

## Education

- Urology Residency** **June 2024**  
Dalhousie University, Halifax, Nova Scotia, Canada
- Doctor of Medicine** **May 2019**  
Dalhousie University, Saint John, New Brunswick, Canada
- Master of Science in Atmospheric Science** **Dec 2015**  
Colorado State University, Fort Collins, Colorado; GPA: 3.98/4.00  
Dissertation: *Emission Rates of Volatile Organic Compounds from Oil and Gas Wells in Colorado*.  
This project involved taking field measurements, processing the data and using computer models to predict concentrations of hazardous air pollutants downwind of well pads.
- Bachelor of Science in Physics, First Class Honours** **May 2013**  
Dalhousie University Halifax, NS; GPA: 3.85/4.30  
Honours Thesis I: *Understanding the Effects of Human-Generated Aerosols on Precipitation*.  
Used a cloud-resolving model to perform experiments on clouds.  
Honours Thesis II: *Cloud Aerosol Micro-physics Parcel Model*.  
Created my own cloud-aerosol micro-physics model to perform sensitivity experiments on clouds.

## Professional Experience

- Dalhousie Urology Residency** **July 2019 – Jun 2024**  
Currently working as a urology resident in Halifax, NS where I care for inpatients, operate, and manage patients on an outpatient basis.
- International Federation of Medical Students SCOPE Exchange** **Jul 2017**  
Worked in Riga, Latvia in a Trauma and Orthopaedic Surgery Hospital by assisting in ORs and developing surgical skills.
- Research in Medicine** **Jun 2016 – Aug 2016**  
Worked with Dr. Erik Scheme and Dr. Keith Brunt to perform a single-blinded pilot study with the goal of creating an algorithm to detect adverse cardiovascular events.
- Colorado State University** **Jan 2015 – May 2015**  
Graduate TA for a graduate level computer programming course taught to atmospheric scientists.
- Colorado State University** **Aug 2013 – Jul 2015**  
Performed research via data collection, analysis, and computer modelling to understand the effects of hydraulic fracturing on atmospheric emissions.
- Jeffrey Pierce Group** **May 2012 – Aug 2012; May 2013 – Aug 2013**  
Performed cloud-resolving model simulations to reproduce marine stratus clouds and estimate the sensitivity of precipitation to aerosol concentrations.
- Jeffrey Dahn Lab** **May 2011 – Aug 2011**  
Optimized impregnation process for activated carbons with the goal of creating more efficient breathing mask material.

## **Horizon Health Network**

**Jun 2009 – Aug 2009; May 2010 – Aug 2010**

Created and analyzed databases for various departments in multiple hospitals and worked with patients in Cognitive Assessment Management.

## **Honours and Awards**

### **JJ Carroll Travel Fund Bursary**

**May 2017**

Awarded for presentation of Inter-professional Education Research at the Canadian Conference on Medical Education (\$750).

### **DMNB Student Conference Funding**

**May 2017**

Awarded for the presentation of original urology research at the American Urological Association Meeting in Boston, MA (\$750).

### **DMNB Student Conference Funding**

**Jul 2016**

Awarded for the presentation of original urology research at the Canadian Urological Association Meeting in Vancouver, BC (\$750).

### **Dalhousie Medicine NB Summer Student Research Program Studentship**

**Jun 2016**

Awarded to Dalhousie Students who perform medical research (\$5,000).

### **Dr. Richard & Lynne Winter Scholarship**

**Sep 2015**

Awarded to a student accepted into Dalhousie Medical Program on the UNB Saint John campus. Based on financial need and scholastic attainment (\$5,000).

### **NSERC Canada Graduate Scholarship**

**Aug 2013**

Scholarship for high calibre scholars who are engaged in eligible Masters programs (\$17,500 over 12 months).

### **NSERC Undergraduate Student Research Award**

**May 2013**

Awarded to undergraduate student to stimulate interest in research in the natural sciences and engineering (\$4,500 over 1 summer).

### **Dean's List**

**Sep 2009 – May 2013**

Each semester of my undergraduate degree at Dalhousie University.

### **Canadian Society of Exploration Geophysicists Trophy**

**Oct 2012**

Award for best speaker in earth, ocean and atmospheric physics at Canadian Undergraduate Physics Conference in Vancouver, BC.

