A. PERSONAL

1. NAME:

John E. Moores,
Associate Professor, Tenured
York Research Chair in Space Exploration
Department of Earth and Space Science and Engineering,
Lassonde School of Engineering
&
Science Advisor to the President
Canadian Space Agency
Ministry of Industry
Government of Canada

Profile

My research straddles the divide between science and engineering to explore our solar system and the atmospheres of other planets. As a NASA-selected Participating Scientist on the Curiosity Mars Rover Mission, my work has contributed to recent major discoveries about our solar system. My research group has 16-times been recognized with the NASA Group Achievement Award and I have published 99 papers, including 22 as lead author and 19 in *Science* or *Nature* with a combined total of 9,720 citations. One of my first author articles has been published in *Nature*, one in *Nature Geoscience* and three others have been selected as highlights in the high-impact journal *Geophysical Research Letters*. Among my most significant discoveries are the first identification of Ice-Penitentes on another planet, the first direct detection of Ice-Water Fogs on Mars, and the first model that reconciles the observations of methane from the spacecraft on the surface and in orbit around Mars. I am an author on 218 conference presentations and I have been interviewed for over 150 media articles. In 2016, I was selected for an Ontario Early Career Researcher Award and was named the Lassonde Innovator of the Year (Early-Career). In 2018 I was elected to the Royal Society of Canada, in the College of New Scholars, Artists and Scientists and was named the York Research Chair in Space Exploration in 2019 before winning the York President's Emerging Research Leader Award (PERLA) and the CASI McCurdy Award in 2022. In 2022 I was named the Science Advisor to the President of the Canadian Space Agency.

2. DEGREES:

Aug 2003- December 2008	**Doctor of Philosophy, Planetary Science** Lunar and Planetary Laboratory, University of Arizona Dissertation: *Effects of insolation on habitability and the isotopic history of Martian water.* Advisor: Peter H. Smith

September 1999- June 2003	**Bachelor of Applied Science (Conferred with Honours)** Engineering Science Program (Aerospace/Space Systems) University of Toronto Advisor: James D. DeLaurier

3. EMPLOYMENT HISTORY:

2018 – present	Associate Professor, Dept. of Earth and Space Science and Engineering, Lassonde School of Engineering, York University
2022 – 2024	Science advisor to the President, Canadian Space Agency
2020 – 2022	Associate Dean, Research and Graduate Studies, Lassonde School of Engineering
2012-2018	Assistant Professor, Dept. of Earth and Space Science and Engineering, Lassonde School of Engineering, York University
2012-2016	Adjunct Research Professor, Dept. of Electrical and Computer Engineering, Faculty of Engineering, Western University
2010-2012	NSERC Postdoctoral Fellow, Dept. of Physics and Astronomy, Western University
2009-2010	Postdoctoral Fellow, Dept. of Earth and Space Science and Engineering, York University
2008-2009	NSERC Visiting Fellow at a Government Laboratory, Air Quality Research Division, Environment Canada

4. HONOURS AND AWARDS:

February 2023	York University Research Leader Award
November 2022	McCurdy Award, Canadian Astronautics and Space Institute (CASI)
April 2022	Named the President's Emerging Research Leader Award (PERLA) Winner for Cluster 1: STEM (of two clusters across the university).
February 2020	York University Research Leader Award
August 2019	Article selected as the August 28, 2019 cover and a journal highlight in *Geophysical Research Letters*: "The Methane Diurnal Variation and Microseepage Flux at Gale Crater, Mars as Constrained by the ExoMars Trace Gas Orbiter and Curiosity Observations"
May 2019	Named the York Research Chair in Space Exploration
April 2019	York University Research Leader Award
Sept. 2018	Elected member of the New College of Scholars, Artists and Scientists of the Royal Society of Canada (RSC)
Sept. 2018	Mars Science Laboratory Team Award "*For outstanding science investigation using the MSL SAM Tunable Laser Spectrometer to characterize methane on Mars.*"
June 2017	NASA Group Achievement Award "*For exceptional technical innovations and execution of rover surface operations leading to numerous, profound new discoveries about the ancient climate and habitability of Mars."*
April 2017	York University Research Leader Award
April 2016	Lassonde Innovator of the year award – Early Career, Lassonde School of Engineering

April 2016	Early Career Researcher Award, Ministry of Research and Innovation, Province of Ontario
August 2015	NASA Group Achievement Award for "*Exceptional technical innovation in rover surface operations leading to significantly improved Mars Science Laboratory prime mission performance and science return*."
June 2014	Article selected as the June 28, 2014 cover in *Geophysical Research Letters*: "The Siding Spring Cometary Encounter with Mars: A Natural Experiment for the Martian Atmosphere?"
July 2013	NASA Group Achievement Award for "*Exceptional achievement defining Curiosity's scientific goals and requirements, supporting the instrument teams and investigations, and successful operations on Mars.*"
July 2013	NASA Group Achievement Award for "*Exceptional achievement defining ChemCam's scientific goals and requirements, developing the instrument and investigation and operating ChemCam successfully on Mars.*"
November 23, 2011	Participating Scientist Proposal for Mars Science Laboratory Mission selected by NASA. 1 of 29 (11 international) selected proposals out of 149 submissions. Reselected in 2015, one of only 2 atmospheric proposals.
March 17, 2011	Article "Observations of Near-Surface Fog at the Phoenix Mars Landing Site" selected as an *American Geophysical Union Journal* Highlight
June 2010	Roger Daley Postdoctoral Publication Award for 2009, Canadian Meteorological and Oceanographic Society, for "*Atmospheric Dynamics at the Phoenix Landing Site as seen by the Surface Stereo Imager*."
April 2009	NASA Group Achievement Award for "*Outstanding performance in the development, readiness for launch and operations of the Phoenix payload."*
April 2009	NASA Group Achievement Award for "*Outstanding achievement in the development and operation of the Phoenix spacecraft, leading to the first landing in the Martian Arctic*"
2008- 2009	NSERC Visiting Fellowship (VF) at Environment Canada
2006; 2008	University of Arizona College of Science Galileo Circle Scholar
Sept. 2006	NSERC Post Graduate Scholarship (PGS Doctoral, Foreign Tenure)
2005 - 2008	University of Arizona Graduate College Registration Scholarship
May 2005	Canadian Space Agency Student Poster Competition 3rd Prize (5th Canadian Space Exploration Workshop) for "*Results from the Descent Imager/Spectral Radiometer (DISR) Experiment on the Huygens probe at Titan*"
May 2004	University of Arizona Aerospace and Mechanical Engineering Space Prize for *Europa Cryo-Ocean Exploration Submersible* Mission Concept

B. SCHOLARLY AND PROFESSIONAL CONTRIBUTIONS

1. SUMMARY OF PUBLICATIONS AND PROFESSIONAL CONTRIBUTIONS

Publication Summary Table for J.E. Moores		
All publications (h-index = 38)		
Peer-Reviewed Articles	Total Citations (Google Scholar)	Total Conference Contrib.
99	9,720	218
Excluding Team & Editor-Reviewed Contributions (h-index = 26)		
Peer-Reviewed Articles	Total Citations (Google Scholar)	Total Conference Contrib.
79	3,290	218

2. PUBLICATIONS

a. Articles in referred journals

First Author
*trainees conducting work under my direct supervision highlighted in **bold** text*

22. Moores, J.E. and Schuerger, A.C. (2020) A Cruise-Phase Microbial Survival (CPMS) Model for Calculating Bioburden Reductions on Past or Future Spacecraft Throughout their Missions with application to Europa Clipper. *Astrobiology*. 20 (12) 15 pp. doi: 10.1089/ast.2019.2205
21. Moores, J.E., P.L. King, **C.L. Smith**, G.M. Martinez, C. E. Newman, S. Guzewich, P.-Y. Meslin, C.R. Webster, P.R. Mahaffy, S.K. Atreya and A.C. Schuerger (2019c) The methane diurnal variation and micro-seepage flux at Gale Crater, Mars as constrained by the ExoMars Trace Gas Orbiter and Curiosity Observations. *Geophys. Res. Lett.* 46 (16) pp. 9430-9438. Doi: 10.1029/2019GL083800
20. Moores, J.E., R.V. Gough, G.M. Martinez, P.-Y. Meslin, **C.L. Smith**, S.K. Atreya, P. R. Mahaffy and C.R. Webster (2019b) Methane Seasonal Cycle at Gale Crater, Mars consistent with regolith adsorption and diffusion. *Nature Geoscience*. 12(5) pp.321-325. doi.org/10.1038/s41561-019-0313-y
19. Moores, J.E. and Podmore, H. (2019a) StarChips in Solar System Planetary Exploration: An opportunity for Canada*. Int. J. of Space Science and Engineering*. Vol 5 no. 2, pp. 181-204.
18. Moores, J.E., **C.L. Smith** and A.C. Schuerger (2017b) UV production of methane from surface and sedimenting IDPs on Mars in the light of REMS and with insights for TGO. *Planetary and Space Science*. V.147 pp 48-60 Doi: 10.1016/j.pss.2017.09.008
17. Moores, J.E., **Smith, C.L.**, Toigo, A. and Guzewich, S. (2017a) Penitentes as the origin of the bladed terrain of Tartarus Dorsa on Pluto. *Nature.* 541 p. 188-190 Doi: 10.1038/nature20779.
    Altimetrics score: 401 (99th percentile of all articles of similar age, 85th percentile of articles published in Nature *of similar age)*
16. Moores, J.E. and 14 co-authors including **C.A. Moore** (2016b) Transient Atmospheric Effects of the Landing of the Mars Science Laboratory Rover: The Emission and Dissipation of Dust and Carbazic Acid. *Advances in Space Research*. 58 pp. 1066-1092 Doi: 10.1016/j.asr.2016.05.051
15. Moores, J.E. (2016a) Lunar water migration in the interval between large impacts: Heterogeneous delivery to Permanently Shadowed Regions,

fractionation, and diffusive barriers. *J. Geophys Res. Planets.* 121 (1) p. 46- Doi: 10.1002/2015JE004929

14. Moores, J.E. and 25 co-authors including **R. Francis** and **E. McCullough** (2015c) Atmospheric movies acquired at the Mars Science Laboratory landing site: Cloud Morphology, Frequency and Significance to the Gale Crater Water Cycle and Phoenix Mission Results. *Advances in Space Research.* 55 (9) pp 2217-2238 Doi: 10.1016/j.asr.2015.02.007
13. Moores, J.E., **T. Ha**, M.T. Lemmon and H.P.Gunnlaugsson (2015b) Martian Airfall Dust on Smooth, Inclined Surfaces as Observed on the Phoenix Telltale Mirror. *Planetary and Space Science.* V 116 p. 6-17 Doi: 10.1016/j.pss.2015.01.001
12. Moores, J.E. and 25 co-authors including **R. Francis** and **E. McCullough** (2015a) Observational evidence of a suppressed planetary boundary layer in northern Gale Crater, Mars as seen by the Navcam instrument onboard the Mars Science Laboratory rover. *Icarus* v. 249 pp.129-142 Doi: 10.1016/j.icarus.2014.09.020
11. Moores, J.E., K.A. Carroll, I. DeSouza, K. Sathiyanathan, B. Stoute, J. Shan, R.S. Lee and B. Quine (2014c) The Small Reconnaissance of Atmospheres (SMARA) Mission Platform Concept, Part II: Design of Carrier Spacecraft and Atmospheric Entry Probes. *Int. J. of Space Science and Engineering*. v 2 (4) pp. 345-364 doi: 10.1504/IJSPACESE.2014.066961
10. Moores, J.E., K.A. Carroll, I. DeSouza, K. Sathiyanathan, B. Stoute, J. Shan, R.S. Lee and B. Quine (2014b) The Small Reconnaissance of Atmospheres (SMARA) Mission Platform Concept, Part I: Motivations and Outline for a Swarm of Scientific Microprobes to the Clouds of Jupiter in 2030. *Int. J. of Space Science and Engineering*. v 2 (4) pp. 327-344 doi: 10.1504/IJSPACESE.2014.06696
9. Moores, J.E., T.H. Mcconnochie, D.W. Ming, P.D. Archer, Jr. and A.C. Schuerger (2014a) The Siding Spring Cometary Encounter with Mars: A Natural Experiment for the Martian Atmosphere? *Geophysical Research Letters* 41 (12) 4109-4117 doi: 10.1002/2014GL060610
**This publication was selected as the cover article for the June 2014 edition of GRL*
8. Moores, J.E. and A.C. Schuerger (2012c) UV degradation of accreted organics on Mars: IDP longevity, surface reservoir of organics, and relevance to the detection of methane in the atmosphere. *JGR-Planets.* 117 (E8) CiteID E08008 doi: 10.1029/2012JE004060
**This paper was discussed in the* Science *News Focus Article "In the Hunt for the Red Planet's Dirtiest Secret," R.A. Kerr, Aug 31, 2012 10.1126/science.337.6098.1032*
7. Moores, J.E., **R. Francis**, M. Mader, G.R. Osinski and the ILSR Team (2012b) A Mission Control Architecture for Lunar Sample Return as Field Tested in an Analogue Deployment to the Sudbury Impact Structure. *Advances in Space Research.* 50 (12) p.1666-1686 doi: 10.1016/j.asr.2012.05.008
**This paper was listed as required reading for member of the NSERC CREATE "Technologies and Techniques for Earth and Space Exploration" ahead of their June 2013 Meeting.*
6. Moores, J.E., Brown, R.H., Lauretta, D.S. and Smith, P.H. (2012a) Experimental and theoretical simulation of sublimating dusty water ice with implications for D/H ratios of water ice on Comets and Mars. *Planetary Science.* 1 (2) Doi: 10.1186/2191-2521-1-2

