, C. Whaley, and J.C. Young. Quantifying the impact

of BOReal forest fires on Tropospheric oxidants over the Atlantic using Aircraft and Satellites (BORTAS) experiment: design, execution and science overview. Atmos. Chem. Phys., 13, 6239-6261, 2013.

Schneider, M., S. Barthlott, F. Hase, Y. González, K. Yoshimura, O. E. García, E. Sepúlveda, A. Gomez-Pelaez, M. Gisi, R. Kohlhepp, S. Dohe, T. Blumenstock, A. Wiegele, E. Christner, K. Strong, D. Weaver, M. Palm, N. M. Deutscher, T. Warneke, J. Notholt, B. Lejeune, P. Demoulin, N. Jones, D. W. T. Griffith, D. Smale, and J. Robinson. Ground-based remote sensing of tropospheric water vapour isotopologues within the project MUSICA, Atmos. Meas. Tech., 5, 3007-3027, doi:10.5194/amt-5-3007-2012, 2012.

C. Adams, K. Strong, R.L. Batchelor, P.R. Bernath, S. Brohede, C. Boone, D. Degenstein, W.G. Daffer, J.R. Drummond, P.F. Fogal, E. Farahani, C. Fayt, A. Graser, F. Goutail, F. Hendrick, F. Kolonjari, R. Lindenmaier, G. Manney, C.T. McElroy, C.A. McLinden, J. Mendonca, J.-H. Park, B. Pavlovic, A. Pazmino, C. Roth, V. Savastiouk, K.A. Walker, D. Weaver, and X. Zhao. "Validation of ACE and OSIRIS ozone and NO_2 measurements using ground-based instruments at 80° N." Atmos. Meas. Tech., 5, 927-953, 2012.

D. Weaver. Involve Me and I'll Understand: Constructivism in the Physics Classroom. The Crucible, Vol. 42, January 2011.

I. Peer Review Referee

2024	Atmospheric chemistry and physics textbook	(1 book)
2021	Atmospheric Chemistry and Physics	(1 manuscript)
2019	Atmospheric Chemistry and Physics	(1 manuscript)
2018	Journal of Atmospheric and Solar-Terrestrial Physics	(1 manuscript)
2017	Atmospheres-Ocean	(1 manuscript)
2016	Atmosphere Chemistry and Physics	(1 manuscript)
2016	Atmospheric Measurement Techniques	(1 manuscript)

J. Field Campaigns

2012 – 2015 Canadian Arctic ACE/OSIRIS Validation Campaign
Feb. – March Polar Environment Atmospheric Research Laboratory (PEARL)
Eureka, Nunavut, Canada

- Led campaign team communications, e.g. wrote daily emails summarizing research progress and challenges to stakeholders and collaborators, updated campaign website.
- Wrote "Guide to being the ACE campaign webmaster" document to support future campaign communications.
- Posted campaign highlights to social media accounts (@CREATEarcticsci on Twitter and Instagram) for public outreach, resulting in direct engagement (e.g. retweets, link clicks) with hundreds of people and reaching over 37,000 accounts.
- Operated Bruker IFS 125HR, a high-resolution Fourier transform spectrometer, to acquire solar absorption measurements of the atmospheric gases, contributing to global observation networks (e.g. Network for Detection of Atmospheric Composition Change) as well as ACE and OSIRIS satellite validation.
- Performed 125HR maintenance and calibration
- Repaired 125HR source chiller.
- Installed and set up new computer to run the 125HR instrument.
- Improved OPUS macro codes to run measurements with greater efficiency and to report measurement successes through on-screen monitoring and email summaries.
- Operated suntracker, tested auto-iris adjustment function.
- Successfully tested lunar measurements, using the 125HR and the recently-installed suntracker.
- Trained new graduate student for 125HR operations.
- Wrote new 125HR Standard Operating Procedure (SOP) documents
- Contributed to annual campaign report and presentations to Canadian Space Agency.

