Neil F. Tandon (he/him/his)
Associate Professor
Department of Earth and Space Science and Engineering (ESSE)
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Degrees

PhD, Applied Physics & Applied Mathematics, Columbia University	2013
MS, Applied Physics & Applied Mathematics, Columbia University	2009
BS, Electrical Engineering, The Cooper Union	2004

Employment History

Associate Professor Department of Earth and Space Science and Engineering York University Toronto, Ontario, Canada	2023-present
Assistant Professor (tenure-track) Department of Earth and Space Science and Engineering York University Toronto, Ontario, Canada	2018-2023 parental leave: July-October 2020
Visiting Postdoctoral Fellow Supervisor: X. Zhang Environment and Climate Change Canada Toronto, Ontario, Canada	2016-2018
Postdoctoral Fellow Supervisor: P. J. Kushner University of Toronto Toronto, Ontario, Canada	2013-2016
Systems Engineer Boeing Satellite Systems El Segundo, California, U.S.A.	2004-2006

Additional Training and Workshops

Visiting Student Supervisor: W. J. Randel National Center for Atmospheric Research Boulder, Colorado, U.S.A.	Summer 2009
Workshop on Water Vapour in the Climate System, Venice, Italy	February 2011
Tutorial on the NCAR Community Atmosphere Model, Boulder, U.S.A.	July 2009

Honours and Awards

Recognition for media engagement, Lassonde School of Engineering	2023
Bjerknes Visiting Fellowship, Bjerknes Centre for Climate Research	2015
Boris A. Bakhmeteff Fellowship, Columbia University	2012-2013
MATLAB Pick of the Week, for “hatchfill” package	2011
Integrative Graduate Education and Research Traineeship (IGERT)	2008-2009
Tau Beta Pi Honor Society	2004

Eta Kappa Nu Honor Society 2004
Full tuition merit scholarship, The Cooper Union 1999-2004

SCHOLARLY AND PROFESSIONAL CONTRIBUTIONS

Summary of Publications and Professional Contributions

My research is in climate dynamics, investigating how motions in Earth's atmosphere and oceans influence climate. My work spans a range of topics within climate dynamics, including climate modelling, extreme precipitation, atmospheric dynamics, ocean dynamics and sea ice dynamics. My research has been cited in high-profile venues such as reports by the Intergovernmental Panel on Climate Change (IPCC). In addition to serving as an Associate Editor for *Journal of Climate*, I regularly review manuscripts for high-quality journals, such as *Geophysical Research Letters*, and present and convene sessions at top international conferences such as the American Geophysical Union (AGU) Fall Meeting. From 2020 to 2023, I sat on the advisory board of Atmosphere-Related Research in Canadian Universities, a special interest group of the Canadian Meteorological and Oceanographic Society (CMOS), which engages in strategic planning initiatives to support atmosphere-related research in Canada.

Areas of Expertise

climate dynamics, climate extremes, extreme precipitation, atmospheric dynamics, ocean dynamics, sea ice dynamics

Peer-Reviewed Publications

(Asterisks indicate authors under my supervision. See Google Scholar page for current citations of these publications: https://scholar.google.ca/citations?user=N4UQPcoAAAAJ&hl=en.)

O. A. Saenko,* and **N. F. Tandon**, 2024: Interannual variability of the heat budget in the tropical Pacific Ocean and its link to the overturning circulation, *J. Geophys. Res. Oceans*, submitted.

S. M. A. Ali* and **N. F. Tandon**, 2023: Influence of horizontal model resolution on the horizontal scale of extreme precipitation events. *J. Geophys. Res. Atmos.,* submitted.

J. L. Ward* and **N. F. Tandon**, 2024: Why is summertime Arctic sea ice drift speed projected to decrease? *Cryosphere,* 18, 995-1012, doi:10.5194/tc-18-995-2024.

- Coverage on CBC Television and CBC Radio. CBC Radio segment: https://www.cbc.ca/listen/live-radio/1-129/clip/16048967

O. A. Saenko,* J. M. Gregory and **N. F. Tandon**, 2024: Uncertainties in the Arctic Ocean response to CO_2: a process-based analysis. *Climate Dyn.*, 62, 1649-1668, doi:10.1007/s00382-023-06986-2.

N. A. Stanton* and **N. F. Tandon**, 2023: How does tropospheric VOC chemistry affect climate? An investigation of preindustrial control simulations using the Community Earth System Model version 2. *Atmos. Chem. Phys.*, 23, 9191-9216, doi:10.5194/acp-23-9191-2023.

