

Who am I?

*A soon-to-graduate **astrophysics PhD** with experience using **climate models** to both **ask and answer** challenging new **questions** about Earth-like planets. Looking for new **challenging questions** to tackle.*

Technical Skills

- High-performance **parallel computing**
- **Python**, Bash, IDL, Fortran, and more
- **Data visualization**, Image editing
- Sharing results with **LaTeX** and **Powerpoint**

Speaking

For The Public

"A Brief Update on the Search for Earth 2.0"

David Dunlap Observatory; 45 mins

"Cold Out There, Eh? The Climates of Alien Worlds"

AstroTours; 45 mins

"Telescope Earth: Using Climate Here to Understand Worlds Out There"

UofT Grad Room Series; 15 mins

"We don't need a backup Earth (yet)"

*UofT Libraries Science Literacy Week
"Space Mythbusters"; 15 mins*

"The Squid-People of Proxima b"

*Astronomy on Tap; 10 mins
Dunlap Teachers' Workshop; 12 mins
York U Teachers' Workshop; 20 mins*

For Other Scientists

"The Habitability of Frozen Worlds"

ERES III, Yale

"Generalizing the Habitable Zone"

CCTP-3, Lunar & Planetary Institute

"Blue Skies: The Role of pN₂ in the Habitable Zone"

ERES V, Cornell University

Experience

PhD Research, University of Toronto (2015--)

- Improvements to an existing model enabled **>10,000 simulations** of previously-unstudied planets
- Created HPC job management code that **reduced overhead** and led to **10x more simulations/week**
- Built a simulation post-processing **pipeline** to produce synthetic observables for **thousands of planets**
- **Trained and supervised** an undergraduate research assistant

University of Minnesota, Developer & Los Alamos National Lab, Postbac Researcher *(June 2014-August 2015)*

- New algorithms for faster simulations

University of Minnesota, Research Assistant *(June 2011-May 2014)*

- **Analysis & classification** of data from spacecraft observing the solar wind
- Created **GUI analysis tool** for easy analysis of data from spacecraft

Teaching Assistant, University of Toronto (2015-)

- **Led classroom tutorials** for 90-120 students per semester
- Created **term projects** with randomized data, **reducing cheating**

Personal Interests

*Ultimate Frisbee – 9 years of organized play
5 years with UofT SGS Division 1*

*Orchestra – 14 years in various ensembles
French horn*

Fish-keeping and aquascaping

4 tanks, 8 animal species, and counting

Dungeons and Dragons – 3 campaigns so far

Education

BS, Physics & Astronomy - University of Minnesota, 2014

PhD (ABD), Astronomy & Astrophysics - University of Toronto, Summer 2020 (In Progress)

Service and Leadership Experience

- 1 year as **Co-President** of UofT Graduate Astronomy Student Association (GASA)
- 2 years on UofT Graduate Student Union **Board of Directors**
- 2 years on GASA **Mediation Committee**
- UofT Department of Astronomy & Astrophysics **Values Statement** Committee
- **Independent School District 197** Strategic Redesign Committee

Miscellaneous Public Engagement

Languages: **English** (native), **Hebrew** (native), **French** (intermediate fluency)

- AAAS “Book Smart” **Book Club**: Expert Facilitator
- UofT Libraries ‘**Science Literacy Week**’: “Human Book: What is an Astronomer?”
- UofT **Ask an Astronomer** email service: 2016-2020
- UofT **AstroTours**: Volunteer **Telescope Operator**; 2015-2020
- “Is Anybody Out There?”: ASX **Panel Discussion** – *Panelist*
- “Earth as an Exoplanet”: *AstroTours Panel Discussion* – *Panelist*
- 4 radio, TV, and print **interviews** for the 2017 solar eclipse, and 2 research **press releases**

Selected Merit-Based Awards

- **Ontario Graduate Scholarship**
\$15,000 CAD; 2019
- **2x winner** Department of Astronomy & Astrophysics International Graduate Student Fellowship
\$6000 CAD total; 2018-2019
- Lachlan Gilchrist Fellowship
\$4500 CAD; 2017
- Centre for Planetary Sciences Graduate Fellowship
\$10,000 CAD; 2015
- Hagstrum Award for **Physics Research**
\$1000 USD; 2014
- Los Alamos National Laboratory “**Outstanding Technical Presentation**” Award
“*Development and Optimization of a Fast Poisson Solver using a Red-Black Multigrid Approach in 2-D*”; 2014
- Los Alamos National Laboratory “Spot Award” for **Service to the Lab**
“*For identifying and reporting a security vulnerability*”; 2014
- Harriet B. & Esther Snyder Merrill Scholarship
\$3000 USD; 2011-2014
- University of Minnesota Gold Scholar Award
\$30,000 USD; 2010-2014
- Bentson Family Scholarship
\$20,000 USD; 2010-2014
- National Merit Scholarship
\$2500 USD; 2010