K. Science Advocacy

Leadership Positions

2013 – present Board of Directors member and Treasurer
Evidence for Democracy

2018 – 2022 Board of Directors member
Canadian Climate Forum

2017 Organizing committee member
Toronto March for Science

2014 – 2015 Evidence for Democracy representative
Right to Know advocacy network (Toronto, ON)

2013 – 2014 Organizing committee member
Scientists for the Right to Know

2012 – 2013 Founder and organizer
Save PEARL campaign

Talks

09 Dec. 2017	Invited speaker, Humanist Association of Toronto
	"Science Advocacy in Canada: What is the role of Evidence and Scientists in a Democracy?"
13 July 2017	Colloquium talk, Dept. of Physics, University of Toronto
	"Science advocacy in Canada: What is the role of evidence and scientists in a democracy?"
22 Apr. 2017	March for Science (Toronto) event kick-off speaker
18 Apr. 2017	Panelist, Canadian Science Policy Centre event discussing the March for Science (Toronto)
25 Mar. 2017	Speaker, March for Science (Toronto) pre-event
	Public talk at the Tranzac Club about science advocacy and motivations for the March for Science
08 Mar. 2017	Speaker & panelist, Markham Library (Markham)
	"The Politics of Science" event (with John Dupuis)
29 Mar. 2015	Panelist, Silence of the Labs documentary screening and discussion, organized by Evidence for Democracy (at U of T Mississauga)
27 Jan. 2015	Panelist, Silence of the Labs discussion, organized by Evidence for Democracy and the School of Public Policy, University of Toronto
17 Oct. 2014	Speaker, The Association for Science and Reason (Skeptics Canada) (Toronto, ON)

L. Public Outreach Highlights

Mar. 2021	Speaker, Exploring by the Seat of Your Pants, online talk and Q&A with students at several high schools in the U.S. and Canada.
May 2020	Panelist, Beyond the Lab: Careers in Science (Ryerson University)
Apr. 2019	Speaker, Exploring by the Seat of Your Pants, online talk and Q&A with students at several high schools in the U.S. and Canada.
Mar. 2019	Moderator & speaker, Climate Action event, Toronto Science Policy Network, University of Toronto
Oct. 2018	Speaker, Ontario Science Centre, Nuit Blanche event
May 2018	Panelist, RawTalk Live, It's Not You, It's the SCItuation: Better Engagement, Better Science (University of Toronto)
Dec. 2017	Speaker, Royal Institute for Science, RCItalks

Sept. 2017	Speaker, Story Collider, Science Literacy Week
Aug. 2015-2017	Speaker, gave Virtual Tour & intro to research at PEARL talk Science Unlimited Summer Camp (University of Toronto)
May 2017	Speaker, Toronto Public Library (Bloor-Gladstone branch) Fragile Planet speaker series
Feb. 2017	Week-long visit to Iqaluit, Nunavut elementary & high school classrooms to support researcher-student collaboration program
Dec. 2016	Wrote feature article on PEARL fieldwork for CMOS Bulletin, Dec. 2016
Nov. 2016	Speaker, Virtual Tour of PEARL, Northern Secondary School environmental science class visit at U of T School of the Environment
Apr. 2016	Invited talk, Our Poles Our Planet Youth Sustainability Conference
Mar. 2016	Wrote blog for CREATE Arctic Science about high latitude (Arctic) sunlight changes (link).
Nov. 2015	Speaker, Sigma Xi Distinguished Speaker Series (at U of T)
May 2015	Speaker, NDACC IRWG meeting (at U of T), Virtual Tour of PEARL
Mar. 2015	Speaker, University of Toronto Sustainability Commission (at U of T)
Oct. 2014	Speaker, The Association for Science and Reason (Toronto)
Nov. 2014	Speaker, Toronto Public Library (with Dr. Zen Mariani)
Feb. 2014	Wrote series of articles about PEARL fieldwork for U of T News during the 2014 ACE/OSIRIS Validation Campaign (link to part one).
Dec. 2013	Speaker, Fieldstone King's College (Mr. Rob Foster's class)
May 2012	Speaker, Ursula Franklin Academy Environmental Assembly (with Dr. Patrick Sheese)
May 2012	Guest, Virtual Researcher on Call (Podcast)
2012 – 2014	Social Media Coordinator, Trainee's Advisory Committee NSERC CREATE training program in Arctic atmospheric science Created and managed Twitter feed (@CREATEArcticSci), Instagram (@CREATEArcticSci) & CREATE Arctic Science blog.
2010 – 2011	Host Committee Member, Canada-Wide Science Fair
2008 – 2010	Science Chase Creator & Coordinator, Science Rendezvous ▪ Created The Science Chase for inaugural Science Rendezvous event in downtown Toronto (2008). This competitive family-friendly team event challenged participants to solve a series of problem-solving science activities while fulfilling a dramatic storyline.