M. A. T. Mpanza* and **N. F. Tandon**, 2022: Further probing the mechanisms driving projected decreases of extreme precipitation intensity over the subtropical Atlantic. *Climate Dyn.*, 59, 3317–3341, doi:10.1007/s00382-022-06268-3.

D. R. M. Rao* and **N. F. Tandon**, 2021: Mechanism of interannual cross-equatorial overturning anomalies in the Pacific Ocean. *J. Geophys. Res. Oceans*, 126, e2021JC017509, doi:10.1029/2021JC017509.

N. F. Tandon, O. A. Saenko, M. A. Cane, and P. J. Kushner, 2020: Interannual variability of the global meridional overturning circulation dominated by Pacific variability. *J. Phys. Oceanogr.*, 50, 559-574, doi:10.1175/JPO-D-19-0129.1.

N. F. Tandon, J. Nie, and X. Zhang, 2018c: Strong influence of eddy length on boreal summertime extreme precipitation projections. *Geophys. Res. Lett.*, 45, 10665-10672, doi:10.1029/2018GL079327.

N. F. Tandon, P. J. Kushner, D. Docquier, J. J. Wettstein, and C. Li, 2018b: Reassessing sea ice drift and its relationship to long-term Arctic sea ice loss in coupled climate models. *J. Geophys. Res. Oceans*, 123, 4338-4359, doi:10.1029/2017JC013697.

- Notable citation in the Intergovernmental Panel on Climate Change (IPCC) 2022 Special Report on the Ocean and Cryosphere in a Changing Climate

N. F. Tandon, X. Zhang, and A. H. Sobel, 2018a: Understanding the dynamics of future changes in extreme precipitation intensity. *Geophys. Res. Lett.*, 45, 2870-2878, doi:10.1002/2017GL076361.

P. J. Kushner, et al., 2018: Canadian snow and sea ice: assessment of snow, sea ice, and related climate processes in Canada's earth-system model and climate prediction system. *Cryosphere*, 12, 1137-1156, doi:10.5194/tc-12-1137-2018.

D. Docquier, F. Massonnet, A. Barthélemy, **N. F. Tandon**, O. Lecomte, and T. Fichefet, 2017: Relationships between Arctic sea ice drift and strength modelled by NEMO-LIM3.6. *Cryosphere*, 11, 2829-2846, doi: 10.5194/tc-11-2829-2017.

N. F. Tandon and M. A. Cane, 2017: Which way will the circulation shift in a changing climate? Possible nonlinearity of extratropical cloud feedbacks. *Climate Dyn.*, 48, 3759-3777, doi:10.1007/s00382-016-3301-6.

N. F. Tandon and P. J. Kushner, 2015: Does external forcing interfere with the AMOC's influence on North Atlantic sea surface temperature? *J. Climate*, 28, 6309-6323, doi:10.1175/JCLI-D-14-00664.1.

- Notable citation in the IPCC Sixth Assessment Report (2021)

N. F. Tandon, E. P. Gerber, A. H. Sobel, and L. M. Polvani, 2013: Understanding Hadley Cell expansion versus contraction: insights from simplified models and implications for recent observations. *J. Climate*, 26, 4304-4321, doi:10.1175/JCLI-D-12-00598.1.

N. F. Tandon, L. M. Polvani, and S. M. Davis, 2011: The response of the tropospheric circulation to water vapor-like forcings in the stratosphere. *J. Climate*, 24, 5713-5720, doi:10.1175/JCLI-D-11-00069.1.

S.-W. Son, **N. F. Tandon**, and L. M. Polvani, 2011: The fine-scale structure of the global tropopause derived from COSMIC GPS radio occultation measurements. *J. Geophys. Res. Atmos.*, 116, D20113, doi:10.1029/2011JD016030.

S.-W. Son, **N. F. Tandon**, L. M. Polvani, and D. W. Waugh, 2009: Ozone hole and Southern Hemisphere climate change. *Geophys. Res. Lett.*, 36, L15705, doi:10.1029/2009GL038671.

- Notable citation in the IPCC Fifth Assessment Report (2013)

PhD Thesis

N. F. Tandon, 2013: What is Driving Changes in the Tropospheric Circulation? New Insights from Simplified Models. Advisor: L. M. Polvani, Columbia University. 97 pp.

