

Adam R. Rhodes

Present Address

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Education

PhD in Applied Mathematics,
University of Alberta, Edmonton, AB. 2018–2023 (anticipated)

Master of Science in Applied Mathematics,
University of Alberta, Edmonton, AB. 2018
Thesis: *M⁴: Mathematical Models of
Metastatic Malignancy*
Supervisor: Dr. Thomas Hillen

Bachelor of Science with Honors in Mathematics
with First Class Honors, University of Alberta, Edmonton, AB June 2015
Final Year Research Project: *Cancer Stem Cell Dynamics
and the Tumour Growth Paradox*
Supervisor: Dr. Thomas Hillen
3.9 GPA

Alberta High School Diploma, Glenmary High School,
Peace River, AB June 2010
Honours with Distinction

Academic Honors

Alberta Innovates Graduate Student Scholarship (Top-up) 2019–2022

Josephine Mitchell Research Scholarship 2019–2020

Alberta Graduate Excellence Scholarship 2019–2020

University of Alberta Graduate Fellowship 2019–2020

Josephine Mitchell Scholarship (top-up) 2019

President's Doctoral Prize of Distinction 2019–2022

NSERC Alexander Graham Bell
Canada Graduate Scholarship – Doctoral 2019–2022

PIMS Graduate Student Prize 2019

Friends of the University of Alberta Society Graduate Award 2018

University of Alberta Doctoral Recruitment Scholarship 2018

PIMS Student Training Acceleration Award 2018

Graduate Student Scholarship (Master's) – Alberta Government 2018

Josephine Mitchell Research Scholarship 2017–2018

Alberta Innovates – Graduate Student Scholarship 2017–2018

NSERC Canadian Graduate Scholarship – Master's 2016–2017

Josephine Mitchell Recruitment Scholarship 2016–2017

University of Alberta Faculty of Science Graduate Scholarship	2016–2017
Walter H. Johns Fellowship	2016–2017
Dean’s Excellence Recruitment Award	2016–2017
Queen Elizabeth II Scholarship – Master’s	2016–2017
Undergraduate Awards – Highly Commended Entry for final year research project: <i>Cancer Stem Cell Dynamics and the Tumour Growth Paradox</i>	2015
NSERC Undergraduate Student Research Award Under the supervision of Dr. Thomas Hillen	Summer 2015
The John Ross McGregor Scholarship in Mathematical and Statistical Sciences	2015
A Dean’s Silver Medal in Science	2015
The Yahya Scholarship in Mathematics	2014
The Cyril G Wates Memorial Scholarship	2014
A Murray Thomas Gibson Memorial Scholarship in Mathematics	2014,2013
A Jason Lang Scholarship	2014, 2013, 2012
Golden Key Honor Society	2012-Present
A Faculty of Science Academic Excellence Scholarship	2011
A Roland Stansfield Young Memorial Academic Excellence Scholarship	2011
The Governor General’s Academic Medal - Bronze	2010

**Contributed
Talks/Posters**

<i>Et tu NK? Immune Cell phenotypic plasticity in cancer</i> (50 mins) University of Alberta MathBio Journal Club Edmonton, AB, CAN (virtual)	July 2021
<i>Mathematical Modeling of the Immune-Mediated Theory of Metastasis</i> (50 mins) University of Wisconsin, Milwaukee Analysis/Applied Math Seminar Milwaukee WI, USA (virtual)	April 2021
<i>Abstract Results for a Non-Local Model of Growth and Spread</i> (50 mins) University of Alberta MathBio Journal Club Edmonton, AB, CAN (virtual)	March 2021
<i>Surf’s Up: The Search for Waves in a non-local model with non-constant growth</i> (50 mins) University of Alberta MathBio Journal Club Edmonton, AB, CAN (virtual)	November 2020
<i>Mathematical Modeling of the Immune-Mediated Theory of Metastasis</i> (20 mins) (video) Mathematical Biosciences Institute Workshop: Mathematical and Computational Methods in Biology	