- Directed research and logistical work of a multi-disciplinary team of University of Toronto undergraduate and graduate students working to conceive, plan and implement Science Chase activities for three years.
- Organized, trained and managed 100 event-day volunteers each spring (mostly undergraduates from the University of Toronto).

M. Science Communication through Photography

Cover photos

Dec. 2017 Cover photo,
Canadian Meteorological and Oceanographic Sciences Bulletin
December 2017, Vol. 45, No. 6

- Image of an Environment Canada truck travelling along the desolate Arctic road between Eureka, Nunavut and the PEARL Ridge Laboratory at sunrise.
- Supported special issue on Arctic science.

Jan. 2017 Cover photo, Physics in Canada
2017, Vol. 73, No. 01

- Image of suntracking instrument on the roof of the Polar Environment Atmospheric Research Laboratory (PEARL) Ridge Lab on Ellesmere Island, Nunavut.
- Supported special issue on “Remote Sensing of the Atmosphere”.

Dec. 2016 Cover photo,
Canadian Meteorological and Oceanographic Sciences Bulletin
December 2016, Vol. 44, No. 6

- Image of researchers installing instruments for satellite validation measurements on the roof of the Polar Environment Atmospheric Research Laboratory (PEARL) Ridge Lab on Ellesmere Island, Nunavut.
- An additional collection of photos was also featured as part of an article on atmospheric research I contributed.

Media

Jan. 2018	Article images, the Globe and Mail
	Story covering Canadian climate funding issues “Scientists urge Trudeau to restore or replace key climate research fund”
Nov. 2017	Images used in articles covering new funding for PEARL facility
	CBC News: “High Arctic lab saved as federal money comes through”
	Globe and Mail: “Arctic climate research lab granted federal funding in late reprieve”
	Physics Today: “Canada’s Arctic research station secures last-minute funding”
	Nunatsiaq News: “Ottawa coughs up short-term money for High Arctic research station”
2013	Article image, the Toronto Star
	Lead image of the view from the Polar Environment Research Laboratory window used in article discussing Arctic research and funding, “Arctic scientists see Canada slipping on world stage” as well as other articles about Arctic science issues.
2012	Cover image, Le Devoir
	Image of PEARL facility used to support lead cover story about the loss of funding to support Arctic atmospheric research in Canada and the closure of PEARL, “La station Eureka fermera en avril”.

Other

2018	Calendar, Polar Continental Shelf Program
2018	Magazine feature, Reader’s Digest: Our Canada (Feb-Mar. issue)
2014	Calendar (November), Seriously Northern, by Canadian North

N. Past Employment Highlights

2014 – 2017 Senior Teaching Assistant: TA Training and Microteaching
Department of Physics, University of Toronto

Created and delivered training sessions for new graduate students at the Physics Dept., emphasizing strategies for effective pedagogy, Physics Dept.-specific challenges, and public speaking; the mini-course was delivered through lectures and small group sessions.

2011 – 2018 Teaching Assistant for PHY100 and PHY131
Department of Physics, University of Toronto

Led practical sessions (labs), taught tutorial sessions, marked assignments and exams.

2016 Senior Teaching Assistant, PHY131 Introduction to Physics
Department of Physics, University of Toronto

Trained and managed a team of 64 teaching assistants.

2015 – 2016 Co-creator & Teaching Assistant for Science for Change
School of the Environment, University of Toronto
(pilot co-curricular course)

Co-designed and co-delivered lessons and activities for interdisciplinary course facilitating engagement between science department undergraduates and entrepreneurship at U of T's Banting & Best Institute, in collaboration with the Rotman School Executive-in-Residence and Faculty of Arts & Science staff. Wrote report for senior administrative staff regarding the success of the course pilot, and how the concept could be moved forward.

2014 Physics Education Research, volunteer research assistant

Contributed to the design and implementation of undergraduate education research, investigating the ideal organization of students into groups by skill level, led by Prof. David Harrison at the Dept. of Physics at U of T.

2012 – 2014 Teaching Assistant for PHY205, Physics of Everyday Life
Department of Physics, University of Toronto

Prepared and led activity-focused tutorial sessions
Marked assignments and exams.

2010 – 2011 Environment Canada Science Horizons Research Internship,

Strong Research Group, Dept. of Physics, University of Toronto

Operated and maintained instruments the Toronto Atmospheric Observatory (TAO), including daily measurements of urban pollutants and greenhouse gases using an ABB DA8 Fourier Transform Spectrometer, construction of two new heliostat (sun tracking) instruments.