Technical Reports

M. A. T. Mpanza*, **N. F. Tandon**, 2020: Dynamical Downscaling Simulations of the Effect of Eddy Length on Regional Projections of Extreme Precipitation Intensity. Deliverable report for Environment and Climate Change Canada. 7 pp.

N. F. Tandon, G. P. Klaassen, et al., 2019: A Plan to Enhance Sustainability of Atmospheric Science at York University. 6 pp.

Conference Publications
(Oral presentations unless otherwise indicated.)

N. A. Stanton* and **N. F. Tandon**, 2024: "How Does Tropospheric VOC Chemistry Affect Climate? An Investigation of Preindustrial Control Simulations Using the Community Earth System Model Version 2." EGU General Assembly, 14-19 April 2024, Vienna, Austria.
Similar material presented at: 2024 CMOS Congress.

S. M. A. Ali* and **N. F. Tandon**, 2022: "Influence of Horizontal Model Resolution on the Spatial Scale of Extreme Precipitation Events." CMOS Congress, 1-8 June 2022, virtual.
Similar material presented at: 2023 AMS Annual Meeting, 2024 EGU General Assembly.

J. L. Ward* and **N. F. Tandon**, 2022: "Why Do Simulated Trends of Arctic Sea Ice Drift Speed Go from Positive in the 20th Century to Negative in the 21st Century?" CMOS Congress, 1-8 June 2022, virtual.
Similar material presented at: 2022 AGU Fall Meeting.

N. A. Stanton* and **N. F. Tandon**, 2021: "How Does Tropospheric Chemistry Affect the Cloud Radiative Effect?" AGU Fall Meeting, 13-17 December 2021, New Orleans, U.S.A., virtual (poster).
Similar material presented at: 2022 CMOS Congress, 2023 AMS Annual Meeting.

M. A. T. Mpanza* and **N. F. Tandon**, 2020: "Further Probing the Dynamical Influences on Regional Changes of Extreme Precipitation Intensity." AGU Fall Meeting, 1-17 December 2020, virtual.
Similar material presented at: 2021 CMOS Congress, 2023 AMS Annual Meeting.

D. R. M. Rao* and **N. F. Tandon**, 2020: "Mechanism of Interannual Cross-equatorial Overturning Anomalies in the Pacific Ocean." CMOS Congress, 25 May-10 June 2020, virtual.
Similar material presented at: 2020 AGU Fall meeting (poster), 2022 AMS Conference on Atmospheric and Oceanic Fluid Dynamics.

N. F. Tandon, J. Nie, X. Zhang, and A. Sobel, 2018: "Strong Influence of Eddy Length on Extreme Precipitation Projections." AGU Fall Meeting, 10-14 December 2018, Washington, U.S.A.
Similar material presented at: 2019 IUGG General Assembly.

N. F. Tandon, X. Zhang, and A. Sobel, 2018: "Understanding the Dynamics of Future Changes in Extreme Precipitation Intensity." GEWEX Open Science Conference, 6-11 May 2018, Canmore, Canada.

N. F. Tandon and X. Zhang, 2017: "Understanding Regional Projections of Extreme Precipitation." CMOS Congress, 5-8 June 2017, Toronto, Canada.
Similar material presented at: 2017 American Meteorological Society (AMS) Conference on Atmospheric and Oceanic Fluid Dynamics (poster).

N. F. Tandon, P. J. Kushner, D. Docquier, J. J. Wettstein, and C. Li, 2017: "Reassessing the Role of Sea Ice Drift in Arctic Sea Ice Loss." CMOS Congress, 5-8 June 2017, Toronto, Canada.
Similar material presented at: 2017 AGU Fall Meeting.

N. F. Tandon, O. A. Saenko, M. A. Cane, and P. J. Kushner 2017: "Interannual Variability of Global Meridional Overturning Circulation Dominated by Pacific Variability." CMOS Congress, 5-8 June 2017, Toronto, Canada.
Similar material presented at: 2017 AMS Conference on Atmospheric and Oceanic Fluid Dynamics, 2016 AGU Ocean Sciences Meeting (poster).

N. F. Tandon and M. A. Cane, 2016: "Which Way Will the Circulation Shift in a Changing Climate? Possible Nonlinearity of Extratropical Cloud Feedbacks." AGU Fall Meeting, 12-16 December 2016, San Francisco, U.S.A. (poster).
Similar material presented at: 2017 AMS Conference on Atmospheric and Oceanic Fluid Dynamics (poster), 2015 SPARC Storm Tracks Workshop.