5. Moores, J.E., Smith, P.H. and Boynton, W. (2011a) Adsorptive Fractionation of HDO on JSC MARS-1 during Sublimation with Implications for the Regolith of Mars. *Icarus* 211 (2) pp 1129-1149 doi: 10.1016/j.icarus2010.10.020.
   **This paper is the result of the Tuaq Project in which I designed, built, instrumented and conducted research using a cryovaccum planetary experimentation chamber with a $15,000 discretionary fund from the University of Arizona.*
4. Moores, J.E., L. Komguem, J.A. Whiteway, M.T. Lemmon, C. Dickinson and F. Daerden (2011b) Observations of Near-Surface Fog at the Phoenix Mars Landing Site. *Geophys. Res. Lett.* 38(4) L04203 doi: 10.1029/2010GL046315.
   **This paper documents the first confirmed detection of ground fog on Mars, was an AGU journal highlight for the week of March 17, 2011, and was the subject of an article in National Geographic by Brian Handwerk (April 4, 2011)*
3. Moores, J.E., Lemmon, M.T., Smith, P.H., Komguem, L., Whiteway, J. (2010) Atmospheric dynamics at the Phoenix landing site as seen by the Surface Stereo Imager. *Journal of Geophysical Research, Planets*. 115 (24), E00E08 doi:10.1029/2009JE003409.
   **Winner of the CMOS 2009 Roger Daley Postdoctoral Publication Award*
2. Moores, J.E., Pelletier, J.D., and Smith, P.H. (2008) Crack propagation by differential insolation on desert surface clasts. *Geomorphology*. 102, 472-481 doi: 10.1016/j.geomorph.2008.05.012
   **This paper was highlighted as an example of an approach "at the interface between traditional academic disciplines [that] can provide fresh perspectives that catalyze novel research approaches and themes" [Tooth, S.* Arid Geomorphology: Emerging Research themes and New Frontiers*, 2009] and is quoted in the textbook* Planetary Surface Processes *[H.J. Melosh, 2012]*
1. Moores, J.E., Smith, P.H., Tanner, R., Schuerger, A.C. and Venkateswaran, K.J. (2007) The Shielding Effect of Small-Scale Martian Surface Geometry on Ultraviolet Flux. *Icarus* 192, 417-433. Doi: 10.1016/j.icarus.2007.07.003

Contributing Author

57. **Walters, M.**, J.E. Moores, F. Grandmont, M. Gordon, H. Sapers (2024) Water Vapor Condensation in Optical Instruments on Mars. Accepted for Publication, *Acta Astronautica*.
56. Doran, P.T. and 20 co-authors, including J.E. Moores (2024) The COSPAR Planetary Protection Policy for missions to Icy Worlds: A review of history, current scientific knowledge, and future directions. In-Press. *Life Sciences in Space Research*. Doi: https://doi.org/10.1016/j.lssr.2024.02.002
55. **Innanen, A., B.A. Cooper, C.W. Hayes, C. Campbell, J.L. Kloos,** S.D. Guzewich and J.E. Moores (2024) Three years of ACB Phase Function Observations from the Mars Science Laboratory: Interannual and Diurnal Variability and Constraints on Ice Crystal Habit. Accepted for publication. *Planetary Science Journal*
54. **Hayes, C., A. Innanen, C. Campbell, J.L. Kloos, H. Sapers,** and J.E. Moores (2024) Five Mars Years of Cloud Observations at Gale Crater: Opacities, Variability, and Ice Crystal Habits. Accepted for Publication, *Planetary Science Journal*

53. Schuerger, A.C. and Moores, J.E. (2023) UV Reflectance of Spacecraft Materials and Analog Soils: Implications for Bioburden Reductions on the Undersides of Mars Rovers. *JGR: Planets* 128, e2023JE007975 doi: 10.1029/2023JE007975
52. Patel, P., L. Tamppari, M. de la Torre Juarez, M. Lemmon, A. Coates, M. Wolff, D. Toledo, G. Branduardi-Raymont, G. Jones, **C. Campbell**, J. Moores, J. Maki, J. Ryan (2023) Geometric properties of water-ice clouds as observed from Jezero Crater in the first 600 sols with the NavCam Instrument onboard Mars2020 Rover, Perseverance. *Planetary Science Journal*. 4:226 (18 pp) doi: 10.3847/PSJ/acfc35
51. **Kerr, J.,** Moores, J.E. and C.L. Smith (2023) An Improved Model for Available Solar Energy on Mars: Optimizing Solar Panel Orientation to Assess Potential Spacecraft Landing Sites. *Advances in Space Research*. 72(4) pp.1431-1447 doi: 10.1016/j.asr.2023.04.004
50. **Godin, P.J., Moore, C.A., Smith, C.L.** and Moores, J.E. (2023) Absorption and scattering of UV and visible light through simulated Martian regoliths and rock samples. *Astrobiology* vol 23 no 3 pp. 280-290 Doi: https://doi.org/10.1089/ast.2021.0184
49. **Innanen, A.C.,** M.E. Landis, P. Hayne and J.E. Moores (2022) Possible Atmospheric Water Vapour Contribution from Martian Swiss Cheese Terrain. *Planetary Science Journal*. 3 (10) id. 242 10 pp doi: 10.3847/PSJ/ac979e
48. **Nguyen, G.**, N.B. Cowan, R.T Pierrehumbert, R.E. Lupu and J.E. Moores (2022) The impact of ultraviolet heating and cooling on the dynamics and observability of lava planet atmospheres. Monthly Notices of the Royal Astronomical Society. 513 (4) pp. 6125-6133. Doi: 10.1093/mnras/stac1331
47. **Bischof, G**., Cooper, B.A. and Moores, J.E. (2022) A record of water-ice clouds at the Phoenix Landing site derived from Modelling MET Temperature Data. *Planetary Science Journal*. 3 (97) doi: 10.3847/PSJ/ac649e
46. **Cooper, B.A.**, M. de la Torre Juarez, M. Mischna, M. Lemmon, G. Martinez, D. Kass, A. Vasavada, C. Campbell and J.E. Moores (2022) Thermal forcing of the Nocturnal Near Surface Environment by Martian Water Ice Clouds. 126 e2020JE006737. *J. Geophys. Res. Planets* doi: 10.1029/2020JE006737
45. Webster, C.R., Mahaffy, P.R., Pla-Garcia, J., Rafkin, S.C.R., Moores, J.E., Atreya, S.K., Flesh, G.J., Malespin, C.A., Teinturier, S.M., **Kalucha, H., Smith, C.L.**, Viúdez-Moreiras, D. and Vasavada, A. (2021) Day-night Differences in Mars Methane Suggest Nighttime Containment at Gale Crater. *Astronomy & Astrophysics*. V 650, article A166, doi: 10.1051/0004-6361/202040030.
44. **Campbell, C.L.**, S. Meka, D. Marrable, A. Rohl, K. Chai, G. Benedix, **C.L. Smith** and J.E. Moores (2021) A Self-Supervised Learning Based Approach to Analyze Martian Water-Ice Cloud Properties for Planetary Atmospheric Applications. *Acta Astronautica*, v181 pp. 1-13 doi: 10.1016/j.actaastro.2020.12.041
43. **Kloos, J. L.,** Moores, J.E., **Godin, P.J.** and Cloutis, E. (2021) Illumination conditions within permanently shadowed regions at the lunar poles: implications for in-situ passive remote sensing. *Acta Astronautica*. v178 pp. 432-451. Doi: 10.1016/j.actaastro.2020.09.012

42. **Godin, P.J.,** Schuerger, A.C., Moores, J.E. (2021) Salt Tolerance and UV Protection of *Bacillus subtilis* and *Enterococcus faecalis* under Simulated Martian Conditions. *Astrobiology*. Vol 21 no 4 Doi: 10.1089/ast.2020.2285
41. **Godin, P.J.,** Ramirez, R.M., **Campbell, C.L.,** Wizenberg, T., **Nguyen, T.G.,** Strong, K. and Moores, J.E. (2020) Collision-Induced Absorption of Ch4-CO2 and H2-CO2 Complexes and Their Effect on the Ancient Martian Atmosphere. *J. Geopys. Res. Planets.* V125 (12) e2019JE006357 doi: doi.org/10.1029/2019JE006357
40. **Smith, C.L.,** Lemmon, M., Moores, J.E., Guzewich, S.D., McConnochie, T.H., Newman, C.E., Khayat, A.S.J., Battalio, M., **Moore, C.A.** and Ellison, D. (2020) The Line-of-Sight Extinction record at Gale Crater as observed by MSL's Mastcam and Navcam through ~ 2500 sols. *J. Geophys Res. Planets*. 125 (11) e2020JE006465. Doi: 10.1029/2020JE006465
39. **Nguyen, T.G.,** Cowan, N.B., Banerjee, A. and Moores, J.E. (2020) Modelling the atmosphere of lava planet K2-141b: implications for low- and high-resolution spectroscopy. *Monthly Notices of the Royal Astronomical Society.* 499 (4) p 4605-4612 doi: 10.1093/mnras/staa2487
38. **Godin, P.J., Kloos, J.L., Seguin, A.** and Moores, J.E. (2020) Laboratory investigations of Lunar ice imaging in permanently shadowed regions using reflected starlight. *Acta Astronautica*. 178 pp 604-610. Doi: 10.1016/j.actaastro.2020.08.015
37. Lee, D., T. Young, H. Podmore, J.E. Moores and R.S.K. Lee (2020) Conceptual Thermal Design of a Network of Solar-powered Boardsat- and CubeSat-based Landed Spacecraft on Mars. *IJSSE*, 6 (2) p.125-146 Doi: 10.1504/IJSPACESE.2020.110359
36. **Cooper, B.,** Moores, J.E., Battalio, M., Guzewich, S., **Smith, C**., **Modestino, R. and Tabascio, M.** (2020) Aphelion Cloud Belt Phase Function Investigations with Mars Color Imager (MARCI). *Planetary and Space Science* v184 nº104840 doi: 10.1016/j.pss.2020.104840.
35. **Nguyen, T.G.,** J. Radebaugh, **A. Inannen** and J.E. Moores (2020) A survey of Small-Scale (<50 m), wind-driven surface features on the Martian Northern Polar Cap using HiRISE. *Planetary and Space Science*. V 182 nº104809 doi: 10.1016/j.pss.2019.104809.
34. **Smith, C.L.** and Moores, J.E. (2020) Modeled Small-scale Crack Orientations on Martian Surface Rocks caused by Differential Insolation-Mobilized Water. *Icarus.* V 338 nº113497 doi: 10.1016/j.icarus.2019.113497.
33. **Godin, P.J., Stone, H., Bahrami, R.**, Schuerger, A.C. and Moores, J.E. (2020) UV Attenuation by Martian Brines. *Canadian Journal of Physics*. 98: 567-570. Doi: 10.1139/cjp-2019-0425
32. **Campbell, C.,** Kling, A., Guzewich, S., **Smith, C.L., Kloos, J.,** Lemmon, M., **Moore, C.A., Cooper, B.A.,** Haberle, R., Moores, J.E. (2019) Estimating the Altitudes of Martian Water-Ice Clouds Above the Mars Science Laboratory Rover Landing Site. *Planetary and Space Science*. v182 nº 104785 10.1016/j.pss.2019.104785
31. **Smith, C.L.,** J.E. Moores, S.D. Guzewich, **C.A. Moore** and D. Ellison (2019) Visibility and Line-of-sight extinction measurements within gale crater during the 2018/Mars Year 34 Global Dust Storm by Curiosity. *Geophys. Res. Lett*. 46 (16) pp. 9414-9421 doi: 10.1029/2019GL083788
30. **Kloos, J.L.,** Moores, J.E., **Sangha, J., Nguyen, T.G.** and Schorghofer, N. (2019) The temporal and geographic extent of seasonal cold trapping on

the Moon. *J. Geophys. Res. Planets* 124 (7) pp.1935-1944 doi: 10.1029/2019JE006003