### **Darrell Montgomery Memorial Prize**

**May 2012**

Awarded to a 3rd year student showing a love of experimentation, qualities of leadership and participation in student activities in Physics related areas.

### **Burgess McKittrick Summer Research Studentship**

**May 2011**

A four month work term awarded to outstanding students in the Honours Physics Program.

## **Peer Reviewed Journal Articles**

- [12] D. Keefe, M. Rickard, P. Anderson, D. Bagli, A.-S. Blais, S. Bolduc, L. Braga, N. Brownrigg, M. Chua, S. Dave, J. dos Santos, L. Guerra, A. Hayashi, M. Keays, S. Kim, M. Koyle, L. Lee, A. Lorenzo, D. MacLellan, **Landan MacDonald**, A. MacNeily, P. Metcalfe, K. Moore, R. Romao, and P. Wang, "Prioritization and management recommendations of paediatric urology conditions during the COVID-19 pandemic," *Canadian Urological Association Journal*, vol. 14, no. 6 SE - Commentary, E237–50, May 2020.
- [11] J. Ory, **Landan MacDonald**, and G. Langille, "Noninvasive Treatment Options for Peyronie's Disease," *Sexual Medicine Reviews*, 2020, ISSN: 2050-0521.
- [10] C. J. Gillis, R. Rendon, **Landan MacDonald**, M. A. S. Jewett, C. French, H. Ajzenberg, A. Almatar, M. Abdoell, and M. Organ, "Identification of tumor size as the only factor associated with non-diagnostic biopsies in patients with small renal masses," *Canadian Urological Association Journal*, vol. 14, no. 5, 2019.
- [9] A. Hecobian, A. L. Clements, K. B. Shonkwiler, Y. Zhou, **Landan MacDonald**, N. Hilliard, B. L. Wells, B. Bibeau, J. M. Ham, J. R. Pierce, and J. L. Collett, "Air Toxics and Other Volatile Organic Compound Emissions from Unconventional Oil and Gas Development," *Environmental Science & Technology Letters*, vol. 6, no. 12, pp. 720–726, 2019.
- [8] **Landan MacDonald**, M. L. Armstrong, K. J. Lehmann, M. R. Acker, and G. M. Langille, "Outcome analysis of patients with Peyronie's disease who elect for vacuum erection device therapy," *Canadian Urological Association Journal*, vol. 14, no. 9 SE - Original Research, Oct. 2019.
- [7] **Landan MacDonald**, J. Hearn, R. J. Power, P. Johnston, and M. Organ, "Case – Nephroureterectomy of a right-to-left crossed fused renal ectopia with urothelial carcinoma," *Canadian Journal of Urology, Submitted*, 2019.
- [6] M. Organ, **Landan MacDonald**, M. A. S. Jewett, H. Ajzenberg, A. Almatar, M. Abdoell, M. R. Acker, and R. Rendon, "Classification tree for the prediction of malignant disease and the prediction of non-diagnostic biopsies in patients with small renal masses.," eng, *Canadian Urological Association Journal*, vol. 13, no. 4, Jul. 2018, ISSN: 1911-6470 (Print).
- [5] B. L. Wells, **Landan MacDonald**, K. Shonkwiler, A. Clements, A. Hecobian, J. Ham, J. R. Pierce, and J. L. J. Collett, "Estimating Hydrocarbon Emissions Using Stationary Tracer Techniques," *In Preparation*, 2018.
- [4] D. J. Delene, A. Neumann, A. Korolev, M. Freer, O. Henry, J. Crosie, S. Gagné, **Landan MacDonald**, A. Bansemer, A. Heymsfield, C. Gurganus, T. Fisher, W. Wu, and G. McFarquhar, "Towards Community Software Development to Process and Analyze Cloud Physics In-situ Aircraft Data," *Bulletin of the American Meteorological Society, in preparation*, 2016.
- [3] S. Gagné, **Landan MacDonald**, W. R. Leitch, and J. R. Pierce, "Software to analyze the relationship between aerosol, clouds, and precipitation: SAMAC," *Atmospheric Measurement Techniques*, vol. 9, no. 2, pp. 619–630, 2016.
- [2] J. W. Smith, M. McDonald, J. V. Romero, **Landan MacDonald**, J. Lee, and J. . Dahn, "Small and wide angle X-ray studies of impregnated activated carbons," *Carbon*, vol. 75, pp. 420–431, 2014, ISSN: 00086223.
- [1] J. V. Romero, J. W. Smith, B. Sullivan, **Landan MacDonald**, L. M. Croll, and J. R. Dahn, "Evaluation of the SO<sub>2</sub> and NH<sub>3</sub> gas adsorption properties of CuO/ZnO/Mn<sub>3</sub>O<sub>4</sub> and CuO/ZnO/NiO ternary impregnated activated carbon using combinatorial materials science methods," *ACS Combinatorial Science*, vol. 15, no. 2, 2013, ISSN: 21568952.