Columbus, Ohio, US (remote workshop)	May 2020
<i>Brief Interviews with Hideous Data: Development of a Mathematical Model of ATX/LPA Signaling in Breast Cancer</i> (60 mins)	
University of Alberta MathBio Journal Club Edmonton, AB, CAN	March 2020
<i>My Dinner with Gillespie: Stochastic Simulations and the Gillespie Algorithm</i> (60 mins)	
Mathematical and Statistical Sciences Graduate Colloquium University of Alberta Edmonton, AB, CAN	February 2020
<i>Everything you ever wanted to know about the autotaxin-lysophosphatidate-lipid phosphate phosphatase axis but were too afraid to ask</i> (60 mins)	
University of Alberta MathBio Journal Club Edmonton, AB, CAN	October 2019
<i>Mathematical Modeling of the Immune-Mediated Theory of Metastasis</i> (30 mins, invited talk)	
Society for Mathematical Biology Annual Meeting 2019 Montreal, QC	July 2019
<i>Metastatic Dormancy and Blowup as a Function of Tumor Educated Immune Cells</i> (20 mins)	
Conference on Multiscale Modeling in Biology Minneapolis, MN, USA	May 2019
<i>Slow Dancing on Manifolds: Theory and Application of Geometric Singular Perturbation Analysis</i> (60 mins)	
University of Alberta MathBio Journal Club Edmonton, AB, CAN	March 2019
<i>Tumor Educated Immune Cells Promote Metastatic Growth.</i> (40 mins) (video)	
CMO: Mathematical Challenges in the Analysis of Continuum Models for Cancer Growth, Evolution and Therapy Oaxaca, Mexico	November 2018
<i>The Metastatic Reproduction Number</i> (10 mins)	
PIMS Workshop on Stochastic and Deterministic Modelling in Biology Jasper, AB, CAN	September 2018
<i>Tumor Educated Immune Cells Promote Metastatic Growth.</i> (poster)	
The 6th G.J. Butler Conference on Differential Equations and Population Biology Edmonton, AB, CAN	July 2018
<i>Tumor Educated Immune Cells Promote Metastatic Growth.</i> (poster)	
Best Poster Award CAIMS 2018 Toronto, ON, CAN	June 2018
<i>My Dinner with Gillespie: Stochastic Simulations and the Gillespie Algorithm</i> (60 mins)	
University of Alberta MathBio Journal Club	

	Edmonton, AB, CAN	March 2018
	<i>Metastasis as Branching Stochastic Process with Settlement.</i> (60 mins)	
	University of Alberta MathBio Journal Club Edmonton, AB, CAN	November 2017
	<i>Modeling Metastasis: Early Results.</i> (60 mins)	
	University of Alberta MathBio Journal Club Edmonton, AB, CAN	August 2017
	<i>Cancer Stem Cell Plasticity and Radioresistance.</i> (50 mins)	
	PIMS Young Researchers' Conference Saskatoon, SK, CAN	June 2017
	<i>Mathematical Modeling of Cancer Stem Cell Dynamics: Insights Into Radio-Resistance.</i> (poster)	
	PIMS Graduate Summit in Mathematical Biology and Applied PDE Jasper, AB, CAN	May 2017
	<i>Cancer Stem Cell Plasticity and Radioresistance.</i> (20 mins)	
	Alberta Mathematics Dialogue Edmonton, AB, CAN	May 2017
	<i>Modeling Metastasis.</i> (60 mins)	
	University of Alberta MathBio Journal Club Edmonton, AB, CAN	March 2017
	<i>Cancer Stem Cell Dynamics and the Tumour Growth Paradox.</i> (3 mins)	
	The Undergraduate Awards - UPresent Dublin, Ireland	November 2015
	<i>Survivin, Dedifferentiation, and Cancer Stem Cells.</i> (30 mins)	
	University of Alberta MathBio Journal Club Edmonton, AB, CAN	August 2015
Participation	Society for Mathematical Biology Annual Meeting 2020 Virtual	July 2020
	Cancer Research Institute of Northern Alberta (CRINA) Research Day 2019 Edmonton, AB, CAN	November 2019
	BIRS Workshop Bridging Cellular and Tissue Dynamics from Normal Development to Cancer: Mathematical, Computational, and Experimental Approaches (video – my talk between 3:26-5:35) Banff, AB, CAN	June 2019
	LMS-CMI Research School PDEs in Mathematical Biology: Modelling and Analysis Edinburgh, Scotland	April/May 2019
	CIME Summer School 2018 Mathematics of Mechanobiology Cetraro, Italy	August 2018