N. F. Tandon and P. J. Kushner, 2015: "Interference Between Forced and Unforced Climate Variability in the North Atlantic and the Arctic." CLIVAR Workshop on Decadal Climate Variability and Predictability (invited), 16-20 November 2015, Trieste, Italy.

N. F. Tandon and P. J. Kushner. 2015: "Does External Forcing Interfere with the AMOC's Influence on North Atlantic Sea Surface Temperature?" EGU General Assembly, 12-17 April 2015, Vienna, Austria.
Similar material presented at: 2015 AMS Conference on Atmospheric and Oceanic Fluid Dynamics (poster), 2015 AMS Annual Meeting, 2014 AGU Fall Meeting (poster).

S. Mello, P. Joe, **N. F. Tandon**, P. J. Kushner, H. Barker, N. Donaldson, L. Garand, W. Hocking, D. Hudak, A. Korolev, and S. Laroche, 2015: "Canadian Participation in Cal/Val ADM-Aeolus." ESA Workshop on Cal/Val ADM-Aeolus, 10-13 February 2015, Frascati, Italy (poster).

N. F. Tandon, L. M. Polvani, and M. A. Cane, 2013: "The Climate Response to Small Solar Perturbations: The Importance of the Background State." AMS Conference on Atmospheric and Oceanic Fluid Dynamics, 17-21 June 2013, Newport, U.S.A.
Similar material presented at: 2013 AGU Fall Meeting.

N. F. Tandon, E. P. Gerber, A. H. Sobel, and L. M. Polvani, 2012: "Understanding Hadley Cell Expansion vs. Contraction: Insights from Simplified Models." AGU Fall Meeting, 3-7 December 2012, San Francisco, U.S.A.
Similar material presented at: 2013 AMS Conference on Atmospheric and Oceanic Fluid Dynamics (poster).

N. F. Tandon, L. M. Polvani, and S. M. Davis, 2012: "The Response of the Tropospheric Circulation to Water Vapor-Like Forcings in the Stratosphere." AGU Fall Meeting, 3-7 December 2012, San Francisco, U.S.A.
Similar material presented at: 2011 WCRP Open Science Conference (poster).

N. F. Tandon, S.-W. Son, L. M. Polvani, W. J. Randel, L. L. Pan, 2009: "The Tropopause Inversion Layer: New Observations, New Theories." AGU Fall Meeting, 14-18 December 2009, San Francisco, U.S.A. (poster).
Similar material presented at: 2009 UTLS Workshop (poster).
S.-W. Son, L. M. Polvani, **N. F. Tandon**, D. W. Waugh, J. Perlwitz, S. Pawson, 2008: "The Impact of Stratospheric Ozone on Southern Hemisphere Climate Change." SPARC General Assembly, 31 August-5 September 2008, Bologna, Italy (poster).

Other Presentations

N. F. Tandon, 2023: "Building Confidence in Regional Projections of Extreme Precipitation." Invited talk, 23 October 2023, McGill University, Toronto, Canada.

N. F. Tandon, 2023: "Building Confidence in Regional Projections of Extreme Precipitation." Invited talk, 24 March 2023, University of Toronto Scarborough, Toronto, Canada.

N. F. Tandon, 2018: "Using Dynamical Theory to Understand Future Changes in Regional Climate." Invited seminar, 9 May 2018, York University, Toronto, Canada.

N. F. Tandon and P. J. Kushner, 2015: "Interference Between Forced and Unforced Climate Variability in the North Atlantic and the Arctic." GFI seminar (invited), 4 May 2015, University of Bergen, Bergen, Norway.

N. F. Tandon, E. P. Gerber, A. H. Sobel, L. M. Polvani, and M. A. Cane, 2013: "Divergent Responses to External Forcing in Simplified GCMs." AOCD seminar (invited), 28 March 2013, Yale University, New Haven, U.S.A.
Similar material presented at: invited seminar at University of Toronto, invited seminar at ETH Zurich.

N. F. Tandon, E. P. Gerber, A. H. Sobel, and L. M. Polvani, 2013: "Understanding Hadley Cell Expansion vs. Contraction: Insights from Simplified Models." MASS seminar, 11 February 2013, MIT, Cambridge, U.S.A.
Similar material presented at: colloquium at the University of Washington.