## Presentations

- [14] **Landan MacDonald**, J. Ory, R. A. Rendon, G. Bailly, A. Cox, G. Langille, and D. Bell, “Using GoPro to Create an Educational Database of Open Urological Procedures for Residents,” in *Dalhousie Urology Research Day*, Halifax, NS (Oral Presentation), Jun. 2020.
- [13] **Landan MacDonald**, L. Armstrong, K. Lehmann, M. Acker, and G. Langille, “Outcome analysis of patients with Peyronie’s disease who elect for non-invasive treatment,” in *American Urological Association Meeting 2017*, Boston, MA (Moderated Poster Presentation), May 2017.
- [12] **Landan MacDonald**, S. Gill, S. Lutchmedial, E. Scheme, and K. Brunt, “Drug Adherence Detection using a Blood Pressure Device as a Strategy to Improve Patient Care,” in *New Brunswick Health Research Foundation Conference 2017*, Moncton, NB (Poster Presentation), Nov. 2017.
- [11] **Landan MacDonald**, S. Gormley, A. Brown, M. Howatt, T. Fournier, and A. Jaffar, “A workable model of a near-peer inter-professional education in anatomy,” in *Interprofessional Health Research Day 2017*, Saint John, NB (Poster Presentation), Mar. 2017.
- [10] **Landan MacDonald**, S. Gormley, A. Brown, M. Howatt, T. Fournier, and A. Jaffar, “A workable model of a near-peer inter-professional education in anatomy,” in *The Canadian Conference on Medical Education*, Winnipeg, MB (Poster Presentation), May 2017.
- [9] **Landan MacDonald**, L. Armstrong, K. Lehmann, and G. Langille, “Outcome analysis of patients with Peyronie’s disease who elect for non-invasive treatment,” in *71st Canadian Urological Association Annual Meeting*, Vancouver, BC (Moderated Poster Presentation), Jun. 2016.
- [8] **Landan MacDonald**, B. Wells, A. Hecobian, A. Clements, K. Shonkwiler, J. R. Pierce, J. M. Ham, and J. L. J. Collett, “Testing Emission Rate Determining Methods via Controlled Field Experiments,” in *96th American Meteorological Society Annual Meeting*, Phoenix, AZ (Oral Presentation), Jan. 2015.
- [7] **Landan MacDonald**, S. Gagné, W. R. Leitch, and J. R. Pierce, “Measurements and Modelling Effects of Aerosol on Marine Stratiform Clouds,” in *Atmospheric Chemistry Group Meeting, Colorado State University*, Fort Collins, CO (Oral Presentation), Feb. 2014.
- [6] **Landan MacDonald**, S. Gagné, W. R. Leitch, and J. R. Pierce, “Understanding the Effects of Human Generated Aerosols on Precipitation,” in *University of Colorado Research Symposium*, Boulder, CO (Poster Presentation), Nov. 2014.
- [5] **Landan MacDonald**, A. Hecobian, A. Clements, K. Shonkwiler, J. R. Pierce, J. M. Ham, and J. L. J. Collett, “Estimating Front Range VOC Concentrations using AERMOD,” in *Young Scientist Symposium on Atmospheric Research*, Fort Collins, CO (Oral Presentation), Oct. 2014.
- [4] **Landan MacDonald**, S. Gagné, W. R. Leitch, and J. R. Pierce, “Understanding the Effects of Human Generated Aerosols on Precipitation,” in *Young Scientist Symposium on Atmospheric Research*, Fort Collins, CO (Poster Presentation), Sep. 2013.
- [3] S. Gagné, **Landan MacDonald**, W. R. Leitch, and J. R. Pierce, “Aerosol-Clouds- Precipitation: Aircraft Measurements on the East Coast of Canada,” in *American Association of Aerosol Research Annual Meeting*, Minneapolis, MN (Oral Presentation), Oct. 2012.
- [2] **Landan MacDonald**, S. Gagné, W. R. Leitch, and J. R. Pierce, “Modelling of a Marine Stratocumulus Cloud,” in *Atmospheric Science Group Meeting*, Halifax, NS (Oral Presentation), Aug. 2012.
- [1] **Landan MacDonald**, S. Gagné, W. R. Leitch, and J. R. Pierce, “Modelling of a Marine Stratocumulus Cloud,” in *Canadian Undergraduate Physics Conference*, Vancouver, BC (Oral Presentation), Oct. 2012.