29. **Nguyen,T.G., C.L. Smith, A. Inannen** and J.E. Moores (2019) Simulating the Formation of Martian Penitentes. *P&SS*. 174 pp 21-31 doi: 10.1016/j.pss.2019.05.003
28. **Moore, C.A.**, Moores, J.E., C.E. Newman, M.T. Lemmon, S.D. Guzewich and M. Battalio (2019) Vertical and Horizontal Heterogeneity of Atmospheric Dust Loading in Gale Crater, Mars. *Icarus* 329:197-206, doi:10.1016/j.icarus.2019.03.041
27. **Cooper, B.A., C.L. Smith**, D. Ellison, J.E. Moores, **J.L. Kloos**, S.D. Guzewich, **C.L. Campbell** (2019) Constraints on Mars Aphelion Cloud Belt Phase Function and Ice Crystal Geometries. *Planetary and Space Science* v.168 p 62-72 doi: 10.1016/j.pss.2019.01.005
26. Schuerger, A.C., Moores, J.E., Smith, D.J. and Reitz, G. (2019) A Lunar Microbial Survival (LMS) Model for Predicting the Forward Contamination of the Moon. *Astrobiology*. 19 (6) pp. 730-756. doi: 10.1089/ast.2018.1952
25. Guzewich, S.D. and 25 co-authors including J.E. Moores, **C.L. Smith, C. Campbell and B. Cooper**. (2018) Mars Science Laboratory Observation of the 2018/Mars Year 34 Global Dust Storm. *Geophys. Res. Lett*. 46 (1) pp. 71-79 Doi: 10.1029/2018GL080839.
24. C. R. Webster, P. R. Mahaffy, S. K. Atreya, J. E. Moores and 40 co-authors, including **C.L. Smith** (2018) Background Levels of Methane in Mars' Atmosphere Show Strong Seasonal Variations. *Science*. 360 (6393) 1093-1096 doi: 10.1126/science.aaq0131
23. **Kloos, J.L.,** Moores, J.E., Whiteway, J.A. and Aggarwal, M. (2018) Inter-annual and diurnal variability in clouds observed from MSL over two Martian years. *J. Geophys. Res. Planets.* 123 (1) pp.233-245 doi: 10.1002/2017JE005314.
22. Plane, J.M.C., Flynn, G.J., Määttänen, Moores, J.E., Poppe, A.R., Carrillo-Sanchez, J.D. and Listowski, C. (2018) Impacts of Cosmic Dust on Planetary Atmospheres and Surfaces. *Space Science Reviews* 214:23 doi: 10.1007/s11214-017-0458-1.
21. **Shear, E.M.** and Moores, J.E. (2018) Saturn Ice Ring Exploration Network (SIREN) Mission Platform. *Int. J. Space. Sci. Eng.* 5(1) pp 16-42 doi: 10.1504/IJSPACESE.2018.10011643.
20. Guzewich et al., including **C.A. Moore, C.L. Smith** and J.E. Moores (2017) The Vertical Dust Profile over Gale Crater, Mars. *J. Geophys. Res.* Doi: 10.1002/2017JE005420
19. Kahanpää, H., C. Newman, J. Moores, M.-P. Zorzano, J. Martín-Torres, S. Navarro, A. Lepinette, B. Cantor, M.T. Lemmon, P. Valentín-Serrano, A. Ullán, W. Schmidt. (2016) Convective vortices and dust devils at the MSL landing site: Annual variability*. J. Geophys Res*. doi: 10.1002/2016JE005027
18. **Smith, C.L., B.A. Cooper** and J.E. Moores (2016) Possible ground fog detection from SLI imagery of Titan. *Icarus*. v. 271 p.269-278 . Doi: 10.1016/j.icarus.2016.02.002.
17. **Kloos, J.L**, Moores, J.E. et al. (2016) The First Year of Atmospheric Monitoring Movies from Mars Science Laboratory (Sol 0-800). *Advances in Space Research*. 57 (5) pp. 1223 - 1240, doi: 10.1016/j.asr.2015.12.040

16. **Shear, E.** and Moores, J.E. (2016) Hydrolyzed Polar Terrain Ice Aerobot (HYPATIA) Mission Platform. *International Journal of Space Science and Engineering*. 3 (4) pp 342-359.
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56. Moores, J.E., Calvin, K., Chauhan, P., Floberghagen, R. Gallagher, S. (2023 - Panelist) Plenary: Planning for a Future With a Changing Climate. *IAF Global Space Conference on Climate Change. Oslo, Norway 23-25 May 2023.*
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54. Moores, J.E. (2022) Gas-Solid interactions in the atmosphere of Mars and the Effect on Methane and Trace Gas Evolution. *Seventh International Workshop on the Mars Atmosphere: Modelling and Observations*, held 14-17 June, 2022 in Paris, France. Edited by F. Forget and M. Millour, id.3531
53. Moores, J.E. (2021) Studying the Martian Atmosphere above Gale Crater with Cameras. *Geological Association of Canada Mineralogical Association of Canada Joint Annual Meeting,* 3-5 Nov 2021
52. Moores, J.E.; L. Whyte, K. Strong, G. Benedix, **C. Smith, P. Godin, C. Campbell, J. Kloos, A. Innanen,** N. Ghafoor, F. Grandmont, **H. Sapers** (2021) MAGE, MAPLE and ANIU – Instruments in Development for the exploration of volatiles on the Moon and Mars. *43rd COSPAR Scientific Assembly* 28 January – 4 February Abstract B0.6-0013-21 id.235
51. Moores, J.E., King, P.L., **Smith, C.L.,** Martinez, G.M., Newman, C., Guzewich, S., Meslin, P.-Y., Atreya, S., Webster, C. and Mahaffy, P. (2019 – Oral) A Diurnal Cycle in Near-Surface Atmospheric Methane Concentration from Microseepage as Constrained by TLS and TGO. *EPSC-DPS Geneva, Switzerland, September 15-20, 2019*
50. Moores, J.E., King, P.L., **Smith, C.L.,** Martinez, G.M., Newman, C., Guzewich, S., Meslin, P.-Y., Atreya, S., Webster, C. and Mahaffy, P. (2019 – Plenary & Panelist) A Diurnal Cycle in Near-Surface Atmospheric Methane Concentration from Microseepage as Constrained by TLS and TGO. *9th Mars Conference, Pasadena, CA, July 22-25*
49. Moores, J.E. (2019 – Plenary) Planetary Atmospheres: At the boundary between Geological Processes and Exoplanetary Astronomy. *Joint General Assembly of the Royal Astronomical Society of Canada and the American Association of Variable Star Observers.* Toronto, ON June14-16. https://www.youtube.com/watch?v=ymyme7GnrVA
48. Moores, J.E. (2019 - Plenary) Methane on Mars: Fact, Folly or Figment? *Technologies for Exoplanetary Science Summer Conference*. Toronto, ON June 12-14
47. Moores, J.E., **Godin, P.** and **Kloos, J.L.** (2019) Aniu: A camera for water-frost prospecting in the Permanently Shadowed Regions (PSRs) of the Moon. *Canadian Aeronautics and Space Institute ASTRO Conference*, Laval, QC June 17-19
46. Moores, J.E., R. Gough, G. Martinz, P.-Y. Meslin, **C.L. Smith**, S. Atreya, P. Mahaffy, C. Newman and C. Webster (2018) The Methane Seasonal Cycle at Gale Crater, Mars Suggests Adsorption-Mediated Microseepage. *50th*

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45. Moores, J.E., R. Gough, G. Martinz, P.-Y. Meslin, **C.L. Smith**, S. Atreya, P. Mahaffy, C. Newman and C. Webster (2018) Regolith adsorptive-diffusive control of the methane seasonal cycle at Gale Crater, Mars. *EF White Conference: Frontiers in Gas-Solid Processes from the Atomic Scale to the Parsec*. September 2018 Canberra, ACT, Australia.
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43. Moores, J.E. and **C.L. Smith** (2018) Methane on Mars. *Canadian Aeronautics and Space Institute ASTRO Conference*, Quebec City, QC May 15-17
42. Moores, J.E. and H. Podmore (2018) Starchips in Solar System Planetary Exploration: An Opportunity for Canada. *Canadian Aeronautics and Space Institute ASTRO Conference*, Quebec City, QC May 15-17
41. Moores, J.E., H. Podmore, R.S.K. Lee, and R.M. Haberle (2017) neoPASCAL: A Cubesat-based approach to validate Mars GCMs using a network of landed sensors. *Division for Planetary Sciences 49th Meeting*, Provo UT October 16-20, 2017
40. Moores, J.E., C.L.Campbell, C.L. Smith and B.A. Cooper (2017) An Analog Rover Exploration Mission for Education and Outreach. *Division for Planetary Sciences 49th Meeting*, Provo UT October 16-20, 2017
39. Moores, J.E. et al. (2017 – oral) Clouds, Dust and other Modern Environmental Bits and Pieces from York University. *Mars Science Laboratory Science Team Meeting*. July 18-19, Montréal, QC.
38. Moores, J.E., Smith, C.L., Toigo, A.D. and Guzewich, S.D. (2017 – oral) Penitentes at Tartarus Dorsa, Pluto. *Canadian Meteorological and Oceanographic Society Congress*, June 2017 Toronto, ON
37. Moores, J.E., Smith, C.L., Toigo, A.D. and Guzewich, S.D. (2017 – oral) Penitentes at Tartarus Dorsa, Pluto. *Lunar and Planetary Science Conference XLVIII*. March 20-24, 2017 The Woodlands, TX.
36. Moores, J.E. and the CSA Planetary Atmospheres Topical Team. (2016) Planetary Atmospheres Topical Team CSEW Summary. *CSEW 2017, Montreal, QC.*
35. Moores, J.E. and the CSA Planetary Atmospheres Topical Team. (2016) Dynamics Objective. *CSEW 2017, Montreal, QC.*
34. Moores, J.E. and the CSA Planetary Atmospheres Topical Team. (2016) Introduction to Objectives. *CSEW 2017, Montreal, QC.*
33. Moores, J.E. and Schuerger, A.C. (2016 - invited) The siding spring cometary encounter with Mars: an exogenous source of methane plumes? ISSI Dust Workshop. October 31-November 4, 2016. Bern, Switzerland.
32. Moores, J.E. and Smith, C.L. (2016 - oral) Penitentes on Pluto? CASI-ASTRO Ottawa, ON.
31. Moores, J.E. et al. (2016 – oral) CSA Planetary Atmospheres Topical Team ASTRO Panel Contribution. CASI-ASTRO Ottawa, ON.
30. Moores, J.E. (2015 – oral) Simulated water delivery to lunar permanently shadowed regions. 47th American Astronomical Society Division for Planetary Science Meeting, Washington, D.C.

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27. Moores, J.E. et al (2014 – Oral) Low Dust, Low Ice Conditions at Gale Crater, Mars as Observed during the first 360 Sols of Atmospheric Monitoring Movies from the Curiosity Rover. *Canadian Meteorological and Oceanographic Society.*
26. Moores, J.E. et al (2014 – Oral) Summary of Canadian Planetary Mission Activities and Report from the Planetary Exploration and Consultation Committee. *Canadian Meteorological and Oceanographic Society.*
25. Moores, J.E. et al (2014 – Poster) Update on MSL Atmospheric Monitoring Movies Sol 100-360. *Lunar and Planetary Science Conference, The Woodlands, TX*
24. Moores, J.E. et al (2014 – Poster) The Javelin Concept: A Swarm of Scientific Microprobes to the Clouds of Jupiter in 2030. *Lunar and Planetary Science Conference, The Woodlands, TX*
23. Moores, J.E., et al. (2013 - Oral) Constraints on Atmospheric Water Vapor and Circulation at Gale Crater from the MSL Atmospheric Monitoring Campaign. *Lunar and Planetary Science Conference, The Woodlands, TX*
22. Moores, J.E., A. Schuerger and N.G. Barlow (2012) UV degradation of accreted organics on Mars: IDP longevity, surface reservoir of organics, and relevance to the detection of methane in the atmosphere. AGU Fall Meeting, 2012.
21. Moores, J.E. et al (2012 – Oral) The Mars Science Laboratory Rover Mission: Spacecraft and Scientific Investigations at Gale Crater, Mars. 2012 Canadian Space Summit
20. Moores, J.E. et al (2012 - Oral) A meteoritic origin for the putative surface reservoir of organic carbon on Mars and relevance to the detection of methane in the martian atmosphere. *Canadian Meteorological and Oceanographic Society.*
19. Moores, J.E. et al (2012 - Oral) Anticipated Atmospheric Measurements of Dust and Ice from the Mars Science Laboratory Rover. *Canadian Meteorological and Oceanographic Society.*
18. Moores, J.E. et al. (2012 – Poster) Surface Operations for Mission Control During Analogue Human Lunar Deployments to Mistastin and Barringer Impact Structures. *Lunar and Planetary Science Conference, The Woodlands, TX*
17. Moores, J.E. et al (2011 - Poster) Surface operations for mission control during analogue human lunar deployments to Mistastin and Barringer impact structures. *EPSC-DPS Nantes.*
16. Moores, J.E. et al (2011 - Poster) Motivation for Atmospheric Measurements of Water Ice using the Mars Science Laboratory Instrument Suite and beyond. *EPSC-DPS Nantes.*
15. Moores, J.E., G.R. Osinski, J.A. Whiteway and F. Daerden (2011- Poster) Stratification of HDO during cloud formation on Mars. *Lunar and Planetary Science Conference, The Woodlands, TX* Abstract 1402.