N. F. Tandon, 2011: "Water Vapor and Climate Change." Invited talk, 23 June 2011, Geophysical Fluid Dynamics Laboratory, Princeton, U.S.A.

N. F. Tandon, 2010: "Water Vapor's Sneaky Role in Climate Change." Invited lecture, 9 December 2010, The Cooper Union, New York, U.S.A.

International Collaborations

Collaboration with Prof. Ji Nie at Peking University to understand the physical mechanisms responsible for extreme precipitation, 2017-2018

Collaboration with Dr. David Docquier at the Swedish Meteorological and Hydrological Institute (previously at Université Catholique de Louvain, Belgium) on the processes responsible for changes in Arctic sea ice motion, 2016-2018

Collaboration with Prof. Camille Li at the University of Bergen (Norway) and Prof. Justin Wettstein at Oregon State University on the relationship between long-term Arctic sea ice loss and changes in sea ice motion, 2016-2018

Collaboration with Dr. Laurent Terray at the Centre Européen de Recherche et de Formation Avancée en Calcul Scientifique (Toulouse, France) on the relationship between variations in the Atlantic Meridional Overturning Circulation and variations in North Atlantic sea surface temperature, 2013-2015

Collaboration with Prof. Mark Cane at Lamont-Doherty Earth Observatory to understand cloud feedbacks and variations in the ocean overturning circulation, 2012-2020

Professional Service

Associate editor for *Journal of Climate*, 2022-present

Session convenor, "Extreme Precipitation: Past, Present, Future," CMOS Congress, June 2022, 2024

Member of steering committee for Canadian team participating in NASA's Aerosol, Cloud, Convection and Precipitation (A-CCP) mission, 2021-2022

Advisory board member of Atmosphere-Related Research in Canadian Universities (ARRCU) special interest group of CMOS, 2020-2023
Representative of York University at the University Corporation for Atmospheric Research (UCAR) Members Meeting, October 2018
Session co-convener, "Beyond the Interannual: Multidecadal and Centennial Modes of Climate Variability," AGU Fall Meeting, December 2016
Session chair, Stratosphere-Troposphere Processes and their Role in Climate (SPARC) Workshop on Storm Tracks, August 2015
Session chair, AMS Conference on Atmospheric and Oceanic Fluid Dynamics, June 2015
Judge in the Outstanding Student Paper Award competition, EGU General Assembly, April 2015
Session convenor, "The Zonal-Mean Atmospheric Circulation and Climate Change," AGU Fall Meeting, December 2012
Reviewer for *Journal of Climate*, *Geophysical Research Letters, Nature Geoscience, Journal of Geophysical Research*, *Climatic Change*, *International Journal of Climatology*, *Nonlinear Processes in Geophysics, Annales Geophysicae*, *Scientific Reports,* Natural Sciences and Engineering Research Council of Canada (NSERC)
Member of CMOS, AGU and AMS

Media Exposure

Interview on CBC Radio program "The Trailbreaker" about Ward and Tandon (2024) study on future changes of Arctic sea ice motion. 13 March 2024. https://www.cbc.ca/listen/live-radio/1-129/clip/16048967

Interview on CBC program "Northbeat" about Ward and Tandon (2024) study on future changes of Arctic sea ice motion. 5 March 2024. https://www.cbc.ca/player/play/2314993219872

Interview with Metroland about the cause of light pillars. 22 January 2024.

Interview with the Toronto *Star* about wildfires and climate change. 12 May 2023.

Presented segment assessing the "red sky" approach to weather prediction on CBC Radio's "Quirks and Quarks," 19 September 2022. https://www.cbc.ca/radio/quirks/sep-17-10-000-steps-really-are-good-for-you-astronomers-thrilled-by-jwst-garbage-picking-cockatoos-and-more-1.6584419

Interview on "This is Lassonde" podcast, 27 June 2022. https://lassondeschool.podbean.com/ e/dr-neil-tandon-and-his-unexpected-path-to-becoming-a-lassonde-professor

Interview on 105.9FM York Region radio about the 21 May 2022 derecho over southern Ontario and possible changes in derecho risk under climate change. Recorded 24 May 2022.

Interview with KCBS radio (San Francisco) regarding Rao and Tandon (2021) study on circulation in the Pacific Ocean. Recorded 4 October 2021.

Interview on Global News regarding the influence of climate change on cold snaps. Recorded 20 May 2021.