## Leadership Activities

- Co-author for Dalhousie Medicine Accreditation 2017 Report** Co-authored the Independent Student Analysis, a report that examined the satisfaction of students at Dalhousie Medicine New Brunswick Campus (2017).
- Interviewer for Dalhousie Medicine** Interviewed medical student candidates for the Dalhousie Medicine Class of 2021 as part of the Multiple Mini-Interview format (2016).
- Dalhousie Medicine New Brunswick Charity Golf Classic** Responsible for creation of website, poster and logistics for this 6th annual charity event (2016).
- Communications and Technology Representative** Part of the Dalhousie Medical Students' Society council. Responsible for all communications of the DMSS members in New Brunswick, and managing the DMSS website (2016 – 2017).
- Respiratory Therapy Anatomy Instructor** Developed and taught respiratory therapy students anatomy relevant to their field (2016 – 2017).
- Surgery Interest Group Executive Member** Organized and helped teach a suturing evening for MED1 and MED2 students at Dalhousie Medicine New Brunswick (2016 – 2017).
- Atmospheric Science Department Graduate Representative** Provided help and guidance to new graduate students in the Atmospheric Science Department of Colorado State University (2014 – 2015).
- Colorado State Engineering Student Technology Committee Member** Part of committee that decides on where to allocate technology fees from engineering students (2014 – 2015).
- Local Chapter President of American Association for Aerosol Research** Colorado State University Student Chapter President. I was responsible for fundraisers, organizing journal clubs, and group outings to various scientific centres in Colorado (2014 – 2015).
- Organizer of “School is Cool” Summer BBQs** Organized BBQs to raise money for this charity to provide much needed supplies to young students around Fort Collins, Colorado (2014).
- Student Organizer of Young Scientist Symposium on Atmospheric Research** Organizer for annual atmospheric science conference in Fort Collins, CO (2014).
- Scientist with Earth Explorers** Worked with sixth graders at Trail Ridge Middle School, Longmont, Colorado to teach the importance of science (2014).
- President of Dalhousie Physics Society** Responsible for organizing meetings, presenting faculty awards and managing funds (2013).
- Social representative of Dalhousie Physics Society** Responsible for hosting a “Physics Phryday” event every month and organizing summer BBQs to earn money for society (2012).
- Member of Dalhousie Allies** Provided support for other students regarding their sexuality without fear of judgment (2011 – 2013).
- Volunteer at IWK Health Centre** Worked at information desk to answer questions and provide directions to patients, families and visitors (2010 – 2011).
- Volunteer at Saint John Regional Hospital** Worked at information desk (2006 – 2008).

## Individual Activities

**Computer Programming** Create various programs to improve my life and the lives of others. A subset of my programs can be found here: <https://github.com/lannymac> (2012 –).

**Downhill Skiing** Living near the Rocky Mountains provided an opportunity to ski that I could not pass up (2013 –).

**Hiking** The Rocky Mountains have provided many trails and mountain peaks to summit. I have also been an avid hiker throughout my childhood and undergraduate career.

**Movies** Alien (1979), Bladerunner (1982), Hereditary (2018), The Shining (1980), The Thing (1982).

**Music** Aphex Twin, Boards of Canada, Floating Points, Gas, Leon Vynehall, Nicolas Jaar, Oneohtrix Point Never, Skee Mask, Tim Hecker, Tycho.