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13. Moores, J E, P Smith, R Brown, D Lauretta, W Boynton (2009 - oral) *Experimental Results of Fractionation of HDO and H_2O with simulated Martian Dust: Implications for the interpretation of past climate on Mars.* American Geophysical Union Joint Meeting
12. Moores, J.E., J W Bottenheim, S Netcheva, A Sheppard, R Staebler, A Steffen, P Lee (2009 - oral) *Preliminary Results from the 2009 OOTI Campaign: Bromine, Ozone and Mercury*. American Geophysical Union Joint Meeting.
11. Moores, J.E., Lemmon, M.T., Smith, P.H. and the Phoenix Science Team (2008 - poster) *Atmospheric dynamics at the Phoenix landing site as seen by the Surface Stereo Imager.* American Geophysical Union Fall Meeting (AGUFM08)
10. Moores, J.E., Smith, P.H., Brown, R.H., Lauretta, D.S., Boynton, W.V. and Drake, M.J. (2008 - oral) *Experimental Results on Isotopic Fractionation of Dusty Deuterated Water Ice During Sublimation*. Lunar and Planetary Science Conference (LPSC08)
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8. Moores, J.E., Smith, P.H., Tanner, R., Schuerger, A.C. and Venkateswaran, K.J. (2007 - Oral) *The Shielding Effect of Small-Scale Martian Surface Geometry on Ultraviolet Flux.* Lunar and Planetary Science Conference (LPSC07)
7. Moores, J.E., Brown, R.H., Lauretta, D.S., and Smith, P.H. (2006 - poster*) Sublimation of Water Ice in Low pressure Environments: Isotopic Effects and Implication for the Martian Paleoclimate Record.* 4th International Conference on mars Polar Science and Exploration, Davos, Switzerland.
6. Moores, J.E. (2006 - oral) *Introduction to the Special Session: The relationship between Planetary Science and Space Missions in the context of LPL.* 2006 Lunar and Planetary Laboratory Conference (LPLC 06).
5. Moores, J.E., P.H. Smith, R. Tanner (2006) *The effect of Martian surface geometry on Ultra-Violet fluxes.* 2006 Lunar and Planetary Science Conference (LPSC 06).
4. Moores, J.E. (2005) Implications of Deuterium in Subsurface Massive Ice. Fall 2005 Phoenix Science Team Meeting.
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160. Guzewich, S. D., Martínez, G., Innanen, A., Pla-García, J., Ruíz-Pérez, M., de la Torre Juárez, M., Newman, C. E., Lemmon, M., Bischof, G., Richardson, M. I., Moores, J., Mason, E., Battalio, J. M., de Vicente-Retortillo, Á., McConnochie, T., Hayes, C., Fraeman, A. A., Vasavada, A., MSL Environmental Science Theme Group (2023) 10 Years of Environmental Science in Gale Crater. *54th Lunar and Planetary Science Conference*, held 13-17 March, 2023 at The Woodlands, Texas and virtually. LPI Contribution No. 2806, id.2054
159. Hayes, C. W., Minton, D. A., Kloos, J. L., Moores, J. E. (2023) Exploring the Effect of Small-Scale Topography on Surficial Temperatures at the LCROSS Impact Site. *54th Lunar and Planetary Science Conference*, held 13-17 March, 2023 at The Woodlands, Texas and virtually. LPI Contribution No. 2806, id.1335
158. Hayes, C. W., Kloos, J. L., Innanen, A. C., Campbell, C. L., Sapers, H. M., Moores, J. E. (2023) Five Mars Years of Gale Crater Cloud Opacity Measurements. *54th Lunar and Planetary Science Conference*, held 13-17 March, 2023 at The Woodlands, Texas and virtually. LPI Contribution No. 2806, id.1332
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155. **Bischof, Grace** ; Cooper, Brittney ; Tamppari, Leslie ; Moores, John (2022). Assessing Radiative Transfer in Water-Ice Clouds above the Phoenix Mars Landing Site in Multiple Wavelengths. *AAS Division of Planetary Science meeting #54*, id. 209.03.
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57. **Cooper, B.A.** and Moores, J.E. (2016) Drone-Assisted Atmospheric Investigations to Enhance Planetary Exploration of Titan and Mars. CASI-ASTRO Ottawa, ON.
56. **Smith, C.L.,** B.A. Cooper and Moores, J.E. (2016) Possible Titan Ground Fog Detection from SLI Imagery. CASI-ASTRO Ottawa, ON.
55. **Shear, E.** and Moores, J.E. (2016) Hydrolyzed Polar Terrain Ice Aerobot (HYPATIA) Mission Platform. CASI-ASTRO Ottawa, ON.
54. **Kloos, J.L.** and Moores, J.E. (2016) Validation of Martian Cloud Optical Depths Using LIDAR Measurements of Terrestrial Cirrus Clouds. CASI-ASTRO Ottawa, ON.
53. **Smith, C.L.** and Moores, J.E. (2016) Geometric Shielding of Surface Rocks on Mars. CASI-ASTRO Ottawa, ON.
52. **C.A. Moore** and Moores, J.E. (2016) Transmission Spectroscopy of Packed Simulated Mars Regolith. CASI-ASTRO Ottawa, ON.

51. **C.A. Moore** and Moores, J.E. (2016) Digital Terrain Model Assisted Line-of-Sight Extinction within Gale Crater, Mars. CASI-ASTRO Ottawa, ON.
50. **Smith, C.L.** and Moores, J.E. (2016) Geometric Shielding of Surface Rocks on Mars. 47th Lunar and Planetary Science Conference, The Woodlands, TX.
49. McConnochie, T.H and 24 co-authors, including J.E.Moores (2015). ChemCam Passive Sky Spectroscopy at Gale Crater: Diurnal and Seasonal cycles of O2, H2O and aerosols. *American Geophysical Union, Fall Meeting 2014, abstract #P22AD-08*
48. **Moore, C.A.,** J.E. Moores, M.T. Lemmon and J. Van Beek (2015). In Situ Observations of Line-of-Sight Extinction Reveals the Depth of the Planetary Boundary Layer within Gale Crater, Mars. 47th American Astronomical Society Division for Planetary Science Meeting, Washington, D.C.
47. **Moore, C.A.**, J.E. Moores et al. (2015 oral) Line-of-Sight Extinction as Seen within Gale Crater, Mars. *International Space Development Conference*, Toronto, ON
46. **Kloos, J.L.**, J.E. Moores et al. (2015 oral) The first Year of Atmospheric Monitoring Movies from Mars Science Laboratory (sol 0-800). *International Space Development Conference*, Toronto, ON
45. **Cooper, B.** and J.E. Moores (2015 poster) Constraints on Lower Atmosphere Clouds from Perturbation Images Using the Huygens' Probe Descent Imager and Spectral Radiometer (DISR). *American Geophysical Union Joint Assembly*, Montreal, QC
44. **Kloos, J.L.**, J.E. Moores et al. (2015 poster) A Full Martian Year of Atmospheric Monitoring Movies from Gale Crater. *American Geophysical Union Joint Assembly*, Montreal, QC
43. **Moore, C.A**., J.E. Moores, **L. Morrissey**, et al. (2015 poster) Transmission Spectroscopy of Packed Simulated Mars Regolith. *American Geophysical Union Joint Assembly*, Montreal, QC
42. **Moore, C.A.**, J.E. Moores et al. (2015 poster) Update on Line-of-Sight Extinction Seen within Gale Crater, Mars. *American Geophysical Union Joint Assembly*, Montreal, QC
41. McConnochie, T.H and 22 co-authors, including J.E. Moores (2014) The Martian O_2 and H_2O cycles observed with ChemCam Passive Sky Spectroscopy. *American Geophysical Union, Fall Meeting 2014, abstract #P53D-01*
40. Haberle, R.M. and 19 co-authors, including J.E. Moores (2014) Secular Climate Change on Mars: An Update Using One Mars Year of MSL Pressure Data. American Geophysical Union Fall Meeting abstract P51B-3947
39. McConnochie, T.H and 19 co-authors including J.E. Moores (2014) ChemCam Passive Spectroscopy of Atmospheric O2 and H2O. Eighth International Conference on Mars. Abstract 1791 p 1328.
38. **Fajber, R.** and 3 co-authors including J.E. Moores (2014) Improvements to a 1-D single column model for simulating atmospheric conditions at the Phoenix Lander Site. *Canadian Meteorological and Oceanographic Society*.
37. DeSouza, I. and 7 co-authors including J.E. Moores (2014) The javelin concept: a swarm of scientific microprobes to the clouds of Jupiter in 2030. *Canadian Meteorological and Oceanographic Society*.

36. **Moore, C.A.** and J.E. Moores (2014) Observed UV radiation at Gale Crater, Mars and modeling UV radiation to approximate Martian atmospheric optical depth. *Canadian Meteorological and Oceanographic Society*.
35. **Francis, R.** and 5 co-authors, including J.E. Moores (2014) Comparisons of surface and upper level winds observed at Gale Crater, Mars. *Canadian Meteorological and Oceanographic Society*.
34. **Francis, R.** and 6 co-authors, including J.E. Moores (2014) Observation of Winds at Gale Crater: Preliminary Comparison of Results from Mars Science Laboratory's NavCam and REMS instruments. LPSC 2014.
33. Kahanpaa, H. and 14 co-authors, including J.E. Moores (2014) Convective Vortices at the MSL Landing Site. Fifth International Workshop on the Martian Atmosphere, Oxford, UK.
32. Osinski, G.R. and 17 co-authors, including J.E. Moores (2013) Preparing to return to the Moon: Lessons from science-driven analogue missions to the Mistastin Lake impact structure, Canada, a unique lunar analogue site. *American Geophysical Union Fall Meeting.*
31. Haberle, R. M. and 18 co-authors, including J.E. Moores (2013) Secular Climate Change on Mars: An Update Using MSL Pressure Data. *American Geophysical Union Fall Meeting.*
30. Wiens, R.C. and 63 co-authors, including J.E. Moores (2013) Compositional Overview of Curiosity's Traverse to Yellowknife Bay. *European Planetary Science Conference.*
29. Kahanpaa, H. and 13 co-authors, including J. Moores (2013) Convective vortices in Gale Crater. European Geophysical Union Meeting (EGU 13)
28. Kahanpaa, H. and 13 co-authors, including J. Moores (2013) Convective vortices in Gale Crater. Lunar and Planetary Science Conference (LPSC 13)
27. Maurice, S. and 54 co-authors including J. Moores (2013) Overview of 100 Sols of ChemCam Operations at Gale Crater. Lunar and Planetary Science Conference (LPSC 13)
26. **Francis, R.** and 6 co-authors including J. Moores (2013) Observations of Clouds and Winds Aloft at Gale Crater. Lunar and Planetary Science Conference (LPSC 13)
25. Fisk, M. and 6 co-authors including J. Moores (2013) Habitability of Transgressing Mars Dunes. Lunar and Planetary Science Conference (LPSC 13)
24. Wiens, R.C. and 60 co-authors including J. Moores (2013) Compositions Determined by ChemCam Along Curiosity's Traverse from Bradbury Station to Glenelg in Gale Crater, Mars. Lunar and Planetary Science Conference (LPSC 13)
23. **McCullough, E.M.**, Moores, J.E., **Francis, R.** and the MSL Science Team (2013) Inferences of Martian Atmospheric Dust and Water Ice Content Derived from Radiative Transfer Models of Passive MSL Observations by MastCam. Lunar and Planetary Science Conference (LPSC 13)
22. **Francis, R.,** Moores, J. et al. (2012) Observations of Wind Direction by Automated Analysis of Ground-Based Cloud Imagery: Applications on Earth and Mars. 2012 Canadian Space Summit.
21. **McCullough, E.,** Moores, J. **and Francis, R**. (2012) Proposed Observations of Water Ice and Dust in the Martian Lower Atmosphere at Gale Crater. 2012 Canadian Space Summit.

20. **Francis, R.;** Moores, J.; McIsaac, K.; Choi, D.; Osinski, G.: Observations of wind direction by automated analysis of images from Mars and the MSL rover, in 63rd International Astronautical Congress, Naples, Italy, 1-5 October 2012
19. B. Stenning, and 17 co-authors including J. Moores (2012) "Planetary Surface Exploration Using a Network of Reusable Paths". In *Proceedings of the 11th International Symposium on Artificial Intelligence, Robotics and Automation in Space (iSAIRAS)*.
18. **Francis, R**.; McIsaac, K.; Moores, J.; Osinski, G.; Natural scene segmentation to support planetary science, in 12th Space Vision and Advanced Robotics Workshop, Brampton, Ontario, 6 June 2012
17. **Francis, R.**; Moores, J.; Osinski, G.: A mission control architecture for joint human and robotic lunar exploration missions, as tested in terrestrial analogue missions, in Global Space Exploration Conference, Washington, DC, 22-24 May 2012
16. Stenning, B. and 18 co-authors including **Francis, R.** and Moores, J.E. (2012) Planetary Surface Exploration Using a Network of Reusable Paths. Lunar and Planetary Science Conference (LPSC 12)
15. Marion, C.L. and 58 co-authors including **Francis, R., McCullough, E** and Moores J.E. (2012) A Series of Robotic and Human Analogue Missions in Support of Lunar Sample Return. Lunar and Planetary Science Conference (LPSC 12)
14. **Francis, R.,** Osinski, G.R., Moores, J., Barfoot, T. and the ILSR Team (2012) Co-Operative Human-Robotic Exploration of Lunar Analogue Sites. Lunar and Planetary Science Conference (LPSC 12)
13. Schuerger, A.C., Moores, J.E., Clausen, C., Barlow, N.G. and Britt, D.T. (2012) A Proposed UV/CH4 Linked Model for the Global Methane Budget on Mars. Lunar and Planetary Science Conference (LPSC 12)
12. Mader, M.M. and 10 co-authors including Moores, J.E. (2012) Science Data Management During Real-Time Geological Lunar Analogue Missions to the Sudbury and Mistastin Lake Impact Structures: Recommendations for Future Ground Data Systems. Lunar and Planetary Science Conference (LPSC 12)
11. Shankar, B. and 16 co-authors including Francis, R. and Moores, J.E. (2012) Lunar Analogue Mission: Overview of the Site Selection and Traverse Planning Process for a Human Sortie Mission at the Mistastin Lake Impact Structure, Labrador, Canada. Lunar and Planetary Science Conference (LPSC 12)
10. Mader, M.M. and 30 co-authors including Francis, R. and Moores, J.E. (2011) Use of Robotic Precursor Mission for Follow-On Human Exploration: Case Study Lunar Analogue Mission at the Mistastin Lake Impact Structure Lunar Exploration Assessment Group Meeting 2011.
9. **Francis, R**; Moores, J; Osinski, G; and the ILSR Team: Analogue mission operations in support of future lunar sample return missions, in Canadian Space Summit 2011, Calgary, Alberta, 23-25 November 2011
8. Steffen, A. and 10 co-authors including Moores, J.E. (2009) Atmospheric Mercury in an Arctic OASIS (Ocean-Atmosphere-Sea Ice-Snow pack). AGU Fall Meeting 2009.
7. Whiteway, J.A. and 20 co-authors including Moores, J. (2009) Phoenix Lidar Observations of the Cloud Topped Boundary Layer on Mars. American Geophysical Union, Spring Meeting 2009, abstract #P21A-01