"Lassonde professor's research is unlocking secrets in the deep Pacific Ocean," *YFile: York University's News*, 6 March 2020. https://yfile.news.yorku.ca/2020/03/06/lassonde-professors-research-is-unlocking-secrets-in-the-deep-pacific-ocean

"New Faces: Lassonde welcomes eight new faculty members," *YFile: York University's News*, 19 September 2018. https://yfile.news.yorku.ca/2018/09/19/new-faces-lassonde-welcomes-eight-new-faculty-members

Funding

New Frontiers in Research Fund
Project title: "Climate changed transportation: holistic and Indigenous informed responses to transportation infrastructure, food security, and community well-being in the Arctic"
Role: Co-Applicant
Total funding: $1,498,448
Funding period: March 1, 2024-February 27, 2027

Canadian Space Agency
Research Opportunities for Satellite Earth Observation
Project title: “Accurate Forest Carbon Quantification from SEO to Drive Nature-based Climate Solutions”
Role: Co-Principal Investigator
Total funding: $311,039
Funding period: April 1, 2024-March 31, 2027

Ministry of Transportation of Ontario
Highway Infrastructure Innovations Funding Program (HIIFP)
Project title: “Incorporating Climate Change into Rainfall Prediction”
Role: Co-Principal Investigator with Rashid Bashir (Civil Engineering)
Total funding: $109,250
Funding period: April 1, 2023-March 31, 2025

Digital Research Alliance of Canada
Resources for Research Groups (for non-monetary high performance computing resources; monetary value below is approximate)
Role: Principal Investigator
Project title: “Understanding the Climate Effects of Coupled Tropospheric Chemistry”
Total funding: $139,026
Funding period: April 3, 2023-April 2, 2025

Junior Faculty Fund
Lassonde School of Engineering, York University
Principal Investigator
Total funding: $1,448.83
Awarded October 2020

NSERC Discovery Grant
Principal Investigator
Total funding: $162,500 (including Discovery Launch Supplement)
Funding period: April 2020-March 2025

Environment and Climate Change Canada Contract No. 3000697135
Project title: “Establishing the Importance of Eddy Length Changes for Regional Projections of Extreme Precipitation”
Principal Investigator
Total funding: $24,995.60
Funding period: October 2019-March 2020

Bjerknes Visiting Fellowship
Bjerknes Centre for Climate Research
Role: Principal Applicant
Total funding: $3,800.00
Funding period: April-May 2015

Boris A. Bakhmeteff Graduate Fellowship
Columbia University
Role: Principal Applicant
Total funding: $29,931.16
Funding period: September 2013-August 2013

Integrated Graduate Education and Research Traineeship
U.S. National Science Foundation
Role: Principal Applicant
Total funding: $31,773.84
Funding period: September 2008-August 2009

TEACHING

Summary of Teaching and Teaching Contributions

Number of undergraduate lecture-based courses directed: 6
Number of undergraduate research courses directed: 1

Number of graduate lecture-based courses directed: 1
Number of graduate reading courses directed: 1
Number of MSc students supervised: 5
Number of PhD students supervised: 2
Number of postdoctoral visitors supervised: 2
Number of research associates supervised: 1
Number of supervisory committee memberships: 4
Number of thesis defense committee memberships: 9 (chair of 3)

Undergraduate Teaching
(Asterisks indicate courses created or substantially revised by me.)

Course Director for Introduction to Climate Science (ESSE 2020)*	2022-present
Course Director for Atmospheric Dynamics I (ESSE 3040)	Fall 2021
Course Director for The Earth Environment (ESSE 1012)*	2021-present
Undergraduate research project (ESSE 4000) supervisor for Justine Frampton (See also Supervision of Highly Qualified Personnel)	Winter 2021
Course Director for The Dynamic Earth and Space Geodesy (ESSE 1010)	Fall 2019
Course Director for Climate Variability and Climate Change (ESSE 4160)*	2019-present
Course Director for Continuum Mechanics (ESSE 2470)*	2019-2020

Graduate Teaching

Course Director for Directed Reading: Advanced Topics in Climate Dynamics (ESS 5010)	2020-present
Course Director for Climate and Climate Change (ESS 5170, integrated with ESSE 4160)	2019-present

Supervision of Highly Qualified Personnel

Research supervisor for undergraduate student Shannon Fernando — 2024-present
- Recipient of NSERC Undergraduate Student Research Award
- Co-supervised with Prof. Matthew Perras (Civil Engineering)