11th Americas Conference on Differential Equations and Nonlinear Analysis Edmonton, AB, CAN	August 2017
Society for Mathematical Biology Annual Meeting 2017 Salt Lake City, UT, USA	July 2017
Undergraduate Awards Global Summit Dublin, Ireland	November 2015
University of Alberta Faculty of Science Undergraduate Summer Research Poster Session Edmonton, AB, CAN	2015
PIMS Industrial Problem Solving Workshop Saskatoon, SK, CAN	2015
University of Alberta Mathbio Journal Club Edmonton, AB, CAN	2015 - present

Publications

4. **A. Rhodes** and T. Hillen. Implications of Immune-Mediated Metastatic Growth on Metastatic Dormancy, Blow-Up, Early Detection, and Treatment. (accepted to the *Journal of Mathematical Biology*). *Journal of Mathematical Biology*, 2020; 81(3): 799 – 843.
3. **A. Rhodes** and T. Hillen. A Mathematical Model for the Immune-Mediated Theory of Metastasis. *Journal of Theoretical Biology* 2019 Dec; 482: 109999.
2. C. Frei, T. Hillen, and **A. Rhodes**. A Stochastic Model for Cancer Metastasis: Branching Stochastic Process with Settlement. *Mathematical Medicine and Biology* (2020); 37(2): 153–182.
1. **A. Rhodes** and T. Hillen. Mathematical Modeling of the Role of *Survivin* on Dedifferentiation and Radioresistance in Cancer. *Bulletin of Mathematical Biology* 2016 Jun; 78(6): 1162-88. DOI: 10.2007/s11538-016-0177-x.

Teaching

Graduate Student Teaching Award <i>Faculty of Graduate Studies and Research</i> <i>University of Alberta</i>	2019
MATH 201 (Differential Equations) Lab instructor <i>Department of Mathematical and Statistical Sciences</i> <i>University of Alberta</i>	FALL 2018
MATH 100 (Calculus I) Lab instructor <i>Department of Mathematical and Statistical Sciences</i> <i>University of Alberta</i>	FALL 2017
One quarter Teaching Assistantship <i>Department of Mathematical and Statistical Sciences</i> <i>University of Alberta</i>	2016-2017

Supervision

Natali Kendall-Freedman
Summer Undergraduate Research (NSERC USRA)
and capstone research project (MATH 499)
at the University of Alberta

Project(s): *Extension of a metastasis model to multiple sites and Modelling CAR T-Cell Immunotherapy including Pro-Tumor Immune Effects.*
Co-supervised with Dr. Thomas Hillen May 2020 – May 2021

Volunteer Work Outreach

President - University of Alberta Society in Graduate Mathematics and Statistics (SIGMAS)	March 2020 - March 2021
Organizer - U of A MathBio Journal Club	June 2019 - December 2020
Representative for Mathematics and Statistics on the Science Graduate Students' Association Council (SGSAC)	2019 - 2021
Vice President - SIGMAS	March 2019 - March 2020
Webmaster - SIGMAS	March 2019 - Present
Vice President - Peace Country Regional Science Fair	2018 - present
Board Member - Peace Country Regional Science Fair	2016 - 2018
Outreach Team Member - SIGMAS	September 2016 - present

Membership & Service

Reviewer - Bulletin of Mathematical Biology	2019 - present
Reviewer - Journal of Mathematical Biology	2018 - present
Member - Society for Mathematical Biology	2017 - present

In The News

New Model Explains Role of Immune System in Cancer Metastasis.
Katie Willis, University of Alberta Faculty of Science News (December 2019)

Languages

- English - Native Speaker
- French - Fluent