6. Netcheva, S., Bottenheim, J., Staebler, R., Steffen, A. Bobrowski, N. and Moores, J. (2009) Measurements to understand the role of the sub Arctic environment on boundary layer ozone, gaseous mercury and bromine oxide concentrations. 2009 EGU Meeting
5. Holstein-Rathlou, C., Gunnlaugsson, H.P., Taylor, P, Lange, C., Moores J. and Lemmon, M. (2008) Winds at the Phoenix Landing Site. AGU Fall Meeting 2008.
4. Taylor, P.A. and 9 co-authors including J. Moores (2008) Phoenix: Summer Weather in Green Valley (126W, 68N on Mars). 3rd International Workshop on the Mars Atmosphere.
3. Lauretta, D.S., Brown, R.H., Schmidt, B. and Moores, J. (2005) Hydrogen Isotopic Fractionation and the Role of Dust During Sublimation from Cometary Ice. Dust in Planetary Systems Conference Proceedings.
2. Soderbloom, L. and 40 co-authors including Moores, J. (2005) Observations of Titan's Surface and Atmosphere from the Descent Imager/Spectral Radiometer (DISR) on the Huygens Probe. 2005 AAS DPS Meeting.
1. Smith, P.H., Tomasko, M.G., Doose, L.R., Rizk, B. and Moores, J.E. (2005) The Atmospheric View from the Side Window of Huygens Probe. 2005 Lunar and Planetary Science Conference.

c. Textbooks, curriculum materials

1. Canadian Scholar's Press Publishing. (2015) *Planets and Planetary Systems, 2nd Edition*, Moores, John E., Editor, ISBN 978-1-4879-0202-5. Toronto, Canada.
2. Moores, J.E. (2020) Natural Satellites of the Planets in *Observer's Handbook* 112th Edition. Editor: James S. Edgar. The Royal Astronomical Society of Canada. Marquis Book Printing. ISBN 978-1-927879-20-7

d. Non-referred articles

23. **Moores, J.E.** (2023) The role of government in space in a time of transformation. *The Canadian Science Policy Magazine*. Issue 05 ISSN 2817-6138 pp. 39-41
22. **Moores, J.E.**, Bruna, M., Kaya, M. and Tomlinson, T. (2023) Canadian Space Agency Activities Related to Climate Change. *IAF Global Space Conference on Climate Change. Oslo, Norway 23-25 May 2023.* Contribution GLOC-2023-75237. 6 pp.
21. Smith, I.B. and 170 co-authors including **Moores, J.** (2020) Solar-System-Wide Significance of Mars Polar Science. White paper #301 submitted to the *2023-2032 Planetary Science Decadal Survey*. U.S. National Academies. 8 pp. published in *Bulletin of the American Astronomical Society*, Vol 53, issue 4. https://doi.org/10.3847/25c2cfeb.4db95c67
20. Lee, J. and 11 co-authors including **Moores, J.E.** (2020) SOTERIA: searching for organisms through equipment recovery at impact areas. White paper #348 submitted to the *2023-2032 Planetary Science Decadal Survey*. U.S. National Academies. 8 pp. published in *Bulletin of the American Astronomical Society*, Vol 53, issue 4. https://doi.org/10.3847/25c2cfeb.ef8f04bb

19. **Sapers, H.M.,** Moores, J.E., Banfield, D., Oehler, D.Z., Daly, M.G., Lange, C.F., Onstott, T.C., Grandmont, F. and Choi, E. (2020) The Martian Atmospheric Gas Evolution (MAGE) Experiment: an Off-Axis Cavity-enahnced Output Spectrometer (OA-ICOS) enabling high-frequency near-surface trace gas measurements on Mars. White paper #125 submitted to the *2023-2032 Planetary Science Decadal Survey*. U.S. National Academies. 8 pp. published in *Bulletin of the American Astronomical Society*, Vol 53, issue 4. https://baas.aas.org/pub/2021n4i385/release/1
18. Moores, J.E., **Sapers, H.M.,** Oehler, D., Newman, C. and Whyte, L. (2020) High-frequency near-surface gas measurement: an opportunity to solve puzzles in planetary atmospheric processes in Martian Methane and beyond. White paper #385 submitted to the *2023-2032 Planetary Science Decadal Survey*. U.S. National Academies. 8 pp. published in *Bulletin of the American Astronomical Society*, Vol 53, issue 4. https://baas.aas.org/pub/2021n4i125/release/1
17. Venn, K. and 14 co-authors, including J.E. Moores (2019) Industrial Initiatives in Canadian Astornomy. Canadian Long Range Plan for Astronomy and Astrophysics White Papers LRP2020, submission id.66 doi: 10.5281/zenodo.3827916
16. Benneke, B. and 60 co-authors, including J.E. Moores (2019) Exoplanet instrumentation in the 2020s: Canada's pathway towards searching for life on potentially Earth-like exoplanets. Canadian Long Range Plan for Astronomy and Astrophysics White Papers LRP2020, submission id.65 doi: 10.5281/zenodo.3827830
15. **Godin, P., Kloos, J., Nguyen, T.G., Sangha, J.** and Moores, J. (2018) The Lunar Atmosphere: a surface-bounded exosphere that builds a record of delivery of water to the Earth's Oceans. *The Bulletin of the Canadian Meteorological and Oceanographic Society*. 46 (4) p 6-9.
14. Caiazzo, Ilaria; Gallagher, Sarah; Heyl, Jeremy and 11 co-authors, including J.E. Moores (2017) *A Vision for Canadian Space Exploration*. White paper submitted to the Space Advisory Board. 26pp. Doi: 10.14288/1.0352001
13. Moores, J.E., **C.L. Smith**, E. Choi, J.A. Whiteway, K. Strong, K.A. Walker, J.R. Drummond, E. Cloutis, M.G. Daly, C.F. Lange, C. Haley, W. Soh, K. Olsen, F. Grandmont, G. Nikolakakos, R. Jayawardhana, B.S. Lollar, C. Dickinson and W. Ward (2017) Canadian Space Agency Planetary Atmospheres Topical Team, final Report. 25 pp.
[*policy document commissioned by the CSA and included in CSA publication* Topical Teams Report 2017 *which sets funding priorities*]
12. Moores, J.E., **Smith, C.L.** and **Campbell, C.L.** (2017) Watching the dust and clouds lazily float by during a martian summer. *The Bulletin of the Canadian Meteorological and Oceanographic Society*. v. 45 (4) p.16-18
11. Moores, J.E. (2017) Penitentes tower over Tartarus Dorsa, Pluto. *Planetary Matters*. v.9 p 2.
10. Moores, J.E., W. Colgan, F. Newland, M. Gordon (2016) Department of Earth and Space Science and Engineering Long Term Plan 2016-2036. 21 pp.
9. Moores, J.E. and **L. Komguem** (2014) Rover-Based UV Imaging of the Lunar Atmosphere. Deliverable for CSA Contract nº52/7011806.
8. Moores, J.E. (2013) Governance Structures for the York University Rover Team and for Future Competitive Engineering Teams at York University's Lassonde School of Engineering. 16 pp.

7. Moores, J.E. and the KRASH team (2011) Kamestastin Research Analogue Site for Human exploration. *Planetary Matters* v. 2 p 3.
6. Moores, J.E. and **Francis, R.** (2011) *Lunar Analogue Mission Operations Concept*. University of Western Ontario Document n° ILAM-UWO-PR-001 Rev C.
5. Moores, J.E. (2009) Report on the 2009 BrO In-Situ Sampling Experiment at Barrow, Alaska and subsequent analysis. AQRD Environment Canada Technical Report.
4. Moores, J.E. (2009) GARDIS Calibrations and Reduction of Mercury Data from the 2008 OOTI Campaign in Kuujjuarapik, QC. AQRD Environment Canada Technical Report.
3. Shinohara, C. and Moores, J.E. (2005) *Surface Stereo Imager Experiment Implementation Plan*. Phoenix Mars Mission Technical Report.
2. Moores, J.E. (2004) *Final report on the University of Arizona Mars UV atmospheric modeling program.* Deliverable for JPL contract 1249621
1. Moores**,** J.E., C. Hutchings and J. Keffler (2004) *Europa Cryo-Ocean Exploration Submersible (ECOES) Preliminary Design Report*. **Winner of the 2004 University of Arizona Space Prize*

3. CREATIVE/ARTISTIC ENDEAVOURS

a. Creative Works

8. J.E. Moores, J. Rogerson and M.D. Parsons with a foreword by R.J. Sawyer (2024) *Daydreaming in the Solar System: Surfing Saturn's Rings, Golfing on the Moon, and Other Adventures in Space Exploration*. Popular Science Book. MIT University Press published via Penguin-Random House.
7. **C. Smith, C. Campbell,** and J.E. Moores (2019) *Rover Exploration Challenge*. Board Game.
6. **C. Campbell, C. Smith** and J.E. Moores (2019) *Rover Exploration Challenge*. Ontario Science Centre (August).
5. **C. Campbell, C. Smith** and J.E. Moores (2018) *Rover Exploration Challenge*. Ontario Science Centre (July).
4. **C. Campbell, C. Smith, B. Cooper** and J.E. Moores (2018) *Rover Exploration Challenge*. Ontario Science Centre (January).
3. Motion Picture *"Clara"* (2018) https://www.imdb.com/title/tt6613878/ Scientific Consultant (https://www.imdb.com/name/nm8907824/?ref_=ttfc_fc_cr64)
2. *Western Worlds*. 1-hour radio program airing on Astronomy.fm and CHRW, London. Creator, producer and showrunner, seasons 1 and 2 (2012). https://space.uwo.ca/outreach/western_worlds/western_worlds_episodes.html
1. *York Universe*. 1-hour live radio program airing on Astronomy.fm. Co-host. (2009-2016)

5. PROFESSIONAL SERVICE

Reviewer

14. STScI/Hubble Space Telescope
13. *Nature Communications*
12. Natural Sciences and Engineering Research Council of Canada Discovery Grants Program

11. *Nature*
10. *Acta Astronautica*
9. *Planetary and Space Science*
8. *Earth Surface Processes and Landforms*
7. *Journal of Geophysical Research, Planets*
6. *Geophysical Research Letters*
5. *Icarus*
4. *Space Science Reviews*
3. Canadian Space Agency
2. National Aeronautics and Space Administration, Planetary Sciences Division, Research & Analysis Program
1. National Aeronautics and Space Administration, Discovery Program Office

Memberships in Learned Societies

American Geophysical Union (2007-present)
American Astronomical Society: Division for Planetary Sciences (2010-present)
Canadian Meteorological and Oceanographic Society (2012-present)
Canadian Aeronautics and Space Institute (2016-present)
Canadian Astronomical Society Société Canadienne d'Astronomie (2022-present)
Geological Association of Canada (2015)

Positions

2023-present	Member, COSPAR Planetary Protection Panel
2023-present	Canadian Representative to COSPAR, Chair of the Canadian National Committee
2023	STScI HST: Telescope Allocation Committee Member
2023	Rapporteur, Business Models and Cooperation for Missions, Data and Services (Track-8), International Astronautical Federation Global Space Conference on Climate Change (GLOC-2023)
2023	Rapporteur, Next Generation of Climate Services (Track-7), International Astronautical Federation Global Space Conference on Climate Change (GLOC-2023)
2023	Technical Program Committee Member, International Astronautical Federation Global Space Conference on Climate Change (GLOC-2023)
2022-2023	International Program Committee Member, International Astronautical Federation Global Space Conference on Climate Change (GLOC-2023)
2022	Chair, CSA Planetary Exploration/Planetary Atmospheres Topical Team
2018-2022	Chair, Scientific Organizing Committee for the 54th Division of Planetary Sciences meeting in London, ON (2022 Conference)
2022	Member, Canadian Space Agency Planetary Exploration Consultation Committee
2021	Member, Scientific Organizing Committee, 53rd Division of Planetary Science meeting. Held Virtually.
2020	Member, Scientific Organizing Committee, 52nd Division of Planetary Science meeting. Held Virtually, October 26-30, 2020.