Research supervisor for Postdoctoral Visitor Negin Binesh — 2023-present
- Co-supervised with Prof. Rashid Bashir (Civil Engineering)

Research supervisor for Research Associate Oleg Saenko — 2023-present

Research supervisor for MSc student Anas Ali — 2021-2023
- Currently a PhD student at University of Toronto

Research supervisor for Postdoctoral Visitor Jamie Ward — 2021-2022
- Currently a postdoc at the Cooperative Institute for Great Lakes Research

Supervisor for undergraduate research project (ESSE 4000) of Justine Frampton (See also Undergraduate Teaching) — Winter 2021

Research supervisor for MSc/PhD student Noah Stanton — 2020-present
- Recipient of NSERC Postgraduate Scholarship, 2024-2025
- Recipient of NSERC Canada Graduate Scholarship, 2020-2021
- Recipient of Ontario Graduate Scholarship, 2021-2022, 2023-2024

Research supervisor for MSc/PhD student M. A. Thabo Mpanza — 2019-present

Research supervisor for MSc student Devanarayana Rao — 2019-2020
- Currently a PhD student at the University of Southern Alabama

Graduate Supervisory and Defense Committees
(All students are based in ESS unless otherwise indicated.)

Chair of MSc defense committee for Shamil Samigulin	2023
Member of MSc defense committee for Yeuhyun Kim (Chemistry)	2023
External PhD defense examiner for Marie-Pier Labonté (McGill University)	2023
Member of MSc defense committee for Abdul Basit (Civil Engineering)	May 2022
Member of supervisory committee for MSc student Shaya Howard	2021-2022
Member of MSc defense committee for Yichu Chen	February 2022
Chair of MSc defense committee for Anuj Thapa	2021-2022
Member of PhD defense committee for Sabour Baray (Chemistry)	October 2021
Member of supervisory committee for PhD student Saad Saad (Civil Engineering)	2020-present
Member of supervisory committee for MSc student Anuj Thapa	2019-2022

Member of supervisory committee for PhD student Giang Nguyen 2018-2022
Member of PhD defense committee for Casey Moore December 2018
Chair of PhD defense committee for Anne Irvin November 2018

Courses Taught at Other Institutions

Teaching Assistant for Numerical Methods (APMA E4300), Columbia University Spring 2010

Course/Curriculum Development

Led modification of ESSE 4160 (Climate and Climate Change) into ESSE 4160 (Climate Variability and Climate Change), 2021
Led development of new undergraduate course, ESSE 2020 (Introduction to Climate Science), 2021
Member of Curriculum Committee for the Earth & Atmospheric Science Program (see also University Service), 2021-present
Led development of new graduate integrated course, ESS 5170 (Climate and Climate Change), 2018
Led modification of ESS 5260 (Numerical Modelling of Climate Change) into ESS 5270 Numerical Climate Modelling, 2018

SERVICE

Representative on the Lassonde Planning, Academic Resources & Research (PARR) Committee, 2022-present
Session chair for ESS Research Evaluation Course Conference, 2022-2023
Science representative on the Lassonde Learning, Curriculum and Students (LCS) Committee, 2021-2023
Member of Curriculum Committee for the Earth & Atmospheric Science Program, 2021-present
Member of Lassonde Ad-hoc Tenure & Promotion Adjudicating Committee, 2021-2022
Faculty panel member for Lassonde Week Zero orientation event, August 2021
Presenter of YouTube recruitment video for York's Earth & Atmospheric Science program (https://youtu.be/1BOg3DmmNGk), July 2021
Chair of working group to develop an undergraduate program in Climate, Atmospheric & Planetary Science (CAPS) at York University, 2019-present
Judge for ESS Research Evaluation Course Conference, 2019-present
Member of working group to develop a new interfaculty program in Environmental Science, 2019-2020
Lead Organizer of ESSE Department Young Faculty Club gatherings, 2019-2020
Session chair for ESS Research Evaluation Course Conference, May 2019
Faculty volunteer for York University Spring Open House, 2019-present
Science representative on the Lassonde Learning, Curriculum and Students (LCS) Committee, March 2019
Member and Affirmative Action chair of search committee for Space Engineering faculty position at York University, 2019
Faculty volunteer for York University Fall Campus Day, 2018-present
Representative of York University at the Ontario Universities' Fair, September 2018

Last updated 10 May 2024