2020	Member, Scientific Organizing Committee, Canadian Astronomical Society (CASCA) York University Congress
2019-2020	Principal Investigator, Selected **Christina L. Smith** Participating Scientist Proposal providing access to NASA's Juno Mission
2018-2019	Member, Heracles Science Definition Team (joint JAXA/ESA/CSA Lunar Lander Program)
2018-2020	Co-Investigator, COMPASS Mission (NASA *Discovery* Candidate)
2018-2023	Science Team Collaborator, NASA Mars InSight Mission
2018-2019	Managing Guest Editor for "Amazonian Mars: Climate and Processes" special issue of *Planetary and Space Science*.
2018 - present	Director, Technologies for Exo-Planetary Science (TEPS) NSERC CREATE program
2018	Session Chair x3, CASI ASTRO, "*Engineering Tools for Space Exploration*" and "*Space Astronomy: Exploring the Great Beyond*" and "*Planetary Science: Exploring the Neighbourhood*"
2018	Organizing Committee Member for Canadian Aeronautics and Space Institute (CASI) ASTRO Conference in Quebec City, QC.
2017	Convenor, "Planetary Atmospheres, Oceans and Ices" session at the 2017 Canadian Meteorological and Oceanographic Society Congress, Toronto, ON, June 4-8, 2017
2016	Organizing Committee Member for the 7th Canadian Space Exploration Workshop, Montreal, November 24-25, 2016.
2015-2017	Chair, CSA Planetary Atmospheres Topical Team
2016-2018	Deputy Director, Technologies for Exo-Planetary Science (TEPS) NSERC CREATE program
2016	Organizing Committee Member for Canadian Aeronautics and Space Institute (CASI) ASTRO Conference in Ottawa, May 14-16
2015	Session Chair, American Geophysical Union Joint Meeting in Montréal
2015-2017	Chair, Canadian Space Agency Planetary Exploration Consultation Committee
2014-2021	Member, Scientific Committee, Canadian Meteorological and Oceanographic Society
2014-2021	Representative of the Canadian Meteorological and Oceanographic Society on the Canadian Space Agency Planetary Exploration Consultation Committee
2013	Member of the Canadian Space Agency Science Definition Team for the RESOLVE Lunar Polar Volatiles Mission – one of four members competitively selected from across the country.
2012	Member, Organizing Committee, Canadian Space Summit
2012-2013	Mars Science Laboratory Science & Operations Team, Environmental Science Theme Group Member & Environmental Science Theme Lead
2012; 2014	Canadian Meteorological and Oceanographic Society. Organizer, Planetary Atmospheres Session.
2011	Operations Designer, Planning Process Leader and Flight Director for ILSR Lunar Analogue Missions in Sudbury, ON, Mistastin Lake, NL and Barringer Crater, AZ
2009	Chair, Planetary Atmospheres: Dynamics, Chemistry, Climate and Couplings III, American Geophysical Union Joint Meeting

2008	Phoenix Mission Operations: Strategic Science Planner, Science Planner/Integrator and Surface Stereo Imager/ASTG liaison
2008	Atmospheric Science Theme Group Member, Phoenix Mission
2007 - 2008	Phoenix Mission Science Team Member at Collaborator Level
2007	Editor, Proceedings of the 10th Lunar and Planetary Laboratory Conference
2005 - 2007	Lunar and Planetary Laboratory Conference Organizing Committee
2006	Editor, Proceedings of the 9th Lunar and Planetary Laboratory Conference
2005	Editor, Planetary Science Field Geology Practicum

6. PUBLIC APPEARANCES

Media Mentions & Appearances

155. A Canadian instrument made NASA's asteroid retrieval possible – and it's job is still not over. A. M. Jones CTV News. September 14th, 2023. https://www.ctvnews.ca/sci-tech/a-canadian-instrument-made-nasa-s-asteroid-retrieval-possible-and-its-job-is-still-not-over-1.6561374
154. York Universe podcast. E. Hyde. February 13th, 2023. https://www.youtube.com/live/MxFFVqjLqB8?feature=share starting at minute 33
153. "In a first, hear a Mars rover get hit by a 387-foot dust devil" J. Achenbach. *The Washington Post.* December 13th, 2022. https://www.washingtonpost.com/science/2022/12/13/mars-rover-dust-devil/
152. "Curiosity Captures Drifting Clouds on Dec. 12, 2021" NASA/JPL Press Release. Feb 18th, 2022. https://mars.nasa.gov/resources/26557/curiosity-captures-drifting-clouds-on-dec-12-2021/?site=msl
151. "NASA's Curiosity rover on Mars is watching the clouds drift by and they're beautiful." E. Howell. Space.com Feb 18th, 2022. https://www.space.com/curiosity-rover-spots-mars-clouds-overhead
150. "NASA's Curiosity rover captures glorious drifting clouds in the Martian sky." H. Vardhan. Republicworld.com Feb 18th, 2022. https://www.republicworld.com/science/space/nasas-curiosity-rover-captures-glorious-drifting-clouds-in-martian-sky-watch-articleshow.html
149. "NASA's Mars rover captures clouds drifting across the Martian sky" L. Papadopoulos. Interesting Engineering. Feb 18th, 2022. https://interestingengineering.com/mars-rover-martian-clouds
148. "NASA's Curiosity rover captures stunning footage of the Martian sky with clouds of carbon dioxide ice passing by overhead." S. Tonkin. Daily Mail. Feb 18th, 2022. https://www.dailymail.co.uk/sciencetech/article-10526939/NASAs-Curiosity-rover-captures-footage-Martian-sky-clouds-carbon-dioxide-ice.html
147. "Is tiny life on Mars burping out methane and when does a planet become a star?" J. O'Callaghan. Podcast. *Stories from a Space Journalist.* https://open.spotify.com/episode/4q09PzDfrHr3lyVWSo4YOB?si=88466e0a91f445e3
146. "Flights of Fancy: How Billionaires are making space tourism blast off" R. Mudhar. July 19, 2021. *The Toronto Star.* https://www.thestar.com/podcasts/thismatters/2021/07/19/flights-of-fancy-how-billionaires-are-making-space-tourism-blast-

off.html?utm_source=Twitter&utm_medium=SocialMedia&utm_campaign=Podcast&utm_content=flights-of-fancy

145. “Microbes burping methane on Mars may be right next to NASA rover.” J. O’Callaghan. July 15, 2021. *New Scientist*. https://www.newscientist.com/article/2284210-microbes-burping-methane-on-mars-may-be-right-next-to-nasa-rover/

144. “Branson Reaches Edge of Space.” A. Seth July 11, 2021 *CTV News Network*. https://www.ctvnews.ca/video?clipId=2239644

133-143. 11 articles on contributing author paper #45, including:

“First you see it, then you don’t: scientists closer to explaining Mars Methane Mystery.” L. Shekhtman June 29, 2021. *NASA.gov* https://www.nasa.gov/feature/goddard/2021/first-you-see-it-then-you-don-t-scientists-closer-to-explaining-mars-methane-mystery

“Mars methane mystery may be starting to clear up.” M. Wall, July 1st, 2021. *Space.com* https://www.space.com/curiosity-mars-rover-tgo-methane-mystery

“Mysterious methane detections on Mars baffle NASA scientists.” June 30th, 2021 *Sky News* https://news.sky.com/story/mysterious-methane-detections-on-mars-baffle-nasa-scientists-12345473

132. “NASA’s Curiosity takes step toward solving Mars methane mystery” J. Barbuzano. July 7th, 2021. *Sky & Telescope* https://skyandtelescope.org/astronomy-news/solar-system/nasas-curiosity-takes-step-toward-solving-mars-methane-mystery/

131. “Exploring a universe of mysteries: Four scientists consider how we fit into the ‘vast cosmic dance’” P. Fraumeni. May 6, 2021. *Brainstorm*. Special edition of YFile https://www.yorku.ca/research/category/uncategorized/2021/05/exploring-a-universe-of-mysteries-four-scientists-consider-how-we-fit-into-the-vast-cosmic-dance/

130. “Rover Perseverance set to touch down on Mars Thursday.” S. Somani. Feb 17, 2021, Global News. https://globalnews.ca/video/7647241/rover-perseverance-set-to-touch-down-on-mars-thursday/

129. “Planetary Scientist/Space Engineer leads paper that may guide future NASA endeavors.” M. Mueller, Feb 4, 2021. *Brainstorm*. Special edition of YFile https://yfile.news.yorku.ca/2021/02/04/planetary-scientist-space-engineer-leads-paper-that-may-guide-future-nasa-endeavors/

114-128. 15 articles on 1st author paper #21 including:

“Overnight changes in Mars’ atmosphere could solve a methane mystery.” Grossman, L. September 3rd, 2019 *Science News* https://www.sciencenews.org/article/overnight-changes-in-mars-atmosphere-could-solve-a-methane-mystery

113. “A possible solution to Mars’ Methane Problem” J. Barbuzano. August 28, 2019. *Sky and Telescope*. https://www.skyandtelescope.com/astronomy-news/possible-solution-mars-methane-problem/

112. “A step closer to solving the methane mystery on Mars” W. Wright *phys.org* August 21, 2019

111. “Scientists move closer to solving methane mystery on Mars” *Times of India*, August 22, 2019

110. “The martian methane contradiction has been resolved, but we still don’t know the cause” J. Brief, *IFL Science*, August 20,2019

109. Study Provides New Clues to Source of Methane Gas on Mars" L. Lipuma, August 21, 2019 *AGU Geospace*. https://blogs.agu.org/geospace/2019/08/21/study-provides-new-clues-to-source-of-methane-gas-on-mars/
108. "Microbes Spotted on Blades of Ice High in the Andes." K. Kornei. *Eos*, 100, https://doi.org/10.1029/2019EO130463 15 August, 2019.
107. "Take a Whiff of Mars: Sniffing out an extraterrestrial mystery." YorkU Magazine, Summer 2019 Edition. https://magazine.yorku.ca/issues/summer-2019/take-a-whiff-of-mars/
106. "Mars methane hunt comes up empty, flummoxing scientists" A. Witze, *Nature* 568 153-154 (2019) doi: 10.1038/d41586-019-01093-x (April 10, 2019)
105. "New Canadian research provides clues to methane levels on Mars." C. O'Brien. *CTV News*. March 8, 2019 Print and TV interview (March 10, 2019). https://www.ctvnews.ca/sci-tech/new-canadian-research-provides-clues-to-methane-levels-on-mars-1.4328241
104. "Canadian scientists develop computer model of methane on Mars." Jordan News Agency. March 10, 2019 http://petra.gov.jo/Include/InnerPage.jsp?ID=13841&lang=en&name=en_news
103. "Martian methane – spotted in 2004 – has mysteriously vanished" P. Voosen. December 12, 2018 *Science* doi: 10.1126/science.aaw3667
102. "Quirks and Quarks" B. MacDonald *CBC Radio One*. November 17, 2018
101. "McMaster University astrophysicist a consultant on film 'Clara.'" G. Rockingham. *Hamilton Spectator*. https://www.thespec.com/whatson-story/9028495-mcmaster-university-astrophysicist-a-consultant-on-film-clara-/
100. "Clara is a story of Exoplanets, Existential Longing – and Real Science." L. Billings *Scientific American* October 11, 2018. https://www.scientificamerican.com/article/clara-is-a-story-of-exoplanets-existential-longing-mdash-and-real-science1/
99. "Mars Scientists Edge Closer to Solving Methane Mystery" A. Witze. *Nature News*, October 25, 2018. https://www.nature.com/articles/d41586-018-07177-4
98. "Blood Moon" CTV News Network July 27, 2018 https://www.facebook.com/CTVNewsChannel/videos/1884102474984408/
97. "Blood Moon" 610 CKTB L. Fedoruk, July 27, 2018
96. "It's a great month for Stargazing" July 18, 2018 *Metro Morning* M. Galloway https://www.cbc.ca/listen/shows/metro-morning/segment/15558562
95. "TESS Launch" Global News at Noon, May 2nd, 2018
94. "We asked a physicist what would happen if Jimmy Ate World" D. Pacholik, *Noisey* Vice Media. April 20, 2018 https://noisey.vice.com/en_ca/article/bjpa9d/we-asked-a-physicist-what-would-happen-if-jimmy-ate-world
93. "Mirror Image" S. Kirk. *York University Magazine*, Fall 2017 Edition.
92. "YorkU Professor discusses invaluable lessons learned about Saturn from Cassini mission." September 16, 2017. *Global News at Noon. https://globalnews.ca/video/3747591/york-u-professor-discusses-invaluable-lessons-learned-about-saturn-from-cassini-mission*
91. "The last days of Saturn's Admirer" September 13, 2017. I. Semeniuk *The Globe and Mail*. https://www.theglobeandmail.com/technology/science/after-13-years-spent-orbiting-saturn-the-cassini-spacecrafts-mission-comes-to-anend/article36242180/
90. "Watch Martian Clouds Scoot, Thanks to NASA's Curiosity." August 10, 2017. G. Webster. *Phys.org*
89. "Curiosity snaps fast-moving clouds in the Martian sky." August 10, 2017. M. Irving. *New Atlas*

88. “NASA’s Curiosity Rover Captures Haunting Images of Clouds on Mars.” August 10, 2017 G. Dvorsky *Gizmodo*
87. “Can you spot any shapes in the martian clouds?” August 10, 2017 D. Grossman. *Popular Mechanics*.
86. “Check out this awesome footage of clouds on Mars.” J. O’Callaghan *IFL Science*.
85. “New discovery makes Saturn’s moon Enceladus prime target in search for life.” April 13, 2017 K. Allen, *Toronto Star*.
84. Taped segment for *Daily Planet* on Martian Clouds with **Jake Kloos**, March 28, 2017. Discovery Channel Canada (Nationally Televised)
83. “Mars Rover spots clouds shaped by gravity waves.” Mar 22, 2017 P. Voosen *AAAS Science News* doi: 10.1126/science.aal0949
82. “Curiosity captures gravity wave shaped clouds on Mars.” Mar 24, 2017 M. Williams *Phys.org/Universe Today*

42-81. 40 News articles (Nature/Altimetrics score: 401) on 1st Author Paper #17, including:
“Pluto’s Washboard ridges resemble unusual features in Earth’s Snows” S.K. Johnson 12 January, 2017 *Ars Technica*
“Scientists finally understand Pluto’s Ice Towers” January 5, 2017 R. Verger *Fox News*
“Scientists offer sharper insight into Pluto’s Bladed Terrain.” January 6, 2017 *Astrobiology Magazine*.
“Prickly Pluto Could Reveal Ice Spike are Common on Other Worlds” January 18, 2017 E. Howell. *Space.com*
“Planetary Science: Penitent Pluto.” L. Maltagliati. *Nature Astronomy* doi: 10.1038/s41550-016-0016
Live Interview on CBC Radio One program “Here and Now,” January 5, 2017

41. Live Interview on CTV News Channel (Nationally Televised), June 22, 2016

13-40. 28 Articles (Google News Results) on 1st author papers nº10 and 11, including:
“Attack of the probes: Jupiter’s atmosphere could be analyzed by a swarm of tiny spacecraft in 2030.” J. O’Callaghan, 27 January 2015 *Daily Mail*
“Swarm of Tiny Probes Could Unlock the Secrets of Jupiter’s Thick Atmosphere” C. Griffin, 26 January 2015 Science World Report.
“Hive Mind: A Swarm of Microprobes Could Tell Us More About Jupiter.” E. Blakemore, January 27, 2015 Smithsonian Magazine.
“Scientists Consider Sending Microprobes to Study Jupiter’s Atmosphere.” R. Burks, January 27, 2015 Tech Times.
“Mini-Probes to Investigate Jupiter’s Atmosphere” R. Pantaleo. Voice of America Science World, Episode 021415

12. “NASA rover find methane, organic chemicals on Mars” CBC News (with files from Sean Davidson). December 16, 2014. http://www.cbc.ca/news/technology/nasa-rover-finds-methane-organic-chemicals-on-mars-1.2875321
11. “Five places in the solar system we should explore next.” M.R. Francis, November 20, 2014 National Post.
10. “What’s Next for Space Exploration?” M.R. Francis, November 20, 2014 Slate.com.
9. “Mars in a Jar” YorkU Magazine pp 10-11, Fall 2014, published August 26, 2014
8. “Comet Fireworks on Mars?” July 24, 2014*, ScienceNOW,* AAAS, http://news.sciencemag.org/physics/2014/07/comet-fireworks-mars

7. “From Fascination to Space Exploration: Newfoundlander works on Mars Rover Missions and Probe Landing on Titan.” August 14, 2013, St. John’s Telegram, Page 1.
6. “Looking for life: Water’s allure becomes an otherworldly quest.” August 5, 2013, Globe and Mail, page 1
5. “How Chris Hadfield turned earthlings on to Space” J. Davidson, May 13, 2013 CBC News.
4. “In the Hunt for the Red Planet’s Dirtiest Secret,” R.A. Kerr, Aug 31, 2012 *Science* 10.1126/science.337.6098.1032
3. “Western researcher hops ride to Red Planet” A. Talbot, November 30, 2012. Western News
2. “Mars Exploration has London Connection” L. Xing, November 30, 2012. CTV News, London
1. “Martian-Fog Study Finds Thick Haze, ‘Diamond Dust’” B. Handwerk, April 4, 2011. National Geographic Daily News.

Invited and Public Talks

65. Moores, J.E. (2023 – Invited Panelist) *Bringing Space Back to Earth*. Western University, November 24, 2023, London, ON.
64. Moores, J.E. (2023 – Invited Presentation) *Developing the Tools and Techniques of Space Exploration.* Queen’s University, November 17, 2023, Kingston, ON.
63. Moores, J.E. (2023 – Invited Presentation) *Using Space Satellites to Observe Surface Water and the Oceans – A Canadian Perspective. International Joint Commission of Canada and the United States of America.* October 19, 2023 Ottawa, ON.
62. Moores, J.E. (2023 – Invited Lecture) *The adventure of space science and exploration: a Canadian perspective.* Royal Astronomical Society of Canada. September 20, 2023, Toronto, ON.
61. Moores, J.E. (2023 – Invited Q&A) *Science Advisor Town Hall.* Canadian Space Agency, St. Hubert, QC., September 12, 2023.
60. Moores, J.E. (2023 – Invited Lecture) *Responsive Space Science and Exploration: How space agencies can leverage “Breaking News” discoveries.* CSA Communications Team meeting, September 12, 2023, St. Hubert, QC
59. Moores, J.E. (2023 – Invited Remarks) *Welcome to the 8th Interstellar Symposium*. 8th Interstellar Symposium, July 10, 2023, Montreal, QC.
58. Moores, J.E. (2023 – Invited Lecture) *Space Exploration to the Lunar Gateway and Beyond*. Eng Idol competition, Professional Engineers of Ontario, Etobicoke Chapter. April 1, 2023.
57. Moores, J.E. (2023) Invited Q&A for the movie *Goodnight Oppy* at the Ted Rogers Bloor HotDocs Cinema. 600 Grade 4 students attending. Feb 14th, 2023.
56. Moores, J.E. (2021 – Invited Lecture) *The Cinematography of the Sky: Making Movies on Other Planets. Astronomy Night at the David Dunlop Observatory*. Richmond Hill, ON. August 20, 2021. https://www.youtube.com/watch?v=IhYeNuInb2w&t=1470s
55. Moores, J.E. (2020 – Invited Lecture) *The Mystery of Methane on Mars: Fact, Folly or Figment*? *Astronomy Night at the David Dunlop Observatory*. Richmond Hill, ON. August 29, 2020. https://www.youtube.com/watch?v=TuHdV--b2zw
54. Moores, J.E. (2020 – Invited Lecture) *The Mystery of Methane on Mars: Fact, Folly or Figment*? Institute for Earth and Space Exploration. Western University. London, ON. May 8, 2020.

53. Moores, J.E. (2019 – Invited Lecture) *The Mystery of Methane on Mars: Fact, Folly or Figment*? Canadian Institute for Theoretical Astrophysics. University of Toronto. Toronto, ON. December 16, 2019.
52. Moores, J.E. (2019 – Invited Lecture) *The Mystery of Methane on Mars: Fact, Folly or Figment*? Centre for Research in Earth and Space Science. York University, Toronto, ON. November 20, 2019.
51. Moores, J.E. (2019 – Invited Lecture) *Our Solar System: A Planetary Rosetta Stone*. Royal Astronomical Society, Ottawa Chapter. Nepean, ON. November 15, 2019.
50. Moores, J.E. (2019 – Invited Lecture) *The Planetary Volatiles Laboratory and the Rover Exploration Board Game*. Ingenium, Ottawa, ON. November 15, 2019.
49. Moores, J.E. (2019 – Invited Lecture) *The Mystery of Methane on Mars: Fact, Folly or Figment*? McGill Space Institute. McGill University, Montreal, QC. November 12, 2019.
48. Moores, J.E. (2019 – Invited Lecture) *Habitability and the Rover Exploration Challenge Board Game.* White Oaks Secondary School. November 8, 2019
47. Moores, J.E. (2019 – Invited Lecture) *The Mystery of Methane on Mars: Fact, Folly or Figment*? Centre for Planetary Sciences. University of Toronto-Scarborough, Scarborough, ON. October 25.
46. Moores, J.E. (2019 – Invited Lecture) *The Mystery of Methane on Mars: Fact, Folly or Figment*? Astronomy Department. Cornell University, Ithaca, NY. October 10.
45. Moores, J.E. (2019 – Public Lecture) *Our Solar System: A Planetary Rosetta Stone*. York University Scholar's Hub. Vaughan Public Library. October 2nd, 2019.
44. Moores, J.E. (2019 – Invited Lecture) *A tale of two atmospheres: from Martian Methane to Plutonian Penitentes*. University of Hawai'i at Manoa Institute for Geophysics and Planetology, Honolulu, Hawai'i, USA. April 24.
43. Moores, J.E. (2019 – Invited Lecture) *Doors held ajar in storms: insights into Atmospheric Planetary Science*. Research School of Astronomy and Astrophysics. Australian National University, Canberra Australia. April 2.
42. Moores, J.E. (2019 – Invited Lecture) *The Mystery of Methane on Mars: Fact, Folly or Figment*? Research School of Earth Sciences. Australian National University, Canberra Australia. March 26.
41. Moores, J.E. (2019 – Invited Lecture) *Planetary Atmospheres: At the boundary between Geological processes and Exoplanetary Astronomy*. Research School of Astronomy and Astrophysics. Australian National University, Canberra Australia. February 19.
40. Moores, J.E. (2018 – Invited Lecture) *Solar System Exploration, An Update*. White Oaks Secondary School, Oakville, ON, December 6, 2018
39. Sneak Peek Screening of Clara: Introduction and Panel (2018) Nat Taylor Cinema. York University. November 27, 2018
38. Moores, J.E. (2018) *Worlds Enough and Time 2018*. Visions of Science Network for Learning. August 2nd, 2018
37. Moores, J.E. (2018*) The Exploration of Mars, from Antiquity to Today*. Ontario Science Center, July 28 & 29, 2018
36. Moores, J.E. (2018*) The Exploration of Mars, from Antiquity to Today*. York University Mars Extravaganza, July 25-August 1st, 2018
35. Moores, J.E. (2018 – Invited Lecture) *Solar System Exploration, An Update*. Royal Astronomical Society of Canada: Mississauga Chapter, June 8, 2018
34. Moores, J.E. (2018 – Invited Lecture) *Doors held ajar in storms: Insights into Atmospheric Planetary Science*, Astronomy Club at York University. January 24, 2018.

33. Moores, J.E. (2017 – Invited Lecture) *Doors held ajar in storms: Insights into Atmospheric Planetary Science*, McGill University. November 7, 2017.
32. Moores, J.E. (2017 – Invited Lecture) *How to get to Mars*. Lillian H. Smith Library. October 12, 2017.
31. Moores, J.E. (2017 – Invited Lecture) *A Volatile Tale of Two Atmospheres.* University of Toronto *Noble Lecture*. March 6, 2017.
30. Moores, J.E. (2017 – Invited Seminar) *A Volatile Tale of Two Atmospheres.* Technologies for Exo/Planetary Science Seminar Series. February 24, 2017.
29. Moores, J.E. (2016 – Invited Public Lecture) *The Solar System as a Local Laboratory.* White Oaks Secondary School, Oakville, ON, December 14, 2016.
28. Moores, J.E. (2016 – Invited Public Lecture) *Planetary Habitability*. October 20, 2016 RASC-Niagrara Falls Chapter.
27. Moores, J.E. (2016 – Invited Public Seminar) *The Red Planet's Timeless Atmosphere.* Integrated Science Seminar Series Inaugural Lecture. September 21, 2016, York University.
26. Moores, J.E. (2016 – Invited Public Lecture*) The Solar System as a Local Laboratory.* NYAA Starfest, Mt. Forest, ON, August 6, 2016.
25. Moores, J.E. (2016 – Invited Public Lecture) *The Solar System as a Local Laboratory.* Ontario Science Centre Star Party, July 16, 2016.
24. Moores, J.E. (2016 – Invited Lecture) Interactions between Comet Siding Spring and the Martian Atmosphere. ISSI Dust Conference, Bern, Switzerland
23. Moores, J.E. (2016 – Invited Public Lecture) *Planetary Habitability*. University of Toronto Astrotours, Earth Hour, March 19, 2016.
22. Moores, J.E. (2015 – Invited Lecture) *The Physics and Chemistry of the Atmosphere of Mars*. IACPES Annual Meeting, May 27, 2015.
21. Moores, J.E. (2015 – Invited Lecture) *Through a Glass, Darkly: Observing the Martian Atmosphere from the Surface.* Planet Day Colloquium at the University of Toronto Center for Planetary Sciences. March 18, 2015.
20. Moores, J.E. (2014 – Invited Lecture) *Astrobiology.* Delivered December 9, 2014 at White Oaks Secondary School, Oakville, ON
19. Moores, J.E. (2014 – Invited Lecture) *Worlds Enough and Time: The Golden Age of Robotic Exploration in our Solar System* Delivered May 22, 2014 at White Oaks Secondary School, Oakville, ON
18. Moores, J.E. (2014 – Invited Lecture) *Searching for Water Across the Solar System.* Delivered February 21, 2014 at the Royal Astronomical Society, Mississauga, ON
17. Moores, J.E. (2014 – Invited Lecture) *Searching for Water Across the Solar System.* Delivered January 16, 2014 at White Oaks Secondary School, Oakville, ON
16. Moores, J.E. (2013 – Invited Colloquium) *Searching for Water Across the Solar System.* Delivered November 6, 2013 at the Centre for Research in Earth and Space Science, York University, Toronto, ON
15. Moores, J.E. (2013 – Invited Interdisciplinary Colloquium) *Searching for Water Across the Solar System.* Delivered October 21, 2013 at the Origins Institute, McMaster University, Hamilton, ON.
14. Moores, J.E. (2013 – Invited Lecture) *Worlds Enough and Time: The Golden Age of Robotic Exploration in our Solar System.* Journalism Graduate Seminar, Carleton University, Ottawa, ON.
13. Moores, J.E. (2012 – Invited Public Lecture) *Early Results from the Mars Science Laboratory Mission to Mars*. Delivered at the Royal Astronomical Society of Canada's Fall AGM, Toronto Chapter (November) and at York University's Teacher Night (October)

12. Moores, J.E. (2012 – Invited Public Lecture) *The Mars Science Laboratory Mission to Mars*. Delivered at the University of Western Ontario (January), York University Astronomy Club (March).
11. Moores, J.E. (2012 – Invited Public Lecture) *The scariest places in the solar system.* Ontario Science Centre.
4-10. Moores, J.E. (2010-2012, Invited Public Lecture) *Worlds Enough and Time: The Golden Age of Robotic Exploration in our Solar System.* Delivered at the Royal Astronomical Society of Canada's fall AGM, Toronto Chapter (November '10), Mississauga Chapter (January '11), London Chapter (February '11) and Hamilton Chapter (May '11) as well as part of the University of Toronto's *Later in Life Learning* Program at the Glendon Campus of York University (September '11) at the 2011 Star Symposium (March '11) and at the Ontario Science Centre (June '12).
3. Moores, J.E. (2009 - Invited) *Martian Meteorology: Insights from the Phoenix Mission to the Martian Arctic.* 1-hour Seminar delivered at Environment Canada and York University.
2. Moores, J.E. (2008 - Invited) *Production of soils and the shielding effect of small-scale surface features.* Lunar and Planetary Laboratory Conference (LPLC08)
1. Moores, J.E. (2008 – Invited) *The Phoenix Mission to Mars*. University of Arizona Discovery Days at the Mount Lemmon Observatory, Summerhaven, AZ.

7. FUNDING

*As Principal Investigator (**TOTAL = $3,395,129.83**)*

2023	$3,400	York	LSE Minor Grant Competition
2022	$7,500	York	PERLA research grant funds
2022	$54,447	NRCan	PI for "Identifying putative microbial drivers of methane flux on Earth and Mars." Science PI: PDF Haley Sapers. Polar Continental Shelf Program (In-Kind value)
2022	$105K	CSA	MSL Participating Scientist Program 3: Investigating Variability in Ice, Dust and Methane at Gale Crater
2022	$20K	CSA	Planetary Exploration: Planetary Atmospheres Topical Team Leader
2022	$9,996	CSA	Subcontract from ABB Inc on Mass & Volume Reduction (PT-4) of the MAGE instrument (CSA-STDP program).
2021	$49K	CSA	Subcontract from Canadensys Aerospace Systems on Lyman-alpha imager for the FROST instrument suite
2020	$300K	CSA	Mars Atmospheric Gas Evolution (MAGE) Experiment, FAST Program
2019	$100K	York	York Research Chair in Space Exploration
2019	$216K	NSERC	Discovery Grant: Investigating Atmospheric Volatiles on Planets in our Solar System and Beyond
2018	$2.01K	LSE/York	Junior Faculty Fund Grant
2018	$1.11M	NSERC	Director, Technologies for Exo-Planetary Science (NSERC direct contribution for years 3-6),
2018	$100K	CSA	Funding PI for The MAPLE project (PDF **Christina Smith**, Science PI) FAST program

2018	$120K	CLS	Funding PI for Collision-Induced Absorption by CO2-H2 and CO2-CH4 Complexes Canadian Light Source, value of in-kind contribution (PDF **Paul Godin**, Science PI)
2018	$25K	NSERC	Engage Grant with Canadensys Corp. “Panoramic Cameras for Space Exploration”
2016	$0.87K	York	Junior Faculty Fund Grant
2016	$3K	York	Research funding associated with Innovator of the Year-Early Career Award
2016	$150K	Ontario - MRIS	Early Career Researcher Award: Exploring the Atmospheres of Other Planets
2016	$275K	CSA	Mars Science Laboratory Participating Scientist Award: Atmospheric Ice Dust and Dynamics at Gale Crater.
2016	$200K	CSA	The Aniu Project (Lyman-alpha camera for imaging lunar volatiles) FAST program
2015	$15K	CSA	Planetary Exploration: Atmospheres Topical Team Leader
2014	$18.9K	CSA	Science Definition/Science Feasibility Study for in-situ ultraviolet imaging of polar volatiles.
2013	$192K	NSERC	Discovery Grant – Laboratory and Spacecraft Investigations for Planetary Exploration
2012	$120K	York	Start-Up funding package
2011	$183K	NASA/CSA	Observations of Water Ice and Winds from the MSL Rover
2005	$15K	LPL/UA	Experimental Equipment for Isotopic Work (tuaq project)

As Co-Investigator or Collaborator

2018	$200K	CSA	Co-I, Small Atmospheric Mars Payload Landed Experiment (SAMPLE) Planetary Secondary Payloads and Nanomissions (Carlos Lange, PI)
2016	$7.01M	NSERC	Technologies for Exo-Planetary Science (TEPS) CREATE Deputy Director & Co-I, Director and PI: Ray Jayawardhana, Total Project Value
2015	$3.76M	CFI	Canadian Planetary Simulator (Co-I, PI Mike Daly)
2011	$800K	CSA	ILSR Lunar Analogue Mission (Co-I, added after award, P.I. Gordon Osinski)
2006	$100K	NASA OPR	Experimental simulation of cometary sublimation (Collaborator; named in proposal P.I.s: R.H Brown and D.S. Lauretta)

C. TEACHING

1. SUMMARY OF TEACHING AND TEACHING CONTRIBUTIONS

2. UNDERGRADUATE

a. Courses Taught

Jan 2023 ESSE 4361: Space Mission Design

Jan 2018	ESSE 1012*: Earth and Environment
Jan 2017 - 2018	ESSE 2030*: Geophysics and Space Science
Jan 2015 – May 2016	NATS 1530*: Science of Spaceflight and Exploration
Sept 2013 – Dec 2018	PHYS 3070*: Planets and Planetary Systems
Sept 2013 – Dec 2016	PHYS 4120*: Gas and Fluid Dynamics
Jan 2013 – May 2013	PHYS 4110*: Dynamics of Space Vehicles

b. Independent Reading Courses directed

Sept 2017 – Dec 2017	PHYS 4310: Physics or Astronomy Project (B. Cooper)
Sept 2017 – Dec 2017	PHYS 4310: Physics or Astronomy Project (R. Clark)
Jan 2015 – Aug 2015	PHYS 4310: Physics or Astronomy Project (J. McLaughlin)
May 2014 – Aug 2014	PHYS 4310: Physics or Astronomy Project (E. Shear)

3. GRADUATE

a. Courses Taught

Summer 2020	ESS 5010: The Art of the Research Note, Course Director
Winter 2020, 2022	ESS 5010: Technologies for Exo/Planetary Science, Course Director
Fall 2017	ESS 5010: Fundamentals of Planetary Science Course Director
Winter 2016	ESS 5010 Co-Course Director (w/R.S.Lee and G. Vukovich)

b. Independent or reading courses directed

Sept 2014 – Dec 2014	PHYS 5490: Astronomical Research (R. Denault)
Jan 2013 – May 2013	PHYS 5490: Astronomical Research (C. Tauber)

c. Thesis Supervisions/Committees

Examination Committees, as a Voting Member

November, 2023	Member (PhD, PHAS, C. Campbell)
October, 2023	Member (MSc, PHAS, C. Withers)
September, 2023	Member (MSc, ESS, E. Saive)
July, 2023	Member (PhD, ESS, B. Lymer)
September, 2022	Member (MSc, ESS, A. Tangestanian)
September, 2022	Member (MSc, PHAS, C. Hayes)

September, 2022	Member (MSc, PHAS, G. Bischof)
June, 2020	Member (MSc, PHAS, V. Sok)
September, 2019	Member (PhD, PHAS, H. Beica)
October, 2018	Member (MSc, PHAS, C. Campbell)
September, 2018	Member (MSc, PHAS, J. Sivasubramanium)
August, 2018	Member (MSc, ESS, K. Cote)
August, 2018	Member (MSc, PHAS, J. Sangha)
June, 2018	Member (PhD, PHAS, G. Nikolakakos)
November, 2017	Chair (MSc, ESS, B. Lymer)
August, 2017	Member (MSc, PHAS, K. Moore)
January, 2017	Member (MSc, EECS, R. Codd-Downey)
January, 2017	Member (MSc, EECS, L. Wang)
August, 2016	Member (MSc, ESS, D. Hamilton)
April, 2016	Member (PhD, PHAS, J. Rogerson)
April, 2016	Member (PhD, ESS, E. Eshelman)
December, 2015	Member (PhD, PHAS, G. Palacino)
June, 2015	Member (MSc, PHAS, R. Denault)
April, 2015	Member (MSc, EECS, P. Mojiri)
Fall, 2014	Member (PhD, EECS, H. Wang)
Summer, 2014	Member (MSc, ESSE, T. Wright)
Fall, 2013	Chair (PhD, ESS, B. Stoute)
Summer, 2013	Member (MSc, PHAS, G. Conidis)
Summer, 2013	Member (PhD, ESS, F. Fazel)

Graduate Supervisions
Bold text indicates the successful completion of a degree program

2022-present	Conor Hayes (PhD, PHAS)
2022-present	Grace Bischof (PhD, PHAS)
2022-present	Elisa Dong (PhD, ESS)
2022-present	Alex Innanen (PhD, ESS)
2021-2023	**Madeline Walters (MSc, ESS)**
2021-2023	**Ankita Das (MSc, ESS)**
2020-2022	**Conor Hayes (MSc, PHAS)**
2020-2022	**Grace Bischof (MSc, PHAS)**
2020-2022	**Justin Kerr (MSc-Project, PHAS)**
2019-2020	**Hemani Kalucha (MSc, ESS)**
2019-2021	**Alex Innanen (MSc, ESS)**
2019-2024	**Charissa Campbell (PhD, PHAS)**
2018-2022	**Tue Giang Nguyen (PhD, ESS)**
2018-2019	**Brittney A. Cooper (MSc, ESS)**
2016-2021	**Jacob Kloos (PhD, ESS)**
2016-2018	**Elisabeth Smith (MSc, ESS)**
2016-2018	**Jasmeer Sangha (MSc, PHAS)**

2016-2018	**Tue Giang Nguyen (MSc, ESS)**
2016-2018	**Charissa Campbell (MSc, PHAS)**
2016-2017	**Eric Shear (MSc, ESS)**
2015-2016	**Jacob Kloos (MSc, ESS)**
2013-2018	**Casey Moore (PhD, ESS)**

D. SERVICE

1. Participation on Faculty, School or Departmental Councils and their Subcommittees

2024	Member, File Preparation Committee, Michael Bazzocchi
2024	Member, File Preparation Committee, Jesse Rogerson
Sept 2022 – 2023	Chair, Engineering Science Working Group
2022	Member, VPRI SPORT CRC Evaluation Committee
Sept 2021 – May 2022	Chair, Search Committee, Lassonde School of Engineering CRC Tier-2 in Science or Engineering.
Jan 2020 – June 2022	Associate Dean, Research and Graduate Studies (therefore, ex-officio membership on a large number of committees, including PARR, GLCS and other associated FC and adjudication committees).
2019	Member, VPRI SPORT CFI-IF Evaluation Committee
Sept 2019 – Oct 2020	Chair, Engineering Education Search Committee
July 2018	Abstract Review Committee for Lassonde Undergraduate Summer Research Conference
Sept 2017 – Dec 2018	York University Senator representing Lassonde School of Engineering
Sept 2017	Ontario Universities Fair (OUF) Volunteer
July 2017 – present	Member, Space Engineering Curriculum Committee
July 2017	Abstract Review Committee for Lassonde Undergraduate Summer Research Conference
Jan 2017 – Dec 2017	Member, Planetary Science CRC Search Committee
Sept 2016 – Sept 2017	Chair, Michael G. Daly File Preparation Committee
Sept 2016 – Jul 2018	Chair, Awards Committee, Department of Earth and Space Science and Engineering
Sept 2016	Ontario Universities Fair (OUF) Volunteer
July 2016	Abstract Review Committee for Lassonde Undergraduate Summer Research Conference
Apr 2016 – Jun 2016	SPARK Program Award Selection Committee
Apr 2016 – Jan 2017	George Vukovich File Preparation Committee
Jan 2016 – June 2016	Member, BEST CLA Search Committee
July 2015 – June 2017	Chair, Lassonde School of Engineering Awards Committee
July 2015 – June 2016	Member, Lassonde School of Engineering Accreditation Advisory Group, Joint Sub Committee

Sept 2015	Ontario Universities Fair (OUF) Volunteer
Mar 2015 – May 2015	Member, ESSE Alternate Stream Search Committee
Dec 2013 – present	Member (and founder), ESSE Young Faculty Circle
Sept 2013 – May 2014	ESSE Adjudicating Committee
Jan 2013 – Jun 2015	ESSE Web Committee
Oct 2012 – Jun 2015	CRESS Seminar Committee Chair/Coordinator
Oct 2012 – Jun 2015	Chair, York University Robotics Society (YURS/YURT) Advisory Board
Sept 2014	Ontario Universities Fair (OUF) Volunteer
Sept 2014	Lassonde Student Mentoring Program

Date c.v. prepared *February, 2024*